

MAJOR CAPITAL EXPENDITURE :
(1 of 2 Major Capital Expenditure within 2nd RP)

20 MVA, 69-34.5kV KAUSWAGAN SUBSTATION

CAGAYAN ELECTRIC POWER & LIGHT CO.,INC	
2008-2011 Capital Expenditure Forecast	
Major Project Information Summary	

Project Details:	
Name	20 MVA, 69-34.5kV KAUSWAGAN SUBSTATION
Project code	
Description	The proposed Kauswagan substation is a new substation with 20 MVA capacity, self-cooled. Its primary voltage is 69kV, with 34.5kV secondary. The power transformer and other major equipment are all outdoor type and mounted on steel structures. The substation will be equipped with facilities for remote monitoring and control. RTUs, IEDs, and communication facilities will be installed in steel enclosures located inside the Control Building.
Commissioning date	RY 2009

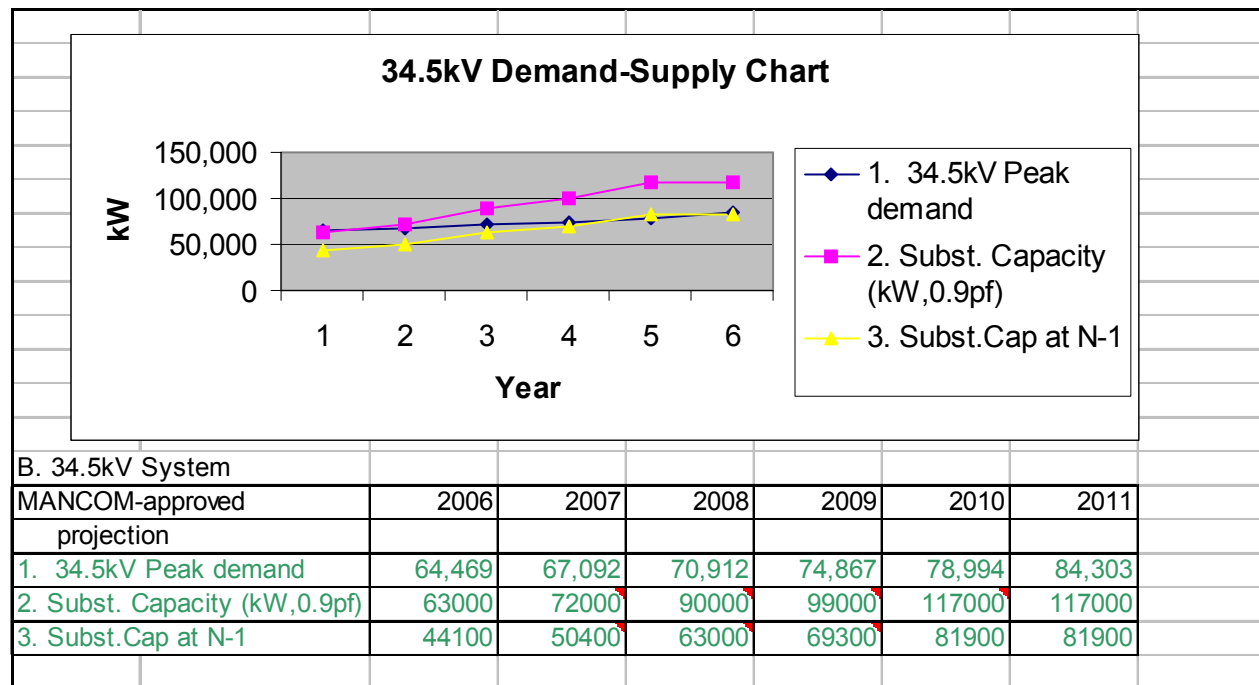
Project Classification:			
Rank	1 st priority		
Project Driver Classification	Load Growth		
	a. Rank – 1 st priority		
	b. Project Driver – Load Growth		
	c. Project Type – Growth		
Expenditure for the RY 2009 (Real Values)	Forex: \$861,708	Local: 19,958,407	TOTAL:

Project Purpose	The western part of the franchise area is seen as a high-growth area and demand for electricity in the coming years is anticipated to grow considerably. It is also estimated that the existing substations supplying the area will experience more than 100% of its rated capacity during peak periods. The addition of one substation in the western part will provide adequate capacity to the area and prevent overloading of these substations.
Impact if Project Not Implemented	If the project is not implemented there will be shortage of supply for the 34.5kV system in the eastern part. A worse case scenario would happen if any of the existing transformer would be out of service for whatever reason, since this would disrupt service to a large number of customers.
Reason for ranking project commissioning	This project is given 1 st priority ranking since this will provide the minimum delivery capacity and reliability levels to meet required service delivery standards.

date relative to other projects

Performance measures with/without project:

Parameter Under Consideration	Result without Project	Result with Project
Adequacy of Supply	Apparently, there is adequate supply for the whole 34.5kV system, however, the western part could be experiencing supply shortage in 2011 if the project will not be implemented.	There will be adequate supply in the western part and in any part of the 34.5kV system following its commissioning in 2010.
N-1 Reliability	The 34.5kV system will not attain its N-1 capability.	The addition of this project will enable the 34.5kV system to attain N-1 capability starting 2010. (Please see illustration below.)



20MVA 69/34.5KV KAUSWAGAN SUBSTATION

ASSET CATEGORY	Capital Expenditure (total, expressed in nominal PhP)										
	Actual (Pesos, nominal in Pesos of calendar year)				Budget (Calendar year)	Budget (Regulatory year)	Forecast (Pesos, nominal in Pesos of regulatory year)				
	2003	2004	2005	2006	2007	2007	2008	2009	2010	2011	
A. Distribution Plant											
1 Land and Land Rights (Distribution Purposes)	-	-	-	-	-	-	-	2,626,425	-	-	
2 Structures and Improvements	-	-	-	-	-	-	-	4,724,063	-	-	
3 Station Equipment	-	-	-	-	-	-	-	-	-	-	
3a Power transformers	-	-	-	-	-	-	-	25,048,084	-	-	
3b Switchgear	-	-	-	-	-	-	-	10,709,333	-	-	
3c Protective equipment	-	-	-	-	-	-	-	5,571,731	-	-	
3d Metering & control equipment	-	-	-	-	-	-	-	963,040	-	-	
3e Communications equipment	-	-	-	-	-	-	-	5,197,746	-	-	
3f Other station equipment	-	-	-	-	-	-	-	1,841,704	-	-	
4 Poles, Towers and Fixtures - Distribution	-	-	-	-	-	-	-	6,991,416	-	-	
5 Poles, Towers and Fixtures - Customer	-	-	-	-	-	-	-	-	-	-	
6 Overhead Conductors and Devices - Distribution	-	-	-	-	-	-	-	5,980,479	-	-	
7 Overhead Conductors and Devices - Customer	-	-	-	-	-	-	-	-	-	-	
8 Underground Circuits - Distribution	-	-	-	-	-	-	-	-	-	-	
9 Underground Circuits - Customer	-	-	-	-	-	-	-	-	-	-	
10 Underground Conduits - Distribution	-	-	-	-	-	-	-	-	-	-	
11 Underground Conduits - Customer	-	-	-	-	-	-	-	-	-	-	
12 Line Transformers - Distribution	-	-	-	-	-	-	-	-	-	-	
13 Line Transformers - Customer	-	-	-	-	-	-	-	-	-	-	
14 Power Conditioning Equipment	-	-	-	-	-	-	-	2,834,896	-	-	
15 Services	-	-	-	-	-	-	-	-	-	-	
16 Meters, Instruments & Metering Transformers - Distribution	-	-	-	-	-	-	-	-	-	-	
17 Meters, Instruments & Metering Transformers - Customer	-	-	-	-	-	-	-	-	-	-	
18 Information Technology Equipment (distribution)	-	-	-	-	-	-	-	-	-	-	
19 Regulated Entity Property on Consumer's Premises	-	-	-	-	-	-	-	-	-	-	
20 Street Lights and Signal Systems	-	-	-	-	-	-	-	-	-	-	
21 Submarine Cables	-	-	-	-	-	-	-	-	-	-	
SUB-TOTAL Distribution Plant	-	-	-	-	-	-	-	72,488,918	-	-	
B. General Plant											
1 Land and Land Rights (non-network)	-	-	-	-	-	-	-	-	-	-	
2 Structures and Improvements (non-network)	-	-	-	-	-	-	-	-	-	-	
3 Office Furniture and Equipment	-	-	-	-	-	-	-	-	-	-	
4 Transportation Equipment	-	-	-	-	-	-	-	-	-	-	
5 Stores Equipment	-	-	-	-	-	-	-	-	-	-	
6 Tools, Shop and Garage Equipment	-	-	-	-	-	-	-	-	-	-	
7 Laboratory Equipment	-	-	-	-	-	-	-	-	-	-	
8 Information Systems Equipment (non-network)	-	-	-	-	-	-	-	-	-	-	
9 Power-operated Equipment	-	-	-	-	-	-	-	-	-	-	
10 Communication Plant and Equipment	-	-	-	-	-	-	-	-	-	-	
11 Miscellaneous Equipment	-	-	-	-	-	-	-	-	-	-	
SUB-TOTAL General Plant	-	-	-	-	-	-	-	-	-	-	
C. Materials and Supplies (including spares)											
D. Transferred Subtransmission Assets											
E. Allocated Overheads Capitalized											
TOTAL CAPITAL EXPENDITURE											
76,928,102											
Exchange Rate Assumption for Forecast Period (Peso/US\$)	Sep quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
(for quarters in regulatory year)	Dec quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
	Mar quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
	Jun quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
Philippines Consumer Price Index Assumption	Sep quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	1.22	1.27
(for quarters in regulatory year)	Dec quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	1.22	1.27
	Mar quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	1.22	1.27
	Jun quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	1.22	1.27
USA Consumer Price Index Assumption	Sep quarter	1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15
(for quarters in regulatory year)	Dec quarter	1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15
	Mar quarter	1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15
	Jun quarter	1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15
Base Value assumed for Philippine CPI figures	Year:	-	-	-	-	-	-	-	-	-	-
Base Value assumed for USA CPI figures	Year:	-	-	-	-	-	-	-	-	-	-

20MVA 69/34.5KV KAUSWAGAN SUBSTATION

ASSET CATEGORY	Capital Expenditure: Peso Component (expressed in real PhP)									
	Actual (Pesos, real in Pesos of calendar year)				Budget (Calendar year)	Budget (Regulatory year)	Forecast (Pesos, real in Pesos of regulatory year)			
	2003	2004	2005	2006	2007	2007	2008	2009	2010	2011
A. Distribution Plant										
1 Land and Land Rights (Distribution Purposes)								2,250,000.00		
2 Structures and Improvements								4,047,000.00		
3 Station Equipment										
3a Power transformers								202,000.00		
3b Switchgear								728,976.00		
3c Protective equipment								130,697.00		
3d Metering & control equipment										
3e Communications equipment								400,000.00		
3f Other station equipment								955,000.00		
4 Poles, Towers and Fixtures - Distribution								5,989,391.00		
5 Poles, Towers and Fixtures - Customer										
6 Overhead Conductors and Devices - Distribution								5,123,344.00		
7 Overhead Conductors and Devices - Customer										
8 Underground Circuits - Distribution										
9 Underground Circuits - Customer										
10 Underground Conduits - Distribution										
11 Underground Conduits - Customer										
12 Line Transformers - Distribution										
13 Line Transformers -Customer										
14 Power Conditioning Equipment								132,000.00		
15 Services										
16 Meters, Instruments & Metering Transformers - Distribution										
17 Meters, Instruments & Metering Transformers - Customer										
18 Information Technology Equipment (distribution)										
19 Regulated Entity Property on Consumer's Premises										
20 Street Lights and Signal Systems										
21 Submarine Cables										
SUB-TOTAL Distribution Plant					0	0	0	19,958,408.00	0	0
B. General Plant										
1 Land and Land Rights (non-network)										
2 Structures and Improvements (non-network)										
3 Office Furniture and Equipment										
4 Transportation Equipment										
5 Stores Equipment										
6 Tools, Shop and Garage Equipment										
7 Laboratory Equipment										
8 Information Systems Equipment (non-network)										
9 Power-operated Equipment										
10 Communication Plant and Equipment										
11 Miscellaneous Equipment										
SUB-TOTAL General Plant					0	0	0	-	-	-
C. Materials and Supplies (including spares)										
D. Transferred Subtransmission Assets										
E. Allocated Overheads Capitalized								931,024.96		
TOTAL CAPITAL EXPENDITURE					0	0	0	20,889,432.96	-	-
Exchange Rate Assumption for Forecast Period (Peso/US\$)	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
Philippines Consumer Price Index Assumption	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
USA Consumer Price Index Assumption	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
Base Value assumed for Philippine CPI figures	Year:				Value:					
Base Value assumed for USA CPI figures	Year:				Value:					

20MVA 69/34.5KV KAUSWAGAN SUBSTATION

ASSET CATEGORY	Capital Expenditure: US\$ Component (expressed in real US\$)									
	Actual (US\$, real in US\$ of calendar year)				Budget (Calendar year)	Budget (Regulatory year)	Forecast (US\$, real in US\$ for regulatory year)			
	2003	2004	2005	2006	2007	2007	2008	2009	2010	2011
A. Distribution Plant										
1 Land and Land Rights (Distribution Purposes)										
2 Structures and Improvements										
3 Station Equipment										
3a Power transformers								434,648.00		
3b Switchgear								172,694.00		
3c Protective equipment								94,930.00		
3d Metering & control equipment								16,870.00		
3e Communications equipment								82,872.00		
3f Other station equipment								12,734.00		
4 Poles, Towers and Fixtures - Distribution										
5 Poles, Towers and Fixtures - Customer										
6 Overhead Conductors and Devices - Distribution										
7 Overhead Conductors and Devices - Customer										
8 Underground Circuits - Distribution										
9 Underground Circuits - Customer										
10 Underground Conduits - Distribution										
11 Underground Conduits - Customer										
12 Line Transformers - Distribution										
13 Line Transformers -Customer										
14 Power Conditioning Equipment								46,961.00		
15 Services										
16 Meters, Instruments & Metering Transformers - Distribution										
17 Meters, Instruments & Metering Transformers - Customer										
18 Information Technology Equipment (distribution)										
19 Regulated Entity Property on Consumer's Premises										
20 Street Lights and Signal Systems										
21 Submarine Cables										
SUB-TOTAL Distribution Plant					0	0	0	861,709.00	0	0
B. General Plant										
1 Land and Land Rights (non-network)										
2 Structures and Improvements (non-network)										
3 Office Furniture and Equipment										
4 Transportation Equipment										
5 Stores Equipment										
6 Tools, Shop and Garage Equipment										
7 Laboratory Equipment										
8 Information Systems Equipment (non-network)										
9 Power-operated Equipment										
10 Communication Plant and Equipment										
11 Miscellaneous Equipment										
SUB-TOTAL General Plant					0	0	0	0	0	0
C. Materials and Supplies (including spares)										
D. Transferred Subtransmission Assets										
E. Allocated Overheads Capitalized								58,725.47		
TOTAL CAPITAL EXPENDITURE					0	0	0	920,434.47	0	0
Exchange Rate Assumption for Forecast Period (Peso/US\$)	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
Philippines Consumer Price Index Assumption	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
USA Consumer Price Index Assumption	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
Base Value assumed for Philippine CPI figures	Year:				Value:					
Base Value assumed for USA CPI figures	Year:				Value:					

