Project Design Document

for

Talubin River Basin Mini-Hydropower Project in the Philippines

March 2006

Tokyo Electric Power Services Company Ltd.

CLEAN DEVELOPMENT MECHANISM
SIMPLIFIED PROJECT DESIGN DOCUMENT
FOR SMALL-SCALE PROJECT ACTIVITIES (SSC-CDM-PDD)
Version 02

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SECTION A. General description of the small-scale project activity:

A.1. Title of the small-scale project activity:

Talubin River Basin Mini-Hydropower Project in the Philippines

A.2. Description of the small-scale project activity:

This PDD presents a bundle of two (2) small-scale, run-of-river hydropower plants in Republic of the Philippines.

The project has two hydropower plants namely Talubin Mini-Hydropower Plant (MHP) and Caneo MHP that will produce electricity without emitting greenhouse gases (GHG). The PDD based on results of preliminary study[1] and feasibility study[2] on Talubin River Basin Mini-Hydropower Development which were conducted by Tokyo Electric Power Services Company Ltd. (TEPSCO)[3] in 2003 and 2004.

The both of the projects located in Municipality of Bontoc, Mountain Province. The electricity generated by the project is expected to displace grid electricity generated from fossil fuels and reduce GHG emissions by an amount of approximately 30,890 tCO_2 per year for the duration of the project activity. A reduction of approximately 648,690 tCO_2 is forecast for the 21-years crediting period.

The Talubin MHP and the Caneo MHP will utilize natural river flow of Talubin River. Talubin River is a tributary of Chico River, which originates in Mountain Province and flows toward north. Chico River is one of the major rivers in Luzon.

The Talubin MHP can generate maximum output of 5,400 kW with maximum discharge of 9.71 m^3/s and effective head of 66.24 m. The Caneo MHP, which is located at downstream of the Talubine MHP, also has maximum output of 5,400 kW with maximum discharge of 11.41 m^3/s and effective head of 57.13 m.

The proposed CDM project’s overall sustainable development impact is positive and the reasons are following below. The benefits, which can be attributed to the proposed projects, which would not have occurred in its absence, are as follows.

- To contribute stable electric power supply in the province.
- Reduction the electricity tariff for consumers due to lower electric generation cost compare with NPC’s cost.
- Apportion a part of the realty and special privilege taxes and other economic benefits of the hydroelectric power potential to the respective localities where they are established.
- The Republic Act No. 7156 “An Act Granting Incentives to Mini Hydroelectric Power Developers and for Other Purposes” describes that 2% of the gross benefit[4] is shared and it is even divided 30% to Municipal government or Host, 30% to Province and 40% to national. And it must be used for the environmental conservation and local development.

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[1] It was financed by Tokyo Electric Power Company Ltd. (TEPCO)

[2] The Ministry of Economy, Trade and Industry (METI) Japan through New Energy Foundation (NEF) financed for implementation of the feasibility study. In 2005, the feasibility study has been revised in connection with preparation of the PDD.

[3] TEPSCO; Tokyo Electric Power Services, Co., Ltd. is a technical consultant which is a subsidiary company of the Tokyo Electric Power Company, Ltd (TEPCO).

[4] Estimated 2% of the gross benefit of the proposed projects is approximately 4.7 Million Pesos per a year.

- E. R. No. I-94 required energy resource developers and/or power producers to provide, among others, a set of financial benefits equivalent to one centavo per kilowatt-hour from electricity sale proceeds of their projects or energy-generating facilities[5]; under Section 6 of E. R. No. I-94, the host LGUs and host regions are entitled to the following benefits from the energy resource developer and/or power producer:
  a. 25% of one-centavo (Php 0.0025) per kilowatt-hour for electrification fund;
  b. 25% of one-centavo (Php 0.0025) per kilowatt-hour for development and livelihood fund; and
  c. 50% of one-centavo (Php 0.005) per kilowatt-hour for reforestation, watershed management, health and/or environment enhancement fund;
- Employment opportunities for maintenance and operation of the proposed plants, especially for the local people
- Development opportunity for the concerned village
- Indirect compensation to the community, this is in the form of development projects such as: School Buildings, Health Center, Road improvement, environmental projects, etc.
- Direct Compensation to affected landowners.

A.3. Project participants:

Name of Party involved ((host) indicates a host Party)	Private and/or public entity (ies) project participants (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
Republic of the Philippines (host)	The Philippine National Oil Company	No
	Provincial Government of Mountain Province	No
	Sta. Clara International Corporation	No
Japan	Tokyo Electric Power Company Ltd.	Yes
(*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party(ies) involved is required.		
Note: *When the PDD is filled in support of a proposed new methodology (Forms CDM-NBM and CDM-NMM),* at least the host Party(ies) and any known project participant (e.g. those proposing a new methodology) shall be indentified.		

The proposed business structure is showed in Figure A.1 and a project company will be established between a private investor in the Host country and the Japanese private. The project participants are conceivable the followings.

Host Country:	Republic of the Philippines
Project Proponent:	Philippines National Oil Company and
	The Provincial Government of Mountain Province
	Sta. Clara International Corporation (private)
Other Project Participant:	Tokyo Electric Power Company Ltd. (TEPCO) in Japan

The Philippine National Oil Company (PNOC) is one of potential project developer. PNOC was established in 1973, to provide and maintain an adequate and stable supply of oil. Its charter was amended to include energy exploration and development. After its creation, PNOC serves as the key institution in the exploration development and utilization of indigenous energy sources. It is imperative for the company to get more involved in new and renewable energy activities and projects.

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[5] Total amount of financial benefit by the proposed projects is approximately 0.7 Million Pesos per a year.

The provincial government of Mountain province is also the owner and operator of the project company. Provincial Energy Council was established in March 2005 and they aim to develop electric energy by using local resources that shall change Mountain Province outlook for the next ten years.

In 1976, Sta. Clara International Corporation was established as a contractor and now promoting the hydropower business in the Panai Island.

Tokyo Electric Power Company (TEPCO) will be one of potential project developer. TEPCO was established in 1951 to supply electric power to the Tokyo metropolitan area. TEPCO has 189 power plants that the total generating capacity is 60,375 MW. TEPCO has 39,679 km of transmission lines and 1,007,191 km of distribution lines.

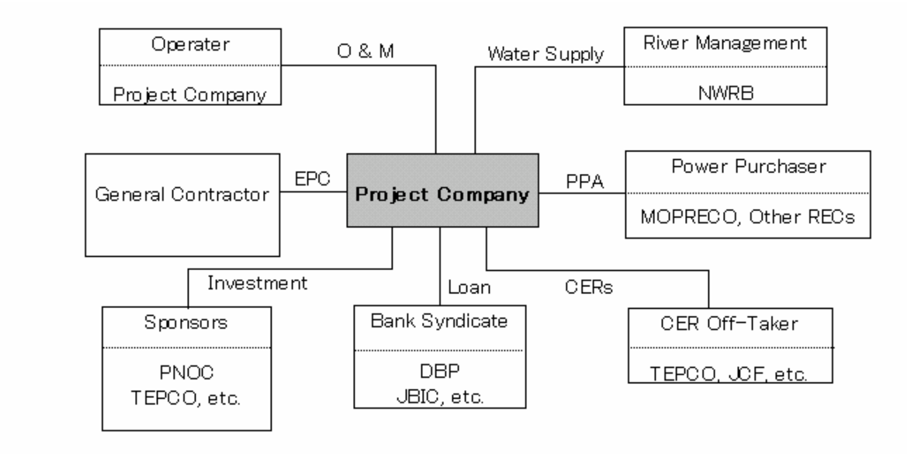

Fig. A.1 Proposed Business Structure

A.4. Technical description of the small-scale project activity:
A.4.1. Location of the small-scale project activity:

A.4.1.1. Host Party(ies):

Republic of the Philippines

A.4.1.2. Region/State/Province etc.:

Mountain province in the Cordillera Administrative Region

A.4.1.3. City/Town/Community etc:

Village of Talubin in Bontoc City

A.4.1.4. Detail of physical location, including information allowing the unique identification of this small-scale project activity(ies):

The project will be located in Bontoc City where is situated at the center of Mountain province, along the Cordillera Mountains of Northern Philippines with coordinated of 17° -5.5'latitude and 120° -59.2' longitude. It is 146 kilometers from Baguio City and 396 kilometers from Manila (Refer to Fig.A.2).

