

1. Project Data:		Date Posted : 11/09/2009	
PROJ ID : P106262		Appraisal	Actual
<b>Project Name :</b> Bicol Power Restoration Project	<b>Project Costs (US\$M):</b>	21.57	18.77
<b>Country:</b> Philippines	<b>Loan/Credit (US\$M):</b>	12.94	11.71
<b>Sector Board :</b> EMT	<b>Cofinancing (US\$M):</b>		
<b>Sector(s):</b> Power (100%)			
<b>Theme(s):</b> Natural disaster management (100% - P)			
<b>L/C Number:</b> L4887			
	<b>Board Approval Date :</b>		02/07/2008
<b>Partners involved :</b>	<b>Closing Date :</b>	07/30/2008	09/30/2008
<b>Evaluator :</b>	<b>Panel Reviewer :</b>	<b>Group Manager :</b>	<b>Group :</b>
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## 2. Project Objectives and Components:

### a. Objectives:

According to the Loan Agreement, the Project Development Objective (PDO) is "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 financed investments necessary to repair actual or imminent damage resulting from natural or man-made disasters, and as such met the eligibility criteria for rapid response as specified in OP 8.00. Consequently, preliminary discussions with the Government of the Philippines (GOP) on this emergency support operation started immediately after the November 2006 Typhoon.

### b. Were the project objectives/key associated outcome targets revised during implementation?

No

### c. Components (or Key Conditions in the case of DPLs, as appropriate):

The project had two components :

Component 1: Restoration of the Bicol Transmission System (US\$ 15.38 million at appraisal; US\$17.94 actual, before contingencies). This component comprised four packages of investments in equipment and installation to repair typhoon damage to the 230 kV and 500 kV transmission systems serving the Bicol region; and

Component 2: System Strengthening & Improved Emergency Preparedness (US\$3.05 million at appraisal; US\$ 0.83 million actual, before contingencies). This component included investments in 11 emergency structures and consulting services to assess reinforcement needs of the transmission system, thereby reducing potential damage and power disruption from future typhoons.

### d. Comments on Project Cost, Financing, Borrower Contribution, and Dates:

Although the borrower was the National Power Corporation (NPC), the Bank -- in recognition of the then-ongoing privatization process for NPC -- agreed that the project would be implemented by the National Transmission Company (TransCo) under a project agreement.

The Bank financed only the supply and installation of the 118 steel towers and line materials to replace those damaged in the 230 kV system in Bicol. TransCo financed additional towers to replace those damaged in the 500 kV transmission system. The preparedness component was undertaken and expanded by the private concessionaire as a part of its Transmission Development Plan (TDP) in January 1, 2009, with an estimated value of about US\$ 7.8 billion over the life of the concession.

Only 4 months elapsed between project effectiveness and closing. The Closing Date was extended by two months from July to September 2008 owing to continued negotiation on some right-of-way (ROW) issues, and a transmission line section that could only be energized after the temporary power supply bypass by another power restoration activity had closed. These issues were resolved quickly, in large part facilitated by the close and efficient working relationship between TransCo and the Bank.

### 3. Relevance of Objectives & Design:

Relevance of Objectives. The Bank has assisted the Government of the Philippines (GOP) over the past 20 years in power sector development and efforts to promote increased access to electricity for rural communities. At the time of project identification, the Bank's assistance was relevant to both the physical and policy aspects of the country's energy sector development. First, at the investment level, TransCo was implementing a recovery strategy to repair damages to the TransCo system and to reinforce critical transmission infrastructure in the Bicol region and other typhoon-prone areas, combined with emergency measures to reduce potential power outages from future typhoons. Moreover, with the increasing incidence of super-typhoons in the Southern Luzon-Visayas corridor, improved design standards were required for wind resistance by the transmission towers through an overall tower-strengthening program to enhance system preparedness. Second, at the policy level, the project was an important element in the ongoing sector reform and privatization process. The Bank's participation increased the comfort level of private investors by demonstrating that the privatization process was credible and the institutional arrangements were strong, and thus deserved support. The promotion of private investments and the removal of infrastructure barriers constraining economic growth were consistent with the objectives of the current Country Assistance Strategy (CAS). The project's objectives also supported the nationwide efforts to ensure the availability of reliable and accessible power supplies, and the electrification of un-energized barangays (local political units). The relevance of objectives is rated **substantial**.