20MVA 69/34.5KV KAUSWAGAN SUBSTATION

ASSET CATEGORY		Capital Expenditure : Peso component (total, expressed in nominal PhP)									
		Actual (Pesos, nominal in Pesos of calendar year)				Budget (Calendar year)	Budget (Regulatory year)	Forecast (Pesos, nominal in Pesos of regulatory year)			
		2003	2004	2005	2006	2007	2007	2008	2009	2010	2011
A. Distribution Plant											
1	Land and Land Rights (Distribution Purposes)	-	-	-	-	-	-	-	2,626,425	-	-
2	Structures and Improvements	-	-	-	-	-	-	-	4,724,063	-	-
3	Station Equipment	-	-	-	-	-	-	-	-	-	-
	3a Power transformers	-	-	-	-	-	-	-	235,795	-	-
	3b Switchgear	-	-	-	-	-	-	-	850,934	-	-
	3c Protective equipment	-	-	-	-	-	-	-	152,563	-	-
	3d Metering & control equipment	-	-	-	-	-	-	-	-	-	-
	3e Communications equipment	-	-	-	-	-	-	-	466,920	-	-
	3f Other station equipment	-	-	-	-	-	-	-	1,114,772	-	-
4	Poles, Towers and Fixtures - Distribution	-	-	-	-	-	-	-	6,991,416	-	-
5	Poles, Towers and Fixtures - Customer	-	-	-	-	-	-	-	-	-	-
6	Overhead Conductors and Devices - Distribution	-	-	-	-	-	-	-	5,980,479	-	-
7	Overhead Conductors and Devices - Customer	-	-	-	-	-	-	-	-	-	-
8	Underground Circuits - Distribution	-	-	-	-	-	-	-	-	-	-
9	Underground Circuits - Customer	-	-	-	-	-	-	-	-	-	-
10	Underground Conduits - Distribution	-	-	-	-	-	-	-	-	-	-
11	Underground Conduits - Customer	-	-	-	-	-	-	-	-	-	-
12	Line Transformers - Distribution	-	-	-	-	-	-	-	-	-	-
13	Line Transformers -Customer	-	-	-	-	-	-	-	-	-	-
14	Power Conditioning Equipment	-	-	-	-	-	-	-	154,084	-	-
15	Services	-	-	-	-	-	-	-	-	-	-
16	Meters, Instruments & Metering Transformers - Distribution	-	-	-	-	-	-	-	-	-	-
17	Meters, Instruments & Metering Transformers - Customer	-	-	-	-	-	-	-	-	-	-
18	Information Technology Equipment (distribution)	-	-	-	-	-	-	-	-	-	-
19	Regulated Entity Property on Consumer's Premises	-	-	-	-	-	-	-	-	-	-
20	Street Lights and Signal Systems	-	-	-	-	-	-	-	-	-	-
21	Submarine Cables	-	-	-	-	-	-	-	-	-	-
SUB-TOTAL Distribution Plant		-	-	-	-	-	-	-	23,297,450	-	-
B. General Plant											
1	Land and Land Rights (non-network)	-	-	-	-	-	-	-	-	-	-
2	Structures and Improvements (non-network)	-	-	-	-	-	-	-	-	-	-
3	Office Furniture and Equipment	-	-	-	-	-	-	-	-	-	-
4	Transportation Equipment	-	-	-	-	-	-	-	-	-	-
5	Stores Equipment	-	-	-	-	-	-	-	-	-	-
6	Tools, Shop and Garage Equipment	-	-	-	-	-	-	-	-	-	-
7	Laboratory Equipment	-	-	-	-	-	-	-	-	-	-
8	Information Systems Equipment (non-network)	-	-	-	-	-	-	-	-	-	-
9	Power-operated Equipment	-	-	-	-	-	-	-	-	-	-
10	Communication Plant and Equipment	-	-	-	-	-	-	-	-	-	-
11	Miscellaneous Equipment	-	-	-	-	-	-	-	-	-	-
SUB-TOTAL General Plant		-	-	-	-	-	-	-	-	-	-
C. Materials and Supplies (including spares)											
D. Transferred Subtransmission Assets											
E. Allocated Overheads Capitalized											
TOTAL CAPITAL EXPENDITURE		-	-	-	-	-	-	-	24,384,235	-	-
Exchange Rate Assumption for Forecast Period (Peso/US\$)											
	Sep quarter										
	Dec quarter										
	Mar quarter										
	Jun quarter										
Philippines Consumer Price Index Assumption (for quarters in regulatory year)											
	Sep quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	1.22	1.27
	Dec quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	1.22	1.27
	Mar quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	1.22	1.27
	Jun quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	1.22	1.27
USA Consumer Price Index Assumption											
	Sep quarter										
	Dec quarter										
	Mar quarter										
	Jun quarter										
Base Value assumed for Philippine CPI figures		Year:		Value:							
Base Value assumed for USA CPI figures		Year:		Value:							

20MVA 69/34.5KV KAUSWAGAN SUBSTATION

ASSET CATEGORY		Capital Expenditure: US\$ Component (expressed in nominal US\$)										
		Actual (US\$, nominal in US\$ of calendar year)				Budget (Calendar year)	Budget (Regulatory year)	Forecast (US\$, nominal in US\$ of regulatory year)				
		2003	2004	2005	2006	2007	2007	2008	2009	2010	2011	
A. Distribution Plant												
1	Land and Land Rights (Distribution Purposes)	-	-	-	-	-	-	-	-	-	-	-
2	Structures and Improvements	-	-	-	-	-	-	-	-	-	-	-
3	Station Equipment	-	-	-	-	-	-	-	-	-	-	-
3a	Power transformers	-	-	-	-	-	-	-	473,375	-	-	-
3b	Switchgear	-	-	-	-	-	-	-	188,081	-	-	-
3c	Protective equipment	-	-	-	-	-	-	-	103,388	-	-	-
3d	Metering & control equipment	-	-	-	-	-	-	-	18,373	-	-	-
3e	Communications equipment	-	-	-	-	-	-	-	90,256	-	-	-
3f	Other station equipment	-	-	-	-	-	-	-	13,869	-	-	-
4	Poles, Towers and Fixtures - Distribution	-	-	-	-	-	-	-	-	-	-	-
5	Poles, Towers and Fixtures - Customer	-	-	-	-	-	-	-	-	-	-	-
6	Overhead Conductors and Devices - Distribution	-	-	-	-	-	-	-	-	-	-	-
7	Overhead Conductors and Devices - Customer	-	-	-	-	-	-	-	-	-	-	-
8	Underground Circuits - Distribution	-	-	-	-	-	-	-	-	-	-	-
9	Underground Circuits - Customer	-	-	-	-	-	-	-	-	-	-	-
10	Underground Conduits - Distribution	-	-	-	-	-	-	-	-	-	-	-
11	Underground Conduits - Customer	-	-	-	-	-	-	-	-	-	-	-
12	Line Transformers - Distribution	-	-	-	-	-	-	-	-	-	-	-
13	Line Transformers -Customer	-	-	-	-	-	-	-	-	-	-	-
14	Power Conditioning Equipment	-	-	-	-	-	-	-	51,145	-	-	-
15	Services	-	-	-	-	-	-	-	-	-	-	-
16	Meters, Instruments & Metering Transformers - Distribution	-	-	-	-	-	-	-	-	-	-	-
17	Meters, Instruments & Metering Transformers - Customer	-	-	-	-	-	-	-	-	-	-	-
18	Information Technology Equipment (distribution)	-	-	-	-	-	-	-	-	-	-	-
19	Regulated Entity Property on Consumer's Premises	-	-	-	-	-	-	-	-	-	-	-
20	Street Lights and Signal Systems	-	-	-	-	-	-	-	-	-	-	-
21	Submarine Cables	-	-	-	-	-	-	-	-	-	-	-
SUB-TOTAL Distribution Plant		-	-	-	-	-	-	-	938,487	-	-	-
B. General Plant												
1	Land and Land Rights (non-network)	-	-	-	-	-	-	-	-	-	-	-
2	Structures and Improvements (non-network)	-	-	-	-	-	-	-	-	-	-	-
3	Office Furniture and Equipment	-	-	-	-	-	-	-	-	-	-	-
4	Transportation Equipment	-	-	-	-	-	-	-	-	-	-	-
5	Stores Equipment	-	-	-	-	-	-	-	-	-	-	-
6	Tools, Shop and Garage Equipment	-	-	-	-	-	-	-	-	-	-	-
7	Laboratory Equipment	-	-	-	-	-	-	-	-	-	-	-
8	Information Systems Equipment (non-network)	-	-	-	-	-	-	-	-	-	-	-
9	Power-operated Equipment	-	-	-	-	-	-	-	-	-	-	-
10	Communication Plant and Equipment	-	-	-	-	-	-	-	-	-	-	-
11	Miscellaneous Equipment	-	-	-	-	-	-	-	-	-	-	-
SUB-TOTAL General Plant		-	-	-	-	-	-	-	-	-	-	-
C. Materials and Supplies (including spares)		-	-	-	-	-	-	-	-	-	-	-
D. Transferred Subtransmission Assets		-	-	-	-	-	-	-	-	-	-	-
E. Allocated Overheads Capitalized		-	-	-	-	-	-	-	63,958	-	-	-
TOTAL CAPITAL EXPENDITURE		-	-	-	-	-	-	-	1,002,445	-	-	-
Exchange Rate Assumption for Forecast Period (Peso/US\$)												
	Sep quarter											
	Dec quarter											
	Mar quarter											
	Jun quarter											
Philippines Consumer Price Index Assumption												
	Sep quarter											
	Dec quarter											
	Mar quarter											
	Jun quarter											
USA Consumer Price Index Assumption		1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15	1.15
(for quarters in regulatory year)		1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15	1.15
	Mar quarter	1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15	1.15
	Jun quarter	1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15	1.15
Base Value assumed for Philippine CPI figures		Year:		Value:								
Base Value assumed for USA CPI figures		Year:		Value:								

20MVA 69/34.5KV KAUSWAGAN SUBSTATION

ASSET CATEGORY		Capital Expenditure: US\$ Component (expressed in nominal PhP)										
		Actual (Pesos, nominal in Pesos of calendar				Budget (Calendar year)	Budget (Regulatory year)	Forecast (Pesos, nominal in Pesos of regulatory year)				
		2003	2004	2005	2006	2007	2007	2008	2009	2010	2011	
A. Distribution Plant												
1	Land and Land Rights (Distribution Purposes)	-	-	-	-	-	-	-	-	-	-	
2	Structures and Improvements	-	-	-	-	-	-	-	-	-	-	
3	Station Equipment	-	-	-	-	-	-	-	-	-	-	
3a	Power transformers	-	-	-	-	-	-	-	24,812,289	-	-	
3b	Switchgear	-	-	-	-	-	-	-	9,858,399	-	-	
3c	Protective equipment	-	-	-	-	-	-	-	5,419,168	-	-	
3d	Metering & control equipment	-	-	-	-	-	-	-	963,040	-	-	
3e	Communications equipment	-	-	-	-	-	-	-	4,730,826	-	-	
3f	Other station equipment	-	-	-	-	-	-	-	726,932	-	-	
4	Poles, Towers and Fixtures - Distribution	-	-	-	-	-	-	-	-	-	-	
5	Poles, Towers and Fixtures - Customer	-	-	-	-	-	-	-	-	-	-	
6	Overhead Conductors and Devices - Distribution	-	-	-	-	-	-	-	-	-	-	
7	Overhead Conductors and Devices - Customer	-	-	-	-	-	-	-	-	-	-	
8	Underground Circuits - Distribution	-	-	-	-	-	-	-	-	-	-	
9	Underground Circuits - Customer	-	-	-	-	-	-	-	-	-	-	
10	Underground Conduits - Distribution	-	-	-	-	-	-	-	-	-	-	
11	Underground Conduits - Customer	-	-	-	-	-	-	-	-	-	-	
12	Line Transformers - Distribution	-	-	-	-	-	-	-	-	-	-	
13	Line Transformers -Customer	-	-	-	-	-	-	-	-	-	-	
14	Power Conditioning Equipment	-	-	-	-	-	-	-	2,680,813	-	-	
15	Services	-	-	-	-	-	-	-	-	-	-	
16	Meters, Instruments & Metering Transformers - Distribution	-	-	-	-	-	-	-	-	-	-	
17	Meters, Instruments & Metering Transformers - Customer	-	-	-	-	-	-	-	-	-	-	
18	Information Technology Equipment (distribution)	-	-	-	-	-	-	-	-	-	-	
19	Regulated Entity Property on Consumer's Premises	-	-	-	-	-	-	-	-	-	-	
20	Street Lights and Signal Systems	-	-	-	-	-	-	-	-	-	-	
21	Submarine Cables	-	-	-	-	-	-	-	-	-	-	
SUB-TOTAL Distribution Plant		-	-	-	-	-	-	-	49,191,468	-	-	
B. General Plant												
1	Land and Land Rights (non-network)	-	-	-	-	-	-	-	-	-	-	
2	Structures and Improvements (non-network)	-	-	-	-	-	-	-	-	-	-	
3	Office Furniture and Equipment	-	-	-	-	-	-	-	-	-	-	
4	Transportation Equipment	-	-	-	-	-	-	-	-	-	-	
5	Stores Equipment	-	-	-	-	-	-	-	-	-	-	
6	Tools, Shop and Garage Equipment	-	-	-	-	-	-	-	-	-	-	
7	Laboratory Equipment	-	-	-	-	-	-	-	-	-	-	
8	Information Systems Equipment (non-network)	-	-	-	-	-	-	-	-	-	-	
9	Power-operated Equipment	-	-	-	-	-	-	-	-	-	-	
10	Communication Plant and Equipment	-	-	-	-	-	-	-	-	-	-	
11	Miscellaneous Equipment	-	-	-	-	-	-	-	-	-	-	
SUB-TOTAL General Plant		-	-	-	-	-	-	-	-	-	-	
C. Materials and Supplies (including spares)												
D. Transferred Subtransmission Assets												
E. Allocated Overheads Capitalized												
TOTAL CAPITAL EXPENDITURE		-	-	-	-	-	-	-	3,352,399	-	-	
TOTAL CAPITAL EXPENDITURE		-	-	-	-	-	-	-	52,543,866	-	-	
Exchange Rate Assumption for Forecast Period (Peso/US\$)		Sep quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
(for quarters in regulatory year)		Dec quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
		Mar quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
		Jun quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
Philippines Consumer Price Index Assumption		Sep quarter										
		Dec quarter										
		Mar quarter										
		Jun quarter										
USA Consumer Price Index Assumption		Sep quarter										
		Dec quarter										
		Mar quarter										
		Jun quarter										
Base Value assumed for Philippine CPI figures		Year:					Value:					
Base Value assumed for USA CPI figures		Year:					Value:					

**MAJOR CAPITAL EXPENDITURE:
(2 of 2 Major Capital Expenditure within 2nd RP)**

CEPALCO Main Headquarters

Project Details

Name	CEPALCO Main Headquarters
Description	Construction of a building that will house most of the managers and supervisory staffmembers of the company, and the central communications facilities. It will also house a customer service center, a customer training room, control room, several conference rooms, and the incedentals of a green building.
Project Duration	2009-2011

Project Classification:

Rank	1st Priority	(Ongoing; 1 st Priority; 2 nd Priority)	
Project Driver Classification	Load Growth and Network Control	(Load Growth, Network non-growth, network control/safety/metering, non-network)	
Project Type Classification	Growth	(Replacement, Refurbishment, New Assets)	
Cost Disbursement 2009 – 2011 (Real Value)	Forex: US \$	Local: PhP 280,860,000	Total: PhP 280,860,000

Project Need:

Project Purpose	The purpose of the project is to provide adequate working spaces for the staff members and provide sufficient spaces to service customers.
Impact if Project Not Implemented	If not implemented, the existing office and incidental spaces used by the company will continue to become congested while customers transacting business with the company will continue to do so in cramped and uncomfortable areas.

ADMINISTRATIVE BUILDING

ASSET CATEGORY	Capital Expenditure: Peso Component (expressed in real PhP)									
	Actual (Pesos, real in Pesos of calendar year)				Budget (Calendar year)	Budget (Regulatory year)		Forecast (Pesos, real in Pesos of regulatory year)		
	2003	2004	2005	2006	2007	2007	2008	2009	2010	2011
A. Distribution Plant										
1 Land and Land Rights (Distribution Purposes)										
2 Structures and Improvements										
3 Station Equipment										
3a Power transformers										
3b Switchgear										
3c Protective equipment										
3d Metering & control equipment										
3e Communications equipment										
3f Other station equipment										
4 Poles, Towers and Fixtures - Distribution										
5 Poles, Towers and Fixtures - Customer										
6 Overhead Conductors and Devices - Distribution										
7 Overhead Conductors and Devices - Customer										
8 Underground Circuits - Distribution										
9 Underground Circuits - Customer										
10 Underground Conduits - Distribution										
11 Underground Conduits - Customer										
12 Line Transformers - Distribution										
13 Line Transformers -Customer										
14 Power Conditioning Equipment										
15 Services										
16 Meters, Instruments & Metering Transformers - Distribution										
17 Meters, Instruments & Metering Transformers - Customer										
18 Information Technology Equipment (distribution)										
19 Regulated Entity Property on Consumer's Premises										
20 Street Lights and Signal Systems										
21 Submarine Cables										
SUB-TOTAL Distribution Plant					0	0	0	0	0	0
B. General Plant										
1 Land and Land Rights (non-network)										
2 Structures and Improvements (non-network)								50,000,000.00	150,240,000.00	80,000,000.00
3 Office Furniture and Equipment										
4 Transportation Equipment										
5 Stores Equipment										
6 Tools, Shop and Garage Equipment										
7 Laboratory Equipment										
8 Information Systems Equipment (non-network)										
9 Power-operated Equipment										
10 Communication Plant and Equipment								220,000.00		
11 Miscellaneous Equipment								400,000.00		
SUB-TOTAL General Plant						0	0	0	50,620,000.00	150,240,000.00
C. Materials and Supplies (including spares)										
D. Transferred Subtransmission Assets										
E. Allocated Overheads Capitalized										
TOTAL CAPITAL EXPENDITURE						0	0	0	50,620,000.00	150,240,000.00
Exchange Rate Assumption for Forecast Period (Peso/US\$)	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
Philippines Consumer Price Index Assumption	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
USA Consumer Price Index Assumption	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
Base Value assumed for Philippine CPI figures	Year:					Value:				
Base Value assumed for USA CPI figures	Year:					Value:				

