

HAITI

Project Profile (PP)

BASIC DATA

Project Name:	Supplementary Financing for the Rehabilitation of the Peligre Hydroelectric Plant		
Project Number:	HA-L1038		
Project Team:	Natacha Marzolf (INE/ENE) Team Leader; Lumas Kendrick (ENE/CHA) Alternate Team Leader; Carlos Trujillo (INE/ENE); Jorge Mercado (INE/ENE); Patricio Crausaz (PDP/CHA); Ariel Rodriguez (PDP/CHA); Denis Corrales (VPS/ESG); Javier Jimenez (LEG/SGO); Pilar Rodriguez (INE/ENE) and Paola Mendez (INE/ENE); under the supervision of Leandro Alves, Division Chief of the Energy Division (INE/ENE/CHF) and Eduardo Almeida, Representative IDB in Haiti (CCB/CHA).		
Borrower:	Republic of Haiti		
Executing Agency:	Ministry of Public Works, Transport and Communication, with the participation of Electricité d'Haïti		
IDB Grant Facility:	IDB		US\$ 15.000.000
	Total		US\$ 15.000.000
Safeguards:	Policies triggered: B.1;B.2;B.3;B.4;B.5;B.7;B.11;B.12;B.17		
	Classification:	B	

I. GENERAL JUSTIFICATION AND OBJECTIVES

- 1.1 **Current conditions in the sector.** The January 12th 2010 earthquake that massively struck Haiti and affected mainly the metropolitan area of Port au Prince, and Petite and Grand Goave, caused damages and losses of approximately US\$7.804 billion. The post disaster needs assessment (PNDA) energy group estimated investments of about US\$100 million in the short-term (February 2010 to September 2011) and US\$160 million in the medium-term to repair main installations, restore electricity service, refurbish and rehabilitate existing generation stations and rehabilitate and strengthen transmission and distribution networks¹. The direct damages to the power system were estimated at about US\$20 million. The expected loss of revenue associated with the disruption of billing and collection was estimated at US\$37 million for February 2010 through April 2011. The earthquake also provoked the displacement of hundreds of thousands of refugees to Port-au-Prince.
- 1.2 **Energy sector organization.** Electricité d'Haïti (EDH), the state-owned monopoly for the provision of public electricity service in Haiti, was established in 1971 together with the commissioning of the first units of the 54-megawatt (MW) Péligre Hydroelectric Plant (PHP), which became the major source of electricity supply to the metropolitan area of Port-

¹ PNDA, Assessment of damage, losses, general and sectorial needs. Annex to the Action Plan for National Recovery and Development of Haiti. March 2010.

au-Prince until the early 1980's. Beginning in the 1980's, EDH relied on diesel generation plants to meet demand growth. In the mid 1990's, EDH began to contract energy supply from independent power producers (IPP), under power purchase agreements (PPAs) and repair, operate and transfer (ROT) contracts using diesel engines. In 2008, a new scheme was used to develop new power generation: 60-MW in three new diesel plants² were installed based on a tripartite agreement between the governments of Venezuela, Cuba and Haiti.

