

Environmental Classification:

The Poechos Hydroelectric Project was appraised in March of 2002. The project is classified as a category III according to the IIC's environmental and labor review procedure because specific impacts may result which can be avoided or mitigated by adhering to generally recognized performance standards, guidelines, and design criteria. The primary issues associated with the project include: water quality, water usage, construction and operation workplace safety, and emergency response. The project sponsors provided IIC with an environmental assessment prepared in August of 2001 by a Peruvian consulting firm that meets the requirements of the electrical sector environmental regulations. In addition, an appraisal of the technical and commercial feasibility and environmental review was conducted for IIC by an international consulting firm. The above reports and the information obtained from the appraisal site visit form the basis for this report.

Environmental and Labor Issues:

Renewable Resource: The project will operate using renewable resources, drainage catchment from the Chira river basin system that extends into Ecuador to the north. The energy potential of the Chira-Piura irrigation system has only been considered as a secondary benefit and to date has only been partially used through the installation of the Curumuy hydro plant that generated about 65 GWh in 2000. The Curumuy plant, which is owned by the same sponsors, was completed in 1998 and uses the drop in elevation between the watersheds of the Chira and Piura river systems. The design of the project is largely based on the passive utilization of water flows based on irrigation demand. During months of lower irrigation demand, however, it will be possible to generate additional energy by using a small existing reservoir that serves as a regulating reservoir located at Sullana about 40km downstream from Poechos on the Chira River. Additionally, it is contemplated that another 34GWh could be generated from another hydroelectric plant utilizing the flows from the other outlet from the Poechos dam.

As is typical with hydroelectric projects, there will be environmental benefits derived from generating electricity without the accompanying emissions of nitrogen oxides or sulfur dioxide associated with fossil fuel power generation. When compared with a combined cycle generating power plant, the next least carbon generating alternative, the project could avoid the generation of about 28,000 tons of carbon dioxide annually. While the project does not currently contemplate obtaining income from carbon avoidance this could equate to about \$280,000 per year based on a carbon dioxide value of \$10.00/ton. A second hydroelectric plant utilizing the flows from the Poechos irrigation dam could realize similar benefits.

Compliance with Environmental Legislation: The project will comply with Peruvian laws and international guidelines, related to the environment, occupational health and safety and labor issues, with respect to the proposed use of the resources and the operations of the facilities. The environmental laws pertaining to the project are based on Decreto Supremo N 029-94, "Reglamento de Protección Ambiental de las Actividades Eléctricas", which regulates the generation, transmission and distribution of electricity in a sustainable manner. In accordance with the law the Environmental Impact Assessment was submitted in accordance with Art. 25 D.L. 25844 Ley de Concesiones Eléctricas and approved by the environmental department of the Ministry of Energy and Mines. The appropriate operating permits will be obtained from the Ministry of Energy and Mines and the Ministry of Agriculture prior to the start of operations of the project.

Land Use: The project is situated in a location that has been extensively changed by the construction of the Poechos dam and many subsequent years of agricultural use based on irrigation. The footprints of the powerhouse and switchyards are very small and located on the trailing foot of the

dam. No resettlement of people will be required, as the project site is relatively remote and uninhabited. The inundated area of the Poechos reservoir covers about 70Km² and will not be increased as a result of the project. The dam's reservoir has not been flushed or dredged and has as such accumulated a considerable amount of silt. This issue is well known by the irrigation authority that is considering several options to restore the storage capacity. This issue, however, is outside of the influence of the project that passively relies on water flows that are dictated by irrigation demand. No roads will be constructed as a result of the project since it utilizes the existing roads to the Poechos dam. Similarly, the transmission line will have minimal impacts since most of it will follow an existing right-of-way of a road or canal. In the exceptional cases, rights of way will be negotiated with the private owners within the framework of the electrical distribution laws that provide for equitable treatment in the accession of rights of way.

Water Quality: The project will have a neutral impact on the water quality of the Chira river. The operators of the project will be required to monitor the quality of the water passing through their plant to determine that it has no negative effects on the downstream users. Based on the nature of the operations of hydroelectric plants and data provided on the performance of the Curumuy plant the project should have little effect on the irrigation water. Turbidity of the water downstream from the Curumuy plant is due to seasonal rainfall changes.

Worker Health & Safety: The project sponsors will implement internationally accepted general health and safety guidelines. The sponsors have a worker health and safety program at the Curumuy plant that will be adopted at Poechos with the following objectives: 1) to explain safety procedures, 2) to describe the type of equipment available to use in emergencies, including fires, and 3) to explain how to use the protective clothing and equipment. The safety record of the Curumuy plant is very good.

Emergency Response and Safety Plans: The project sponsors will implement a Contingency and Emergency Response Plan which focuses on the following: 1) fire prevention and control, and 2) natural catastrophes (i.e., storms, floods, earthquakes etc.). The plans will be simulated periodically and all workers will be made aware of the plans.

Labor: The project when completed will have very few additional workers. New workers will be compensated and provided benefits in a manner that is consistent with existing arrangements that are consistent with Peruvian requirements.

Monitoring: The project sponsors will develop an environmental management plan that will require annual reports to be provided and a site review of specific environmental and safety records. This will include periodic monitoring of water quality and the impacts of silt accumulation in the reservoir.