

PROJECT ABSTRACT

Project number	CR-0115
Project name	Miravalles III Geothermal Plant
Country	Costa Rica
Sponsors	Oxbow Power Corporation & Marubeni Corporation
Total project cost	US\$65.8 million
IDB participation	IDB A-Loan: US\$16.5 million IDB B-Loan: US\$33 million
Department:	Private Sector Department
Status	Approved by the Board of Executive Directors
Date:	June 10, 1998

I. THE PROJECT

The project consists of a 27.5MW geothermal power plant. ICE, the Costa Rican public electricity utility, is calling an open bid to award a 15-year BOT contract. The tender requires bidders to provide the 27.5MW plant, fluid transmission system materials, and some US\$20 million in extra equipment for additional drilling by ICE. The construction period would be 30 months after contract signing.

The tender also requests a bid for a second 25/27.5MW geothermal power plant (Miravalles IV) which would be built at ICE's sole option. Miravalles IV would be conditional on further technical analysis to be performed. The cost for this potential unit would be lower than that of Miravalles III as some efficiencies would be achieved by operating and maintaining two similarly-sized facilities using the same technology.

The project will be built in the same area where two other geothermal facilities, with a combined capacity of 110MW, are located. With the financial support of the Bank, geothermal resources in the area have been thoroughly analyzed. The Bank has also participated in the financing of both Miravalles I, already operating, and Miravalles II, which is under construction.

Miravalles III is the first energy project that has been tendered to the private sector under the Costa Rican Build-Own-Transfer (BOT) legislation approved in 1995. Up to now, private sector projects, mainly small hydroelectric facilities, have been developed under the provisions of Law 7200 which allows ICE to directly negotiate with private sector companies the development of power plants using renewable sources of energy. In that respect, Miravalles III is the first competitively bid private energy project in Costa Rica.

II. PROJECT COST AND FINANCIAL PLAN

Project costs for Miravalles III will be between \$65-70 million, including the extra equipment for steam fields development to be supplied to ICE.

The financial plan considers a 25% equity participation combined with an A/B Loan structure for the Debt portion, where IDB will commit up to 25% of total Project Costs and Commercial Banks will provide the remaining 50%.

III. ECONOMIC ANALYSIS & DEVELOPMENTAL IMPACTS

The Miravalles III plant is part of ICE's optimal (least-cost) expansion plan for power generation to satisfy the system's projected demand growth at similar tariff levels to those of the long-term marginal cost of the system. This combination of factors demonstrates how the project is economically justifiable.

In addition to the positive result from a purely economic analysis, the project also offers some other important advantages:

- Investments in the Cost Rican electricity sector are rapidly lagging behind and will soon start constraining the development potential of the country. Implementation of ICE's expansion plan is experiencing significant delays, an issue reflected in the performance of IDB's loan portfolio in the sector. Projects that are not affected by the country's fiscal restrictions, such as Miravalles III, will provide a reliable and timely source of energy.
- Costa Rica, as other countries in Central America, has an over-reliance on hydro sources of electricity, which represents 73% of the system's effective capacity. This dependence will accentuate as hydro projects under development come into line, further increasing the exposure of the system to dry seasons. Thus, Miravalles III contributes to a needed balance of the system towards thermal generation.
- From an environmental standpoint geothermal plants have a lower negative impact as compared to alternative sources of thermal energy, making Miravalles III a project consistent with a sustainable model of development. The latter is reinforced by the fact that geothermal is a renewable source of energy. This is more so considering that Costa Rica has no access to gas, making high-emission thermal generation (e.g., coal, diesel) the only real alternatives to geothermal generation.