The Talubin MHP is located in the upstream of Barangay Talubin in Mountain Province. The intake site is the point of junction with the Apap creek, and the plan is to take maximum discharge of 9.71 m^3/s from the left side of Talubin River. The plan is run-of-river as a type of generation system, utilizing the effective head of 66.24 meters.

The Caneo MHP is located downstream of Barangay Talubin in Mountain Province. The intake site is located at 1.0 km downstream of the tailrace of the Talubin MHP, and it is planned to obtain a maximum of 11.41 m^3/s from the left side of Talubin River. A tunnel type is selected as a headrace; length of the headrace is 1,659 meters. The plan is to select a type of run-of-river type, utilizing the effective head of 57.13 meters.

Table A.1 General Features of the Proposed Projects

Item			Talubin MHP	Caneo MHP	Remarks
Name of River			Talubin River (Chico River)		
Location			Talubin Village, Mountain Province		
Catchment area (km^2)			70.8	83.6	
Generation Plan	Power Generation Type		Run-of River	Run-of River	
	Maximum Output (kW)		5,400	5,400	
	Maximum Discharge (m^3/s)		9.71	11.41	
	Effective Head (m)		66.24	57.13	
	Annual Electricity Generation (MWh)		35,308	35,073	
	Effective Electricity Generation (MWh)		33,543	33,319	Losses: 5 %
	Plant Factor (%)		70.9	70.4	
Facilities	Intake	Type	Gravity	Gravity	
		Height of the Intake Weir (m)	3.0	3.0	
	Headrace	Type	Open Channel	Tunnel	
		Length of the Headrace (m)	2,544	1,643.7	
Construction Cost (Million Pesos)			693.8	897.5	Hard Cost

Source: Feasibility study report on Talubin River Basin Hydropower CDM Project in the Philippines 2005 Update

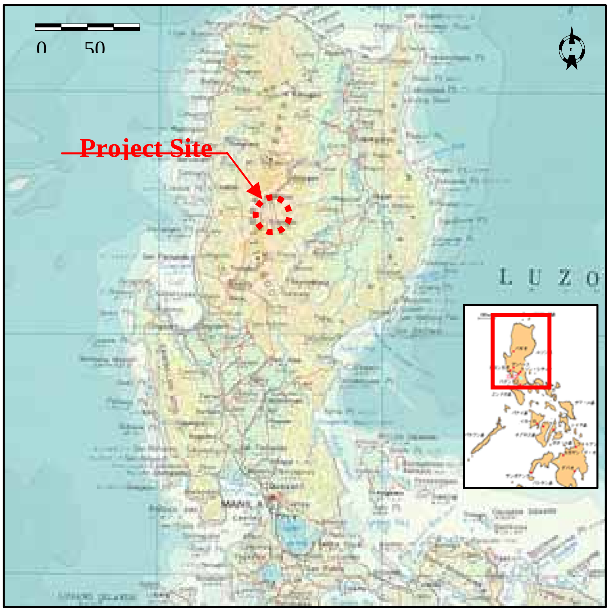

Fig. A.2 Map of Philippines, Bontoc City in Mountain Province

Fig. A.3 shows the feature of these sites.

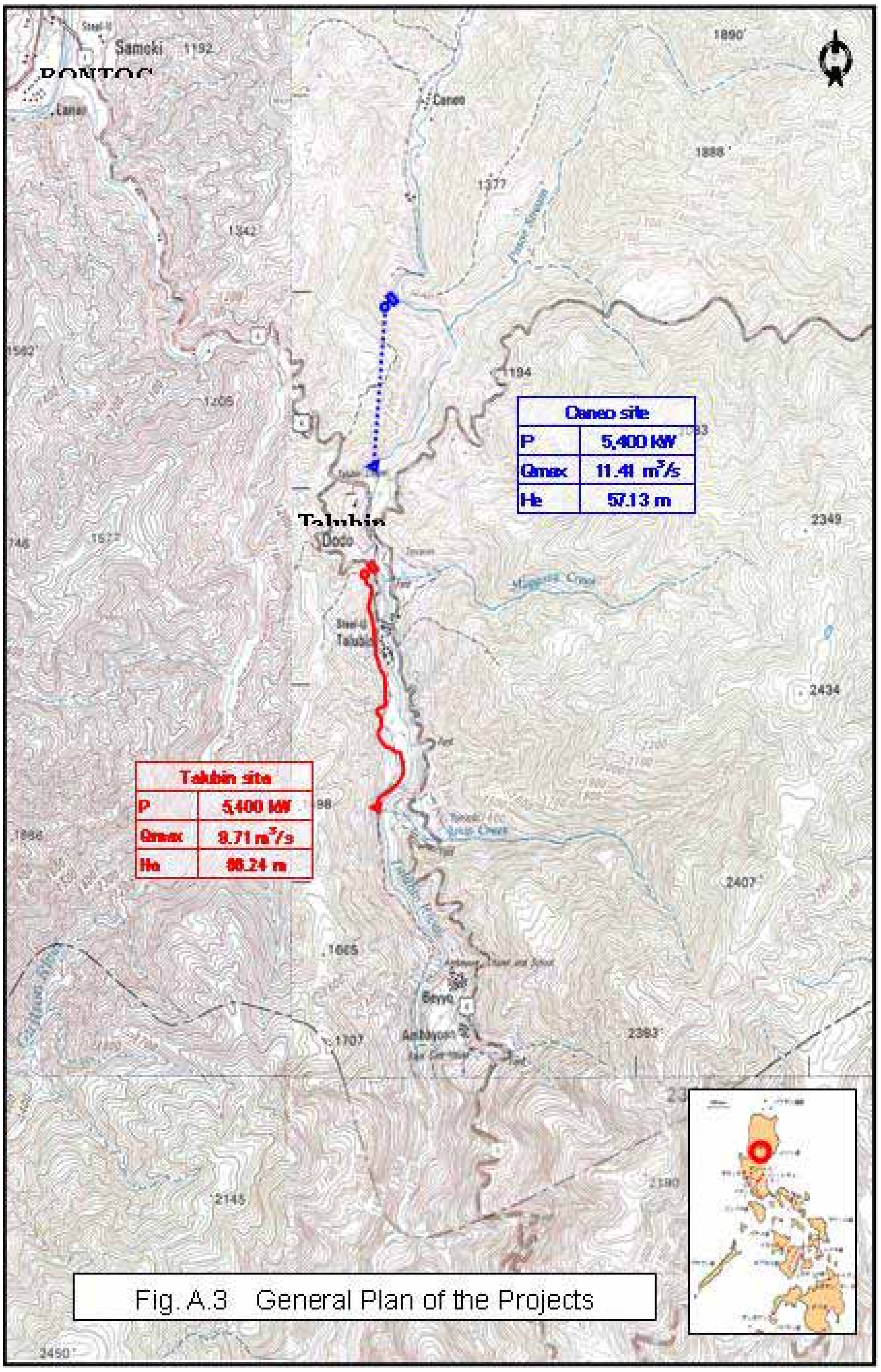

Fig. A.3 General Plan of the Projects

A.4.2. Type and category (ies) and technology of the small-scale project activity:

Type I: Renewable Energy Projects
Category: I.D. “grid connected renewable electricity generation”.

Maximum output of the Talubin MHP and the Caneo MHP are respectively 5.4 MW and 5.4 MW which are in small scale projects less than 15 MW of capacity. The plants will sell its electricity generation to the local electric cooperatives under its Power Purchase Agreement (PPA).

A.4.3. Brief explanation of how the anthropogenic emissions of anthropogenic greenhouse gas (GHGs) by sources are to be reduced by the proposed small-scale project activity, including why the emission reductions would not occur in the absence of the proposed small-scale project activity, taking into account national and/or sectoral policies and circumstances:

The Talubin MHP and the Caneo MHP with 10.8 MW of installed capacity and an average 66,862 MWh of annual generation will directly reduce the greenhouse gas emissions.