ADMINISTRATIVE BUILDING

ASSET CATEGORY	Capital Expenditure: US\$ Component (expressed in real US\$)									
	Actual (US\$, real in US\$ of calendar year)				Budget (Calendar year)	Budget (Regulatory year)	Forecast (US\$, real in US\$ for regulatory year)			
	2003	2004	2005	2006	2007	2007	2008	2009	2010	2011
A. Distribution Plant										
1 Land and Land Rights (Distribution Purposes)										
2 Structures and Improvements										
3 Station Equipment										
3a Power transformers										
3b Switchgear										
3c Protective equipment										
3d Metering & control equipment										
3e Communications equipment										
3f Other station equipment										
4 Poles, Towers and Fixtures - Distribution										
5 Poles, Towers and Fixtures - Customer										
6 Overhead Conductors and Devices - Distribution										
7 Overhead Conductors and Devices - Customer										
8 Underground Circuits - Distribution										
9 Underground Circuits - Customer										
10 Underground Conduits - Distribution										
11 Underground Conduits - Customer										
12 Line Transformers - Distribution										
13 Line Transformers -Customer										
14 Power Conditioning Equipment										
15 Services										
16 Meters, Instruments & Metering Transformers - Distribution										
17 Meters, Instruments & Metering Transformers - Customer										
18 Information Technology Equipment (distribution)										
19 Regulated Entity Property on Consumer's Premises										
20 Street Lights and Signal Systems										
21 Submarine Cables										
SUB-TOTAL Distribution Plant					0	0	0	0	0	0
B. General Plant										
1 Land and Land Rights (non-network)										
2 Structures and Improvements (non-network)										
3 Office Furniture and Equipment										
4 Transportation Equipment										
5 Stores Equipment										
6 Tools, Shop and Garage Equipment										
7 Laboratory Equipment										
8 Information Systems Equipment (non-network)										
9 Power-operated Equipment										
10 Communication Plant and Equipment										
11 Miscellaneous Equipment										
SUB-TOTAL General Plant					0	0	0	0	0	0
C. Materials and Supplies (including spares)										
D. Transferred Subtransmission Assets										
E. Allocated Overheads Capitalized										
TOTAL CAPITAL EXPENDITURE					0	0	0	0	0	0
Exchange Rate Assumption for Forecast Period (Peso/US\$)	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
Philippines Consumer Price Index Assumption	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
USA Consumer Price Index Assumption	Sep quarter									
	Dec quarter									
	Mar quarter									
	Jun quarter									
Base Value assumed for Philippine CPI figures	Year:				Value:					
Base Value assumed for USA CPI figures	Year:				Value:					

ADMINISTRATIVE BUILDING

ASSET CATEGORY		Capital Expenditure : Peso component (total, expressed in nominal PhP)									
		Actual (Pesos, nominal in Pesos of calendar year)				Budget (Calendar year)	Budget (Regulatory year)	Forecast (Pesos, nominal in Pesos of regulatory year)			
		2003	2004	2005	2006	2007	2007	2008	2009	2010	2011
A. Distribution Plant											
1	Land and Land Rights (Distribution Purposes)	-	-	-	-	-	-	-	-	-	
2	Structures and Improvements	-	-	-	-	-	-	-	-	-	
3	Station Equipment	-	-	-	-	-	-	-	-	-	
	3a Power transformers	-	-	-	-	-	-	-	-	-	
	3b Switchgear	-	-	-	-	-	-	-	-	-	
	3c Protective equipment	-	-	-	-	-	-	-	-	-	
	3d Metering & control equipment	-	-	-	-	-	-	-	-	-	
	3e Communications equipment	-	-	-	-	-	-	-	-	-	
	3f Other station equipment	-	-	-	-	-	-	-	-	-	
4	Poles, Towers and Fixtures - Distribution	-	-	-	-	-	-	-	-	-	
5	Poles, Towers and Fixtures - Customer	-	-	-	-	-	-	-	-	-	
6	Overhead Conductors and Devices - Distribution	-	-	-	-	-	-	-	-	-	
7	Overhead Conductors and Devices - Customer	-	-	-	-	-	-	-	-	-	
8	Underground Circuits - Distribution	-	-	-	-	-	-	-	-	-	
9	Underground Circuits - Customer	-	-	-	-	-	-	-	-	-	
10	Underground Conduits - Distribution	-	-	-	-	-	-	-	-	-	
11	Underground Conduits - Customer	-	-	-	-	-	-	-	-	-	
12	Line Transformers - Distribution	-	-	-	-	-	-	-	-	-	
13	Line Transformers -Customer	-	-	-	-	-	-	-	-	-	
14	Power Conditioning Equipment	-	-	-	-	-	-	-	-	-	
15	Services	-	-	-	-	-	-	-	-	-	
16	Meters, Instruments & Metering Transformers - Distribution	-	-	-	-	-	-	-	-	-	
17	Meters, Instruments & Metering Transformers - Customer	-	-	-	-	-	-	-	-	-	
18	Information Technology Equipment (distribution)	-	-	-	-	-	-	-	-	-	
19	Regulated Entity Property on Consumer's Premises	-	-	-	-	-	-	-	-	-	
20	Street Lights and Signal Systems	-	-	-	-	-	-	-	-	-	
21	Submarine Cables	-	-	-	-	-	-	-	-	-	
SUB-TOTAL Distribution Plant		-	-	-	-	-	-	-	-	-	
B. General Plant											
1	Land and Land Rights (non-network)	-	-	-	-	-	-	-	-	-	
2	Structures and Improvements (non-network)	-	-	-	-	-	-	58,365,000	182,571,648	101,400,000	
3	Office Furniture and Equipment	-	-	-	-	-	-	-	-	-	
4	Transportation Equipment	-	-	-	-	-	-	-	-	-	
5	Stores Equipment	-	-	-	-	-	-	-	-	-	
6	Tools, Shop and Garage Equipment	-	-	-	-	-	-	-	-	-	
7	Laboratory Equipment	-	-	-	-	-	-	-	-	-	
8	Information Systems Equipment (non-network)	-	-	-	-	-	-	-	-	-	
9	Power-operated Equipment	-	-	-	-	-	-	-	-	-	
10	Communication Plant and Equipment	-	-	-	-	-	-	256,806	-	-	
11	Miscellaneous Equipment	-	-	-	-	-	-	466,920	-	-	
SUB-TOTAL General Plant		-	-	-	-	-	-	59,088,726	182,571,648	101,400,000	
C. Materials and Supplies (including spares)		-	-	-	-	-	-	-	-	-	
D. Transferred Subtransmission Assets		-	-	-	-	-	-	-	-	-	
E. Allocated Overheads Capitalized		-	-	-	-	-	-	-	-	-	
TOTAL CAPITAL EXPENDITURE		-	-	-	-	-	-	59,088,726	182,571,648	101,400,000	
Exchange Rate Assumption for Forecast Period (Peso/US\$)		Sep quarter									
		Dec quarter									
		Mar quarter									
		Jun quarter									
Philippines Consumer Price Index Assumption (for quarters in regulatory year)		Sep quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	
		Dec quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	
		Mar quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	
		Jun quarter	1.00	1.00	1.00	1.00	1.07	1.07	1.12	1.17	
USA Consumer Price Index Assumption		Sep quarter									
		Dec quarter									
		Mar quarter									
		Jun quarter									
Base Value assumed for Philippine CPI figures		Year:	Value:								
Base Value assumed for USA CPI figures		Year:	Value:								

ADMINISTRATIVE BUILDING

		Capital Expenditure: US\$ Component (expressed in nominal US\$)									
		Actual (US\$, nominal in US\$ of calendar year)				Budget (Calendar year)	Budget (Regulatory year)	Forecast (US\$, nominal in US\$ of regulatory year)			
ASSET CATEGORY		2003	2004	2005	2006	2007	2007	2008	2009	2010	2011
A. Distribution Plant											
1	Land and Land Rights (Distribution Purposes)	-	-	-	-	-	-	-	-	-	-
2	Structures and Improvements	-	-	-	-	-	-	-	-	-	-
3	Station Equipment	-	-	-	-	-	-	-	-	-	-
	3a Power transformers	-	-	-	-	-	-	-	-	-	-
	3b Switchgear	-	-	-	-	-	-	-	-	-	-
	3c Protective equipment	-	-	-	-	-	-	-	-	-	-
	3d Metering & control equipment	-	-	-	-	-	-	-	-	-	-
	3e Communications equipment	-	-	-	-	-	-	-	-	-	-
	3f Other station equipment	-	-	-	-	-	-	-	-	-	-
4	Poles, Towers and Fixtures - Distribution	-	-	-	-	-	-	-	-	-	-
5	Poles, Towers and Fixtures - Customer	-	-	-	-	-	-	-	-	-	-
6	Overhead Conductors and Devices - Distribution	-	-	-	-	-	-	-	-	-	-
7	Overhead Conductors and Devices - Customer	-	-	-	-	-	-	-	-	-	-
8	Underground Circuits - Distribution	-	-	-	-	-	-	-	-	-	-
9	Underground Circuits - Customer	-	-	-	-	-	-	-	-	-	-
10	Underground Conduits - Distribution	-	-	-	-	-	-	-	-	-	-
11	Underground Conduits - Customer	-	-	-	-	-	-	-	-	-	-
12	Line Transformers - Distribution	-	-	-	-	-	-	-	-	-	-
13	Line Transformers -Customer	-	-	-	-	-	-	-	-	-	-
14	Power Conditioning Equipment	-	-	-	-	-	-	-	-	-	-
15	Services	-	-	-	-	-	-	-	-	-	-
16	Meters, Instruments & Metering Transformers - Distribution	-	-	-	-	-	-	-	-	-	-
17	Meters, Instruments & Metering Transformers - Customer	-	-	-	-	-	-	-	-	-	-
18	Information Technology Equipment (distribution)	-	-	-	-	-	-	-	-	-	-
19	Regulated Entity Property on Consumer's Premises	-	-	-	-	-	-	-	-	-	-
20	Street Lights and Signal Systems	-	-	-	-	-	-	-	-	-	-
21	Submarine Cables	-	-	-	-	-	-	-	-	-	-
SUB-TOTAL Distribution Plant		-	-	-	-	-	-	-	-	-	-
B. General Plant											
1	Land and Land Rights (non-network)	-	-	-	-	-	-	-	-	-	-
2	Structures and Improvements (non-network)	-	-	-	-	-	-	-	-	-	-
3	Office Furniture and Equipment	-	-	-	-	-	-	-	-	-	-
4	Transportation Equipment	-	-	-	-	-	-	-	-	-	-
5	Stores Equipment	-	-	-	-	-	-	-	-	-	-
6	Tools, Shop and Garage Equipment	-	-	-	-	-	-	-	-	-	-
7	Laboratory Equipment	-	-	-	-	-	-	-	-	-	-
8	Information Systems Equipment (non-network)	-	-	-	-	-	-	-	-	-	-
9	Power-operated Equipment	-	-	-	-	-	-	-	-	-	-
10	Communication Plant and Equipment	-	-	-	-	-	-	-	-	-	-
11	Miscellaneous Equipment	-	-	-	-	-	-	-	-	-	-
SUB-TOTAL General Plant		-	-	-	-	-	-	-	-	-	-
C. Materials and Supplies (including spares)		-	-	-	-	-	-	-	-	-	-
D. Transferred Subtransmission Assets		-	-	-	-	-	-	-	-	-	-
E. Allocated Overheads Capitalized		-	-	-	-	-	-	-	-	-	-
TOTAL CAPITAL EXPENDITURE		-	-	-	-	-	-	-	-	-	-
Exchange Rate Assumption for Forecast Period (Peso/US\$)											
	Sep quarter										
	Dec quarter										
	Mar quarter										
	Jun quarter										
Philippines Consumer Price Index Assumption											
	Sep quarter										
	Dec quarter										
	Mar quarter										
	Jun quarter										
USA Consumer Price Index Assumption		1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15
(for quarters in regulatory year)		1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15
	Mar quarter	1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15
	Jun quarter	1.00	1.00	1.00	1.00	1.04	1.04	1.06	1.09	1.12	1.15
Base Value assumed for Philippine CPI figures		Year:	Value:								
Base Value assumed for USA CPI figures		Year:	Value:								

ADMINISTRATIVE BUILDING

ASSET CATEGORY	Capital Expenditure: US\$ Component (expressed in nominal PhP)										
	Actual (Pesos, nominal in Pesos of calendar				Budget (Calendar year)	Budget (Regulatory year)	Forecast (Pesos, nominal in Pesos of regulatory year)				
	2003	2004	2005	2006	2007	2007	2008	2009	2010	2011	
A. Distribution Plant											
1 Land and Land Rights (Distribution Purposes)	-	-	-	-	-	-	-	-	-	-	
2 Structures and Improvements	-	-	-	-	-	-	-	-	-	-	
3 Station Equipment	-	-	-	-	-	-	-	-	-	-	
3a Power transformers	-	-	-	-	-	-	-	-	-	-	
3b Switchgear	-	-	-	-	-	-	-	-	-	-	
3c Protective equipment	-	-	-	-	-	-	-	-	-	-	
3d Metering & control equipment	-	-	-	-	-	-	-	-	-	-	
3e Communications equipment	-	-	-	-	-	-	-	-	-	-	
3f Other station equipment	-	-	-	-	-	-	-	-	-	-	
4 Poles, Towers and Fixtures - Distribution	-	-	-	-	-	-	-	-	-	-	
5 Poles, Towers and Fixtures - Customer	-	-	-	-	-	-	-	-	-	-	
6 Overhead Conductors and Devices - Distribution	-	-	-	-	-	-	-	-	-	-	
7 Overhead Conductors and Devices - Customer	-	-	-	-	-	-	-	-	-	-	
8 Underground Circuits - Distribution	-	-	-	-	-	-	-	-	-	-	
9 Underground Circuits - Customer	-	-	-	-	-	-	-	-	-	-	
10 Underground Conduits - Distribution	-	-	-	-	-	-	-	-	-	-	
11 Underground Conduits - Customer	-	-	-	-	-	-	-	-	-	-	
12 Line Transformers - Distribution	-	-	-	-	-	-	-	-	-	-	
13 Line Transformers -Customer	-	-	-	-	-	-	-	-	-	-	
14 Power Conditioning Equipment	-	-	-	-	-	-	-	-	-	-	
15 Services	-	-	-	-	-	-	-	-	-	-	
16 Meters, Instruments & Metering Transformers - Distribution	-	-	-	-	-	-	-	-	-	-	
17 Meters, Instruments & Metering Transformers - Customer	-	-	-	-	-	-	-	-	-	-	
18 Information Technology Equipment (distribution)	-	-	-	-	-	-	-	-	-	-	
19 Regulated Entity Property on Consumer's Premises	-	-	-	-	-	-	-	-	-	-	
20 Street Lights and Signal Systems	-	-	-	-	-	-	-	-	-	-	
21 Submarine Cables	-	-	-	-	-	-	-	-	-	-	
SUB-TOTAL Distribution Plant	-	-	-	-	-	-	-	-	-	-	
B. General Plant											
1 Land and Land Rights (non-network)	-	-	-	-	-	-	-	-	-	-	
2 Structures and Improvements (non-network)	-	-	-	-	-	-	-	-	-	-	
3 Office Furniture and Equipment	-	-	-	-	-	-	-	-	-	-	
4 Transportation Equipment	-	-	-	-	-	-	-	-	-	-	
5 Stores Equipment	-	-	-	-	-	-	-	-	-	-	
6 Tools, Shop and Garage Equipment	-	-	-	-	-	-	-	-	-	-	
7 Laboratory Equipment	-	-	-	-	-	-	-	-	-	-	
8 Information Systems Equipment (non-network)	-	-	-	-	-	-	-	-	-	-	
9 Power-operated Equipment	-	-	-	-	-	-	-	-	-	-	
10 Communication Plant and Equipment	-	-	-	-	-	-	-	-	-	-	
11 Miscellaneous Equipment	-	-	-	-	-	-	-	-	-	-	
SUB-TOTAL General Plant	-	-	-	-	-	-	-	-	-	-	
C. Materials and Supplies (including spares)	-	-	-	-	-	-	-	-	-	-	
D. Transferred Subtransmission Assets	-	-	-	-	-	-	-	-	-	-	
E. Allocated Overheads Capitalized	-	-	-	-	-	-	-	-	-	-	
TOTAL CAPITAL EXPENDITURE	-	-	-	-	-	-	-	-	-	-	
Exchange Rate Assumption for Forecast Period (Peso/US\$)	Sep quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
(for quarters in regulatory year)	Dec quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
	Mar quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
	Jun quarter	1.00	1.00	1.00	1.00	52.72	52.72	52.42	52.42	52.91	52.91
Philippines Consumer Price Index Assumption	Sep quarter										
	Dec quarter										
	Mar quarter										
	Jun quarter										
USA Consumer Price Index Assumption	Sep quarter										
	Dec quarter										
	Mar quarter										
	Jun quarter										
Base Value assumed for Philippine CPI figures	Year:					Value:					
Base Value assumed for USA CPI figures	Year:					Value:					

	longer support the load.		
Project Duration	2008-2011		
Project Classification			
Rank	1st Priority	(Ongoing; 1st Priority; 2nd Priority)	
Project Driver Classification	Growth	(Renewal; Refurbishment; Growth or New Assets)	
Project Type Classification	Overhead conductors and devices - Distribution	(As defined in Appendix F of the DWRG Issues Paper)	
Cost Disbursement 2008 – 2011	Forex: US\$	Local: PhP 2,476,224	Total: PhP 2,476,224

Project Recommendation

Capex Project Classification :	Approved Fully	Approved at X%	Not Approved
Recommendation :	Yes		
Primary Reason(s) for Decision	Safety to public, load growth, voltage quality and secondary line losses are the primary reasons for recommending this project.		
Other Comments			

Analysis of Project

Overloading of secondary lines would sometimes result to fires and conductor breakdown. There will be large voltage drop at the further end of the secondary line when the line is overloaded. To address these issues the existing secondary conductors will be upgraded.

Reasons to Support Recommendation

This project would address safety, overloading, voltage quality and line losses at the low voltage secondary side of the distribution system.

ESD-TSD

- 1.4. Single Phase WH Meters, Class 100/200 2,968 units 2008-2011 Php 5,936,000**
 These are for replacements of the existing meters based on historical rejection rate of meters tested.