Relevance of Design. The project's design was responsive to its emergency nature by mapping out design components within a very tight schedule while working within a rapidly changing sector institutional context, applying a high level of retroactive financing, flexible procurement arrangements, rapid bid evaluation and awards, minimizing loan conditionalities other than those essential to proper project management, and most importantly, coordinating very closely with TransCo as the implementing agency. For example, it was agreed that TransCo would proceed with advance contracting of critical restoration packages. In March 2007, at TransCo's request, the Bank reviewed and concurred with the bidding documents and bid evaluation reports for three supply and installation contracts. After the reconnaissance mission in May 2007, GOP officially requested the Bank to finance the project with additional components. The Bank appraised the project on July 2007 focusing only on key restoration components. Retroactive financing to a level of 80% of disbursements pre-financed by TransCo was also approved by the Bank. This exception to the 40% financing limit was allowed under OP 8.00 (Rapid Response to Crises and Emergencies), and approved in accord with OP 6.00 (Bank Financing). Also in line with OP 8.00, all three contracts under retroactive disbursements were conducted through National Competitive Bidding (NCB) procedures, using the Philippines Bidding Document (PBD) for procurement of goods, as harmonized with the Bank. Under non-emergency conditions, ICB procedures would have been used to award these contracts. The relevance of project design is rated **substantial**.

The overall rating for Relevance is **substantial**, based on substantial ratings for project objectives and design.

### 4. Achievement of Objectives (Efficacy):

The Project Development Objective -- to support the stabilization of power supply in the Bicol region by replacing or repairing critical electricity transmission infrastructure damaged by typhoons in 2006 -- was **achieved**.

Using accelerated contracting, the project achieved its key project indicator of restoring the Bicol transmission system to pre-typhoon levels and stabilizing power supplies, as evidenced by:

(i) the re-establishment of the system with capability to deliver an additional 50 GWh of electricity through the construction of 118 new 230 kV towers that met higher technical specifications, i.e., able to withstand wind speeds of 270 km/hr for the Bicol-Visayas corridor and 240 km/hr for other typhoon-prone areas; and

(ii) improved power system reliability in Bicol based on a target of 15 system minutes.

New towers and line materials for the Naga-Labo and the Tiwi Plant C-Naga 230-kV transmission lines were constructed by the September 2008 Closing Date. New towers and line materials for 3 similar lines at Tiwi Plant-A-Daraga, Naga-Daraga, and BacMan-Daraga were completed earlier on April 2008. TransCo also financed the reconstruction of 10 500-kV towers, exceeding the Bank's target of 7 towers.

The capability to deliver an additional 50 GWh of unsupplied energy was more than achieved: 254 MW of maximum demand (MD) was installed by December 2008, compared to the baseline value of 232 MW MD. Similarly, the target of improved power system reliability (measured in terms of the System Interruption Severity Index, or SISI minutes) was more than achieved: a reduction in system minutes lost to 10 minutes or less was achieved in December 2008, compared to the target of 15 minutes.

The SISI under the new installations was tested in October 2008. Comparisons from the ICR indicate that prior to the project in 2006, typhoon Reming -- packing maximum sustained wind (MSW) of 195 km/hr and wind gusts over 230 km/hr -- caused an outage in Bicol of 3,258 SISI minutes. Also in 2006, typhoon Milenyo -- packing MSW of 130 km/hr and wind gusts up to 160 km/hr -- caused an outage of 966 SISI minutes. In June 2008, when only 2 of the 3 Packages financed by the Bank under the project had been completed, typhoon Frank hit the Bicol region with MSW of 140 km/hr and wind gusts up to 170 km/hr (similar to the strength of Milenyo). Although not all transmission lines damaged by past typhoons had been fully restored, outage was reduced to 66 SISI minutes. In October 2008, after project completion, typhoon Pablo hit Bicol with MSW of 65 km/hr and wind gusts of 80 km/hr (or half that of Milenyo), but outage was essentially negligible at 0.22 SISI minutes, although this typhoon was of lower strength.

While the foregoing indicators for Component 1 were achieved or exceeded, Component 2 (consultancies and Emergency Restoration Structures, or 4% of total baseline costs) was basically not implemented under the project. This, however, would not detract from the achievement of the PDOs since the activities under the component would be implemented by the new concessionaire, which intended to develop preparedness measures and ERS siting throughout the grid.