According to the Philippine Energy Plan 2005 Update, the peak power demand in Luzon-Visayas grid to which the proposed projects will be connected is rapidly increasing with annual growth rate of 7.9 %. Luzon-Vizayas Grid will need a total of 3,450MW of new capacity additions to meet the electricity demand in the next ten years. The assumed composition of the required new power source is 575 MW will come from renewable energy, not include the hydropower, 2,875 MW will come from fossil-fuel source such as diesel (125 MW), coal (650 MW) and natural gas (2,100MW).

Thus, the fossil-fuel will be dominant as electric power source in the next 10 years.

A.4.3.1 Estimated amount of emission reductions over the chosen crediting period:

The GHG emission reduction was calculated for Luzon-Visayas grid by using the weighted average emissions factor as 0.462 (kg CO_2/kWh). The result of the calculation for the emission reductions is 30,890 (t-CO2/year). The total amount of the GHG emission reduction during crediting period, which is set the 21 years, is the 648,690 (t-CO2) as shown below.

30,890 (t-CO2/year) × 21 (year) = 648,690 t-CO2

A.4.4. Public funding of the small-scale project activity:

The projects will not receive and will not seek any public funding.

A.4.5. Confirmation that the small-scale project activity is not a debundled component of a larger project activity:

The two small-scale activities are being presented as a CDM project activity. The total installed capacity of the two projects is still under 15 MW; therefore the project qualifies as small-scale. Based on the information provided in Appendix C of the simplified modalities and procedures for small-scale CDM project activities corresponds to the procedures for determining the occurrence of debundling.
This project is not a debundled component of a larger project activity since the project participants have not registered or operated another project in the region surrounding the project boundary.

SECTION B. Application of a baseline methodology:

B.1. Title and reference of the approved baseline methodology applied to the small-scale project activity:

Project Activity category I.D. "grid connected renewable electricity generation". As outlined in paragraph 7 of Annex B of the simplified modalities and procedures for CDM small- scale project activities.

B.2 Project category applicable to the small-scale project activity:

Appendix B of the simplified modalities and procedures for CDM small-scale project activities offers the following two choices for preparing the baseline calculation for this type of project activity:

(a) The average of the "approximate operating margin" and the "build margin"

(b) The weighted average emissions (in $kgCO_2/kWh$) of the current generation mix.

Option (b) is selected for this project because information of the recent capacity additions to the system which capacity additions are defined as the greater (in MWh) of most recent 20% of existing plants or the 5 most recent could not open to the public in the Philippines as of August 2005.

B.3. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered small-scale CDM project activity:

(1) Market Situation[6]:

Philippine Energy Plan 2005 Update shows the following Market Situation of Luzon-Visayas grid where the Talubin and Caneo MHP will be connected.

Energy Supply Mix in 2004;

- The 2005 Philippine Energy Plan targets on energy self-sufficiency level of at least 60 % in 2010 from 56.6 percent in 2005. And the ratio of indigenous energy in Luzon-Visayas grid was 55.38 percent in 2004.
- Total electricity power generation of Luzon-Visayas grid in 2004 was approximately 48,870 GWh.
- In 2004, the electricity power source in Luzon-Visayas grid was 28% renewable energy (8.9 % of hydro and 19.2 % of geothermal) and 72% conventional energy came from fossil-fuel source (13.5 % of oil-based, 33.1 % of coal and 25.3 % natural gas).
- Thus, the fossil-fuel is dominant as electric power source in 2004 in Luzon-Visayas grid.

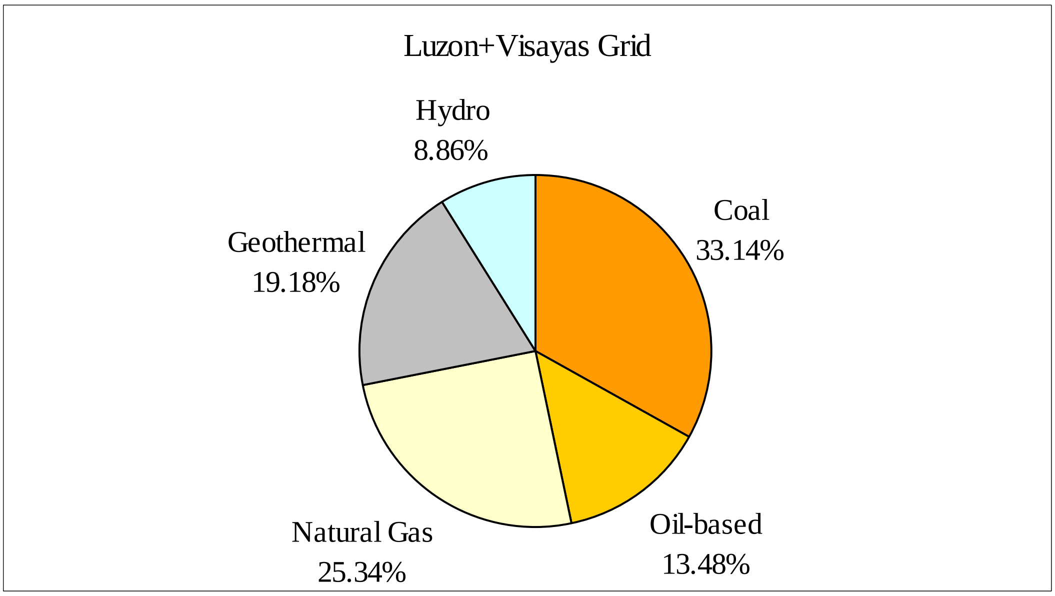

Fig. B.1 Electricity power source in Luzon-Visayas grid in 2004[6]

Power Demand and Supply;

[6] Source: Philippine Energy Plan 2005 Update and Annexes

- The peak demand will increase in gross capacity from 7,889 MW in 2004 to 16,808 MW in the year 2014 with annual growth rate of 7.9 %.
- Simulating the peak demand forecast, Luzon-Vizayas Grid will need a total of 3,450MW of new capacity additions to meet the electricity demand in the next ten years.
- Out of the total 3,450 MW, 290MW comes from committed projects while the remaining 3,160 MW are indicative capacity additions identified.

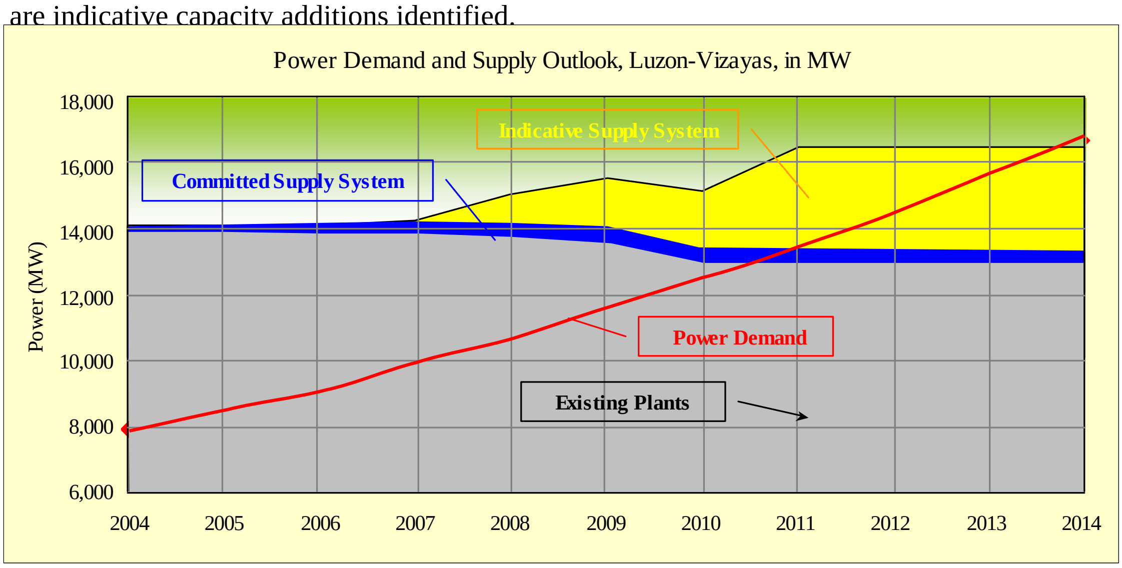

Fig.B.2 Power Demand and Supply Outlook in Luzon-Visayas Grid
Source: Philippine Energy Plan 2005 Update and Annexes