- 1.3 **Country's sector strategy.** In the PDNA, the Government of Haiti (GoH) established that reconstruction of the sector should be part of an overall development plan for the electricity sector to make it efficient and financially viable, operating as an open, transparent market, promoting renewable energy, and attracting sufficient capital to meet the rising demand and to provide affordable, high-quality electricity service. The GoH has also decided to implement an integrated and coordinated program of reform and transformation of Haiti's energy sector to: (i) achieve greater access for rural and urban households; (ii) lower energy costs; (iii) improve the reliability for new and existing commercial customers; (iv) make a viable energy utility with reduced technical and commercial losses and efficient rates; and (v) improve revenue collection and a sustainable mix of fuel sources, including renewable energy sources.
- 1.4 **Bank's country strategy/programming objectives.** The Supplementary Financing for the Rehabilitation of the PHP (the Project) supports the original grant program for Peligre Hydroelectric Plant Rehabilitation Program (HA-L1032, grant 2073/GR-HA) approved in 2008 for an amount of US\$12.5 million to rehabilitate the PHP and corresponding transmission line to Port-au-Prince. The proposed Supplementary Financing is consistent with the GoH's priority of strengthening the electricity sector and with the updated IDB country strategy with Haiti (document GN-2465-2) which identifies the electricity sector as one of the main pillars. The Project is also in line with IDB's institutional priorities as outlined in the Report on the Ninth General Increase in Resources for the Inter-American Development Bank (GCI) (AB-2764) as it contributes to the goal of "supporting development in small and vulnerable countries" (such as Haiti) and to that of "assisting borrowers in dealing with climate change, sustainable energy (including renewable) and environmental sustainability".
- 1.5 **Progress on execution of grant 2073/GR-HA.** The Peligre dam, built to control the waters of the Artibonite Valley, was completed in 1956. By 1971, the installation of three 18-MW generating units was complete and the PHP began to produce electricity. The PHP performs two functions: (i) it regulates and controls the flooding in the Artibonite Valley, and (ii) serves as Haiti's only large-scale renewable energy plant, providing approximately 50% of the national system's energy supply. PHP's electromechanical equipment has reached its useful life and the problems of an aging physical plant are compounded by sedimentation caused primarily by deforestation, inadequate management of the Artibonite Valley watershed, and natural effects of environment, which further hinders the unit's availability.
- 1.6 As a result of the above and in order to rehabilitate the only reliable renewable source of energy in Haiti, the Bank approved the grant proposal for Peligre Hydroelectric Plant

² Petion plant at Carrefour (30 MW), Marti plant at Cap Haitien (15 MW) and Bolivar plant at Gonaives (15 MW).

Rehabilitation Program (HA-L1032, grant 2073/GR-HA mentioned in paragraph 1.4 above), on November 18, 2008 to restore and preserve Haiti's capacity to generate electrical power with renewable energy sources and to ensure the supply of electricity to Haiti's capital by rehabilitating the transmission line to Port-au-Prince. As of April 2011, two separate bid processes had been undertaken under this grant: (i) the bid for PHP contract supervision and (ii) the bid to award the rehabilitation of the PHP equipment. The supervision contract was awarded to Fitchner GmbH from Germany for US\$3.2 million in June 2010 and the contract for the rehabilitation of the PHP equipment is anticipated to be awarded in the 2nd quarter of 2011. As of today, execution of 2073/GR-HA has been considered satisfactory to the Bank.

- 1.7 **Proposal for Supplementary Financing.** When grant 2073/GR-HA was under preparation in 2008, IDB financing available for Haiti was limited. Thus the operation was designed based on a modular technical and economic structure in order to maximize resources and gain access to additional co-financing from other potential donors. Such structure involved the preparation of three technically independent operations that would yield the specific cumulative benefits of rehabilitating the PHP. The first operation was to be the one financed by the IDB for an amount of US\$12.5 million, the second one to be co-financed by the OPEC Fund for International Development (OFID) for an amount of US\$15 million and the last operation would be presented to the IDB Board of Executive Directors in 2010 for an additional provisional amount of US\$12.5 million³. The first operation (grant 2073/GR-HA) was thus approved in 2008 and the OFID concessional loan in October 2009 (currently pending GoH approval). Subsequently, in November 2010, Kreditanstalt für Wiederaufbau (KfW), a German Development Bank, approved a 10 million euro grant to participate in the rehabilitation of the PHP (grant already approved by the GoH).
- 1.8 As a result of the technical and economic bids for the supervision and rehabilitation contracts for PHP, and notwithstanding KfW participation in the financing of the Project, total projects costs increased⁴ and yielded an amount of US\$55 million (vs. a figure of US\$40 million in 2008 during preparation for grant 2073/GR-HA). The Supplementary Financing proposed in this document will thus cover the funding gap for the rehabilitation of the PHP originated as a result of the bids mentioned above.
- 1.9 **Rationale.** IDB Supplementary Financing has been sized to an amount of US\$15 million in order to cover the funding gap resulting from the incremental costs associated with the bids for the PHP supervision and rehabilitation contracts. Based on the preliminary analysis carried out by the project team for the purposes of the project profile, the proposed Supplementary Financing for the Rehabilitation of the PHP meets all the conditions established in Operational Policy OP-310, "Additional Financing of Cost Overruns for Operations in Progress" (document GN-2329). Financing of the incremental costs resulting

