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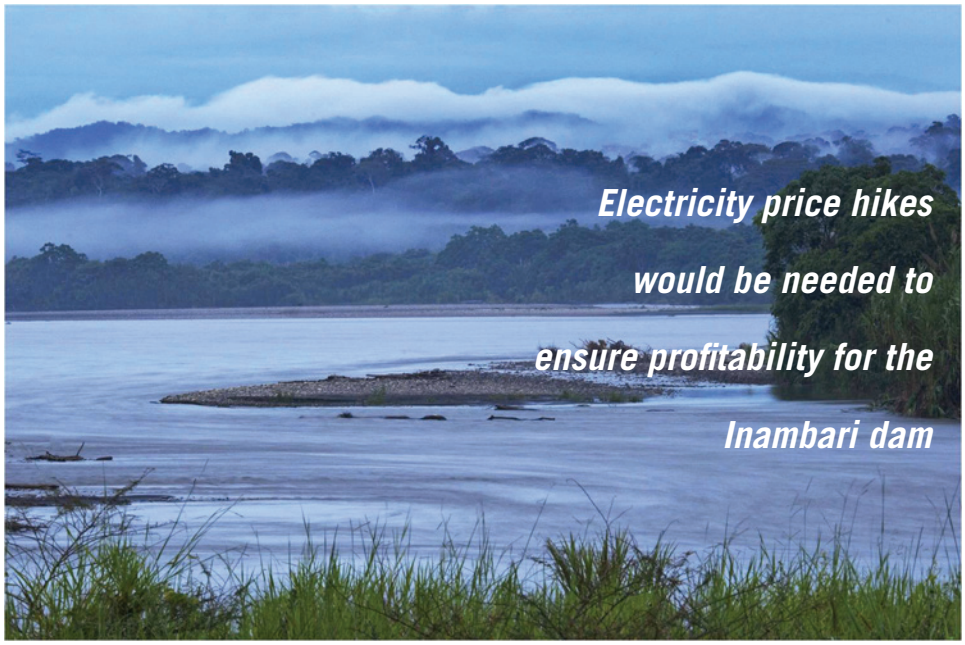
CONSERVATION STRATEGY FUND

COSTS AND BENEFITS OF THE INAMBARI RIVER HYDROELECTRIC PROJECT

Tapping hydropower in the Andean slopes is a key feature in Brazil's electricity strategy. In June 2010, the governments of Peru and Brazil signed an Energy Agreement that includes plans for hydroelectric plants in the Peruvian Amazon, intended primarily to generate power for export to Brazil. The Inambari River hydroelectric project, with an installed capacity of 2,200 megawatts, is the first of five possible projects to have a feasibility study conducted.

Bi-national projects deliver very different costs and benefits to the two countries involved. To clarify the merits of the Inambari project, CSF and the Wildlife Conservation Society analyzed its financial and economic feasibility from the distinct viewpoints of the developer (the Brazilian firm EGASUR), the Peruvian government, several key groups in Peru, as in society in general



in the two countries. According to this analysis, the project would be very profitable for the developer, with a net present value (NPV) between US $527 million and 1.245 billion, depending on the electricity prices assumed and the distribution of electricity between the Peruvian and Brazilian markets. A large share of profits depend on the assumption that the developer will be paid for regulating the flow of the Madeira River to benefit two downstream dams in Brazil. Without this service, the financial NPV would be about a billion dollars less.

The project would have significant environmental and social costs. It would displace about 4,000 people, cause the deforestation of 96,000 hectares of ecosystems with high biodiversity, and contribute to global warming via the emission of a significant volume of greenhouse gases (GHGs). The present value of environmental and social costs exceeds US $1.3 billion. The largest environmental cost (about 60% of the total) is that related to greenhouse

gas emissions. For Peru, this cost represents potential future revenue that could be generated by a hypothetical future market that regulates emissions via avoided deforestation and other measures. From the perspective of global society, the dam will cause an emissions-related cost regardless of the existence of carbon markets.

If environmental costs are included, the project is only feasible when: i) the electricity price is around the $70/MWh proposed by investors (higher than the US $56 and 52 per MWh currently prevailing in Peruvian and Brazilian markets, respectively) and, simultaneously, ii) income is generated from regulation of the Madeira, a revenue stream for which there is no certainty.

In addition to social and environmental costs, the elevated price proposed by investors would result in a net loss for Peruvian consumers of approximately US $200 million, as a consequence of the rise in the price of electricity. Benefits reaped by Peruvian institutions (government, workers, and suppliers of goods and services) would be significantly less than the environmental costs incurred. Brazilian firms are clear winners, taking 75 percent of overall corporate profits, compared to 25 percent accruing to Peruvian companies.

If prevailing prices are assumed, EGASUR could make slightly more profit selling power to the Peruvian market, since prices are marginally higher in the Andean country. But, given that the whole scheme is designed with the Brazilian market in mind, which includes an $882 million international transmission

line, and counts on subsidized Brazilian credit, it is likely that the vast majority of generation would go to Brazil.

The environmental and social costs, as well as the potential loss to Peruvian electricity consumers, call for a thorough review of the Inambari project. In the event that it does proceed, full environmental mitigation and ecological compensation plans should be put in place with adequate financial guarantees before construction starts.

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NOTES:
1. Conservation Strategy Fund (CSF)
2. Wildlife Conservation Society (WCS)

All CSF publications and policy briefs are available at
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