

# **Mindanao Power Transmission Project**

Loan Agreement No. : PHL-002-1994

Year Month Date : 1995. 6. 28

Country : Philippines

The Export-Import Bank of Korea  
(Government Agency for the EDCF)

EDCF Operations Evaluation Team  
(Evaluated by Korea Institute for Industrial Economics & Trade)

# I. Overview of the Evaluation Project

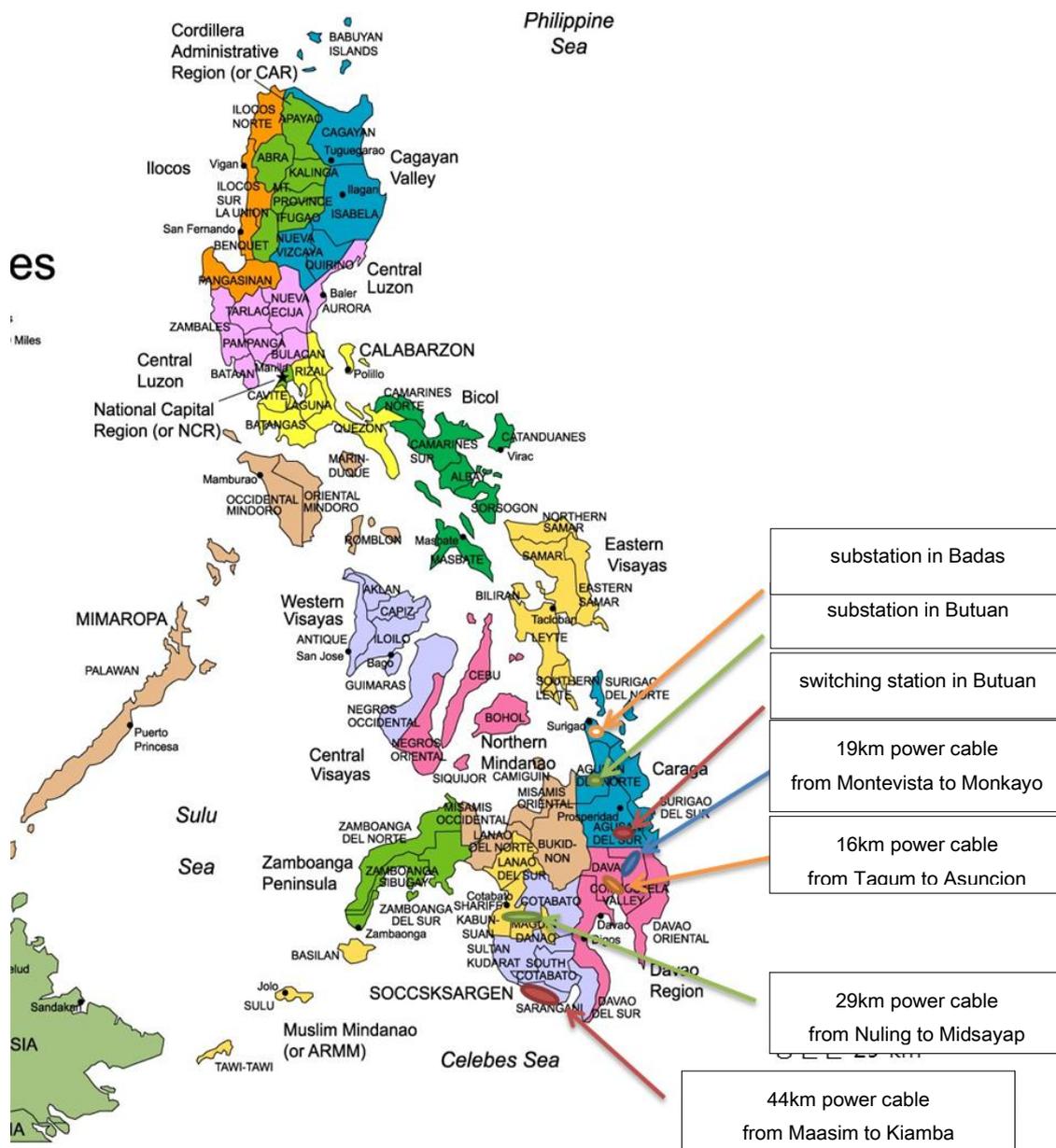
## 1. Project Background

- The infrastructure of the Philippines is generally considered inadequate to support its social and economic development. In particular, its power sector suffers from significant power shortages due to a lack of power facilities and the deterioration of existing facilities. These conditions disrupt economic activities and inhibit industrial production.
- In order to stabilize the power supply, the Philippine government initiated effort to increase capacity and improve efficiency of its power sector as a part of the national development agenda. In response, EDCF approved a loan amounting to USD10.2 million in 1994 to finance a transmission and distribution project in Mindanao.

Division		Content		
<b>Project</b>	Korean	필리핀 민다나오 지역 송전설비 확장 사업		
	English	Mindanao Power Transmission Project		
<b>Project Goal</b>		Installation of power cable & construction of substation to provide sufficient power supply in Mindanao Island as part of plan to improve serious power shortage in the Philippines		
<b>Coat</b>	<b>Korea</b>	18,800 (in US dollars)	<b>Total</b>	22,700
	<b>Philippine</b>	3,900		
<b>Area</b>		민다나오섬 Nuling~Midsayap 지역, Butuan, Badas, Bunawan 지역		
<b>Scale/Period</b>		-29km 69KV installation of power cable -substation and switching station		
<b>Effectiveness</b>	<b>Korea</b>	<input type="checkbox"/> Contribute to extension of other similar project in the Philippines for domestic companies • Contribute to improving the awareness/reliability of domestic companies in the Philippines and other countries • Contribute to strengthening the international competitiveness of Korean consulting companies		
	<b>Philippine</b>	• Contribute to stabilizing the power-supply by increasing power-capacity in the project area • Contribute to attracting other project investment due to the presence of a stable power-supply • Contribute to increasing the income from local companies (construction, heavy equipment) engaged in the project • Contribute to increasing local taxes from other project, strengthen local industries <input type="checkbox"/> Contribute to jobs creation for local residents (completion report p.9)		
