

**Environmental and Labor Issues:**

This is a category III project according to the IIC's environmental and labor review procedure because it could produce certain effects that may be avoided or mitigated by following generally recognized performance standards, guidelines, or design criteria. The environmental, social, and labor issues related to this project include compliance with environmental protection regulations, soil and water impacts, labor practices, and social and community issues.

The Patico - La Cabrera (Patico) project is a run-of-the-river power plant on the Cauca River. It has a single Kaplan turbine with 1.48 megawatts of installed power and a generating capacity of approximately 8.5 gigawatt-hours per year. This small hydropower plant is in the Puracé-Coconuco township, department of Cauca. The project, which came on line in 2001, was developed and has been operated to date by Genelec. Gelec is in the process of acquiring the assets of Genelec to overhaul and operate the plant.

The project involves investments to increase the plant's generating capacity and build a three-kilometer, medium-voltage (34.5 kilowatts) transmission line linking to another transmission line owned by the company in order to improve interconnection quality with the distribution grid in the city of Popayán.

**Compliance with Environmental Protection Regulations.** Hidroeléctrica Patico holds the authorizations from the department's environmental authority Corporación Autónoma Regional del Cauca (CRC) required to operate (public water use concession and permission to occupy the river channel, banks, and stream bed). These authorizations require maintaining an operative Environmental Management Plan (EMP).

Genelec committed to earmark a fixed amount for environmental and social investments. To this end, it developed a plan in conjunction with the CRC; the latter monitors the plan. To date 74% of the promised environmental investments and 87% of the social investments have been made. Gelec must continue with the plan up to the committed amount.

**Soil and Water Impacts.** The project is in a rural area in which cattle-grazing is the main activity, along with some crop-farming. The land is on steep mountainsides; there are no virgin areas or sensitive habitats that would be affected by the project. The entire project, including the hydraulic works, the canal, the powerhouse, the transmission line, and the substation, is on land owned by the company. No land owned by private third parties will be affected. The transmission line, which is expected to be some three kilometers long, will also be on company land. From the public road there is direct access to the project across company land.

As part of the aforementioned environmental investment plan, the company is required to reforest the river banks and watershed with native species in order to preserve and stabilize the mountain slopes on both sides of the river. The reforestation plan was designed by the former owner (Genelec); Gelec will continue implementing it under CRC supervision. An experimental community farm, a community plant nursery, and school vegetable gardens are among the other investments provided for in the environmental plan.

The project is good for water quality because the systems for screening and cleaning debris from the river (trash racks) remove organic plant matter (logs and branches), increasing the amount of dissolved oxygen and decreasing the deposit of solids.

Water is discharged from the powerhouse less than fifty meters from the intake, so the required ecological flow rate is minimal and has been established at 3% of the mean multiyear flow rate.

**Social and Community Issues.** Project construction did not require displacement of persons or relocation of dwellings and took place in its entirety on company land. The lands neighboring Hidroeléctrica Patico belong to the indigenous councils of Puracé, Coconuco, Paletará, and Poblazón. Before the plant was built, a consultation process with these communities took place in August and September 1998 with the participation of the CRC. This process led to an agreement signed on October 15, 1998, providing for the social investment program mentioned above. The agreement remains in force, and Gelec has committed to continue implementing it under CRC oversight. Several of these projects have already been executed. For example, a school was built in Patico and provided with supplies and educational aids. Investments were made in the all-purpose room, playing field, nurse's station, telephone system, and cultural center.

Under Colombian law, employees are free to choose and join labor unions.

**Oversight and Monitoring.** Gelec will prepare an Environmental and Social Action Plan (ESAP) to ensure compliance with national regulations and the IIC's environmental and occupational safety and health guidelines. It will also report regularly on progress in implementing the ESAP.