³ The operation proposed in this project profile corresponds to this last operation mentioned in section 1.7, originally programmed to be presented to the IDB Board of Executive Directors in late 2010.

⁴ In the case of the rehabilitation of PHP, the additional cost of the equipment rests mainly on higher prices for the commodities involved in the Project, mostly steel, and the consequences of the international financial crisis that impacted the inputs prices in the market.

from the bidding process carried out for the PHP equipment contract, will ensure completion of the Rehabilitation of PHP and thus achieve the Project's planned objectives⁵.

- 1.10 **Project Objective.** The general objective is to cover the funding gap for the rehabilitation of the PHP equipment and corresponding transmission line to Port-au-Prince envisaged under the original operation HA-L1032. Components are as follows:
- 1.11 **Component I: investments in rehabilitating PHP electro-mechanical components and transformers.** This component will finance electro-mechanical rehabilitation of the PHP and the related civil works.
- 1.12 **Component II: investments in the 115-kilovolt transmission system between the PHP and Port-au-Prince.** This component will finance physical rehabilitation including addressing swelling pylons, replacing insulation, charting flows in areas of high topographical vulnerability subject to erosion and rehabilitation the transmission line from the PHP to the Port-au-Prince distribution substation.
- 1.13 **Component III: engineering and administration.** This component will support the execution through institutional strengthening of the "Unité de Coordination du Programme" (Program Coordination Unit -PCU) and "Unité Technique du Program" (Program Technical Unit -PTU); and program supervision including environmental and social supervision, audit and evaluation.
- 1.14 **Execution.** The beneficiary will be the GoH and the executing agency will be the Ministère de Public Works, Transport, and Communication (MTPTC), in cooperation with EDH. The Supplementary Financing will use the same execution mechanism as the one contemplated in grant 2073/GR-HA, namely (i) the PCU, responsible for administrative and financial aspects of the PHP; (ii) the PTU, responsible for technical aspects, and (iii) the Steering Committee (formed by representatives of the MTPTC, Ministry of Finance (MEF), EDH, the Ministry of Planning and External Cooperation (MPCE), and the Public Enterprise Modernization Board (CMEP)) responsible for ensuring that the objectives are met.

II. TECHNICAL ISSUES AND SECTOR KNOWLEDGE

- 2.1 The IDB has been deploying a strategy of comprehensive support to the energy sector, which since 2006 has included the approval and execution of several operations, including grant 2073/GR-HA, the Program for the Rehabilitation of the Electricity Distribution System in Port-au-Prince (HA-L1014) (approved in 2007 for an amount of US\$18.1 million) and Supplemental Financing for the Program for Rehabilitation of the Electricity Distribution System in Port-au-Prince (HA-L1035) approved in 2010 for an amount of US\$14 million.
- 2.2 IDB presence in the energy sector also includes the development of a White Paper to discuss policy options, support infrastructure reconstruction efforts post-earthquake and engage in key initiatives in order to increase supply and reliability of the electricity system.

⁵ The Proposal for Operation Development (POD) will provide in more detail how the Supplementary Financing for the Peligre Hydroelectric Plant is consistent with all and each of the criteria set forth in OP-310.

- 2.3 Additional technical assistance programs led by the Bank include installation of solar power generators and application through grants of US\$1 million from the Sustainable Energy and Climate Change Initiative (SECCI) and of US\$3 million from the Global Environment Facility (GEF). The Bank is also providing assistance to the GoH with the preparation of a three-year Programmatic Policy-Based Grant Program (Institutional Transformation and Modernization of the Energy Sector HA-L1065) that will support the development and implementation of an energy sector framework that will contribute to modernize and increase the efficiency and reliability of the electricity sector.

