

Project Summary

Projekt Background

The Sumaco rain forest biosphere reserve covers an area of 120 000 hectares and is located on the edge of the Amazon prairie in the Northeast of Ecuador. The lack of a reliable electricity supply is one of the major constraints for development especially in remote areas. Being the headwaters of the Amazon, the region has rich hydro potential, which can be exploited for electricity production and income generation.

Project Objectives

The company Energía Renovable y Desarrollo Sostenible – ERDESU (Renewable Energy and Sustainable Development) was founded in 2002 aiming at a rational development of the hydropower resources in the region. It is constituted by local public organisations and village associations (40% of shares) and by the private sector (60% of shares). ERDESU plans the development of a site on the Jondachi river. Besides the preparation of a pre-feasibility study for a community owned 12 MW hydropower plant, the project concentrated on providing decentralized energy supply for productive use to remote villages that do not have grid access.

Project Activities

For a three year period, the German Agency for Technical Cooperation (GTZ) supported ERDESU with the Amazonia Hydropower Project. This project provided the basic structures and data for the development of hydro electric potentials in the Sumaco region as follows:

- Preparation of the relevant decision papers, such as pre-feasibility studies, cost comparisons, Environmental Impact Assessment (EIA), impact studies on economic development, financing proposals etc. for the Jondachi project;
- Strengthening of ERDESU as an Independent Power Producer (IPP) and project developer through capacity building and human resource development;
- Design and construction of micro-hydro plants in remote villages.

The main outcome of the project was a detailed pre-feasibility study for the hydropower plant Jondachi. In phase I of the study three pre-selected possible sites were explored, compared and evaluated. In phase II the topographical analyses, extensive geotechnical and hydrogeological investigations, technical design and economic analyses for the hydropower plant were carried out. A compact alternative has been successfully selected which fits in an optimal way with the surrounding environment, without neglecting the economic feasibility of the hydropower plant. The run-of-river plant would yield 12 MW, which can be connected to the national grid through 69 kV transmission line 25 km and 15 km long respectively.

Implementation Features

The Jondachi Hydro Power Plant will essentially contribute to the improvement of electricity supply in North Eastern Ecuador. The revenues from power sold into the national grid will be channelled by ERDESU into new regional development projects and enhance income generation of the local population.

Services Provided

- Implementation of a pre-feasibility study for a 12 MW hydropower plant
- Strengthening of the independent local power producer ERDESU
- Advice on design, construction and operation of decentralized small hydropower plants (SHP);
- Development of a financing concept and acquisition of PPP investors
- Awareness campaigns for SHP sites and implementation of a results-based monitoring system
- Project management

Ecuador

Utilisation of Renewable Energy Resources

Client

German Agency for Technical Cooperation (GTZ)

Duration

01/2003 - 12/2005

Personnel

- 1 internat. LTE (34 PM, Team leader)
- 6 PM international STE
- 96 PM national STE