The project's efficacy is rated **substantial**.

#### 5. Efficiency (not applicable to DPLs):

The project's efficiency is rated **substantial**. The project's economic benefit is the minimized economic loss of unsupplied energy after replacing existing damaged towers with permanent structures built to higher standards that would withstand super typhoons. In re-calculating the EIRR, the ICR used the following assumptions: (i) a super typhoon like Reming in 2006 that caused a two-day blackout at a 200 GWh demand level, with a continued 50 GWh deficit lasting two days; (ii) about US\$5 per GWh as the economic cost of supply, excluding revenues lost to TransCo; (iii) a structurally sound life of 20 years for the transmission towers; and (iv) the total project cost of about US\$25 million. Benefits were also conservatively estimated: (i) only the observable loss of economic benefits resulting from unsupplied energy were counted, whereas unobserved loss of consumer surplus due to suppressed demand were not; and (ii) unsupplied electricity estimates were on the low side since major service interruptions could last several days. On this basis, the ICR analysis yields higher economic internal rates of return (EIRRs) of about 16-100 percent, compared to appraisal estimates of 12-80 percent. (Note: The base case, most probable, scenarios are used for the ERRs quoted below.)

a. If available, enter the Economic Rate of Return (ERR)/Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation :

	Rate Available?	Point Value	Coverage/Scope*
Appraisal	Yes	53%	100%
ICR estimate	Yes	67%	100%

\* Refers to percent of total project cost for which ERR/FRR was calculated.

#### 6. Outcome:

The overall project Outcome rating is satisfactory, based on ratings of substantial for relevance, substantial for efficacy, and substantial for efficiency.

a. Outcome Rating : Satisfactory

## 7. Rationale for Risk to Development Outcome Rating:

Physical risks such as vulnerability of the transmission towers to typhoons (especially super typhoons) have been mitigated by the selection and construction of towers that were of higher technical standards, leading to a structured tower strengthening program. Financial risks were mitigated by having a reliable transmission system that helped ensure steady financial inflows to TransCo. Social risks from resettlement were minimized since only a few structures were relocated; moreover, agreement on compensation was reached quickly through full consultation and participation of affected persons. Environmental risks were minor and taken into account in the environmental management plan. Implementation risks were low given the experience of TransCo, its close collaboration with the Bank, and GOP's full commitment to this emergency restoration project.

**a. Risk to Development Outcome Rating** : Negligible to Low

## 8. Assessment of Bank Performance:

Quality at Entry. The project's quality at entry was **satisfactory**. From a sector development perspective, the Bank recognized that the project - by rapidly restoring damaged facilities and stabilizing power supply -- was of considerable importance to the then-ongoing sector reform and privatization efforts. Through the project, the Bank helped sustain private sector confidence in the privatization process. Despite the uncertainties arising from the outcome of the ongoing sector privatization efforts on the project's scope for seeking a Bank loan and ensuing delays, the Bank responded to the critical power supply restoration needs by accelerating project preparation, facilitating advanced contracting, and allowing for retroactive financing in line with its requirements and procedures for emergency situations. The Bank applied simplified procurement methods while ensuring that fiduciary arrangements and controls were adequate. The Bank also addressed safeguard concerns suitably with a high degree of participation and consultation. The appraisal team, for example, included a senior environmental specialist and a social development specialist from the country office, which also helped ensure continuity during implementation.

Quality of Supervision. The quality of the Bank's supervision was **satisfactory**. Only two supervision missions were required, given the project's fast disbursement and short project implementation period. There was only one ISR. The Bank supervision missions visited all project areas to validate progress on all the project activities. The missions paid special attention to the performance of the project management groups (PMGs). The quality of supervision was enhanced with the participation of specialists in financial management, procurement, environment and social safeguards. The ICR mission in February 2009, was well-staffed and visited all project areas with representatives from the PMGs.

The overall rating for Bank Performance is **satisfactory**, based on satisfactory ratings for project quality at entry and Bank supervision.