<b>Execution Agency</b>	<b>Korea</b>	EDCF		
	<b>Philippine</b>	National Power Corporation		

□ The scale of the project was ultimately reduced due to the economic crisis in Southeast Asia 1998 as well as the privatization of TransCo/NGCP, and there was also a request to change the materials. Therefore, only the expansion of a substation in Butuan/Badas, the construction of a switching station in Bunawan and the installation of 126km (4 section in total) of power cable were completed.

## 2. Map of Project Areas



### **3. Evaluation Outline**

#### **□ Evaluation Goal**

- It is necessary to understand the effectiveness and impact on the local community and to analyze the main factors. Moreover, it is necessary to draw an adaptable recommendation for the planning similar projects and their execution.

#### **□ Evaluation Method**

- It is necessary to evaluate the project's relevance, efficiency, effectiveness, impact and substantiality according to OECD/DAC evaluation guideline.
- It is necessary to definitize the evaluation criteria focused on the detailed content of the project and apply this information in a matrix.
- It is necessary to improve the objectivity of the evaluation results and hold a joint evaluation workshop with the main stakeholders of the recipient country to strengthen capability/ownership.

#### **□ Evaluation Framework**

- Process evaluation: It is necessary to analyse the project relevance, efficiency, substantiality during the process.
- Outcome evaluation: It is necessary to analyse the overall output, outcomes and impacts of the project.
- Recommendation for improving project: It is necessary to summarize the lesson learned from the process and outcomes and to then highlight actual recommendations that can be adapted to future similar projects in the power and infrastructure sector planned by EDCF.

#### **□ Evaluation Team Organization**

- The set-up of the evaluation team was reflected the feature of evaluation project and the members are as follows: specialist in power transmission, Prof. Lee Heung-Jae from Gwang Woon University, evaluation specialist, Dr. Kim Aron from GDC Consulting and fellows experienced in ODA and evaluation projects.