III. SAFEGUARDS AND FIDUCIARY SCREENING

- 3.1 **Environmental Aspects.** The Project will finance cost overruns electromechanical rehabilitation of the PHP. The PHP is the main source of renewable energy in Haiti and the only hydroelectric plant, so it is considered that the Project will have a positive impact on the country, taking into account that if the PHP does not rehabilitate, the installed capacity should be replaced in the short-term with fossil generation, which has negative environmental and social impacts, local and global. Based on the above and according to the Environment and Safeguards Compliance Policy, this Program is classified as category “B”. In addition, mechanisms, institutional arrangements and responsibilities established for environmental and social management of this operation remain unchanged from the original scheme provided under grant 2073/GR-HA. A socio-environmental audit for this operation will be carried out and results obtained will be incorporated in the Environmental and Social Management Plan (ESMP).
- 3.2 **Fiduciary Aspects.** A financial management capacity and risk analysis of the PCU was conducted in November 2010 by applying the Institutional Capacity Assessment System (ICAS). The analysis determined a medium level of fiduciary risk for the financial management functions, with the lowest score affecting the internal control system. Additionally, the Operating Regulations and agreement between MTPTC and EDH will be reviewed during the preparation of the operation.

IV. OTHER ISSUES

- 4.1 In March 20th, 2011, the people of Haiti will elect the new President of the Republic and subsequent changes in authorities at the different public entities involved in the execution of the Project are sure to follow and disruptions in the decision making process are to be expected. A communication strategy with the new authorities to quickly inform them of the different aspects of the Project will be put in place in order to mitigate any delays in the continuation of activities.

V. RESOURCES AND TIMETABLE

- 5.1 Annex V details the timetable for the preparation of this operation. The due date envisioned for the proposal for Operational Development (POD) is in April 22nd, 2011.

Supplementary Financing for the Rehabilitation of the Peligre Hydroelectric Plant

**HA-L1038
Matriz de Efectividad en el Desarrollo
Resumen**

INTERNAL USE

SAFEGUARD POLICY FILTER REPORT

This Report provides guidance for project teams on safeguard policy triggers and should be attached as an annex to the PP (or equivalent) together with the Safeguard Screening Form, and sent to ESR.

1. Save as a Word document. 2. Enter additional information in the spaces provided, where applicable. 3. Save new changes.

PROJECT DETAILS	IDB Sector	ENERGY-HYDROELECTRIC ENERGY
	Type of Operation	Investment
	Additional Operation Details	
	Investment Checklist	Power Hydro
	Team Leader	Marzolf, Natacha (NATACHAM@iadb.org)
	Project Title	Supplementary Financing for the Rehabilitation of the Peligre Hydroelectric Plant
	Project Number	HA-L1038
	Safeguard Screening Assessor(s)	Corrales, Denis (DENISC@iadb.org)
	Assessment Date	2011-03-15
	Additional Comments	

SAFEGUARD POLICY FILTER RESULTS	Type of Operation	Investment	
	Safeguard Policy Items Identified (Yes)	Potential disruption to people's livelihoods living in the project's area of influence (not limited to involuntary displacement, also see Resettlement Policy.)	(B.01) Resettlement Policy– OP-710
		Activities to be financed in the project area are located within a geographical area or sector exposed to natural hazards (Type 1 Disaster Risk Scenario).	(B.01) Disaster Risk Management Policy– OP-704
		The Bank will make available to the public the relevant Project documents.	(B.01) Access to Information Policy– OP-102
		The operation is in compliance with environmental laws and regulations of the country where the operation is being	(B.02)