ASD-LOGISTICS

- 1.5. Materials and Sub-contracting Cost for Line Revisions and Maintenance 2008-2011 Php 137,910,999**
 The above materials include poles, anchor logs, cross-arms, insulators and accessories, wires and cables, clamp and connectors and other line hardware.

These are normal recurring capital items based on historical necessary for the maintenance of the T&D system operations to ensure continuous electricity distribution service.

- 1.6. Distribution Transformers and Accessories 2008-2011 Php 54,714,468**

DISTRIBUTION TRANSFORMERS	2008	2009	2010	2011	TOTAL
25 KVA, 13200(14400/24940) PV, 120/240 SV	648,432	648,432	648,432	648,432	2,593,728
50 KVA, 13200(14400/24940) PV, 120/240 SV	860,160	860,160	860,160	860,160	3,440,640
100 KVA, 13200(14400/24940) PV, 120/240 SV	838,405	838,405	838,405	838,405	3,353,620
167 KVA, 13200(14400/24940) PV, 120/240 SV	1,232,645	1,232,645	1,232,645	1,232,645	4,930,580
333 KVA, 13200(14400/24940) PV, 120/240 SV	416,640	416,640	416,640	416,640	1,666,560
25 KVA, 34500/19920 PV, 120/240 SV	1,009,140	1,009,140	1,009,140	1,009,140	4,036,560
50 KVA, 34500/19920 PV, 120/240X139/277 SV	3,538,485	3,538,485	3,538,485	3,538,485	14,153,940
100 KVA, 34500/19920 PV, 120/240X139/277 SV	1,497,918	1,497,918	1,497,918	1,497,918	5,991,672
167 KVA, 34500/19920 PV, 120/240X139/277 SV	1,542,796	1,542,796	1,542,796	1,542,796	6,171,184
250 KVA, 34500/19920 PV, 120/240X139/277 SV	651,840	651,840	651,840	651,840	2,607,360
SUB-TOTAL	12,236,461	12,236,461	12,236,461	12,236,461	48,945,844
PROTECTIVE DEVICES & FUSELINKS					
LIGHTNING ARRESTER, 15 KV	106,800	106,800	106,800	106,800	427,200

LIGHTNING ARRESTER, 27 KV	134,580	134,580	134,580	134,580	538,320
HT FUSE CUTOOUT, 15 KV	125,000	125,000	125,000	125,000	500,000
HT FUSE CUTOOUT, 36 KV	576,780	576,780	576,780	576,780	2,307,120
BLADE, HT FUSE CUT-OUT, 15KV	30,000	30,000	30,000	30,000	120,000
BLADE, HT FUSE CUT-OUT, 27KV	30,000	30,000	30,000	30,000	120,000
LOADBREAK FUSE CUT-OUT, 15KV	67,500	67,500	67,500	67,500	270,000
LOADBREAK FUSE CUT-OUT, 20/34.5KV	110,290	110,290	110,290	110,290	441,160
FUSELINKS (VARIOUS SIZES)	206,306	206,306	206,306	206,306	825,224
PHOTO SWITCH	34,800	34,800	34,800	34,800	139,200
PHOTO SWITCH SOCKET	20,100	20,100	20,100	20,100	80,400
SUB-TOTAL	1,442,156	1,442,156	1,442,156	1,142,156	5,768,624
TOTAL	13,678,617	13,678,617	13,678,617	13,678,617	54,714,468

These are normal recurring capital items based on historical necessary for the maintenance of the T&D system operations to ensure continuous electricity distribution service.

1.7. Service Materials

2008-2011 Php 10,509,404

NORMAL	2008	2009	2010	2011	TOTAL
PORC. WIRE HOLDER	147,980	147,980	147,980	147,980	591,920
FIBERGLASS MIDSPAN SPACER	139,456	139,456	139,456	139,456	557,824
ACSR #4, WP	18,660	18,660	18,660	18,660	74,640
ACSR #2, WP	30,310	30,310	30,310	30,310	121,240
CU-WIRE, #2, AWG, STRANDED, TW	95,570	95,570	95,570	95,570	382,280
CU-WIRE, #1/0, AWG, STRANDED, TW	146,800	146,800	146,800	146,800	587,200
CU-WIRE, #2/0, AWG, STRANDED, TW	184,910	184,910	184,910	184,910	739,640
CU-WIRE, #4/0, AWG, STRANDED, TW	292,380	292,380	292,380	292,380	1,169,520
CU-WIRE, #250 MCM, AWG, STRANDED, TW	102,455	102,455	102,455	102,455	409,820
CU-WIRE, #500 MCM, AWG, STRANDED, TW	198,080	198,080	198,080	198,080	792,320
CU-WIRE, #750 MCM, AWG, STRANDED, TW	321,750	321,750	321,750	321,750	1,287,000
PLASTIC TAPE, 3/4"x60"	98,000	98,000	98,000	98,000	392,000
PADLOCK SEAL - LOGISTICS	695,600	784,400	902,800	1,021,200	3,404,000
TOTAL	2,471,951	2,560,751	2,679,151	2,797,551	10,509,404

These are normal recurring capital items based on historical necessary for the maintenance of the T&D system operations to ensure continuous electricity distribution service.

Testing Unit	1 unit	2009	Php 177,000
Simulation/Testing Unit for Distance Relay	1 unit	2009	Php 589,120

The primary protection devices being used at CEPALCO substations are of the microprocessor-based type of devices. These devices normally include many other important functions aside from the basic protection function that they are intended for.

Unlike the electromechanical type of devices where there is usually one protection device for each phase, these digital protection devices integrate all the single-phase devices into one single unit. The result is a compact, space-saving unit which is simpler to mount and wire. The downside however is that a failure of one unit results in the complete loss of protection to an equipment or line. The loss of one unit in electromechanical relays will leave the two other phases still protected.

It is therefore important that simulation and testing be performed regularly on these digital protection devices to ensure protection is available when required.

Single-phase electromechanical relays usually can be taken off line for testing since protection is still provided by the other two relays still on line. With digital relays, taking the unit off line for testing will leave the equipment or line unprotected. It is therefore imperative that an extra unit be available to temporarily replace the unit taken off line for testing and simulation. This will also allow comprehensive testing of the unit under test since the unit can then be taken to the laboratory for testing, unlike in field tests where, due to time constraints, usually only the basic functions are tested simultaneous with a scheduled line or equipment shutdown.

ESD-TSD

- 2.5. K-Switch for GE Electronic Meter Upgrading for LP, PQ, TOU, KVAR and Other Monitoring Options**
- | | | | |
|--|--------------------|------------------|----------------------|
| | 63 software | 2008-2011 | Php 1,260,000 |
|--|--------------------|------------------|----------------------|
- This software is an activation key for the software already installed in the electronic meters but was inactivated by the supplier. This is necessary for monitoring of data.

A. NETWORK ASSETS

(Note: Costs are in Real Value excluding Freight & Handling Cost estimated at 6.815%)

3. GROWTH-RELATED OR NEW ASSETS

ESD-SYSPAD

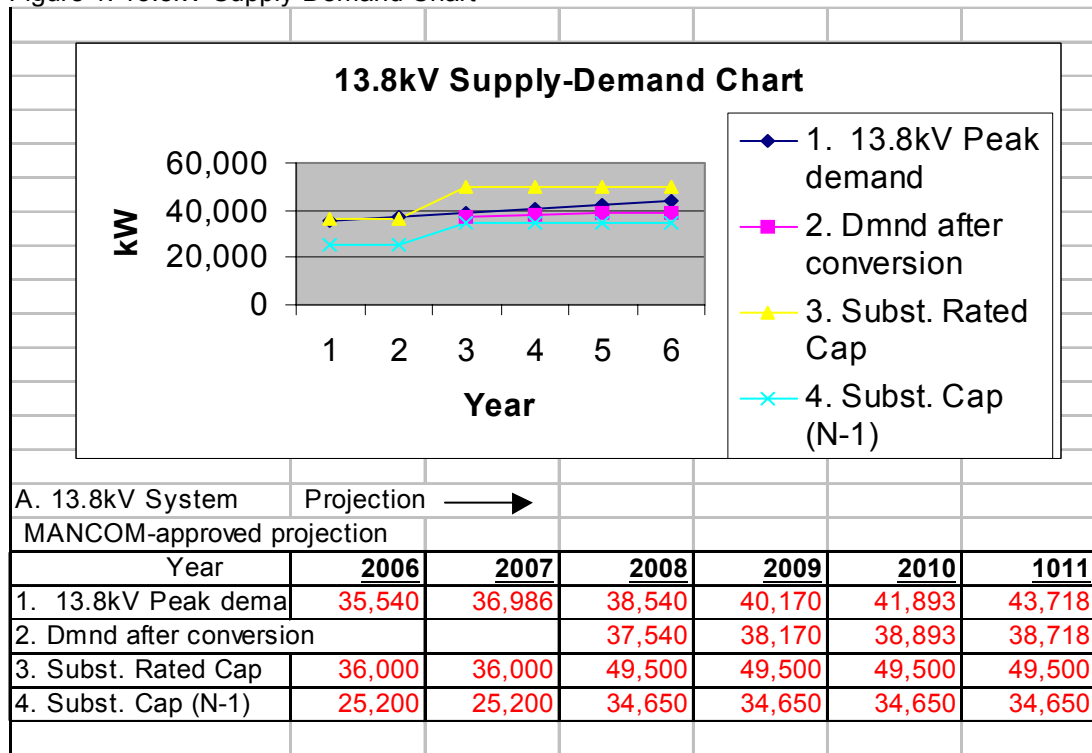
3.1. Installation of 10 MVA Power Transformer from Carmen to Macasandig Substation 2008 Php 14,531,595 US\$ 335,962

This involves the old 10 MVA, 69-13.8kV power transformer currently installed at Carmen. In 2007, this power transformer will be replaced with a new and bigger 15 MVA transformer. The old transformer will then undergo rehabilitation and later installed at Macasandig substation to augment power supply for the 13.8kV system.

At the Macasandig substation, it will be installed beside an existing 15 MVA transformer bringing the whole substation to a total 25 MVA capacity rating, self-cooled. All other equipment and accessories will be brand new. Its 69kV Circuit breaker and other primary side equipment will all be outdoor type, while the medium voltage vacuum circuit breakers and other secondary side equipment and accessories will all be installed indoor.

The Figure 1 below shows that the addition of this 10 MVA at Macasandig will avert a possible supply shortage in 2009 if no transformer is added to the 13.8kV system. Even with this adequate supply, the planned N-1 capability is still not reached.

Figure 1. 13.8kV Supply-Demand Chart



A. 13.8kV System	Projection →					
MANCOM-approved projection						
Year	2006	2007	2008	2009	2010	1011
1. 13.8kV Peak dema	35,540	36,986	38,540	40,170	41,893	43,718
2. Dmnd after conversion			37,540	38,170	38,893	38,718
3. Subst. Rated Cap	36,000	36,000	49,500	49,500	49,500	49,500
4. Subst. Cap (N-1)	25,200	25,200	34,650	34,650	34,650	34,650

3.2. Installation of the old 10 MVA, 69-34.5kV Power Transformer from Carmen to Tagoloan Substation 2008 Php 24,221,664 US\$ 315,534

This refers to the old 10 MVA power transformer from Carmen which will be replaced in 2007 by the other 10 MVA from Pueblo. Upon retirement, it will undergo rehabilitation and eventually installed at Tagoloan substation, beside the old 30 MVA transformer.

The installation in 2009 will provide adequate capacity to the 34.5kV system especially in the eastern part that is being supplied only by the lone 30 MVA transformer. Even then, the

34.5kV system will not reach its N-1 capability in 2009, but this 10 MVA will help in attaining this objective in 2010 with the addition of a new 20 MVA substation at Kauswagan.

3.3. Automation of Existing Substations

Tagoloan Substation **2008** **Php 1,590,000** **US\$ 107,429**
 SCADA is an acronym for Supervisory Control and DATA Acquisition. Power transmission and distribution have been using SCADA for decades to monitor and control the delivery of power from the generation sites to the electricity users.

Presently, CEPALCO substations are monitored and controlled through substation tenders who man the substations in three shifts a day. The installation of SCADA functions to these substations will eliminate the need of these tenders, since most of their functions can now be done by a single load dispatcher who monitors and controls substations at a remote Control Center.

CEPALCO believes that implementing a SCADA system will provide an effective means of improving the reliability and efficiency of the distribution system.

In 1997, CEPALCO contracted with KEMA Consulting Inc., to conduct a feasibility study on the implementation of a SCADA/DA system on CEPALCO's distribution system. Result of the study showed that the investment in implementing SCADA to CEPALCO's T&D system is economically justified and can be considered technically and financially feasible. Specific benefits that have been identified in implementing a SCADA system include, 1) Manpower Savings, 2) Reduction in Electrical Losses, 3) Elimination of a Separate Meter Reading System, 4) Deferred investments, 5) Demand Management, 6) Efficiency improvement through improvements in the quality and quantity of data acquisition, 7) Improved Planning Capability, and 8) Improved Customer Satisfaction.

CEPALCO has already started the implementation of Substation SCADA. The pilot project at Carmen Substation was completed in 2001, and the ongoing substation construction projects at Pueblo and Macasandig is being constructed complete with SCADA functionalities.

The two remaining substations at Camaman-an and Tagoloan are planned for implementation in 2007-2008.

3.4. Installation of Distribution Automation **2008** **US\$ 779,496**

The implementation of Distribution Automation is the second part of the phased implementation approach that will follow Substation Automation as recommended by KEMA Consulting. This is planned for implementation in 2007-2008. This involves the installation of line switches on strategic points along the distribution line. These switches will be equipped with pole-mounted RTUs and communication facilities. The idea is to enable automatic isolation of faulted sections of the line and restore supply to healthy sections once the faulted feeder section has been identified.

Fault location should be initiated by the tripping of a substation breaker or line recloser. Each breaker and recloser should be associated with a time-out interval whose value may be individually set by CEPALCO. When a breaker or recloser trips and there is no control inhibit tag, the SCADA/DA system should wait for the time-out interval to expire. At the end of the interval, the SCADA/DA system should then check the status of the breaker/recloser.

If the breaker or recloser has locked out, the SCADA/DA system should check the fault indications of the line switches that were electrically connected to the breaker/recloser and identify the feeder section (on which the fault presumably occurred) which lies between the line switch showing a fault indication and either an open line switch, an open end of the feeder, or a line switch showing the no fault identification.

Aside from Fault Isolation and Service Restoration, the Distribution Automation will include other functions as Load Shedding, Var Control, Voltage Control, Interface to a Trouble Call System and Interface to AM/FM/GIS system.

3.5. Phase Marking **2008-2011** **Php 8,217,526**

Project Details:	
Name	Installation of Phase Markers
Description	Installation of Phase Markers to Primary and Secondary Distribution Lines
Project Duration	2008-2011
Project Classification:	
Rank	(Ongoing; 1 st Priority; 2 nd Priority)

Project Classification	Driver	(Load Growth, Network non-growth, network control/safety/metering, non-network)		
Project Classification	Type	(Replacement, Refurbishment, New Assets)		
Cost Disbursement 2008 – 2011	Forex: US \$	Local: PhP 8,217,526.00	Total: PhP 8,217,526.00	
Project Recommendation:				
Capex Project Classification:	Approved Fully	Approved at X%	Not Approved	
Recommendation:	Yes			
Primary Reason(s) for Decision	The phase marking is necessary in order to have a reliable, common and consistent reference for planning, network modeling, and load balancing.			
Other Comments	Phase markers will also serve as common visual reference for field surveys, line works, proper phase connection of all line equipment and devices (i.e., distribution transformers, protection devices), for connection of customer loads and serve as aids in identifying line faulted lines. Monitoring of the customer loads per phase will lead to proactive load balancing and to prompt identification of customers affected by single-phasing problems.			

Analysis of Project

The tracing of backbone primary pole-to-pole phasing and the updating of the facilities database and base maps are on-going. Data gathered from these will serve as the input for the Project.

The physical installation of phase markers are divided into three (3) phases: 69kV poles with duration of 20 months; 34.5kV and 13.8kV poles with duration of 20 months; and the secondary poles with duration of 18 months. Phase Marking of the 69kV poles can only be performed during scheduled line maintenance; and those of 34.5kV and 13.8kV poles to be on "hot-line" work. The scheme is to install the markers at every 5 spans, unless there is a shift in phase. Points of connections with Transco and laterals will also bear phase markers.

The Project Cost stated covers the materials, labor and administrative services.

ESD-SOD

3.6. Installation of 34.5KV Load Break Switch for Tie Point at		
Agora/Recto	2008	US\$ 13,244
RER 1	2009	US\$ 13,244
Midpoint of Tagoloan Feeder 1	2010	US\$ 13,244
Midpoint of Camaman-an Feeder 4	2011	US\$ 13,244
Installation of 13.8KV Load Break Switch for		
Corrales/Luna and Corrales/Borja	2009/2011	US\$ 23,584

Project Details

Name	Installation of Load Break Switches at Tie Point & Midpoint of Feeders
Description	This project is intended to optimize distribution feeders during planned and unplanned interruptions wherein load transfer is permitted.
Project Duration	July 2007 – December 2010

Project Classification

Rank	1st Priority	(Ongoing; 1st Priority; 2nd Priority)	
Project Categorization	Growth or New Assets	(Renewal; Refurbishment; Growth or New Assets)	
Project Sub-Categorization	Overhead conductors and devices - Distribution	(As defined in Appendix F of the DWRG Issues Paper)	
Cost Disbursement 2007 – 2011 (Real Value - 2006)	Forex: US\$ \$ 76,560.00	Local: PhP	Total: PhP

Project Recommendation

Capex Project Classification :	Approved Fully	Approved at X%	Not Approved
Recommendation :	Yes		
Primary Reason(s) for Decision	Prevention of unnecessary feeder interruption due to load shifting is the primary reason for pursuing this project.		
Other Comments	Connecting two lines with one line energize requires a switch capable of closing under loaded condition. When one feeder is out due to a permanent fault and portion could be restored and will be connected to adjacent feeders, the other feeder has to be interrupted to accomplish connection of the remaining healthy lines. Unless the switch that will connect the said lines is capable of closing under load, no interruption is required. Also during scheduled line maintenance of feeder wherein portion or all load is shifted to other feeder, only the customers shifted will experience power interruption.		