## □ Evaluation Process

- Evaluation design according to phased evaluation process → Domestic research (desk review & interview with domestic stakeholder) → On-site inspection (workdown, interview with local stakeholder, questionnaire with beneficiaries) → Analysis and evaluation results → Joint evaluation workshop (discussion & recommendation with Philippine stakeholder) → Report

## **II. Evaluation Criteria**

### **1. Evaluation items and results**

- Considering the project features and factors, this evaluation was set up to focus mainly on an evaluation of the process and outcomes. Each core evaluation item was divided into a detailed evaluation items. The evaluation was conducted to derive results by analyzing/collecting 'references', 'related quantitative data', 'questionnaires with beneficiaries', and 'interview'.
- In this evaluation, the project's relevance, efficiency, effectiveness, impact and substantiality were evaluated, based on the five OECD/DAC criteria. Using these criteria, the evaluation matrix was then derived.
- In order to produce the final evaluation results, it was necessary to apply the same importance to the evaluation results of the five criteria according to EDCF ex-post evaluation guidelines.
- In the joint evaluation workshop, the Philippine stakeholders in the project evaluated the output as 3.5 out of 4 points with other stakeholder attending this joint evaluation sessional so expressing very positive comments. This joint evaluation results reflected 30% of the overall evaluation results, the details of which are shown in the table below (refer to Appendix 5).
- Overall a score of 3.5 out of 4 points were acquired as the result of this evaluation: thus, the project was evaluated as a "successful project". The project was also evaluated as a

contributor to development in the Philippines due to its effectiveness.

Criteria	Item	Detailed Evaluation Item	Mark	
			Team	Other
Relevance	Policy & Strategic Relevance	Conformance with EDCF Assistance Strategy	3	
		Conformance with Partner Country's Development Policy	4	
	Relevance of Plan	Goal Setting	2	
		Project Plan	3	
	<b>Overall - 3.3</b>		<b>3</b>	<b>3.8</b>
Efficiency	Execution	Actual Time	3	
		Actual Cost	4	
	Structural Factor	Impediment Factor	3	
	<b>Overall - 3.3</b>		<b>3.33</b>	<b>3.3</b>
Effectiveness	Output	Power Cable Construction	4	
		Substation Facilities Expansion	3	
	Short-Term	Stable Power Supply	3	
	Mid-Term	Increase of Local Power Supply	3	
		Improve of Power Service	2	
<b>Overall - 3.3</b>		<b>3</b>	<b>3.8</b>	
Impact	Long-term Outcome	Sector Outcome	4	
		Local Economic Outcome	4	
		Other Impact	4	
	<b>Overall - 3.8</b>		<b>4</b>	<b>3.3</b>
Sustainability	Sustainability	Human/Institutional Sustainability	4	
		Financial Sustainability	4	
	<b>Overall - 3.8</b>		<b>4</b>	<b>3.3</b>
<b>Total Overall</b>			<b>3.5</b>	

## 2. Relevance Evaluation

### □ Policy & Strategic Relevance

- (Conformance with EDCF assistance strategy) There didn't find out specific strategy from the power transmission and distribution sector of EDCF found. The project was conducted as a request by the recipient country. Nevertheless, it was found that some parts were in conformance with EDCF mid-term working strategy.
- (Conformance with development policy of recipient country) Considering development need & strategy in Philippine where has a trouble in power supply, it is evaluated as "high conformance" (4points).

#### □ Plan Relevance

- (Relevance of Goal Setting) It was found that practically it was difficult to achieve the goal compared with all inputs in this project. Therefore, it was evaluated in '2 points'.
- (Relevance of Project Plan) The project area was selected appropriately and it was evaluated to utilize the technical input considering its environment and climate. However, there was need to further consider the actual prior preparation time required, especially in terms of securing the right of way (one of main reasons for projects delay) for conducting the project (3points).

#### □ Overall Total

- The project was evaluated as being "relevant" in terms of relevance (3points).