		implemented (including national obligations established under ratified Multilateral Environmental Agreements).	
		The operation (including associated facilities) will be screened and classified according to their potential environmental impacts.	(B.03)
		The Borrower/Executing Agency exhibits weak institutional capacity for managing environmental and social issues.	(B.04)
		An Environmental Assessment is required.	(B.05)
		The Bank will monitor the executing agency/borrower's compliance with all safeguard requirements stipulated in the loan agreement and project operating or credit regulations.	(B.07)
		The operation has the potential to pollute the environment (e.g. air, soil, water, greenhouse gases...).	(B.11)
		The operation is already <u>under construction</u> by the Executing Agency or the Borrower.	(B.12)
		Suitable safeguard provisions for procurement of goods and services in Bank financed projects may be incorporated into project-specific loan agreements, operating regulations and bidding documents, as appropriate, to ensure environmentally responsible procurement.	(B.17)
	Potential Safeguard Policy Items	No potential issues identified	
	Recommended Action:	<p>Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s). Complete Project Classification Tool. Submit Safeguard Policy Filter Report, PP (or equivalent) and Safeguard Screening Form to ESR.</p> <p>The project triggered the Disaster Risk Management policy</p>	

		(OP-704). A Disaster Risk Assessment (DRA), is required, as established under Directive A-2 of the DRM Policy OP-704). Please contact a Natural Disaster Specialist in VPS/ESG or INE/RND for guidance.
	Additional Comments:	

ASSESSOR DETAILS	Name of person who completed screening:	Corrales, Denis (DENISC@iadb.org)
	Title:	
	Date:	2011-03-15

SAFEGUARD SCREENING FORM

This Report provides a summary of the project classification process and is consistent with Safeguard Screening Form requirements. The printed Report should be attached as an annex to the PP (or equivalent) and sent to ESR.

1. Save as a Word document. 2. Enter additional information in the spaces provided, where applicable. 3. Save new changes.

PROJECT DETAILS	IDB Sector	ENERGY-HYDROELECTRIC ENERGY
	Type of Operation	Investment
	Additional Operation Details	
	Country	HAITI
	Project Status	
	Investment Checklist	Power Hydro
	Team Leader	Marzolf, Natacha (NATACHAM@iadb.org)
	Project Title	Supplementary Financing for the Rehabilitation of the Peligre Hydroelectric Plant
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	Assessment Date	2011-03-15
	Additional Comments	

PROJECT CLASSIFICATION SUMMARY	Project Category: B	Override Rating:	Override Justification:
			Comments:
	Conditions/ Recommendations	<ul style="list-style-type: none"> Category "B" operations require an environmental analysis (see Environment Policy Guideline: Directive B.5 for Environmental Analysis requirements). The Project Team must send to ESR the PP (or equivalent) containing the Environmental and Social Strategy (the requirements for an ESS are described in the Environment Policy Guideline: Directive B.3) as well as the Safeguard Policy Filter and Safeguard Screening Form Reports. These operations will normally require an environmental and/or social impact analysis, according to, and focusing on, the specific issues identified in the screening process, and an environmental and social 	

		management plan (ESMP). However, these operations should also establish safeguard, or monitoring requirements to address environmental and other risks (social, disaster, cultural, health and safety etc.) where necessary.
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SUMMARY OF IMPACTS/RISKS AND POTENTIAL SOLUTIONS	Identified Impacts/Risks	Potential Solutions
	The project will result in a minor to moderate increase in community risks from disease (e.g. from water borne diseases such as malaria, cholera and typhoid) or natural resources risks (e.g. landslides, flooding, land subsidence, clearance of hillside vegetation, changes to water flow in rivers and streams).	Manage Increased Risk of Disease: Where a project will generate environmental health risks (such as increased risk from disease and environmental hazards), the borrower should be required to develop a environmental health risk plan (this will require input from professionally competent advisers/ consultants). There should be engagement with affected communities and compliance with the plan should be monitored and reported. Where specific diseases are endemic in communities in the investment area of influence, the borrower is encouraged to explore opportunities to reduce their incidence.
	Project construction activities are likely to lead to localized and temporary impacts (such as dust, noise, traffic etc) that will affect local communities and workers but these are minor to moderate in nature.	Construction: The borrower should demonstrate how the construction impacts will be mitigated. Appropriate management plans and procedures should be incorporated into the ESMP. Review of implementation as well as reporting on the plan should be part of the legal documentation (covenants, conditions of disbursement, etc).
	Hydropower project activities will moderately in a negative way affect availability and/or quality of water supplies to local communities or ecosystems (e.g. as a result of changes to downstream flow or groundwater levels from impoundments, or in water quality from construction activities or release of impounded waters with low oxygen levels).	Water Resources: The borrower should demonstrate via a plan (part of the ESMP) how the construction and operation of the hydropower facility (and associated facilities such as roads, reservoirs, pipelines, etc.) will be developed and operated so as to avoid impacts to local and downstream water supply and quality. Particular risks include changes in downstream flows and water quality, land use changes in catchments and changes in groundwater levels). Evidence of appropriate consultation with local communities should be apparent. Review of implementation as well as reporting on the plan should be part of the legal documentation (covenants, conditions of disbursement, etc.).