<u>Energy Supply Mix to meet the future demand;</u>

- Of the 290 MW committed projects, 180 MW will come from renewable energy such as 65 MW of wind-power, 55 MW of bio-energy and 60 MW of geothermal. The remaining 110 MW comes from diesel, which is including in Pinaucan diesel-fired transfer program.
- Of the 3,160 MW indicative projects, 395 MW will come from renewable energy, such as 70 MW of wind-power, 115 MW of bio-energy, 210 MW of geothermal. The remaining 2,765 MW come from fossil-fuel source such as diesel (15 MW), coal (650 MW) and natural gas (2,100MW).
- Although 911 MW of hydropower capacities are required to meet the 60 % self-sufficiency target by 2010, specific hydropower development is not planned in above new capacity additions.
- Thus, the fossil-fuel will be also dominant as electric power source in the next ten years.

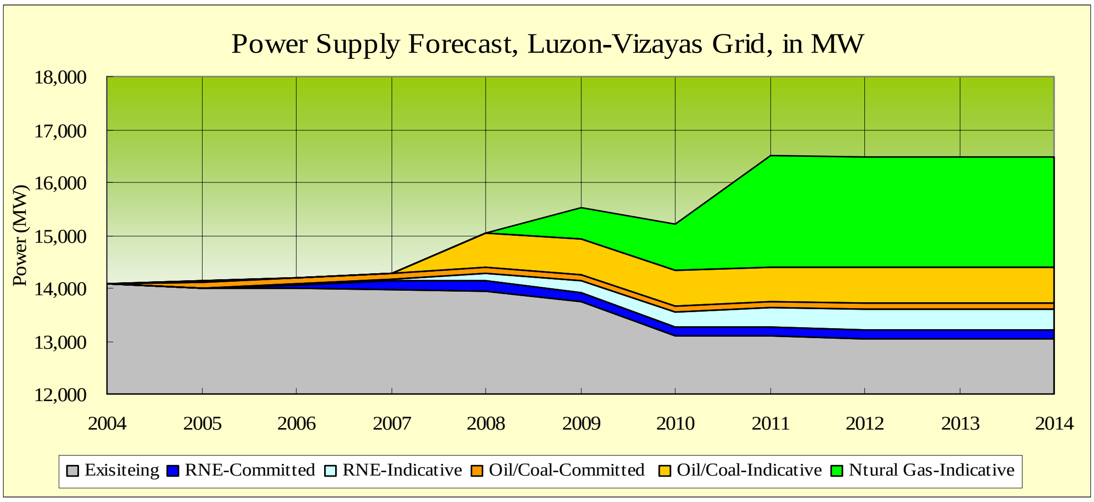

Fig.B.3 Power Supply Forecast in Luzon-Visayas Grid
Source: Philippine Energy Plan 2005 Update and Annexes

(2) Additionality:

According to Attachment A to B of the simplified modalities and procedures for CDM small-scale project activities evidence to why the proposed project is additional is offered under the following categories of barriers: (a) investment barrier, (b) technological barrier, and (c) prevailing practice.

(a) Investment Barrier:

The barriers on investment are identified from the viewpoint of 1) the project IRR and 2) the comparison of the project investment cost with the alternative power supply without the Talubin MHP and the Caneo MHP. The details are shown below.

1) Project IRR;

Project IRR of the Talubin MHP and the Caneo MHP is estimated to be 12.4 % and 9.3 %. Project IRR of the bundling case is estimated to be 11.2 %.

Table B.1 The Project IRR

Item	unit	Talubin	Caneo	Bundling of Talbine & Caneo
Foreign exchange rate	Php/1US$	54.5	54.5	54.5
Construction Costs	Million Php	701.242	894.691	1,551.040
Electricity tariff	Php/kWh	3.50	3.50	3.50
Effective annual electricity generation	MWh	33,543	33,319	66,862
Project life	years	50	50	50
Project IRR	%	12.4	9.3	11.2

Source: Feasibility study report on Talubin River Basin Hydropower CDM Project in the Philippines 2005 Update

Data assumptions;

- The expected life: 50 years
- Construction cost including “Soft cost”, such as Financial and legal fee, Project Company establishment cost and Construction audit.
- The annual generation is excepted transmission loss and loss for maintenance (total 5%) from possible generation.
- The construction period: 24months (1st year: 50%, 2nd year: 50%)
- The O&M cost : 1.0% of construction costs, ratio of inflation 1.5%/year
- The replacement of electrical/mechanical equipments: 25th year, 50 % of initial costs
- The fee of water use permit：53,905 Php/year(Talubin),63,255Php/year（Caneo）
- The depreciation: 2 %/year of 95% of the construction costs.
- The electricity tariff: 3.5 peso /kWh. The electricity will be sold to Mountain Province Elecctric Cooperative (MOPRECO) and Benquet Electric Coopaerative (BENECO).
- The income tax: 32% of the net income. The developer shall be exempted the income tax for 7 years from the start of commercial operations.
- The financing conditions are assumpted as follows;
  - The debt to equity ratio; 80:20
  - Two-step loan by Japan Bank for International Cooperation (JBIC) and Japanese private Banks through Development Bank of Philippines (DBP) ; interest rate = 10 % , return period = 15 years, grace period = 2 years

Discount Rate is calculated using the Capital Asset Pricing Model (CAPM) formula, as determined by Brealy and Myers in their book “Principles of Corporate Finance”.

$$r = rf + \beta\ (rm - rf) + CRP = 5.04\ \% + 0.47 * 8.4\% + 4.17\% = \mathbf{13.2}\ \%$$

where:

r : return on a asset

rf : risk free return = 5.04 %; average yield of the 20-year Treasury Bonds for the tear 2004 (Federal Reserve System, information released on 03/07/2005)

β : Beta = 0.47; the electric utility sector in the US (Brealy and Myers, p219)

(rm-rf): 8.4%; traditional returns on stock investments for the last 69 years (Brealy and Myers, p180)

CRP: Country-specific risk premium = 4.17 %; spread of the bond Phil 2017 as of 16 February 2005 (Source: Asia Bond Indicators – Asia Development Bank)

Therefore a conservative[7] Discount Rate to be use as benchmark to compare with the project IRR is 13.2 %, which is much higher than the bundled project IRR 11.2%. Low IRR, compared to be hurdle rate, indicates that the projects are not financially attractive without CDM assistance.

<u>2) Project Investment Cost</u>

If the Talubin MHP and the Caneo MHP will be not developed, natural gas plants develop to meet the demand as an alternative[8] power source. The information contained in the table below shows the cost of installing 1 MW of a natural gas turbine generation plant and compares it with the cost of installing 1 MW of the Talubin MHP and the Caneo MHP.

Table B.2 Comparison of Generation Cost with Gus Turbine and Proposed Projects

	Cost of a Gus Turbine	Talubin and Caneo Projects
Generation Cost ($/MW)	300,000 to 650,000	2,360,000 to 2,960,000

Source: Gas turbine Engineering Handbook, p.8
A generation cost includes equipment cost, transport cost, civil works and the installation costs.

The cost of the Talubin MHP and the Caneo MHP is higher than the cost for natural gas plant. (US$ 2,360,000 to US$ 2,960,000 versus US$ 300,000 to US$ 650,000)

It is clearly demonstrated that taking into account the investment cost, building a natural gas plant is financially much more attractive than building a mini-hydropower plant.

[7] It is conservative because it uses US returns on US public utilities and the US stock market. The Philippine Market are much more volatile. Also local expectations of equity investors are higher than 20 %.

[8] Natural Gas will be main power source in the near future to meet the demand of Luzon-Visayas Grid; it is identified in Philippine Energy Plan 2005 Update.