### **3. Efficiency Evaluation**

#### □ Execution

- (Actual time) Due to internal/external factors such as the economic crisis in Korea and the reorganization of power industrial structure in the Philippines, the construction of the project was postponed for a long time after the loan was approved. Accordingly, the period of the project was extended; however, once the project contract was initiated the bulk of the project was completed within 3years' time except for some areas. Therefore, it was evaluated as being "efficient"(3points).
- (Actual Expenditure) Ultimately, the project used 91% of the loan allocated provided by the estimated expenditure of government assistance-policy. It was thus evaluated as being 'efficient'(4points).

#### □ Structural Factors

- There was a complicated system used for financial management and policy decision were controlled segregated institutions regarding the power production, power transmission, power sales and service for end-user. Due to hindrances in the structural efficiency, the project given '3points'.

□ Overall

- Overall, this project was evaluated as being 'efficient'(3points) according to the efficiency criteria.

#### **4. Effectiveness**

□ Scope of Effectiveness Evaluation

- In order to evaluate the outcomes, the outcomes were divided into output, short-term, mid-term and long-term outcomes by selecting an evaluation index for each. The long-term evaluation, however, was separated as the socio-economic impact and is reviewed in the next chapter. In this chapter, the output and short/mid-term outcomes are evaluated in terms of their effectiveness.

□ Output

- (Power cable & substation facility expansion) The power cable was installed and operated according to the final contract criteria and plan, therefore, it was evaluated as being 'very effective'. But in the case of the transformer installed in the Butuan City substation, the following issues were found after its initial operation: several operation stoppages due to early replacement of some components, trouble with gas pressure, no fixing of defects, not enough training for technicians, and lack of ex-post management. Therefore, in terms of the substation, the output evaluation was "efficient"(3points).

□ Short & Mid-Term Outcomes

- (Stable power supply & increase in local power capacity) The goal of providing a stable power supply was achieved. For instance, the increase of power capacity and its supply met the increase of local power consumption according to the estimated power consumption of the project plan and there was no power failure of over 30min from the power plant to the substation supply line. However, circulating blackouts in residential and industrial areas still existed after the project. As a result, the project was evaluated as being "effective"(3points).

#### □ Mid-term outcome

- (Improvement in power service) Basically, due to the lack of awareness of the end-beneficiary(local resident) change, the project was evaluated as being 'partly effective'(2points).
- Due to the rudimentary financial condition, enforcement agencies in this project such as NGCP/TransCO and other isolated agencies (that provide power to resident) provide power using old-facilities and equipment. Therefore, it was found that there was no big difference from prior to the project in the provision of service and a stable power supply.

#### □ Overall Evaluation of Effectiveness

- Based on the above evaluation of each items, the project was evaluated as being 'effectiveness'(3points).

### **5. Impact**

#### □ Long-term outcome & impact

- (Sector outcome) Compared to 2008, the time of the project was completed, every indicators such as power production/sales, loss rate of power system, and power supply rate were clearly improved. Thus the project was evaluated as having 'high impact'.
- (Local economic development) It was observed that fundamental indexes such as local total product, local income per household, and employment were clearly improved. Through interviews and questionnaires, it was verified that there was a change in local resident. For this reason, the project was evaluated as having 'high impact'. Note that this change was not merely the direct result of the power transmission project, but was the overall results of various efforts for local development.
- (Other impact) Due to increase in power-supply capacity, improvements in the quality of life could be verified. For example, there was an increase in the use of home electronics and an increase in the economic cooperation with Korea. Therefore, the project was evaluated as having a 'high impact'.

## □ Overall

- If there continuous power-demand growth and appropriate investment for vigorous economic activity consistently exist, this project should have a big impact and create ripple effect. Thus, the project was evaluated as having 'high impact'(4points).

## **6. Sustainability**

### □ Human/Institutional Sustainability

- Ownership of the power transmission facilities belongs to TransCo and NGCP has the operational rights. The human/institutional system was prepared for the actual inspection and ex-post investigation of its supervision and facility management according to the contract. Overall, it was evaluated as being 'very sustainable'

### □ Financial Sustainability

- The cost for power transmission was stably paid by the Electric Cooperative according to the contract. In the case of loss from natural disaster, there was stable cooperation with TransCo. It was observed that the agencies for power transmission were financially healthy. As a result, the project was evaluated as being 'very sustainable'(4points).