**a. Ensuring Quality -at-Entry**:Satisfactory

**b. Quality of Supervision** :Satisfactory

**c. Overall Bank Performance** :Satisfactory

## 9. Assessment of Borrower Performance:

Borrower Performance. The Borrower's performance is rated **satisfactory**. During project implementation, there was close collaboration among GOP, TransCo and the Bank project team on addressing both sector and project-related issues. In February 2007, TransCo gave notice of its intention to apply the *force majeure* provisions that would allow it to obtain urgently needed funds to restore the capacity of its damaged transmission lines; in March 2007, GOP's National Economic and Development Authority (NEDA) and Environmental Management Bureau (EMB) supported TransCo's application on an exceptional basis, so that it could seek funds for the proposed project. According to the ICR, counterpart funds were provided expeditiously, procurement activities were processed with timely approvals, financial management conditions were adhered to, and safeguards were fully complied with, and Bank guidance sought as required. The government also provided full implementation support under a very tight time schedule.

Implementing Agency Performance. The implementing agency's performance is rated **satisfactory**. TransCo staff had also benefited from project management training in the United States, that had been financed by the Bank prior to this project. The ICR indicates that TransCo staff were knowledgeable, responsive and proactive in its relationship with the Bank project team, which was important given the project's emergency nature. TransCo performed well, having had prior experience in implementing Bank-financed and other multilateral development

bank-funded projects, such as the Bank-financed restoration work in 1995 on the 500 kV Naga-Tayabas transmission line, which was damaged by civil unrest. Transco's efforts at coordinating with the diverse group of government agencies and industry participants is noteworthy, in that it allowed all legal and procedural requirements to be met even as the country's energy sector was still undergoing restructuring. Transco coordinated closely with the Bank on procurement procedures, including bid tendering, evaluation, and award. TransCo adhered to the project schedule, and sought to resolve expeditiously the land acquisition issues associated with the ROW that arose during implementation. The ICR indicates that TransCo diligently controlled the cost of variation orders for items not originally covered under contract, and cost overruns were significantly below the allowance for contingencies estimated at appraisal.

The overall rating for Borrower performance is **satisfactory**, based on satisfactory ratings for the Borrower and the implementing agency.

**a. Government Performance** :Satisfactory

**b. Implementing Agency Performance** :Satisfactory

**c. Overall Borrower Performance** :Satisfactory

#### **10. M&E Design, Implementation, & Utilization:**

Design. NPC (hence, TransCo after NPC's generation and transmission assets were unbundled, and the generation assets privatized) has had a fully-staffed M&E group for many years, which the ICR assesses as satisfactory. The project's selected indicators to track outputs and outcomes were based on the effectiveness of providing a stable supply of electricity, measured essentially in terms of responsiveness to maximum demand and reduction in system interruptions.

Implementation. Various project management units were responsible for developing data collection instruments, actual data collection, and field reports. TransCo was responsible for overall reporting. Quarterly reports were prepared for contract activities as well as occupational health and safety aspects. Monthly demand estimates were prepared, and an annual report was produced on the System Interruption Severity Index (SISI).

Utilization. The SISI is a key indicator. According to the ICR, the SISI for the project 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) - with no fatalities reported during the project period. Regarding the environmental monitoring reports, no significant mitigation measures were recommended due to the project's minor impacts ascribed to the project. There were also no mid-course corrections recommended by the project monitoring teams since the project was restorative and of short duration.

**a. M&E Quality Rating** : Substantial

#### **11. Other Issues (Safeguards, Fiduciary, Unintended Positive and Negative Impacts):**

Environmental Safeguards. The project was classified as Category B for Environmental Assessment purposes. Since the transmission lines were rebuilt within the original rights-of way (ROW), there were only minor construction-related impacts to consider and no modifications to the natural environment. TransCo had an Environmental Management Division with highly qualified management and staff, complemented by environmental and social development specialists in the field. TransCo is certified under ISO 14001, and has a fully functioning Environmental Management System, as well as its own Corporate Social Responsibility and Environmental Stewardship Program. The Department of Environment and Natural Resources (DENR) issued the Environmental Management Plan and Certificate of Non-coverage promptly given the project's small-scale and site-specific impacts. The environmental impact assessment (EIA) and environmental impact and management plan (EIMP) mitigated those impacts adequately. Both documents were publicly disclosed on TransCo's website and library, its field offices and the DENR.