DISASTER SUMMARY	Details	Actions
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	<p>The Project should include the necessary measures to reduce disaster risk to acceptable levels as determined by the Bank on the basis of generally accepted standards and practices. Alternative prevention and mitigation measures that decrease vulnerability must be analyzed and included in project design and implementation as applicable. These measures should include safety and contingency planning to protect human health and economic assets. Expert opinion and adherence to international standards should be sought, where reasonably necessary.</p>	<p>A Disaster Risk Assessment (DRA), is required, as established under Directive A-2 of the DRM Policy OP-704). Please contact a Natural Disaster Specialist in VPS/ESG or INE/RND for guidance.</p>
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ASSESSOR DETAILS	Name of person who completed screening:	Corrales, Denis (DENISC@iadb.org)
	Title:	
	Date:	2011-03-15

ANNEX III

HAITI: SUPPLEMENTARY FINANCING FOR THE REHABILITATION OF THE PELIGRE HYDROELECTRIC PLANT

(HA-L1038)

ENVIRONMENTAL AND SOCIAL STRATEGY

I. Project Description

Objective and Expected Results:

- 1.1 The general objective of this supplementary financing is to cover the funding gap for the rehabilitation of the PHP equipment and corresponding transmission line to Port-au-Prince envisaged under the original operation HA-L1032. Specific objectives aim to: (i) restore and maintain the PHP generating capacity; (ii) improve the efficiency of the plant's generating units, and (iii) improve the conditions under which energy is transmitted from the PHP to Port-au-Prince.
- 1.2 **Component I: investments in rehabilitating PHP electro-mechanical components and transformers.** This component will finance electro-mechanical rehabilitation of the PHP and the related civil works. The three 18-MW generators, including the rehabilitation of the electro-mechanical components, the turbine and insulation for the alternators, amongst others. Common electrical works for the PHP, including the rehabilitation of the external 13.8/115 kilovolt substation, protective equipment, 13.8-kilovolt electrical equipment, auxiliary services, remote control and command, signaling and alarms will be financed. Resources allocated for this Component (under loan 2073/GR-HA and under Supplementary Financing combined) are estimated at US\$ 13.71 million (original loan operation estimated this amount at US\$8.2 million).
- 1.3 **Component II: investments in the 115-kilovolt transmission system between the PHP and Port-au-Prince.** This component will finance physical rehabilitation including addressing swelling pylons, replacing insulation, charting flows in areas of high topographical vulnerability subject to erosion and rehabilitation the transmission line from the PHP to the Port-au-Prince distribution substation. Resources allocated under this component have not been drawn under the original loan and costs of the component are estimated at US\$2 million.
- 1.4 **Component III: engineering and administration.** This component will support the execution through institutional strengthening of the Program Coordination Unit (PCU) and the Program Technical Unit (PTU); program supervision including environmental and social supervision, audit and evaluation. Resources under loan 2073/GR-HA were already utilized to support the work carried out by the PCU and PTU as well as for the three studies that were mentioned above. Resources allocated for this Component (under loan 2073/GR-HA and under Supplementary Financing combined) are estimated at US\$ 0.25 million (original loan operation estimated this amount at US\$1.02 million).