Analysis of Project

The occurrence of permanent faults along the backbone of distribution feeder should not result to prolong outage to all customers connected to the feeder. Once the fault is isolated, remaining healthy lines can be supplied by the original source and from other adjacent feeders. Depending on the location of the fault, the number of customers that can be supplied from adjacent feeders varies. In order to supply the unaffected further side of the feeder without causing interruption to the adjacent feeder, a switch capable of taking and breaking load is required. A load break switch can perform the necessary switching in supplying loads to adjacent feeders. Also during planned interruptions, the same switch will facilitate transfer of loads to adjacent feeders.

Reasons to Support Recommendation

This project will further reduce interruption frequency and duration during planned and unplanned outages.

3.7.

3.8. **VHF Radio for Pueblo, Macasandig, Baloy, & Kauswagan Substations** **2 units** **2009/2010** **Php 44,000**
Incidental to the new substations.

3.9. **Multi-tester for Substation** **3 units** **2008-2010** **Php 75,000**
Assorted Tools for Substation **3 lots** **2008-2010** **Php 24,000**
Incidental to the new substations.

ESD-LCMD

3.10. **Line Reconductoring:**
34.5KV Line from Transco Natumulan to Tagoloan Substation **2010** **Php 1,296,904**

Line reconductoring projects are being planned to those lines both 13.8 and 34.5kV that are expected to experience increased loading in the future. The reconductoring from smaller wire to bigger wires with increased ampacity will enable these lines to handle bigger loads both for normal operation and during switching. Most of these lines form the backbone portion of the distribution system and should therefore have that ready capacity to handle large loads.

3.11. **Line Conversion:**

Kauswagan to Bayabas Line P1	2009	Php 488,699
Bonbon Line P2	2009	Php 492,829
Kauswagan to Scions Line P1	2009	Php 289,715
Kauswagan to Pasil Line P4	2009	Php 566,131
Main Feeder to Kauswagan Line	2009	Php 17,995
Taguanao Road Line	2009	Php 539,322

These are conversion of lines from 13.8kV to 34.5kV. The projects listed are part of the plan to limit only the 13.8kV system to those areas located at Cagayan Poblacion, the central urban part of the city. The 13.8kV lines located in the outlying areas which are included in the list will be converted to 34.5kV system. These conversions help in reducing system losses.

- 3.12. Major Line Extension Projects** **2008-2011** **Php 36,404,127**
 These projects are for Primary Line Extension with DT installation. Most of these applications are for the preservation of Service area and accommodation of requests by Local Government Unit officials of the city and the neighboring Municipalities. One example is the Neighborhood Association or Group of individuals of a certain barangay, those not yet reached by our distribution lines. This also refers to line extensions to the unwaived areas within our franchise area that are served presently by neighboring utilities especially those near our boundaries. The project cost was based on the historical.
- 3.13. Minor Line Extension Projects** **2008-2011** **Php 15,429,188**
 These projects are for Secondary Line Extension with a maximum distance of 300m from the existing Distribution Transformer station. Most of the applicants of these projects are those living in the interior part of the barangay of the city, and of the neighboring municipalities which are covered by our franchise area. We have also applicants that are beside or near with our primary poles that does not have secondary lines. The projected cost was based on the historical.
- 3.14. Commercial Projects** **2008-2011** **Php 27,598,757**
 These projects are for feasible projects. It involves the installation of Primary Line with Distribution Transformer and service drops or Distribution Transformer Uprating or Rentals of our Distribution facilities or Electrification of Subdivision. Most of these applicants are those involved in developing a business establishment or contractor and developers of a subdivision. The project cost was based on the historical.
- 3.15. Streetlight Control Installation** **2008-2011** **Php 959,724**
 Estimated costs for the installation of streetlight control for places that still do not have installations like that of rural areas.

ESD-TSD

- 3.16. Service Materials: Power Metering Accessories** **2008-2011** **Php 4,962,030**

POWER METERING ACCESSORIES	2008	2009	2010	2011	TOTAL
CT ENCLOSURE	313,600	333,200	347,900	362,600	1,357,300
METER BOX	300,800	319,600	333,700	347,800	1,301,900
ELECTRONIC METER BATTERY	10,500	10,500	10,500	10,500	42,000
# 10 AWG STRANDED CU. WIRE	37,800	37,800	41,400	41,400	158,400
TERMINAL BLOCK, W/ 10 OR 12 SHOTS, DURHAM BRAND	448,000	476,000	497,000	518,000	1,939,000
PVC PIPE, LENGTH: 10 FT., DIAMETER:1"	7,680	8,160	8,520	8,880	33,240
LOCKNUT, DIAMETER: 1"	1,935	2,025	2,130	2,220	8,310
CONDUIT BUSHING, DIAMETER: 1"	1,935	2,025	2,130	2,220	8,310
PVC COUPLING, 1" DIAMETER	1,935	2,025	2,130	2,220	8,310
PVC ELBOW, 1" DIAMETER	1,935	2,025	2,130	2,220	8,310
PADLOCK MASTER	22,400	23,800	24,850	25,900	96,950
TOTAL	1,148,520	1,217,160	1,272,390	1,323,960	4,962,030

The above items are power metering accessories necessary for the forecasted load-growth of power customers.

- 3.17. Meters and Accessories** **2008-2011** **Php 109,468,100**

SINGLE PHASE WH METERS	2008	2009	2010	2011	TOTAL
KWHMETER, CLASS 100/200	12,916,000	12,916,000	12,916,000	12,916,000	51,664,000
SINGLE PHASE WH METER ACCESSORIES					
METER BASE, 3/4	1,364,000	1,474,000	1,430,000	1,496,000	5,764,000
METER BASE, 1"	101,000	101,000	111,100	111,100	424,200
METER BASE, 2" 4-JAWS	51,000	51,000	51,000	51,000	204,000
METER BASE, 2" 5-JAWS	238,000	238,000	238,000	238,000	952,000
METER BOX, GI, 16"X10"X5'	125,000	125,000	125,000	125,000	500,000
METER BASE MOUNTING, SMALL	720,000	720,000	765,000	810,000	3,015,000
METER BASE MOUNTING, BIG	105,000	105,000	105,000	105,000	420,000

SNAP-ACTION SEALING RING	558,000	603,000	585,000	612,000	2,358,000
GLASS COVER, GE TYPE	87,500	87,500	87,500	87,500	350,000
AAC, #8 AWG, SOLID	993,600	993,600	993,600	993,600	3,974,400
SUB-TOTAL	17,259,100	17,414,100	17,407,200	17,545,200	69,625,600
THREE PHASE WH METER ACCESSORIES					
HEAVY DUTY RINGLESS METER BASE, 5 TERMINALS BRAND:GE TYPE 200A	215,000	225,000	237,500	247,500	925,000
FOR 3PH 4 WIRE WYE/DELTA BOTTOM TYPE, CL 200 BRAND:GE OR EQUIVALENT ELECTRONIC METER	3,870,000	4,050,000	4,275,000	4,455,000	16,650,000
POWER METERING EQUIPMENT					
FOR 3PH 4 WYE/DELTA FITZALL BOTTOM TYPE, CL20 BRAND: GE OR EQUIVALENT ELECTRONIC METER	4,080,000	4,250,000	4,505,000	4,760,000	17,595,000
FOR 3PH 4 WYE/DELTA FITZALL BOTTOM TYPE, CL20 W/ ADVANCED PQ BRAND NEXUS OR EQUIVALENT ELECTONIC METER	1,800,000	300,000	0	0	2,100,000
SUB-TOTAL	9,965,000	8,825,000	9,017,500	9,462,500	37,270,000
CURRENT TRANSFORMERS					
BRAND:GE TYPE:JAK-O RATIO:200/5A VOLT:600	168,000	175,000	185,500	196,000	724,500
BRAND:GE TYPE:JAK-O RATIO:300/5A VOLT:600	112,000	119,000	122,500	129,500	483,000
BRAND:GE TYPE:JAK-O RATIO:400/5A VOLT:600	87,500	94,500	101,500	101,500	385,000
BRAND:GE TYPE:JAK-O RATIO:600/5A VOLT:600	66,500	73,500	73,500	80,500	294,000
BRAND:GE TYPE:JAK-O RATIO:800/5A VOLT:600	52,000	52,000	60,000	60,000	224,000
BRAND:GE TYPE:JAK-O RATIO:1000/5A VOLT:600	71,500	71,500	82,500	82,500	308,000
BRAND:GE TYPE:JAK-O RATIO:1200/5A VOLT:600	38,500	38,500	38,500	38,500	154,000
SUB-TOTAL	596,000	624,000	664,000	688,500	2,572,500
TOTAL					109,468,100

These are necessary for the forecasted load-growth of customers.

B. NON-NETWORK ASSETS

(Note: Costs are in Real Value excluding Freight & Handling Cost estimated at 6.815%)

1. RENEWAL-RELATED

ESD-LCMD

1.1.	High Tension Gloves with Sleeves	2008/2010	Php 600,000
	Personal/Lineman's Tools	2008-2010	Php 200,000
	These are provisions for the replacement of the above tools.		

ESD-SOD

1.2.	Infrared Scanner with Software	1 unit	2009	US\$ 78,840
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Project Details

Name	Renewal of Infrared Scanner with Software
Description	This project is intended to replace the existing Infrared Scanner with is already 10 years old.
Project Duration	July 2008 – December 2008

Project Classification

Rank	1st Priority;	(Ongoing; 1st Priority; 2nd Priority)	
Project Categorization	Renewal	(Renewal; Refurbishment; Growth or New Assets)	
Project Sub-Categorization	Miscellaneous Equipment	(As defined in Appendix F of the DWRG Issues Paper)	
Cost Disbursement 2007 – 2011 (Real Value – 2006)	Forex: US\$ \$ 78,840.00	Local: PhP	Total: Php

Project Recommendation

Capex Project Classification :	Approved Fully	Approved at X%	Not Approved
Recommendation :	Yes		
Primary Reason(s) for Decision	The existing infrared scanner is almost 10 years old. Although it is still functional it is expected to reach its useful life soon. A Replacement is necessary to sustain the preventive maintenance program which utilized infrared scanner.		
Other Comments	<p>Portable infrared (IR) imaging systems scan equipment and structures, then instantly convert the thermal images to visible pictures for quantitative temperature analysis.</p> <p>CEPALCO use infrared scanning to check connection points on its distribution facilities. Since 1996 the year of its purchased, the scanner had been instrumental in the prevention of unscheduled interruptions due to loose connections.</p> <p>Going back with old the unit, it is no longer flexible enough to cater scanning works in areas where space is very limited. Infrared scanning at control panels where cubicles are spaced very close to walls and other barriers is very difficult and sometimes cannot be accomplished because the old unit is quite big compared to new models.</p>		

Analysis of Project

Thermal imaging has evolved into one of the most valuable diagnostic tools used for predictive maintenance (PM). Thermal imaging, also called thermography, is the production of non-contact infrared, or "heat" pictures from which temperature measurements can be made. By detecting anomalies often invisible to the naked eye, thermography allows corrective action before costly system failures occur.

Reasons to Support Recommendation

This project would reduce maintenance costs, minimizes unscheduled outages and facilitates effective predictive maintenance.

- 1.3. Calculator 4 units 2008-2011 Php 2,400**
 These are replacements of calculators used at the substations.

ESD-TSD

- 1.4. Personal Computer & Accessories 1 set 2009 Php 180,000**
 This is a replacement of the PC used by Meter & Equipment Testing and Repair Section for database maintenance and a test set controller.

- 1.5. Clamp Meter 2 units 2008/2010 Php 50,000**
 These Clamp Meters are expected to reach its usable life and needs replacement by 2008 and 2010.

ESD-CSD

- 1.6. Replacement of the following Transportation Equipment Php 6,749,100**

<u>SAS</u>	<u>Schedule</u>	<u>Amount</u>
4-WHEEL DRIVE (renewal of Vehicle #036)	2009	900,000
4-WHEEL DRIVE (renewal of Vehicle #033)	2010	900,000
4-WHEEL DRIVE (For additional SAS Lineman Crews)	2010	900,000
MOTORCYCLE (for 1 additional Inspector)	2009	49,100
<u>CAS</u>		
BUCKET (Renewal of Vehicle #038)	2008	4,000,000
TOTAL		6,749,100

The forecast renewal is based on the estimated economic life of vehicle which is 10 years.

We propose the conversion of vehicles as follows:

SAS	Vehicle 036 in 2009 to 4-wheel drive	P 900,000
	Vehicle 033 in 2010 to 4-wheel drive	900,000
CAS	Vehicle 038 to Bucket	4,000,000

4-WHEEL DRIVE VEHICLES

At CSD, 4-wheel drive vehicles are necessary so that we can respond to our customers at all weather conditions especially during emergencies. These vehicles are effective even in areas that are located uphill, slippery and off-road conditions.

BUCKET (Man-lift)

Presently, CAS has only 1 mini bucket. Since, we have a maximum of three (3) regular crews during the peak shift (2PM – 10PM), we need to provide one (1) additional bucket (*proposed conversion of the vehicle 038 due for renewal in 2007*) for the other crew. This will speed up repair work of CAS linemen even during rain showers (depending on the intensity). A bucket is necessary also in cases where our linemen have difficulty in positioning or maneuvering due to obstructions (*telephone, cable wires and vegetation*).

NEW VEHICLES

The provided budget is intended for the 4-wheel vehicles for the additional SAS lineman crews in 2010 and a motorcycle for the one (1) additional inspector in 2009.

FCSD-DSD

- 1.7. Various Personal Tools Replacement 1 lot 2008 Php 42,439**
1 lot 2009 Php 48,530
1 lot 2010 Php 80,625
1 lot 2011 Php 45,575

These are budget provisions for the issued tools of all Linemen of District Services Department Service Section. The replacement schedules are based on the standard estimated lives of tools.

1.8. Various Crew Tools Replacement	1 lot	2008	Php 6,655
	1 lot	2009	Php 3,872
	1 lot	2010	Php 4,392
	1 lot	2011	Php 90,345

These are budget provisions for the issued crew tools of all Linemen of District Services Department Service Section. The replacement schedules are based on the standard estimated lives of tools.

1.9. Service Manlift	1 unit	2008	Php 4,500,000
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This unit will replace the old vehicle unit #092, KIA, which is already more than 10 years old assigned to District Services Department.

The Service Manlift is the proposed replacement to address the accessibility problem of linemen to structures, equipment, switches, and protective devices installed at the higher level of the distribution poles. The presence of telecommunication lines in both sides of the poles and sometimes the grown trees beside the pole become obstacles in climbing up and down to fix, repair, and replace any installations or operate the cut-out switches. These obstacles become the factor of delays in restoring power during power failures and much more if the work is turned over to System Operation Department, where a distribution or back-up crew is to be called and mobilized.

The telescopic bucket of Service Manlift is capable to reach at least 12m from the ground, which is the normal height of the primary line, distribution transformers, high tension cut-out, lightning arresters, and other distribution equipment. The presence of this equipment will boost our crew capability to handle minor repair and replacement of sectionalizing switches, transformer protective devices, insulators, and other related works. Thus, makes the power restoration faster and economical compared to mobilizing a back-up crew that requires at least three hours to be at the work site.

Likewise, the use of this equipment will also speed up line works such as: transformer and secondary line related problems especially those where our linemen have difficulty in positioning because of vegetation, obstruction brought by telephone cable and wires and full-over hang structure configuration.

ASD-HRMD

1.10. DVD Player	1 unit	2009	Php 2,000
Replacement of the existing unit purchased in 2006. Estimated usable life is 2 years.			
1.11. Overhead Projector	1 unit	2009	Php 29,000
Replacement of the existing unit purchased in May 1997.			
1.12. Microphone	1 pc.	2008	Php 500
Replacement of the existing unit purchased in 1997.			
1.13. Various Standard Personal Tools	2 lots	2009-2010	Php 207,284
Various Standard Group Tools	4 lots	2008-2011	Php 302,900
These are replacements of the existing personal and group tools issued to Apprentice and Dualized Training Program Trainees.			
1.14. Mini-Tie Clip Microphone	9 pcs.	2008-2011	Php 1,800
Replacements of existing mini-tie clip microphone. Estimated life is only 6 months based on previous purchases and as confirmed by the supplier.			

ASD-LOGISTICS

1.15. Air conditioning Unit, various HP for Engineering complex Main Office (Accounting Office, C1, Mezzanine, and customer lobby)	2 units	2009/2011	Php 102,000
	7 units	2008-2011	Php 573,000

These are replacements of more than 10 to 15 year old units. The replacements shall be done on staggered basis, starting from the oldest, frequently downed and has low efficiency.