(b) Technical Barrier

Since 1930's in the Philippines, 55 mini-hydropower plants[9], which installed capacity is up to 10 MW, have been developed. However, "Philippines Hydropower Database, Feb.2003, DOE" indicates that 8 hydropower plants are not operational and other 8 hydropower plants have been required the rehabilitation.

Furthermore, the actual plant factors of MHPs in the Philippines are approximately 20 % to 40% (average in 1993-1999 is 36 %. Refer to Table B.3). Generally, the plant factors of MHP's in the Philippines are terribly low. As a reference, plant factors of TEPCO owned MHPs in Japan are 36 % to 100% (its average is 78%. Refer to Table B.4).

Thus, the appropriate technology for mini-hydropower development has not been established yet in the Philippines. Because until recent year large-scale hydropower technology has been established by mainly foreign assistance prior to mini-hydropower due to economic reasons. The high ratio of the failure and low plant factor are major cause of low financial profitability of existing mini-hydropower plants. As a result, investors and banks see other type of electricity generation such as natural gas as less risky.

The Talubin MHP and the Caneo MHP aim to be a showcase for mini-hydropower development for the future of the Philippines.

(c) Prevailing Practice:

The Government of Philippines is promoting the development of the country's natural gas market (since new natural gas fields were discovered), which has a direct negative effect on development of other type electricity generation, particularly renewable energy.

Although mini-hydropower developments have been encouraged in "Mini-Hydroelectric Power Incentives Act of 1991 (RA7156)", in actuality mini-hydropower plants were practically not developed in the recent years

[9] The total capacity is 90,632kW (Source: Philippines Hydropower Database Third General Distribution)

Table B.3 Statuses of Existing Mini-Hydropower Plants in the Philippines

No.	ID No.	Capacity (MW)	Plant Factor (%)	Year Commissioned	Capacity (MW)	Average Generation 1993-1999 (GWh)	Plant Factor (%)	Status
1	1	1	Agua Grante/Mabogabog	1983	4.550	2.550	6.3	Need to Rehabilitate
2	4	1	Amburayan MHP	1991	0.200			Not Operational
3	26	1	Dawara	1981	0.525			Not Operational
4	16	1	Batchelor	1983	0.750			Not Operational
5	20	CAR	Bineng 1	1991	3.200	8.282	29.5	
6	17	CAR	Bineng 2	1991	1.800	5.954	37.8	
7	18	CAR	Bineng 2b	1992	0.750	2.240	34.1	
8	19	CAR	Bineng 3	1992	4.500	10.767	27.3	
9	6	CAR	Ampohaw MHP	1990	8.000	24.719	35.3	
10	7	CAR	Asin 1	1930	1.200	2.868	27.3	
11	8	CAR	Asin 2	1930	0.800	2.218	28.8	
12	9	CAR	Asin 3	1930	0.970	2.340	27.5	
13	31	CAR	Irisan MHP	1991	1.200	2.673	25.4	
14	49	CAR	Sal-Angan MHP	1991	2.400	7.287	34.7	
15	48	CAR	Philex	1988	0.500	1.137	26.0	
16	36	CAR	Lower Labay MHP	1992	2.400	12.785	60.8	
17	35	CAR	Lom-oy MHP	1993	3.200	9.488	33.8	
18	28	CAR	F.L. Singit MHP	1992	6.400	24.039	42.9	
19	24	CAR	Club John Hay	-	0.560			Not Operational
20	39	2	Magat A MHP	1984	1.440	2.635	20.9	Need to Rehabilitate
21	40	2	Magat B MHP	1985	1.080	2.252	23.8	Need to Rehabilitate
22	11	2	Baligatan MHP	1987	6.000	28.763	54.7	
23	53	2	Tumauini MHP	1992	0.250			Not Operational
24	47	3	Penaranda	1992	0.300			Not Operational
25	27	4	Dulangan	1990	1.600	2.550	25.3	Need to Rehabilitate
26	13	4	Baligbog	1930's	0.660			Need to Rehabilitate
27	46	4	Palacpaquin	1930's	0.400			No Information
28	50	4	San Juan River		0.145			No Information
29	14	4	Balugbog MHP					Under Construction
30	30	5	Inarihan	1998	0.960	3.478	41.4	
31	25	5	Coyaoyao	1980	0.350			Not Operational
32	55	5	Yabo		0.200			No Information
33	22	5	Buhi-Barit MHP	1957	1.800	4.537	28.8	
34	23	5	Cawayan MHP	1959	0.400			Need to Rehabilitate
35	12	5	Balongbong	1983	1.800	4.201	26.6	
36	41	7	Mantayupan MHP	1985	0.550	1.145	23.8	
37	15	7	Basak MHP	1986	0.552	1.542	31.9	
38	43	7	Matutunao MHP	1990	0.720	2.640	41.9	
39	34	7	Laboc MHP	1957	1.200	7.889	75.0	
40	32	7	Janopol	1992	5.000	14.539	33.2	
41	5	7	Amulan MHP	1962	0.800	1.531	21.9	
42	3	8	Amanjuray	1991	1.000	0.367	4.2	Need to Rehabilitate
43	52	8	Ton-ok Falls	1983	1.080	2.005	21.2	Need to Rehabilitate
44	29	8	Hanabian	1982	0.810			Not Operational
45	10	9	Balactasan MHP	1983	0.270	0.182	7.7	
46	33	9	Kumalarang MHP	1989	0.680	1.854	31.1	
47	2	10	Agusan MHP	1957	1.600	9.816	70.0	
48	21	10	Bubanawan Falls	2000	7.000			Planned
49	44	10	Mountain View 1	1958	0.300			No Information
50	45	10	Mountain View 2	1982	0.500			No Information
51	54	11	Upper Talomo		1.200	5.022	47.8	
52	51	11	Talomo		2.500	20.199	92.2[*1]	
53	37	11	Lower Talomo 2A	1955	0.700			No Information
54	38	11	Lower Talomo 2B	1955	0.300			No Information
55	42	ARMM	Matling	1990	0.720			No Information
Average					1.644		36.0	

Source: Philippines Hydropower Database Third General Distribution

Note: *1; This data is doubtful because Annual generations of 1993 to 1995 and 1997 exceed 100 % of palnt factor. Thus this data was delataed in the caluculation of plant factor

Table B.4 Plant Factor of the TEPCO's MHP in Japan (Up to 10 MW and Run-of –River Type)

No.	Plant Name	Year Commissioned	Capacity (MW)	Plant Factor (%)	No.	Plant Name	Year Commissioned	Capacity (MW)	Plant Factor (%)
1	Hanazonogawa	1953	2.000	80	28	Matsudone	1928	1.440	43
2	Houkigawa	1943	4.600	67	29	Miyagase	1925	3.580	74
3	Sawanagawa	1921	0.160	85	30	Yamakita	1913	7.000	80
4	Kurokawa	1917	0.800	89	31	Uchiyama	1917	3.900	84
5	Akagawa	1929	0.960	68	32	Fukuzawa No.1	1931	1.460	72
6	Tidori	1927	2.140	94	33	Fukuzawa No.2	1931	1.030	60
7	Tokura	1962	8.400	61	34	Arashi	1919	5.500	74
8	Shibukawa	1924	6.800	82	35	Ikudo	1930	6.000	52
9	Murota	1903	1.300	77	36	Mine	1898	8.600	71
10	Satomi	1917	1.200	85	37	Yamasaki	1936	1.500	67
11	Takenosawa	1921	8.000	75	38	Tounosawa	1907	3.300	99
12	Mitiyabars	1917	1.592	83	39	Hayakawa	1956	2.900	36
13	Maebashi	1933	1.600	86	40	Kawakubo	1953	1.650	81
14	Nerigawa	1920	0.970	86	41	Hatasyuku	1941	1.300	46
15	Atsuta	1904	1.300	74	42	Kamanashi No.3	1938	1.100	71
16	Nikkou No.1	1907	1.080	100	43	Komukawa No.3	1927	2.100	78
17	Nikkou No.2	1880	1.300	95	44	Komukawa No.4	1927	1.100	75
18	Akazawa	1949	1.200	78	45	Egusa	1931	2.400	64
19	Tokorono No.1	1900	3.900	74	46	Ashiyasu	1930	1.300	89
20	Tokorono No.2	1945	5.000	77	47	Tsugane	1923	0.700	97
21	Tokorono No.3	1952	5.400	69	48	Hajikano	1907	1.750	79
22	Shoubugahara	1910	0.430	100	49	Kashio	1922	2.200	82
23	Nishikinugawa	1928	1.000	85	50	Mitake	1927	3.800	80
24	Kumagawa No.1	1921	2.400	82	51	Ashikawa No.3	1900	0.530	97
25	Kumagawa No.2	1922	1.540	98	52	Ashikawa No.2	1894	0.380	81
26	Oshino	1921	0.800	78	53	Ashikawa No.1	1888	0.470	80
27	Kanegafuchi	1921	2.390	100	Average			2.552	78

Source: The Report of 5th Potential Survey on the Hydropower Plant in Japan, Region I, Ministry of Economic and Trade Industry, Jun 1976.