EXPECTED RESULTS:

- 1.5 The results expected of the Supplementary Financing are to complete the rehabilitation of the PHP and ensure generation of clean energy in the country.

II. ENVIRONMENTAL AND SOCIAL STRATEGY

- 2.1 During preparation of the Project (HA-L1032) was performed a Social Environmental Analysis (EA), which included the results of the study on sedimentation in the PHP and the environmental and social impacts generated from the electro-rehabilitation program. Also, the EA program includes an Environmental and Social Management Plan (ESMP) for each stage of the rehabilitation program, particularly focused on the management of solid and liquid waste, safety and occupational health and management control systems flow of water from the hydroelectric dam, and according to environmental regulations and social of Haiti and the Environmental and Social Policy of IDB. For monitoring and enforcement of environmental and social measures of the program, the contracts for the rehabilitation of the CPH, as well as monitoring activities must include compliance with the requirements of ESMP. Taking into account the results of the EA and the Environmental Policy and Safeguards Bank (OP-703), this operation is classified as Category B.
- 2.2 Since the approval of HA-L1032 operation financed by the IDB, there have not been changes in the conditions of the rehabilitation of the CHP, or the environmental and social strategy adopted by the IDB, which was taken into account in assessing the environmental and social impacts of the operation performed. Mechanisms, institutional arrangements and responsibilities established for environmental and social management of this operation remain unchanged from the original scheme. Program works are in the process of bidding, so that this operation will provide additional financial resources because of cost overruns. Monitoring activities of construction works have already been tendered and awarded, including technical monitoring activities, economic, environmental and social.
- 2.3 For the socio-environmental analysis, and pursuant to Directive B.12 Loans under construction, it was agreed with the project team that a socio-environment audit will be performed as a condition precedent to first disbursement for HA-L1038. Such analysis will review, among other things: (i) existence of permits and other socio-environmental requirements in compliance with national legislation, (ii) the existence of potential environmental liabilities outstanding in the implementation of rehabilitation and which may require additional resources, (iii) if it's needed it will be elaborated prevention plan or compensation plans for small farmers in the Artibonite Valley that could be affected by the cleanup of the reservoir and water flow control of the hydroelectric dam, (iv) occupational safety. The recommendations of the socio-environmental audit will be strictly enforced and implemented with resources from the operation.
- 2.4 The Environmental and Social Management al Plan (ESMP) will be updated with the results of socio-environmental audit for this operation. VPS / ESG will hold annual socio-environmental supervision to the project, when appropriate.

