



**Stable Power Supply for Residents of the Bicol Region**

**Overview**

The Bicol Power Restoration Project demonstrates how the World Bank, government, and implementing agency can work together in responding to and recovering from natural calamities. Through the project, 5 million residents in 3,359 barangays or villages (out of 3,410) in the Bicol Region of the Philippines now have a stable power supply that is resilient against typhoons frequently affecting the region.

**Challenge**

The Bicol Region, with a population of over 5 million, was hit by two typhoons with wind speeds over 200 km per hour in the last quarter of 2006. The blackout resulting from the typhoons had a considerable adverse economic impact on the region. The economic cost of the blackout, excluding revenue losses to the National Transmission Corporation (TransCo), a government agency managing the country's power transmission system linking the power plants to the electric distribution utilities nationwide, and the electricity cooperatives, reached more than US\$250 million.

Bicol is the second poorest region in the Philippines, with half the population living below the poverty line. Given Bicol's vulnerability to typhoons and its high proportion of poor, there is a high possibility that many residents run the risk of sinking into deeper poverty after every major disaster. Hence, having a reliable infrastructure is of great importance to ensure that the region's economy continues to thrive and generate jobs for local residents.

**Approach**

The project provided financing to support the stabilization of power supply in the Bicol Region by replacing or repairing critical electricity transmission infrastructure damaged by typhoons in 2006. The project was designed to be highly responsive to the emergency nature of the project. All the work was done within a very tight schedule, applying a high level of flexibility in terms of procurement as well as minimizing loan conditionalities other than those essential to proper

More Results



**5 million**

residents of the Bicol Region now have stable power supply resilient against typhoons

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project management. Because of this, the project was able to provide immediate response for the residents of Bicol Region by repairing 118 electricity transmission steel towers and line materials damaged by typhoons *Milenyo* (international code name Xangsane) and *Reming* (Typhoon Durian) in the last quarter of 2006.

## Results

The project restored power supply for 5 million residents in the Bicol Region by replacing electricity transmission steel towers and line materials damaged by typhoons in 2006, with indicators as follows:

- By the end of 2008, an improved electricity supply system was re-established with the construction of 118 new 230 kV towers that delivered an additional 50 GWh of unsupplied energy in region.
- Improved power system reliability in Bicol. The System Interruption Severity Index (SISI) SISI, a key indicator, showed a tremendous improvement in system reliability during typhoons, with interruptions decreasing from a high of 3,258 MW-minutes/MW in December 2006 (Typhoon Reming) to less than a minute in October 2008 (Typhoon Pablo).

## Beneficiaries

The project's immediate beneficiaries were 5 million residents in the Bicol Region who benefited from the restoration and increased reliability of power supply after two super-typhoons hit the country in the last quarter of 2006.

## Bank Contribution

The International Bank for Reconstruction and Development (IBRD) provided the state-owned National Power Corporation (NPC) a US\$12.94 million loan to finance the restoration of electricity in the Bicol Region after it was devastated by typhoons in 2006. Given the emergency nature of the project, approximately 80 percent of the total loan amount (US\$10.3 million) was financed retroactively for replacement of towers and associated materials in the 230 kV transmission system, which sustained most of the damage from the typhoons.

## Partners

The World Bank provided financing of US\$12.94 million, or about 60 percent of the total project cost, and the implementing agency, the National Transmission Corporation (TransCo)—a government agency spun-off from the NPC and which manages the country's power transmission system linking power plants to electric distribution utilities nationwide—financed the remaining US\$8.67. The successful experience under the project demonstrates how the Bank, government, and implementing agency can effectively and efficiently work together to respond to an emergency situation that results in a fast and generally problem-free implementation.

## Toward the Future

The project's recovery strategy focused not only on repair of the damages to Bicol Region's power infrastructure but also further addressed physical sustainability by providing permanent structures that conformed to higher specifications and are capable of withstanding super typhoons.