B.4. Description of how the definition of the project boundary related to the baseline methodology selected is applied to the small-scale project activity:

The project boundary is defined as the notional margin around a project within which the project's impact (in terms of carbon emission reduction) will be assessed. As referred to in Annex B for small-scale project activities, the project boundary for a small-scale hydropower project that provides electricity to a grid encompasses the physical, geographical site of the renewable generation source. For the Talubin and Caneo MHP this includes emissions from activities that occur at the project location.

The system boundary for the proposed project is defined as the national grid in Luzon-Visayas. The project boundary for the baseline will include all the direct emissions, being the emissions related to the electricity produced by the facilities and power plants to be replaced by the Talubin and the Caneo MHP. This involves emission from displaced fossil fuel use at power plants.

Conforming to the guidance and ruled for small-scale project activities, the emission related to production, transport and distribution of the fuel used for the power plants in the baseline are not included in the project boundary as these do not occur at the physical and geographical site of the project. For the same reason the emission related to the transport are also excluded from the project boundary.

B.5. Details of the baseline and its development:

Specify the baseline for the proposed project activity using a methodology specified in the M&P for small-scale CMD project activities:

As specified for project category Type I.D, the appropriate baseline is "the weighted average emissions (in $kgCO_2/kWh$) of the current generation mix".

The boundary is both power plant and production of energy as a broken line shown in Fig. B.4.

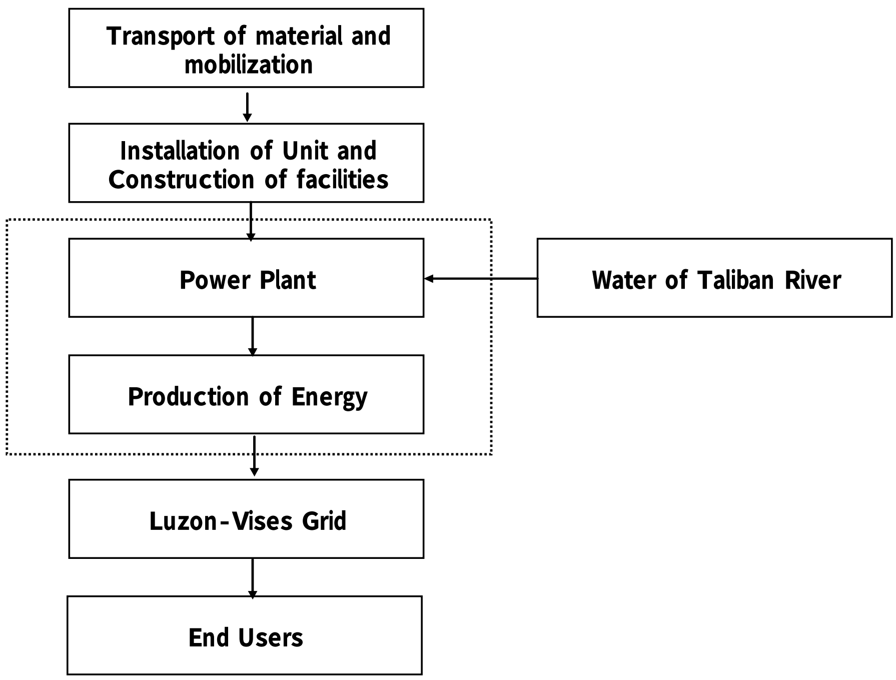

Fig. B.4 Boundary

The production of the cement and operation of the heavy equipment such as bulldozer or dump truck during construction are considered as the leakage. However, both power plants are small-scale and total amount of cement consumption is also small scale for this project. And methane from reservoir is very limited for run-off-river type power station. Therefore, leakage of this project is not considered.

Date of completing the final draft of this baseline section (DD/MM/YYYY): 10/03/2005

Name of person/entity determining the baseline: Mitsuru SHIMIZU TEPSCO

SECTION C. Duration of the project activity / Crediting period:

C.1. Duration of the small-scale project activity:

C.1.1. Starting date of the small-scale project activity:

Construction work of the project is planned to start in 2008. Operation of the station is planned to start in 2010.

C.1.2. Expected operational lifetime of the small-scale project activity:

50 years

C.2. Choice of crediting period and related information:

C.2.1. Renewable crediting period:

Renewable crediting period (at most seven (7) years per crediting period)

C.2.1.1. Starting date of the first crediting period: Estimated 1/4/2010

C.2.1.2. Length of the first crediting period: 7 years

SECTION D. Application of a monitoring methodology and plan:

D.1. Name and reference of approved monitoring methodology applied to the small-scale project activity:

Type ID and Monitoring (b)

The monitoring method of this project is based on the method articulated in the "Appendix B of the simplified modalities and procedures for small-scale CDM project activities."

D.2. Justification of the choice of the methodology and why it is applicable to the small-scale project activity:

The methodology was selected as suggested by the Simplified Monitoring Methodologies for small-scale CDM projects. Measuring and recording the amount of electricity supplied to the buyer is the most accurate method of monitoring the project.

D.3 Data to be monitored:

ID	Data Type	Data Variable	Data unit	Measured (m), Calculated (c) or estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived	For how long is archived data to be kept?	Comment
1	Electricity generation	Electricity generation to Luzon-Visayas grid by this project	MWh	m	Yearly	100 %	Electronically and on paper	3 years after Crediting period	
2	Fuel consumption	Fuel consumption from power plants in Luzon-Visayas region	toe	e, c	Yearly	100 %	Electronically and on paper	3 years after Crediting period	
3	Electricity generation	Electricity generation from power plants in Luzon-Visayas region	MWh	c	Yearly	100 %	Electronically and on paper	3 years after Crediting period	

D.4. Qualitative explanation of how quality control (QC) and quality assurance (QA) procedures are undertaken:

Data	Uncertainty level of data	Outline explanation why QA/QC procedures are or are not being planned.
D.3-1	Low	Sales record to MOPRECO/BENECO
D.3-2	Low	Based on accuracy annual report the Department of Energy
D.3-3	Low	Based on accuracy annual report the Department of Energy

D.5. Please describe briefly the operational and management structure that the project participant(s) will implement in order to monitor emission reductions and any leakage effects generated by the project activity:

The data monitored will be recorded on papers per day and the data consolidated after every month, will be reported to the project company via the local community (Talubin village in Bontoc City in Mountain Province) per month by the local operator. The operator is to receive appropriate education necessary for the monitoring before the start of the operation of the plant.

The production of the cement and operation of the heavy equipment such as bulldozer or dump truck during construction are considered as the leakage. However, both power plants are small-scale and total amount of cement consumption is also small scale for this project. And methane from reservoir is very limited for run-off-river type power station. Therefore, leakage of this project is not considered.

D.6. Name of person/entity determining the monitoring methodology:

Tokyo Electric Power Services Company Ltd.
(Contact Person)
Mitsuru SHIMIZU

SECTION E: Estimation of GHG emissions by sources:

E.1 Formulae used:

E.1.1 Selected formulae as provided in appendix B:

In accordance with Appendix B of the simplified modalities and procedures for CDM small-scale project activities, the baseline for Project Category I.D., paragraph 29. b. is defined for the proposed project. An emission coefficient calculated the weighted average emissions (in $kgCO_2/kWh$) of the current generation mix.