Social Safeguards. The involuntary resettlement of only 47 households (45 houses and 35 structures) was anticipated. Compensation was managed by TransCo in line with Bank requirements as detailed in the Land Acquisition and Resettlement Plan (LARP) that was developed in consultation with project-affected persons (PAPs). The final LARP was made available at TransCo's central and field offices. While there were some initial differences

between TransCo and landowners on compensation levels, negotiations led quickly to an agreement . According to the ICR, TransCo worked closely with landowners and tenants, and was responsive to their demands by agreeing to full and immediate payment and compensation adjusted for increased land values owing to improvements . The ICR also indicates that during the resettlement planning process, a review by the National Commission on Indigenous Peoples of PAPs, their properties and location, together with tenurial documentation covering those properties showed that none of the ancestral domains in Tiwi or Buhi barangays would be affected by the project . Hence, the Bank's Indigenous People's Policy was not triggered since no indigenous peoples were affected .

**Procurement.** TransCo facilitated the procurement process by applying Bank parameters and ensuring that there were no divergences in the procurement procedures that they followed . This helped implement the project rapidly and provided the confidence needed to support the high level of retroactive financing for the project . The ICR describes the system followed as including : (i) the use of national competitive bidding, subject to conditions agreed by TransCo; (ii) agreement to the imposition of Approved Budget for the Contract as a ceiling on bid prices; (iii) fast-track procurement, with Notices of Award and contract signing within two months of issuance of bid documents; (iv) exemption of eligibility screening on a highly exceptional basis . The number of contracts was kept small at three packages.

**Financial Management.** The PAD assessed the risks with TransCo's system of internal controls as moderate . A task force from the internal audit team was assigned to verify, reconcile and record the adjustments related to the privatization of the former National Power Corporation into TransCo . The accounting risk was also rated low since the project would be treated as a separate work order with separate financial reports . This reporting structure, comprising only one location and a few contracts, made financial management relatively straightforward .

<b>12. Ratings :</b>	<b>ICR</b>	<b>IEG Review</b>	<b>Reason for Disagreement /Comments</b>
<b>Outcome:</b>	Satisfactory	Satisfactory	
<b>Risk to Development Outcome:</b>	Negligible to Low	Negligible to Low	
<b>Bank Performance :</b>	Satisfactory	Satisfactory	
<b>Borrower Performance :</b>	Satisfactory	Satisfactory	
<b>Quality of ICR :</b>		Satisfactory	

**NOTES:**

- When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.
- The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate .

**13. Lessons:**

Based on the project's experience, the main lessons that are pertinent to emergency operations are as follows :

- (1) Close upstream collaboration is critical in emergency projects, focusing particularly on assessing institutional capacities as well as clear requirements and procedures to follow, in order to enhance fast and problem -free implementation.
- (2) The Bank needs to exercise flexibility in procurement and disbursement arrangements for emergency operations by applying simplified procedures, such as the application of National Competitive Bidding rather than International Competitive Bidding, imposition of the Approved Budget as the contract ceiling, and other measures . Flexibility, however, would still require due diligence on procurement capabilities and compliance with Bank requirements.
- (3) While minimizing conditionalities to help accelerate implementation of an emergency project, good project governance still needs to be ensured . This can be achieved early in project processing by ensuring that (a) accountabilities are clear in the project's institutional structure, and (b) appropriate financial management controls are in place.

(4) Even in emergency situations, resettlement planning cannot be overlooked . The possibility of land acquisition and resettlement issues emerging during implementation can make a project vulnerable to delays and even stoppages. Therefore, it is important early in processing to conduct detailed assessments, identify potential problems, and develop responses and solutions .

(5) Even in emergency situations, it is possible to complement longer-haul and broader sector reform processes, as demonstrated by this project, which helped the ongoing privatization process by strengthening investor confidence in the sector's responsiveness to natural disasters as well as the capacities of the institutions managing and operating in the sector .

**14. Assessment Recommended?**     Yes     No

**15. Comments on Quality of ICR:**

The quality of the ICR is **satisfactory** . The ICR was clear, candid and concise . It complied with the guidelines for ICR preparation, including the suggested number of pages . The section on lessons learned reflected much careful thought on the project's experience and contributions . The clear emphasis on procurement, financial management and safeguards aspects is laudable . Moreover, the effort to situate the project within the overall energy sector reform context is particularly noteworthy .

**a. Quality of ICR Rating :** Satisfactory