## **III. Lesson Learned and Recommendations**

### **1. Lessons**

- In project formation stage, it is necessary to conduct an in-depth study about the beneficiaries (i.e., sector, region, institutions, etc.).
- The beneficiary agency that worked with EDCF at the time of loan approval became a private corporation as a result of restructuring and privatization of the Philippine's power sector in late 1990's. In the future, an in-depth study should be conducted in order to identify areas where EDCF finds more suitable for development purposes of pursuing the

public good.

- Also, such studies should identify regions in the Philippines that are being developed in a relatively slow pace, where EDCF's support may produce greater impact.
  
- In project design and planning stage, it would be desirable to strengthen preliminary study.
  
- NEDA is an implementing agency that EDCF must work with closely for effective coordination in terms of operating in the Philippines. Recent changes in the process of project formation may require EDCF to be well-prepared for future project formation and design.
  
- EDCF may need to conduct in-depth studies to identify projects appropriate for cooperating with Korea. Such preliminary studies should be carried out long before potential projects reach a desk in the MOF. Based on these facts and findings, EDCF should be able to present the advantages that EDCF may give the Philippines in order to effectively persuade decision-makers there to choose EDCF over other donor agencies.
  
- For instance, preliminary studies should investigate: 1) Korea's competitive advantage in different development sectors, 2) project context and issues (i.e., governance and system of power sector, organizational structure of major players, major problems and issues in power sector, etc.), 3) interrelations among stakeholders and key players 4) national and regional development strategies and plans, and 5) regions of developmental needs.
  
- It is necessary to plan in advance for follow-up to enhance sustainability.
  
- Infrastructure projects such as those in the power sector may require a long-term commitment for maintenance to ensure effective and sustainable utilization. Often, recipient country's institutional and financial capacity leads to a poor sustainability grade.
  
- Currently, EDCF's project follow-up plan usually includes defect repairs(A/S) for 2 years after the completion of a contract. However, in order to help produce the intended mid-term and long-term effects (impacts) of projects, continuing the monitoring for a longer period and providing appropriate follow-up activities are desirable such as by providing additional training and consulting services.

## **2. Recommendations**

### **□ Research on Partner Country, Region, and Sector**

- It is recommended to design and implement research project(s) as mid- and long-term projects in order to meet the development needs of regions, countries, and the energy sector and also to improve development effectiveness.
- Research projects should be conducted by independent research institutions such as universities or consulting firms.
- Based on such research projects, EDCF may be able to identify specific areas in the power sector where Korean expertise is likely to make significant contribution. Subsequently, EDCF would be able to design more customized projects and help Korean experts and companies who possess such expertise participate in EDCF-funded projects in the future.
- Thus, it is recommended to promote a consulting function in EDCF to design customized projects and support Korean companies and development institutions. EDCF may also need to establish a network for collaboration with organizations specialized for consulting.

### **□ Systematic Project Planning & Design for Improve Development Effectiveness**

- It is recommended to strive for more systematic and evidence-based project design and planning based on scientific studies that provide accurate and timely information as evidence.
- In doing so, EDCF may consider strengthening preliminary study or including expert(s) in the areas of international development, monitoring and evaluation, and regional study in feasibility study.
- One of the key tasks in systematic design of project is identifying goals and objectives. Thus, it is recommended to set practical (manageable and measurable) goals and objectives in order to ensuring effectiveness and accountability whenever possible.

### **□ Practical Outcome Management for Result-Oriented Project Management**

- It is recommended to involve evaluation expert for more effective and practical outcome management from the beginning of the project (i.e., project design and implementation).
- Also, RFP's for the future project should include requirements of involving evaluation

expert(s) in the project as a monitoring and evaluation personnel in order for outcome management. The evaluation expert(s) will play a key role in ensuring result-based management.

☐ It is recommended to incorporate follow-up components into the project to enhance sustainability.

○ It is unrealistic to expect those who were involved in the project to continue to keep monitoring the project's outputs and outcomes and communicating with EDCF. Thus, what EDCF needs to maintain after the completion of the project must be specified in the project plan and proper budget should be allocated for necessary follow-up activities.