E.1.2 Description of formulae when not provided in appendix B:

E.1.2.1 Describe the formulae used to estimate anthropogenic emissions by sources of GHGs due to the project activity within the project boundary:

No formula is used. Emissions by source are zero since hydroelectric power is a zero CO_2-neutoral source of energy.

E.1.2.2 Describe the formulae used to estimate leakage due to the project activity, where required, for the applicable project category in appendix B of the simplified modalities and procedures for small-scale CDM project activities

Not applicable. See Section B.5.

E.1.2.3 The sum of E.1.2.1 and E.1.2.2 represents the small-scale project activity emissions:

Not applicable. No emission at all.

E.1.2.4 Describe the formulae used to estimate the anthropogenic emissions by sources of GHGs in the baseline using the baseline methodology for the applicable project category in appendix B of the simplified modalities and procedures for small-scale CDM project activities:

CO_2 Emission for each generation type are given by:

E_j (ton CO_2/year) = FC_j (toe) * NCV (TJ/toe) * CEF_j (tC/TJ) * Oxidation $Factor_j$ * 44/12 (tCO_2/tC) ---[Equation 1]

Where E_j : CO_2 emissions per year of the generation type *j*
FC_j : Fuel Consumption of the generation type (toe)
NCV (TJ/toe) : Net Calorific Value = 41.868 [10](TJ/toe10^3)
CEF_j : Carbon Emission Factor of the generating $type_j$(tC/TJ) . See table below.
OF_j : Oxidation Factor of the generating $type_j$. See table below

	Carbon Emission Factor: CEF (tC/TJ)	Oxidation Factor
Petroleum	21.1	0.990
Coal	26.8	0.980
Natural Gas	15.3	0.995

Source: Revised 1996 IPDC Guidelines for National Greenhouse Gas Inventories Reference Manual (Volume 3)

The CEF of zero is assigned to hydropower and geothermal power.

The individual CEF (tCO_2/MWh) will then calculated with CO_2 emission (tCO_2) divided by the electricity generation (MWh) by each generation type.

Individual CEF_j (tCO_2/MWh) = E_j (ton CO_2/year) /Annual Electricity $Generation_j$ (MWh/year) *j* ---[Equation 2]

The weighted average emissions (tCO_2/MWh) is given by:

Weighted average emissions (tCO_2/MWh) = Σ_j (WEG_j *Individual CEF_j) ------------------[Equation 3]

Where WEG_j (%)= Annual Electricity Generation of the generation type *j* (MWh/year) / Total Annual Electricity Generation in the grid (MWh/year)

---

[10] Source: Revised 1996 IPDC Guidelines for National Greenhouse Gas Inventories Workbook (Volumu 2) Energy

E.1.2.5 Difference between E.1.2.4 and E.1.2.3 represents the emission reductions due to the project activity during a given period:

Refer to the data and steps below to understand how this Figure was derived.

Emission reductions of project activity = 0.462 tCO_2/MWh * 66,862 MWh/year = 30,890 tCO_2/year

E.2 Table providing values obtained when applying formulae above:

(1) Condition of calculation

- Total electricity generation is 66,862MWh/year for the Talubin MHP and the Caneo MHP.
- No change of the power generation during operation of the project
- The power generation (kWh) is to the Luzon-Visayas grid
- Based on the most recent data which is the information from DOE in 2004

(2) Calculation of fuel consumptions for each energy source in the Luzon-Vizayas grid

According to Department of Energy, they made up fuel consumptions for each energy source as only nation-wide. The each grid does not total it. In here, the fuel consumption in the Luzon-Visayas grid is calculated backward from the annual power generation as shown in the following tables.

Table E.1 Annual Power Generation in 2004 (unit; GWh)

GWh	(1) Luson	(2) Visayas	(3) Mindanao	(4) Total	(5)=(1)+(2) Luson & Visayas	(6)Weight in L-V grid (%)
Oil-Based	4,590.814	1,997.708	1,915.799	8,504.321	6,588.522	13.48
Hydro-Power	4,296.879	34.277	4,261.525	8,592.681	4,331.156	15.36
Geothermal	3,033.417	6,338.317	909.815	10,281.549	9,371.734	18.37
Coal	15,548.335	646.077	0.000	16,194.412	16,194.412	28.94
Natural Gas	12,384.467	0.000	0.000	12,384.467	12,384.467	22.13
Total	39,853.912	9,016.379	7,087.139	55,957.430	48,870.291	100.00

Source:
(1)(2)(3)(4): Department Energy Power Bureau

Table E.2 Calculation of fuel consumptions for each energy source in the Luzon-Vizayas grid (ktoe)

ktoe	(7)=(11)x(1)/(4) Luson	(8)=(11)x(2)/(4) Visayas	(9)=(11)x(3)/(4) Mindanao	(10)=(7)+(8) Luson & Visayas	(11) Total
Oil-Based	1,038.02	451.70	433.18	1,489.72	1,922.90
Hydro-Power	1,069.98	8.54	1,061.18	1,078.52	2,139.70
Geothermal	755.35	1,578.30	226.55	2,333.65	2,560.20
Coal	3,059.66	127.14	0.00	3,186.80	3,186.80
Natural Gas	2,120.90	0.00	0.00	2,120.90	2,120.90
Total	8,043.92	2,165.67	1,720.91	10,209.59	11,930.50

Source:
(11): Department Energy Power Bureau

(3) Individual CO_2 emission factor for each generation type

Based on the information of DOE and IPCC default value for Luzon-Visayas grid in 2004, CO_2 emission factor for each generation type are shown in Table E.3

Table E.3 CO_2 emission factor for each type of power station in Luzon-Visayas grid (2004)

	(1) Fuel Consumption (10^3toe)	(2) Electricity Generation (MWh)	(3) Net Calorific Value (TJ/toe10^6)	(4)=(1)x(3) Energy Content (TJ)	(5) CEF (tC/TJ)	(6) Oxidation Factor	(7) tCO_2/tC	(8)=(4)x(5) x(6)x(7) CO_2 Emission (tCO_2)	(9)=(8)/(2) Individual CEF (tCO_2/MWh)	Assumption
Petroleum	1,490	6,588,522	41,868	62,372	21.1	0.990	3.667	4,777,666	0.725	residual fuel oil
Hydro	1,079	4,331,156	41,868	45,155	0.0	0.000	3.667	0	0.000	
Geothermal	2,334	9,371,734	41,868	97,705	0.0	0.000	3.667	0	0.000	
Coal	3,187	16,194,412	41,868	133,425	26.8	0.980	3.667	12,850,168	0.793	anthracite
Natural Gas	2,121	12,384,467	41,868	88,798	15.3	0.995	3.667	4,957,102	0.400	natural gas (dry)
Total	10,210	48,870,291								

Source
(1): Table E.2 (10)
(2): Department of Ebergy, Power Bureau
(3) : Revised 1996 IPDC Guidelines for National Greenhouse Gas Inventories Workbook (Volumu 2) Energy
(5),(6) : Revised 1996 IPDC Guidelines for National Greenhouse Gas Inventories Reference Manual (Volumu 3)

(4) The weighted average emissions

Based on the Table E.3 above mentioned, the weighted average emissions factor is 0.462 ($kgCO_2$/kWh) shown in Table E.4.