III. ENVIRONMENTAL AND SOCIAL RISKS

- 3.1 The project will finance cost overruns electromechanical rehabilitation of the PHP. The PHP is the main source of renewable energy in Haiti and the only hydroelectric plant, so it is considered that the project will have a positive impact on the country, taking into account that if the PHP does not rehabilitate, the installed capacity should be replaced in the short-term with fossil generation, which has negative environmental and social impacts, local and global. The project has significant positive environmental and social impacts, to improve the living conditions of people particularly the capital city Port-au-Prince and increase productivity by providing reliable electric service, and enable beneficiaries to make better use and promotion of renewable energy (hydropower).
- 3.2 The project's negative impacts occur mainly during the electromechanical rehabilitation activities would be of short duration and low magnitude, whereas during the operation impacts are expected medium to long and moderate to high magnitude. The main environmental and social impacts expected include the following: (i) for the control of the cleanup of the reservoir and control the flow of water from the hydroelectric dam, and the poor coordination between the EDH and the ODVA (Organization for the Artibonite Valley) is presented on a recurring basis the risk of affecting some 50,000 small farmers located in the Artibonite Valley irrigation district (32,000 ha) and people living in the area near the valley. This affectation is settling and clogging of irrigation canals de l'Artibonite district, increasing costs of maintenance and repair of irrigation system, affected crops and agricultural productivity and family income, erosion of river banks, among others.
- 3.3 Also known moderate impact this type of work during the rehabilitation, such as disruption of families due to vehicular traffic, safety, oil spills, toxic waste both solid and liquid, etc.. for which management plans establish socio-environmental measures.
- 3.4 In addition to the problems of useful life of PHP electromechanical equipment, there is a process of sedimentation of the reservoir, mainly due to deforestation activities, improper management in the Artibonite Valley watershed with additional negative effects on the energy generation capacity of the PPH.
- 3.5 On January 12, 2010 an earthquake of 7.3 magnitude on the Richter scale struck Haiti, affecting the metropolitan area of the capital city (Port-au-Prince), Leogane, Jacmel, and Petit-Goave. The earthquake's epicenter was located in the city of Leogane, about 17 km southwest of the capital, PAUP. It was conducted a study on the effects of the earthquake on the structure of the PHP and it was concluded that no failures or breakdowns have occurred to that structure. However, as a result of that event, the seismic risk is evidence that could affect the PHP and thus must be taken into account the warning and preventive measures for people living downstream in the Artibonite Valley.
- 3.6 Haiti and particularly the Artibonite river basin is often subject to impacts of floods and hurricanes, which cause negative effects of sedimentation and on the capacity of flood control of the dam, affecting farmers and residents located downstream in the Artibonite Valley.

IV. INSTITUTIONAL AND REGULATORY FRAMEWORK

- 4.1 Haitian environmental legislation is very recent and has not been properly regulated. The Government does not have full capacity to enforce such legislation.
- 4.2 The Decree on Environmental Management was released on January 26, 2006, with a chapter on the management bodies of the environment. Due to the economic situation and the government reshuffle, in practice the power of control of the Ministry of Environment is limited. The Ministry is responsible for granting environmental permits for new projects and offers a guide to analysis of projects submitted for licensing.
- 4.3 There is still no regulation of the licensing process, but large companies that want to hire ahead of the regulatory environmental impact studies and submitted to the Ministry. It uses an internal document, not officially, to evaluate the project, called "Impact Assessment Guidelines on Environment." After an analysis based on the Guide, the company received a "letter of no objection" from the Minister of Environment, or not subject to new environmental conditions.

This guide includes the projects that require an analysis of "the construction of power plants with an output exceeding 10 MW, but says nothing about the rehabilitation of power plants already built.

- 4.4 It is suggested that the initiation of physical works for rehabilitation of the PHP is conditional on presentation by EDH of non-objection letter issued by the Ministry of Environment.

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SUPPLEMENTARY FINANCING FOR THE REHABILITATION OF THE PELIGRE HYDROELECTRIC PLANT
HA-L1038

INDEX FOR PROPOSED SECTOR WORK

Issues	Description of works	Expected Dates	References & hyper links to Technical files
White Paper	<ul style="list-style-type: none"> Legal and regulatory assessment carried out by the IDB 	Dec 2010	IDBDOCS-#35764165-White paper-final-Dec 18-clean
Structure Security Analysis Report	<ul style="list-style-type: none"> Inspection of the dam after the earthquake of January 12, 2010 	Mar 2010	IDBDOCS-#35794687-Inspection Péligre (2)
Post Disaster Needs Assessment (PNDA)	<ul style="list-style-type: none"> Assessment of damage, losses, general and sectorial needs. Annex to the Action Plan for National Recovery and Development of Haiti 	Mar 2010	IDBDOCS-#35764178-Haiti NDA
Stability Study	<ul style="list-style-type: none"> Study of the electrical stability of the metropolitan grid 	Nov 2009	IDBDOCS-#35794910-Stability Study
Sedimentation Report	<ul style="list-style-type: none"> Sedimentation Study on the Peligre Reservoir 	Dec 2008	IDBDOCS-#1670215-Estudio de Sedimentación del Embalse de la Central Hidroeléctrica Peligre / INFCONS

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Critical Path: Schedule of activities

INTERNAL USE