- 1.16. Office/Computer Chairs** **7 units** **2008-2010** **Php 11,700**
These are projected replacements of office/computers chairs for the Controller's Office.
- 1.17. Tools:**
Bolt Cutter, Small **1 pc.** **2008** **Php 7,500**
Bolt Cutter, Big **1 pc.** **2008** **Php 12,000**
These are provision for replacement due to wear & tear.
- 1.18. Handtruck, 10" wheel diameter** **1 unit** **2009** **Php 2,680**
This is a provision for replacement of the existing unit which has been in service for more than 10 years.
- 1.19. Battery Charger** **1 unit** **2008** **Php 6,500**
This is a replacement of the unit purchased in the '80s.
- 1.20. Motorcycles, Yamaha Crypton** **18 units** **2008** **Php 883,800**
These will replace the 2 strokes motorcycles in compliance of the Clean Air Act. These are 13 units of at least 9 year old and 5 units of 7 year old. Prolonging the replacement would cost the company more since maintenance costs are already high. Furthermore, there would be more downtime resulting to lower utilization of these units and affect the users' productivity.
- 1.21. Replacement Various Transportation Equipment** **2008-2011** **Php 13,668,800**

Proposed Replacement	Existing Unit	Age (yrs) in 2006	Schedule	Estimated Cost
Multi-Cab	Multi-Cab MV#016 KBT853	12	2008	495,000
Mitsubishi L300	Kia Ceres 4x2 MV#017 KBU524	11	2008	667,000
	Kia Ceres 4x2 MV# 093 KBX 122	11	2008	667,000
	Kia Ceres 4x2 MV# 092 KBU 523	11	2008	667,000
	Tamaraw FX MV# 030 LDV 372	9	2008	667,000
	Tamaraw FX MV# 039 LDV 373	9	2009	667,000
	Tamaraw FX MV# 065 LDV 490	9	2009	667,000
	Tamaraw FX MV# 073 LDV 480	9	2009	667,000
	Tamaraw FX MV# 036 KCG 557	7	2010	667,000
	Mitsubishi L300 MV# 060 KCG 280	8	2010	667,000
	Isuzu IPV MV# 032 KCJ 606	6	2011	667,000
	Tamaraw FX MV# 066 KCG 548	7	2011	667,000
	Isuzu IPV MV# 021 KCL 245	5	2011	667,000
	KIA K2700 4x4	Kia Ceres 4x2 MV# 038 KBX 112	11	2008
Isuzu NKR	Isuzu NKR MV# 046 KCA 815	9	2008	927,300
Isuzu NPR	Isuzu Elf MV# 043 TME 175	13	2008	1,133,500
	Isuzu NPR MV# 040 KCG 874	7	2011	1,133,500
	Isuzu NPR MV# 041 KCG 601	7	2011	1,133,500
	TOTAL			13,668,800

Replacements of the above vehicles are necessary and these are based on the following:

- Policy on replacements of vehicles was set on 10 years of use.
- Prolonging the replacement would cost the company more since 10 year old vehicles already required the necessary repairs, e.g. engine overhauling, body repairs, replacement of underchassis parts. Furthermore, there would be more downtime and inconvenience that affect the user's productivity.

ASD-LSD

- 1.22. Notebook Computer** **2008/2011** **2 units** **Php 254,000**
This will replace the existing computers. A notebook computer would be so useful for lawyers as soft copies of laws, guidelines, rules, cases, contract and other important documents could be easily brought during hearing and meetings and easily accessible.

MLA

- 1.23. Replacement of the following Equipment:**

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Transportation Equipment				

Purchase of new service vehicle (2.5 sedan) replacing the 5-year old service car. (Estimated cost includes comprehensive insurance and LTO registration for 3 years)	-	1,383,000	-	-
Communication Equipment				
A. Network Infrastructure				
OFFICE FURNITURE & EQUIPMENT				
Computers & Peripherals				
1. Computers (Deskstops)	115,000	175,000	112,000	-
2. Printers				
a. Network Printers	-	-	-	-
b. OVC Printer	-	-	-	-
c. Solomon Printer (TIG Room)	9,000	-	-	-
d. FCG Printer (PVM's)	-	-	-	-
3. Scanner	-	-	-	-
4. Fax Machine	14,000	-	-	-
5. DLP Projector	65,000	-	-	-
Sub-total	203,000	175,000	112,000	-
INFORMATION SYSTEMS EQUIPMENT				
Softwares				
1. TAMS	120,000	-	-	-
2. Software for CORSEC	150,000	-	-	-
Sub-total	270,000	-	-	-
TOTAL	473,000	1,558,000	112,000	-

B. NON-NETWORK ASSETS

(Note: Costs are in Real Value excluding Freight & Handling Cost estimated at 6.815%)

2. REFURBISHMENT-RELATED

ESD-TSD

2.1. Calibration/Rehabilitation:			
160KVDC Hipot Dielectric Test Set	1 unit	2008	Php 250,000
DT Loss Test Set	1 unit	2008	Php 250,000
Vacuum & Heater Filter Equipment	1 unit	2008	Php 150,000
DGA Analyzer	1 unit	2010	Php 250,000

The proposed calibration and/or equipment rehabilitation are intended to maintain reliability and integrity of these testing instruments as these instruments are used to test high valued T&D equipment.

ASD-HRMD

2.2. Gate, Motor Operated for District Central Office	1 unit	2008	Php 120,000
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The refurbishment of existing steel gates at the Engineering Complex and District Central Office, and installation of motor for operations are primarily for the improvement of gate operations and enhancement of security performance. This will allow motorized operations of steel gates and improve security performance.

ASD-LOGISTICS

2.3. Main Office Canopy		2008	Php 100,000
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The Main Office Front Canopy Shed is designed to provide a covered comfortable place for customers, who could not be accommodated inside the CCD lobby, to stay while waiting for their turn to pay their electric bills. It is of "built-up steel frames" and "plain GI sheets with epoxy paint finish" structure, provided with insulation layer matting to deflect the heat of the sun. It will cover practically the whole main office front ground and would also provide as protective roof cover for company vehicles parked, thereat, overnight.

2.4. Retrofitting of Lights & Outlets of the Main Office & Engineering Complex		2009-2011	Php 550,000
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Most of the Building's lighting fixtures and power outlets are hazardously loose, broken, worn-out or out of place, that the need for retrofitting is necessary. The retrofitting will also cover the preparation of all lighting outlets and c.o. for the application of DSM conforming lighting fixtures which has been the thrust of the company. The retrofitting shall be implemented on a staggered basis within 3 year period.

2.5. Rehabilitation of Water Distribution Lines of the Main Office & Engineering Complex		2008-2009	Php 79,000
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There is a need to revamp the water supply lines at the Main Office and Engineering Complex to isolate lines suspected to have leaks and in advance state of corrosion greatly affecting the usage, pressure and potability of water.

2.6. Rehabilitation of Sewer Facility and Drainage System of the Main Office and Other Buildings		2009-2011	Php 480,000
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Most of the sewage and water waste containment facilities of the Main Office, Engineering Complex, including those of the Substations are either clogged or broken that needs revamp or reconstructions.

2.7. Concreting of the Engineering Complex Parking Area	2008	Php 500,000
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Periodic surfacing and compacting, routine backfilling and surface grading will be done regularly if the area will not be concreted. The mud will spread within the complex by vehicles moving in and out of the parking area during rainy days which also caused the clogging of the drainage lines, and indirectly increase the routine facility maintenance cost.

2.8. NON-TECHNICAL LOSS REDUCTION PROJECT

Project Details:

Name	NON-TECHNICAL LOSS REDUCTION PROJECT
Description	This is a retrofitting of existing metering clusters owned by customers which were identified to be unsafe and cause of non-technical losses
Project Duration	July 2007 – July 2011

Project Classification:

Rank	1 st Priority	(Ongoing; 1 st Priority; 2 nd Priority)
Project Categorization	Metering	(Renewal-related; Refurbishment-related; Growth-related or New Assets; Non-network Assets)
Project Type Classification	New Assets	
Cost Disbursement 2007 – 2011	Forex: US \$	Local: PhP Total: PhP 16.12 M

Project Recommendation:

Capex Project Classification:	Approved Fully	Approved at X%	Not Approved
Recommendation:	Yes		
Primary Reason(s) for Decision (Why the Capex is required?)	To reduce the total Non-Technical Losses by 0.16 percentage point (or increase the residential customer sales by 75,000 kWh annually), through customer meter clustering and change-out.		
Budget Justification:	<p>Historical indicators support our belief that some portion of the non-technical losses of CEPALCO has been caused by pilferages among several customers. BSD's historical data on recovered kWh from residential customers that were caught tampering their meters or pilfering electricity indicate that the average recovery for 2005 was at 290 kWh per caught residential customer.</p> <p>Using a more conservative assumption of 100 kWh recovered per month per caught residential customer, this pre-feasibility study showed that the Total Non-Technical Losses can be reduced by 0.16 percentage point, based on the 3,864,000 kWh monthly system loss average from January-May 2006, if 6,250 (more or less) cases of pilferage among residential customers can be corrected through the meter clustering project. The benefits are mainly due to the increase in kWh sales as a result kWh recoveries.</p> <p>If the assumptions will hold true, the results in this pre-FS show that this project is beneficial for CEPALCO and for its customers.</p> <p><i>Assumptions:</i></p> <ol style="list-style-type: none"> 1. Average monthly energy sales recovery for residential customers caught having pilferage cases is 100 kWh. 2. Non-technical Losses can be reduced by 0.16 percentage point if 6,250 pilferage cases of Schedule 26 customers will be prevented through cluster metering. 3. Each cluster metering structure installed on poles can accommodate up to 25 customer meters. 4. Average Revenue Margin per unit of energy recovered is at P1.00 per kWh. 5. Assuming the project can be fully implemented starting July 2007, only half of the total recoveries in that year are counted as benefits for the first year. Likewise, only half of the estimated recoveries in the second year are counted as benefits for the second year plus the full benefit of the recoveries in the first year. This approach of crediting benefits shall continue until 2011. Full recoveries due to the project are counted starting the sixth year. 6. Other benefits like the reduction in technical losses (incurred in the service drop lines of customers) are not counted as part of the benefits of this project. 7. This NTLR Feasibility Study or Project shall be a collaborative effort of Customer Services Department (CSD), District Services Department(DSD), System Planning & Design(SysPAD) , and 		

	Billing Services Department – with CSD and DSD as lead departments.
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Budget Requirements

1st Half of RY 2007: CAPEX = P 3,225,125.00; OPEX = P 1,924.00
1st Half of RY 2008: CAPEX = P 3,225,125.00;
1st Half of RY 2009: CAPEX = P 3,225,125.00;
1st Half of RY 2010: CAPEX = P 3,225,125.00;
1st Half of RY 2011: CAPEX = P 3,225,125.00.

Details of NTLR CAPEX Budget:

Item	Quantity	Unit	Item Cost, P
A. Material Cost:			
Trough Box	1	Lot	8,000
Air Circuit Breaker, Kotten 60A	100	pcs	18500
Connector, Burndy HYLUG Belled Cat. # (For #4AWG Cu Str)	20	pcs	3048
Connector, Compression	26	pcs	2886
Universal Dist. Connector (UDC) , # 6 to # 4 Al-Cu	100	pcs	10000
Pipe, RSC 2.5" dia.	11	lengths	8250
RSC Connector, 2.5" dia.	22	pcs	1760
Service Entrance Cap, 2.5" dia.	11	pcs	3080
Secondary Rack	20	pcs	8000
Spool insulators	100	pcs	2000
Bolt, Nuts & Washers, 5/8" dia. X 8"	20	sets	3000
Spacer, GI pipe 1/2" dia.	1	lengths	300
Cross-arm, Steel, 10 feet	6	pcs	9000
Cross-arm, Steel, 8 feet	2	pcs	2200
Bolt, Nuts & Washers, Double-arming, 5/8" x 14"	3	pcs	600
Pole Bands	2	sets	500
V-brace	4	sets	1200
End-plug, GI	100	pcs	2000
Reducer & Locknut, GI	50	pcs	1500
Tape, Electrical	10	pcs	350
Tape, Rubber	6	pcs	570
Tape, Friction	6	pcs	900
Wire, #1/0 Cu. Str. THW	20	m	4000
Wire, #4 Cu. Str. THW	10	m	900
Wire, #8 Cu. Str. THW	120	m	4200
Mica Tube, 1/4" dia.	30	m	450
Mica Tube, 1/2" dia.	3	m	90
Mica Tube, 3/4" dia.	2	m	200
Padlock, Master Weather-proof	2	pcs	720
Miscellaneous	1	units	5000
Total Material cost per Cluster Structure			103,204.00
Total No. of Cluster for Correction per Year			25
Sub-total (Material Cost) per year			P 2,580,500.00
Labor Cost per year			P 645,025.00
TOTAL NTLR Project CAPEX per year			P 3,225,125.00
Multiply: Total No. of Yrs. 2007 to 2011			X 5
TOTAL NTLR Project CAPEX			P 16,125,625.00

Details of NTLR Project OPEX Budget:

Item	Quantity	Unit	Item Cost, P
Incidental Office Supplies	1	lot	P 1,924.00
TOTAL NTLR OPEX (for 2007 only)			P 1,924.00

B. NON-NETWORK ASSETS

(Note: Costs are in Real Value excluding Freight & Handling Cost estimated at 6.815%)

3. GROWTH-RELATED OR NEW ASSETS

ESD-LCMD

**3.1. Capital Requirements for
Live Line Maintenance**

2008/2009 Php 22,866,470 US\$ 16,327

Description	Purchase of Insulated Aerial Bucket, Telescopic Crane, and Hotline Tools and Accessories intended for live line maintenance of CEPALCO's distribution system.		
Date Needed	2008 (for Hotline Tools and Accessories) and 2009 (for Bucket Truck and Crane)		
Rank	1 st Priority	(On-going, 1 st Priority, 2 nd Priority)	
Project Driver Classification	Network Reliability and Safety	(Load Growth; Network non-growth; Network Control /Safety / Metering; Non network)	
Project Type Classification			
Cost Disbursement 2008 to 2009	Forex: US\$ 16,327(@ 52.42)	Local: Php 22,866,470	Total: Php 23,722,331

Project Purpose

CEPALCO's commitment to improve its system performance and the growing demand for power has made it increasingly difficult to schedule outages in CEPALCO's major distribution lines to perform required line maintenance and repair. The fact that CEPALCO's distribution system has not yet met the N-1 criteria, the lines and substations are much harder to temporarily take out of service to have work done on them.

De-energizing high voltage distribution lines for maintenance and repair can involve considerable expense and revenue loss as well as negative effect and feedback from customers. Yet, working on energized systems involves obvious risks that require highly specialized live-line techniques and high valued tools and equipment.

CEPALCO has been conducting live-line maintenance works on its medium voltage (34.5 & 13.9 kV) lines since 1995 to minimize power supply interruption. Such strategy proves beneficial for CEPALCO in terms of increased sales, and at the same time improving service reliability and better customer service. To further enhance customer service, better line reliability and service efficiency by reducing O&M costs, CEPALCO has expanded its capability to conduct live-line maintenance on its 69 and 138 kV lines, which are the main backbone of CEPALCO's distribution system.

Using live-Line techniques would enable CEPALCO to maintain its distribution lines without removing them from service. The attractions of this technique are as follows:

- Customer satisfaction due to increased security/reliability of supply;
- Improve productivity through better work efficiency or speed of maintenance;
- Ability to monitor or better appreciate the condition of the distribution system; and
- Economic advantages due to improve sales.

In line with the above objectives CEPALCO has included in its PBR application a budget to purchase hotline tools and accessories, an insulated aerial bucket truck and a telescopic crane.

HOTLINE TOOLS & ACCESSORIES: (USD 16,327; Php 285,620.00)

These are additional hotline tools and accessories needed to further enhance the capability of CEPALCO to perform live line maintenance and repairs on high voltage lines. These are spiral and strain link sticks, conductor covers, extension chains, pole covers, cable cutters, chain saws, hand lines and among other hotline safety equipment that are consequential to live-line maintenance works.

INSULATED AERIAL BUCKET TRUCK – Php 10,122,450

An insulated aerial bucket truck is a vehicle mounted articulating or telescopic device with attached bucket, which is used to elevate and position personnel to job sites above the ground. It consists of an extensible boom platform, aerial ladders, articulating boom platforms and any combination of these devices. The aerial lift device is made with fiberglass in the lower and upper boom with polyethylene bucket liners capable to withstand a dielectric strength of up to 146 kV. This equipment would serve as the major tool on live-line maintenance, which will be conducted either “hot stick” or “bare-hand” technique.

The insulated aerial buck truck will be specifically used on the following line maintenance works:

- pole and cross arm installation or replacement;
- distribution transformer installation or replacement;
- insulator replacement;
- line spacer replacement;
- conductor transfer, repair or replacement;
- line, tower, and pole inspection;
- line hardware tightening;
- repair or replacement of high voltage terminations;
- high-voltage splices;
- replacement of high voltage power fuses;
- replacement of defective line or station switches;
- repair and replacement of damaged poles;
- relocation of in-service sub-transmission or distribution lines;
- assemble and repair tower structures;
- assessment of line structures through pole to pole inspection;
- high-voltage electrical apparatus maintenance; and
- Dry cleaning of contaminants, corrosive salts and industrial pollutants from insulators.