Table E.4 the weighted average emissions (2004)

	(1) Weight in Grid (%)	(2) Individual CEF ($kgCO_2$/kWh)	(3)=(1)x(2) weighted CEF (kgCO2/kWh)
Petroleum	13.48	0.725	0.098
Hydro	8.86	0.000	0.000
Geothermal	19.18	0.000	0.000
Coal	33.14	0.793	0.263
Natural Gas	25.34	0.400	0.101
Total	100.00		0.462

(5) Emission reductions of project activity

Table E.5 The CO_2 emission reduction during project period

Year	Annual electricity generation by the projects (MWh)	Weighted average emissions factor (tCO_2/MWh)	Emission reduction (tCO_2/year)
2010	66,862	0.462	30,890
2011	66,862	0.462	30,890
2012	66,862	0.462	30,890
2013	66,862	0.462	30,890
2014	66,862	0.462	30,890
2015	66,862	0.462	30,890
2016	66,862	0.462	30,890
2017	66,862	0.462	30,890

2018	66,862	0.462	30,890
2019	66,862	0.462	30,890
2020	66,862	0.462	30,890
2021	66,862	0.462	30,890
2022	66,862	0.462	30,890
2023	66,862	0.462	30,890
2024	66,862	0.462	30,890
2025	66,862	0.462	30,890
2026	66,862	0.462	30,890
2027	66,862	0.462	30,890
2028	66,862	0.462	30,890
2029	66,862	0.462	30,890
2030	66,862	0.462	30,890
Total	1,404,102		648,690

SECTION F.: Environmental impacts:

F.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:

According to the Philippine Environmental Impact Statement (EIS), the Department of Environmental and Nature Resources (DENR) requires all project to undergo an Environmental Impact Statement (EIS) Study prior to approval, and proponent of energy projects shall obtain the Environment Compliance Certificate (ECC) to ensure the project's compliance with the conditionalities of the ECC. However, due to the Memorandum of Agreement singed between DENR and DOE on October 1999, Mini-hydro project with rated capacity that is greater than one up to ten (10) megawatts; or with less than twenty (20) million cu. m. water impoundment only required to submit Initial Environmental Examination (IEE) Checklist which a short and simplified form designed to assist proponent's mini hydro plant project/s in complying with the EIS system. Energy projects involving feasibility studies, seismic survey, geophysical survey, exploration, core drilling/sampling research, and all activities that do not involve significant earth moving and ecological/vegetative disturbance activities using mechanical equipment that affect the environment are not covered by the EIS system.

Republic Act 8371, Indigenous People's Rights Act (IPRA) provides that all governmental agencies shall observe the Indigenous People's Rights to Ancestral Domain when conducting development project. The project area is located in the Municipality of Bontoc, Mountain Province and is inhabited by the indigenous peoples mainly comprising the Bontoc people. The Barangay Consultation had been held site each investigation stage to obtain the understanding of the residents of Barangay Talubin. The result of Barangay Consultations was described in Appendix 1.

As a result of the feasibility study, it is concluded that there is no significant impacts on the natural and social environments due to the project.

The plan needs to be updated base on the detailed data/information, and IEE Checklist shall be prepared. For the residents, in particular elderly residents, it is necessary a patiently dialog to alleviate the suspicion of residents and to get them to understand in the period leading up to the construction.

➢

SECTION G. Stakeholders' comments:

G.1. Brief description of how comments by local stakeholders have been invited and compiled:

In order to execute a consensus building including local residents towards to the mini-hydropower development in Talubin village, Department of Energy (DOE) and Tokyo Electric Power Services Co., Ltd. (TEPSCO) proceeded with several village consultations step by step since the feasibility study had started in 2004. When the consultation was hold, DOE invited concerned stakeholders through the provincial government in Mountain Province and disseminated information and reflected the comments of residents into the plan. Local NGO who spoke local language expedited the proceedings and made minutes and delivered them to all stakeholders.

The consultation had already conducted 5^{th} times (refer to Table G.1). The participant especially local residents understood the objective of the project and they gave the go signal to continue the preparation of CDM project.

Table G.1 Contents of consultation

	1st	2nd	3rd	4th	5th
Date	2004/9/15-16	2004/12/6-9	2005/2/28	2005/8/29	2005/12/14
Venue	A meeting hall in Caneo and Talubin Village, Bontoc City	A meeting hall in Talubin Village, Bontoc City	A conference hall in the Provincial Government Office	A conference hall in the Provincial Government Office	Mountain Province Learning Center, Bontoc, Mountain Province
Participant	Residents of Caneo and Talubin Village. LGU officer (Provincial, Municipal, Village). Provincial Energy Committee (PEC). Electric Cooperative (MOPRECO). Department of Energy.	Residents of Talubin Village. LGU officer (Provincial, Municipal, Village). Provincial Energy Committee (PEC). Electric Cooperative (MOPRECO). Department of Energy.	Representative of residents of Talubin Village. LGU officer (Provincial, Municipal, Village). Provincial Energy Committee (PEC). Electric Cooperative (MOPRECO). Department of Energy.	Representative of residents of Talubin Village LGU officer (Provincial, Municipal, Village) Provincial Energy Council (PEC) Electric Cooperative (MOPLECO) Department of Energy	Representative of affected land owners of Talubin Village LGU officer (Provincial, Municipan, Village) Provincial Energy Committee (PEC) Electric Cooperative (MOPRECO) Department of Energy
Number of Participant	163	120	24	19	20
Main discussions	Objective of the study Explanation of the future project Request for cooperation with the field survey Open forum	Explanation of Mini-hydropower Explanation of the result of comparative study Open Forum	Conditionality of the Project Open Forum	Explanation of the CDM Conditionality of the Project Open Forum	Project Design Document (PDD) Revised Project Feasibility Study Stakeholders' Resolutions Feedbacks from the community of Talubin village

G.2. Summary of the comments received:

(1) Basic consensus regarding the development plan

Although some residents, in particular elderly residents, still held some concerns over hydropower development (any kind of development project not just limited to hydropower). Most residents accepted to promote the projects as CDM activities. Concerning the specific development route, adjustments will be required concerning ① compensation and ② new employment in the future; however, consensus was obtained from the related agencies (provincial government, municipalities, Barangay representatives, residents (youth groups)).

(2) Residents' Opinions in the Open Forum

(a) Doubts concerning Dam Construction

The Project was planed a run-of-river and conduit type hydropower development, and the plan was repeatedly explained to the residents; however, doubts still remain over large dam construction, especially in elderly residents[11].

[11] Voice of elders: If sediment will filled up in front of the intake, making it difficult to take water from the river, the dam will be raised in step by step and finally it will become a major structure. (The residents had such experience on small-scale irrigation dams in the surrounding area).

(b) The Memorandum of Agreement
Compensation must be discussed between identified investors/developers and the representative of affected people before construction. According to the youth group in the village, they try to organize the group to prepare the negotiation.

(c) Protection for agricultural fields and residential area from flood.
The investors/developers must protect agricultural fields and residential area from flood even after construction on the intake weir.

(d) Priority for Employment
In case the project is approve and implemented, labor required in the construction of the project must come from the locality. Labourers must not be imported from outside the village.

(e) Route Selection
Regarding the route of the plant, the residents are still having some concerns that the proposed route of the plant will affect their environments although the concerns can be avoided by technical measures.

G.3. Report on how due account was taken of any comments received:

During the consultation, Department of Energy and TEPSCO held a seminar of mini-hydropower and they explained the principles of electric power, type of hydropower and each civil engineering structure. Most residents basically understood the project, but some residents, in particular elderly residents, still have a suspicion for the development, therefore a patiently dialog is to be need to alleviate them in the period up to the construction.

In response to the above mentioned opinions, the followings are answered.

(a) The Local Government Unit (Provincial, municipal and village level) try to continue to talk and educate to the affected people for appropriate understandings.

(b) For promotion and Negotiations, Affected landowners should be organizing the community people to have one voice and make interagency commitment to promote the proposed project. Compensation package should be granted to concerned affected people before the construction will commenced.

(c) The Provincial Energy Council plans to take the village people to successful existing mini-hydropower plant (Exposure trip) in Province of Bengquet for removing their fear toward mini-hydropower development.

(d) During construction, local materials and labor should be tapped and utilized. Even after construction, some residents will have chances to be employee as operation and maintenance the power house, if they will be trained.

(e) It will be necessary that continual discussions be conducted with developers before the construction.

Annex 1:CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

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Titles	
Salutation:	
Last Name:	
Middle Name:	
First Name:	
Department:	
Mobile:	
Direct Fax:	
Direct Tel:	
Personal E-Mail:	

Annex 2:

INFORMATION REGARDING PUBLIC FUNDING

The financial plants for the Projects will not involve public funding from Annex I countries.