The mechanization of line construction and maintenance will reduce the line crew composition from six (6) to five (5) men per crew or a 16.7% reduction in line crew manpower complement. The purchase of the aerial bucket truck would likewise free-up one line crew vehicle since the aerial bucket has material handling features. This will allow the Logistic department to re-assign the vacated vehicle to other work unit.

TADANO TELESCOPIC CRANE – Php 12,458,400

The telescopic crane would serve as support equipment for all normal and live line maintenance and repair activities such as: pole hauling, pole erection and setting, pole retirement, lifting of heavy line hardware and lifting of live conductor while hotline maintenance is on progress. This telescopic crane is highly important support equipment on the day-to-day operations of the line construction and maintenance group.

Impact if Project Not Implemented

As the distribution system of CEPALCO expands the number or frequency of major line maintenance requirements likewise increases. The absence of live line techniques and equipment would mean frequent and prolonged line outages, thereby resulting to poor system and customer services performance.

These equipment are intended to reduce if not eliminate frequent and prolonged line outages to meet the system and customer service performance levels committed by

tasks are related to the utilization, recording and monitoring of line materials and equipment.

Apart from the WOS requirement, the use of the portable data terminal/assistant (PDT/A) by line crews would likewise reduce the man-hours spent by line crews in encoding their daily job accomplishments by approximately 70%. At present LCM is consuming an average of 350 man-hours per month or an average of 3.5 man-hours per crew/day for encoding works. The use of PDT would eliminate encoding of daily job progress reports since daily accomplishments would automatically be downloaded from the PDT to the computer at the end of the day. With the use of PDT, the crews would only need about 100 man-hours per month to do some file maintenance of the downloaded records to ensure that the recorded daily accomplishments are in order and accurate.

Apart from the economic benefits the following are other intangible benefits that can be realized as a consequence of the use of PDT:

- a. Reduced encoding error of DJPR since actual recording is done in the field;
- b. The use of PDT eliminates the hiring of casual employees that are supposed to conduct time-and-motion study to update the existing construction man-hour standards to validate the man-hours used by SYSPAD in project estimates;
- c. Man-hour allocation per construction task can now be accurately determined that would lead to more realistic setting of construction standards. The actual data encoded data in the field, such as the installation/retirement of material/structure or the performed tasks in the field, will be used to update the existing construction standards to serve as the basis of line crews' performance.
- d. Project bill of materials requisition and liquidation will also be done through the use of PDT hence, eliminating manual reporting of materials subject for BRO, MRS, MRR thereby resulting to a faster completion of the work accomplishment reports (WAR);
- e. Dispatching and scheduling of projects will be done through PDT, thus feed backing of project status would be more effective; and
- f. Reporting requirements of ERC, DOE and other government agencies can be done faster and accurately.

Impact if Project Not Implemented

CEPALCO will miss the efficiency gains that would be derived if said project is not implemented. Secondly, the requirement of timely reporting and maintaining accurate records of field accomplishments will not be realized if said project will be disallowed. The second reason is in compliance with regulatory reporting requirements as well as the mandate to maintain accurate records by electric distribution utilities.

Investment Costs (5 PDT and related expenses)	P 250,000.00
Man-hours consumed for encoding per month w/o PDT	350
Man-hours consumed for encoding per month w/ PDT	100
Net Man-hour savings with PDT	250
Average hourly rate of encoder	P 86.96
Annual Savings	P 260,880.00
Provisions for Maintenance Costs per year	P 13,261.50
Net Annual Savings	P 247,618.50
Investment IRR, 5 years	100.64%
NPV Costs	P 257,116.75
NPV Benefits	P 842,985.82
Benefit Cost Ratio	3.58

Reason for Ranking Project Commissioning date relative to Other Projects

Necessary investment to meet ERC and DOE compliance on timely reporting and maintain accurate reporting and recording of assets installed in the field. Besides, the project would pay off from its efficiency gains.

ESD-SOD

3.3.	Vehicle	1 unit	2008	Php 900,000
		1 unit	2009	Php 1,200,000

Project Details

Name	Purchase of Two Vehicles, (New SOD Crew, System Operation Section)
Description	
Project Schedule	2008/2009

Project Classification

Rank	1 st Priority	(Ongoing; 1 st Priority; 2 nd Priority)	
Project Categorization	Growth or New Assets	(Renewal; Refurbishment; Growth or New Assets)	
Project Sub-Categorization	Transportation Equipment	(As defined in Appendix F of the DWRG Issues Paper)	
Cost Disbursement 2008/2009	Forex: US\$	Local: PhP 2,100,000	Total: PhP 2,100,000

Project Recommendation

Capex Project Classification :	Approved Fully	Approved at X%	Not Approved
Recommendation :	Yes		
Primary Reason(s) for Decision	Due to load growth and increasing number of customers and other functions of the Distribution Section. To provide a vehicle to the System Operation Section in performing local operation to unmanned substations when remote operation fails.		
Other Comments			

Analysis of Project

The increasing number of customers will require more works to the distribution section. In order maintain the level of service required by customer additional crew will be added. The new vehicle for the Distribution Section is just an incidental cost of the additional crew.

With regards to the vehicle intended for the System Operation, switching operation must be performed locally when required particularly during communication failure. The shift System Operation Supervisor will be tasked to perform local switching thus he needs a vehicle to perform this function.

Reasons to Support Recommendation

One vehicle would be used by the distribution section in performing distribution functions including voltage measurement in accordance to the voltage regulation performance incentive scheme index. The other vehicle would be used for local switching of unmanned substation when SCADA fails.

3.4.	Calculator	3 units	2008-2010	Php 1,800
	These are calculators for the new substations.			

3.5.	Tools for the New SOD Crew	1 lot	2009	Php 600,000
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Project Details

Name	Tools for New SOD Crew
Description	These tools are intended for the proposed additional SOD Crew.
Project Duration	July 2008 – June 2009

Project Classification

Rank	1 st Priority	(Ongoing; 1 st Priority; 2 nd Priority)	
Project Categorization	Growth or New Assets	(Renewal; Refurbishment; Growth or New Assets)	
Project Sub-Categorization	Tools, Shop and Garage Equipment	(As defined in Appendix F of the DWRG Issues Paper)	
Cost Disbursement RY 2009	Forex: US\$	Local: PhP 600,000	Total: PhP 600,000

Project Recommendation

Capex Project	Approved Fully	Approved at X%	Not Approved
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Classification :			
Recommendation :	Yes		
Primary Reason(s) for Decision	These new tools are incidental cost of additional SOD Crew.		
Other Comments			

Analysis of Project

These tools are just coincidental cost of the proposed additional SOD crew for year 2008. To provide better service to the increasing number of customers served by CEPALCO triggered this project.

Reasons to Support Recommendation

Tools are necessary for a crew to perform its functions.

3.6. Equipment/Tools for the Improvement of Operation Personnel Performance 2008-2011 Php 338,000

Project Details

Name	Various Tools
Description	Purchase of some equipment/tools will be required to improve the performance of operation personnel.
Project Duration	July 2007 – July 2011

Project Classification

Rank	2nd Priority	(Ongoing; 1st Priority; 2nd Priority)	
Project Categorization	Growth or New Assets	(Renewal; Refurbishment; Growth or New Assets)	
Project Sub-Categorization	Miscellaneous Equipment	(As defined in Appendix F of the DWRG Issues Paper)	
Cost Disbursement 2007 – 2011	Forex: US\$	Local: Php 338,000	Total: Php 338,000

Project Recommendation

Capex Project Classification :	Approved Fully	Approved at X%	Not Approved
Recommendation :	Yes		
Primary Reason(s) for Decision	To improve the performance of operation personnel, this will consequently improve safety and service to customers.		
Other Comments			

Analysis of Project

Item 1: Distribution Phasing Tester [2009] Php 80,000

Before connecting two primary distribution lines when the other line becomes the source and vice versa, two basic requirements must be satisfied. First, the nominal voltage rating of the two lines must be the same. Second, the phase sequence (rotation) must be also the same. To satisfy the second requirement, testing must be conducted to check if the phase rotation is the same. The worst consequence of connecting these lines when the second condition is not satisfied is the possibility of 3-phase motor load failures and its accessories.

Item 2: Digital Camera [2008] Php 30,000

During line inspection, the Vegetation Clearing Supervisor should properly document trees and other vegetation that were outside safety clearance. A better way to properly document vegetation inspection is by taking and saving pictures. Pictures are then downloaded to available computers for saving, reporting, and proper viewing, which will be printed later when needed. A digital camera can satisfy the required documentation of vegetation inspection and tripping incidents. This camera will also be utilized by other sections of the department for documentation of their respective works.

Item 3: Range Finder [2009] Php 40,000

Inspections of lines by our Vegetation Clearing Supervisor have been carried out and trees that were outside safety clearance have been trimmed. Even though some tree

owners are reluctant to allow tree cutting, trimming and pruning, efforts have made to negotiate with these owners. This device would be a great help in conducting line inspection wherein clearance of trees from distribution lines must be measured. Clearance measurement is very important especially for trees that might collapse in the future.

Item No. 4: Night Vision Binoculars [2011] Php 100,000

Line inspection and patrol are difficult during nighttime due to lack of visibility, however this problem can be address easily using night vision binoculars. Locating failed line components, hanging branches & foreign objects at the line, electrocuted animals like birds, snakes and lizards would be easy using night vision binoculars. This device will speed up patrol and inspection time.

Item 5: Haven Grip [2009] Php 8,000

Grips are widely used in the power, communication and general construction fields to pull wire and cable and to maintain temporary tension until it can be permanently terminated. This particular grip is intended for use with smaller cable like installing transformer grounding and guy wires. Pulling smaller wire cable would be easy with required tension maintained.

Item 6: Traffic Cone [2008] Php 20,000

Traffic cone is intended as safety precaution for linemen working along the road from incoming vehicles, which might bump them. This will replace the existing traffic cone, which are no longer of standard safety specification.

Item 7: Others [2009] Php 60,000

Reasons to Support Recommendation

These equipments will increase the productivity of CEPALCO personnel in the performance of their functions.

3.7.	Three Phase Voltage Recorder	2 units	2008/2009	Php 660,000
	Single Phase Voltage Recorder	2 units	2008/2009	Php 110,000
	Distribution Transformer Load Monitoring	2 units	2008	Php 895,000

Project Details

Name	Purchase of Voltage & Load Recorder
Description	This project is intended to measure voltage and load along the distribution lines of CEPALCO. The measurements will be the basis for the necessary corrections to meet the standard specified in the Philippine distribution Code.
Project Duration	July 2007 – December 2008

Project Classification

Rank	1st Priority	(Ongoing; 1st Priority; 2nd Priority)	
Project Categorization	Growth or New Assets	(Renewal; Refurbishment; Growth or New Assets)	
Project Sub-Categorization	Miscellaneous Equipment	(As defined in Appendix F of the DWRG Issues Paper)	
Cost Disbursement 2007 2011 (Real Value – 2006)	Forex: US\$	Local: PhP 1,665,000	Total: PhP 1,665,000

Project Recommendation

Capex Project Classification :	Approved Fully	Approved at X%	Not Approved
Recommendation :	Yes		
Primary Reason(s) for Decision	The primary reason for these equipments is for measurement of voltage at various points in the distribution system of CEPALCO. The measured voltages will be the basis in the calculation of voltage regulation index, which is included in the submitted performance incentive scheme. The same equipment will provide the necessary inputs in the corrections of voltages outside nominal values.		
Other Comments	<p>ITEM 1: THREE PHASE VOLTAGE RECORDER [2008, 2009] Php 660,000</p> <p>Measurement of voltage sag, swell and unbalance levels are necessary to assure customers that the said power quality is within tolerable level. This device is intended to measure power</p>		

	<p>quality to three-phase power supply. Power quality complaints of customers particularly on voltage levels can be verified using this equipment. Voltage unbalance due to supply or due to improper division of loads in three-phase supply can be easily determined. As mandated by the Philippine Distribution Code, the allowed voltage variation during normal operation is plus and minus ten percent of the nominal voltage while plus and minus 2.5 percent for voltage unbalance. In order to determine whether voltage level and unbalance at customer service entrance are within the standard limits prescribed in the Philippine distribution code a three phase voltage recorder is necessary.</p> <p>ITEM 2: SINGLE PHASE VOLTAGE RECORDER [2008, 2009] Php 110,000 The above equipment will be used in measuring voltage at the secondary side of the distribution system. Verification of voltage that is not within the prescribe limits of the distribution code is very necessary to formulate corrective actions.</p> <p>The proposed PIS submitted to ERC include voltage violation, which would affect our rates if measured voltage at specified locations exceed approved threshold. Voltage recording will be performed using recorders that can be left in the field to reduced manpower cost.</p> <p>ITEM 20: Distribution Transformer Load Monitoring – 2units [2008] Php 895,000 This device is intended to monitor loading of distribution transformers. Pilferage can be detected using this device. Total energy consumption of customer meters is compared to the energy record of the meter. Any big discrepancy would mean pilferage or grounded connection.</p>
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Analysis of Project

The quality of voltage supplied by electric distributor should be within prescribed standards. To validate quality of supply voltage, measuring devices are used. Voltage and load measurement are the basis for necessary corrections.

Reasons to Support Recommendation

This project would further help CEPALCO in addressing voltage quality problems in its franchise area.

- 3.8. **Electric Stove** **3 units** **2008-2011** **Php 6,000**
These are Electric Stove for the new substations.

ESD-SYSPAD

- 3.9. **Customized Vehicle** **1 unit** **2008** **Php 950,000**
The customized vehicle will be used as mobile fiber optic work area. This will be an enclosed and air-conditioned van designed to simulate a dust free work environment which is a requirement for working with fiber optics. Splicing, termination and testing of fiber optics must be done in a dust-free environment since even the smallest particle of dust settling in the fiber could already affect its efficiency.

- 3.10. **Asset Register Database Build-up** **2008-2011** **Php 18,539,400**

Project Details:	
Name	Asset Register Database Build-Up
Description	Build-up of Geographical Information System (GIS) Based Asset Register Database and Implementation of Automated Mapping and Facilities Management Application.
Project Duration	2008-2011
Project Classification:	
Rank	(Ongoing; 1 st Priority; 2 nd Priority)

Project Classification	Driver		(Load Growth, Network non-growth, network control/safety/metering, non-network)	
Project Classification	Type		(Replacement, Refurbishment, New Assets)	
Cost Disbursement 2008 – 2011	Forex: US \$	Local: PhP 18,539,400.00	Total: PhP 18,539,400.00	
Project Recommendation:				
Capex Project Classification:	Approved Fully	Approved at X%	Not Approved	
Recommendation:	Yes			
Primary Reason(s) for Decision	<p>The build-up of a GIS-based Asset Register is basically the development of a Continuing Property Record that contains all Unitized Property Units with the following attributes: quantity, purchase price, installed (or as-built) cost, year installed or placed in service, and significant changes in value due to maintenance or refurbishment. By adding another data to each property unit – the location or geo-location – the Asset Register becomes GIS-capable. As GIS-capable, Asset Register will have a self-checking feature as the data will have a geo-location on which to physically verify where it is installed thus ensuring the accuracy of the Asset Register. These cannot be satisfactorily attained if the Asset Register is not GIS-capable. Accurate, complete, and up-to-date geo-referenced Asset Register is already a valuable asset, but this value can be further dramatically increased if GIS-based applications are implemented to avail of the data, thus enabling the company to effectively manage the assets. This application, which is an integral part of the project, is the Automated Mapping and Facilities Management (AM/FM)</p> <p>Work associated with assets is 80% geo-spatial in nature (related to a point in the map). The company needs a GIS-based automated mapping software to sustain and maintain the updating of the base map, thus providing accurate, complete and up-to-date data to the users, providing the users capability to view and analyze the spatial data in ways to create thematic maps, like franchise area classification, soil types, shorelines, vegetation growth, etc.</p> <p>Facilities Management (FM) would enable the company to use circuit topology and perform spatial analysis and optimal path determination. FM can readily determine and show Planned Network, Network Under Construction and Network in Operation once AM/FM is interfaced with Work Management System. Queries and verification can easily be made to provide type and quantity of facilities (assets) per voltage level, per feeder, per section, per area. AM/FM will also provide the company the opportunities to manage effectively right-of-way assets, pole usage, and vegetation clearing.</p> <p>With the AM/FM, customers' locations and network connectivity can be reflected on the base maps and distribution network. These will provide the Customer Assistance and Services groups and System Operators the capability to promptly determine the locations of affected customers for transmission to the field crews, thus aiding in hastening the resolution of customers' complaints.</p>			
Other Comments	<p>Mapping is a major issue for the company as it is dedicated in improving system reliability. The company's existing base map is in AutoCAD and this map is overlaid with the distribution facilities. These base map and the overlaid facilities need to be converted to GIS-based environment. In essence, GIS-capable Asset Register and GIS-based applications will provide company with tools to improve productivity and implement efficiency initiatives to reduce the cost of constructing, operating and maintaining distribution facilities. Incoming competitive market and stricter regulatory requirements will demand for more efficient operations, while an increasingly complex infrastructure requires more monitoring and maintenance. The GIS-based systems can effectively meet these challenges and contribute to the improvement of system reliability.</p>			

Analysis of Project

The existing AutoCAD-based base map, overlaid facilities and over customer locations will have to be converted to GIS-based environment. The conversion will involve acquisition of GIS-based software, hardware (computers and Geographical Position System, or GPS device), training, geo-database design and actual field survey and verification of asset locations. The survey output will then update the existing asset register by providing the asset entities with geo-locations and then reconciled, and all attributes added, as required by ERC in the PBR.

The system will require a relational database system software to store and handle all the attributes and a spatial database engine software to interface with the AM/FM software.

Details of Project Cost

ASSET REGISTER DATABASE BUILD-UP	2008	2009	2010	2011	TOTAL
INFORMATION SYSTEMS EQUIPMENT					
1. Asset Register Database Build-up					
a. Software (ArcGIS)					
Arc Spatial Database Engine (SDE)	250,000	250,000	250,000	250,000	1,000,000
Maintenance Fee					
1. ArcGIS ArcEditor 9	522,000	522,000	522,000	522,000	2,088,000
2. ArcGIS Data Interoperability Extension (1license)	80,000	80,000	80,000	80,000	320,000
3. ArcPAD Appl. Builder & ArcPAD	63,800	63,800	63,800	63,800	255,200
2. Oracle 10g					
a. Software: one(1) processor license for 5 users	1,000,000	1,000,000	1,000,000	0	3,000,000
b. Maintenance Fee - 20% of the software cost	200,000	400,000	600,000	800,000	2,000,000
3. Automated Mapping/Facilities Management Appl.	4,000,000	0	0	0	4,000,000
a. Application Software	800,000	0	0	0	800,000
b. Training - 20% of software cost	800,000	0	0	0	800,000
c. Customization - 20% of software cost	0	800,000	0	0	800,000
d. Maintenance Fee - 20% of the software cost	0	0	800,000	800,000	1,600,000
SUB-TOTAL	7,715,800	3,115,800	3,315,800	2,515,800	16,663,200
OFFICE FURNITURE & EQUIPMENT					
3. Automated Mapping/Facilities Management Appl.					
a. Desktop PCs	540,000	420,000	0	0	960,000
b. Deskjet Printers	135,000	105,000	0	0	240,000
SUB-TOTAL	675,000	525,000	-	-	1,200,000
MISCELLANEOUS EQUIPMENT					
1. Asset Register Database Build-up					
a. Other Expenses	676,200	0	0	0	676,200
TOTAL	9,067,000	3,640,800	3,315,800	2,515,800	18,539,400

3.11. Work Management System Application 2008-2011 Php 10,910,000

Project Classification:			
Rank		(Ongoing; 1 st Priority; 2 nd Priority)	
Project Driver Classification		(Load Growth, Network non-growth, network control/safety/metering, non-network)	
Project Type Classification		(Replacement, Refurbishment, New Assets)	
Cost Disbursement 2008 – 2011	Forex: US \$	Local: PhP 10,910,000.00	Total: PhP 10,910,000.00
Project Recommendation:			
Capex Project Classification:	Approved Fully	Approved at X%	Not Approved
Recommendation:	Yes		

Primary Reason(s) for Decision	The Work Management System (WMS) application produces the largest benefits in the GIS system as it automates the design, cost estimating and scheduling, resulting to substantial reduction in average price per work order. Likewise, as a result of optimizing the design process, there is also savings in the areas of inventory, materials handling and carrying costs, as WMS will be interfaced with the existing Materials Inventory System (in the Solomon Financial software).
Other Comments	<p>The WMS application will avail of the GIS-based facilities database (with interface to Asset Register) and interface with AM/FM application for ready assessment on the project locations, line routes, access roads, right-of-way concerns, possible vegetation clearing, etc. Non-implementation of a GIS-based WMS cannot sustain the expected volume of work order generation and processing and will adversely affect the update of the Asset Register.</p> <p>Completed projects from WMS will be reflected (layered) in the AM/FM base map and facilities database on Per-Work-Order, for ready access and reference for project installation date, energization date, total project cost, project duration, etc. and interfaced (indexed) with the corresponding reflected line assets in the Asset Register.</p>

Analysis of Project

The critical requirement of the timely implementation and effective use and operation of the WMS application is that all data inputs are accurate, complete and up-to-date, as WMS is only as good as the quality of the data provided. The quality and timely requirements of the data input can only be attained with the use of portable data devices (PDAs) by all personnel handling tasks related to the utilization, recording and monitoring of distribution line materials and equipment. Some PDAs that will be used in the field will be equipped with geographical positioning system (GPS) to also capture the installed materials/equipment's and the customers' locations (location coordinates). The base map, facilities symbols and customer locations are readily updated once the PDAs are brought to the central station for uploading to the system. For completed projects, the uploaded data will promptly update the Asset Register. Hence, all the users of WMS will share and use common data, which are accurate, complete and up-to-date. The data storage and handling will be handled by the RDBMS software.

For much clearer prints, a DeskJet Plotter will be acquired during the implementation.

Details of Project Cost:

WORK MANAGEMENT SYSTEM (WMS) APPLICATION	2008	2009	2010	2011	TOTAL
INFORMATION SYSTEMS EQUIPMENT					
a. Personal Digital Assistant (PDA) System					
1. For Program Development					
One (1) copy Visual Studio.NET Enterprise Dev	300,000	0	0	0	300,000
One (1) unit PDA with GPS module	100,000	0	0	0	100,000
2. One (1) copy AppForge Corssfire	160,000	0	0	0	160,000
3. Training	280,000	0	0	0	280,000
b. Work Management System					
1. Software	0	4,000,000	0	0	4,000,000
2. Training - 20% of software cost	0	800,000	0	0	800,000
3. Customization - 20% of software cost	0	800,000	0	0	800,000
4. Maintenance Fee - 15% of software cost	0	0	800,000	800,000	1,600,000
SUB-TOTAL	840,000	5,600,000	800,000	800,000	8,040,000
OFFICE FURNITURE & EQUIPMENT					
a. Personal Digital Assistant (PDA) System					
11 units PDAs with GPS module @P100,000.00 each	1,100,000	0	0	0	1,100,000
25 PDAs without GPS module @P40,000.00 each(19&6)	1,000,000	0	0	0	1,000,000
b. Work Management System					
DeskJet Plotter	0	350,000	0	0	350,000
c. Desktop PCs11 (@ 60,000)	0	360,000	0	0	360,000

d. Deskjet Printers (@ 15,000)	0	60,000	0	0	60,000
SUB-TOTAL	2,100,000	770,000	-	-	2,870,000
TOTAL	2,940,000	6,370,000	800,000	800,000	10,910,000

- 3.12. **Desktop Computer** 1 unit 2008 Php 60,000
Computer Table 1 unit 2008 Php 2,500
Range Finder 1 unit 2008 Php 25,000

These are incidental capital items to the hiring of DB Admin Staff.

- 3.13. **Desktop Computer** 2 units 2008/2009 Php 120,000
Notebook Computer 2 units 2008/2009 Php 180,000
Computer Table 2 units 2008/2009 Php 5,000
Handheld Radio 2 units 2008/2009 Php 44,000

These are incidental capital items to the hiring of two Design Engineers to be hired in RY 2008 and RY 2009.

- 3.14. **Desktop Computer** 1 unit 2008 Php 60,000
Notebook Computer 1 unit 2008 Php 90,000
Computer Table 1 unit 2008 Php 2,500

These are incidental capital items to the hiring of one Analyst/Programmer.

ESD-SYSPAD/DCS

- 3.15. **Capital Items for Distribution Compliance Section (DCS)** 2008-2011 Php 1,861,622 US\$ 67,742

Project Details:			
Name	Distribution Compliance Section (DCS) CAPEX		
Description	For the Second Regulatory Period of the PBR		
Project Duration	July 1, 2007 – June 30, 2011		
Project Classification:			
Rank	1 st Priority	(Ongoing; 1 st Priority; 2 nd Priority)	
Project Categorization	Non-network Assets, Growth-related	(Renewal-related; Refurbishment-related; Growth-related or New Assets; Non-network Assets)	
Project Sub-Categorization	(7.) Laboratory Equipment; (8.) Information Systems Equipment; and (11.) Miscellaneous Equipment	(As defined in Appendix F of the DWRG Issues Paper)	
Cost Disbursement 2008 – 2011	Forex: US \$ 67,742	Local: PhP 1,861,622	Total: PhP
Project Recommendation:			
Capex Project Classification:	Approved Fully	Approved at X%	Not Approved
Recommendation:	Yes		
Primary Reason(s) for Decision (Why the Capex is required?)	The proposed CAPEX for Distribution Compliance Section (DCS) is necessary for the section to accomplish its functions within the second regulatory period of the PBR.		
Other Comments (Why the Capex is considered to be of reasonable magnitude?)	<p>The official functions of DCS include:</p> <ul style="list-style-type: none"> • T&D short-, medium-, and long-term development; • Research and studies in system reliability and improvement; • Compliance to the technical standards in the Philippine Grid and Distribution Codes; • Association with concerned government agencies, other utilities, professional organization and societies, and academic institutions; and • Special projects. <p>The proposed One Million Eight Hundred Sixty One Thousand Six Hundred Twenty Two Pesos (P1,861,622) and Sixty Seven Thousand</p>		

Seven Hundred Forty One US dollars and Ninety Seven cents (US\$ 67,942) capitalized budget will ensure that DCS can fulfill efficiently the above functions.

Breakdown of the DCS CAPEX Forecast:

Group Tools –

- AC Current Probes – P588,750 [RY 2008]
Needed to augment the existing AC Current probes of DCS. These will be used for sampling the hourly profiles representing each of customer class, voltage variation measurements for the PBR PIS monitoring, and power quality measurements required in the Philippine Distribution Code.
- Heavy duty Inverter and Power Supply (AC/DC) Adaptor – P28,800 [1H RY 2008]
Needed by the Power Quality Crew/Technicians of DCS in areas where there are no available AC source to power their mobile (laptop) PC and the communication device interface (UNICOM 2500) between the installed PQ meters/analyzers and their mobile PC. In those areas, the inverter and power supply adaptor will work in tandem to supply power for the mobile PC and the communication interface device from the 12-volt battery of their vehicle.
- Electric Drill set and Soldering Iron – P6,040 [2008]
Needed by the Power Quality Crew/Technicians in fabricating the metal boxes to enclose the PQ meters/analyzers and the AC current probes.
- Toolbox – P1,250 [2008]
For safe keeping and protection of the tools issued to the Power Quality Crew/Technicians.
- Other Items – P47,580 [RY 2008-2009]
To augment the miscellaneous Group Tools of the Power Quality Crew.

Office Tools (hardware, software, books and reference materials, and subscription fees) –

- Books, reference materials, and IEEE Power and Energy Online Library subscription – P940,417 [RY 2008-2011]
Needed by DCS, SYSPAD and other key engineers of CEPALCO as their references to equip them the necessary knowledge and skill and to keep them abreast with present technologies in the field of electric distribution, and in order for them to fulfill their functions efficiently.
- DELPHI and Microsoft Visual Studio software packages – P96,735 [RY 2008]
Needed by DCS engineers/analysts in converting the geographic information-based data from Facilities and Resource Mapping section. The converted data will served as input to DCS's network modeling of CEPALCO's distribution system for subsequent simulations and technical analysis. The existing tool used by DCS for electric distribution modeling, simulations, and analyses is SynerGEE Electric software package – which is predominantly a steady-state electric network analyzer. The planned ETAP software will also utilize converted network data from FRM. These electric simulations and analyses are necessary for monitoring and studying the electric distribution system performance of CEPALCO to verify whether it achieved or not the technical performance criteria set in the PIS, i.e., Reliability Indices (SAIFI, Planned SAIDI, and CAIDI), Power Quality (Voltage Variation), and System Efficiency (System Losses). Also, these electric simulations and analyses are required in the Philippine Grid and Distribution Codes.
- Electrical Transient Analyzer Program (ETAP) and User's Training – US \$ 67,742 [RY 2008-2011]
CEPALCO needs to have a commercial-grade transient

4-WHEEL VEHICLE , 12 UNITS (@ Php 700,000)	6,300,000	700,000	700,000	700,000	8,400,000
COMMUNICATION EQUIPMENT					
HANDHELD RADIO, MOTOROLA GP-328	242,000	22,000	22,000	22,000	308,000
HANDHELD CHARGER/LOADER	220,000	20,000	20,000	20,000	280,000
CONSOLE (@ Php 120,000)	0	0	0	120,000	120,000
SUB-TOTAL	462,000	42,000	42,000	162,000	708,000
TOOLS					
TOOLS	110,000	10,000	10,000	10,000	140,000
MULTI TESTER	33,000	3,000	3,000	3,000	42,000
DIGITAL CAMERA	110,000	10,000	10,000	10,000	140,000
EXTENSION LADDER	220,000	20,000	20,000	20,000	280,000
FOLDING LADDER	66,000	6,000	6,000	6,000	84,000
HANDHELD LEATHER CASE	11,000	1,000	1,000	1,000	14,000
HARD HAT	33,000	3,000	3,000	3,000	42,000
TOOLBOX	22,000	2,000	2,000	2,000	28,000
SUB-TOTAL	605,000	55,000	55,000	55,000	770,000
TOTAL	11,358,130	2,165,750	2,220,955	2,418,870	18,163,705

Meter change-out or replacement of all installed kWh meters is in compliance with the mandate of Republic Act 7832 (Anti-Electricity Pilferage Act) that requires all electric utilities to calibrate all installed kWh meters every two years.

This activity requires the purchase of additional vehicles, testing equipment, materials and tools. There will also be a need to hire additional personnel resulting to an increase in the monthly usage of fuel, oil and other operational expenses due to the additional vehicles and personnel.

The number of vehicles is based on the number of customers per year, the average daily output per crew, and the average man-days per month. Please refer to the formula below.

$$\text{No. of Crews} = \frac{\text{Annual no. of customers for meter change-out}}{10 \text{ customers/day} \times 22 \text{ mandays/month}}$$

One crew is composed of two personnel.

Ladders, tools, digital camera, and handheld radio should be provided for every vehicle to ensure efficiency and safety.

Data of customers scheduled for meter change-out will be downloaded to these handheld computers for faster field data updating without resorting to the traditional manually issued job orders.

3.19. Incidental Capital Requirements for the Hiring of Additional Meter Readers	2008-2011	
Motorcycle (1 unit/year)	4 units	Php 196,400
Handheld Computer & Portable Printer	4 units	Php 1,000,000
Leather Case for the Handheld	4 pcs.	Php 4,000

The hiring of additional Meter Readers is due to the increase in the number of customers. They need the above meter reading equipment so that they will be able to perform their tasks effectively.

FCSD-CCD

3.20. Proposed Service & Payment Enter For :		
Puntod (Cepalco Esd Complex)	2008	Php 991,500
Lapasan (Lkks Center)	2008	Php 791,950
Kauswagan (Proposed Cepalco Headquarter)	2011	Php 446,100

Another 3 CEPALCO Service and Payment Centers will be established within the strategic areas in the City to receive bill payments and handle customer concerns due to the following reasons:

- Due to increase of customers, there is a need to decongest main office;
- Traffic condition along the main streets and perimeter of the location of the Main Office - to reduce travel time needed to service customers ; quick response to customer concerns especially emergencies;
- Ease in payments for residents within the area and neighboring areas;

These centers need infrastructures such as computers and network facilities. Each center will be manned by 2 staff.

Capex Requirement:

VARIOUS EQUIPMENT FOR SERVICING & PAYMENT CENTER AT ESD, PUNTOD:	2008
OFFICE IMPROVEMENT	509,900
COMPUTER, PRINTER, MODEM, SOFTWARE, LICENSE	321,000
UPS	25,000
TABLE OR COUNTER	10,500
SWIVEL CHAIR	6,000
WORKING TABLE	6,000
WORKING TABLE CHAIR	2,000
FILING CABINET, 1 WITH SAFE	20,000
AIRCONDITIONER, 2 HP WALL MOUNTER	30,000
PLASTIC CHAIR	10,500
FAKE CURRENCY DETECTOR	3,600
CALCULATOR	3,000
VHF RADIO	30,000
TELEPHONES	10,000
OFFICE EMERGENCY LIGHT	4,000
TOTAL	991,500
VARIOUS EQUIPMENT FOR SERVICING & PAYMENT CENTER AT LAPASAN OR GUSA AREA:	2008
OFFICE IMPROVEMENT	310,350
COMPUTER, PRINTER, MODEM, SOFTWARE, LICENSE	321,000
UPS	25,000
TABLE OR COUNTER	10,500
SWIVEL CHAIR	6,000
WORKING TABLE	6,000
WORKING TABLE CHAIR	2,000
FILING CABINET, 1 WITH SAFE	20,000
AIRCONDITIONER, 2 HP WALL MOUNTER	30,000
PLASTIC CHAIR	10,500
FAKE CURRENCY DETECTOR	3,600
CALCULATOR	3,000
VHF RADIO	30,000
TELEPHONES	10,000
OFFICE EMERGENCY LIGHT	4,000
TOTAL	791,950
VARIOUS EQUIPMENT FOR CEPALCO HEADQUARTER AT KAUSWAGAN:	2011
OFFICE IMPROVEMENT	10,350
COMPUTER, PRINTER, MODEM, SOFTWARE, LICENSE	321,000
UPS	25,000
COUNTERS	10,500
SWIVEL CHAIRS	6,000
WORKING TABLE	6,000
WORKING TABLE CHAIRS	2,000
FILING CABINET, 1 WITH SAFE	20,000
PLASTIC CHAIRS	15,000
FAKE CURRENCY DETECTOR	3,600
CALCULATORS	3,000
VHF RADIO	30,000
OFFICE EMERGENCY LIGHT	4,000
TOTAL	446,100

3.21.	Motorcycle, Krypton	2 units	2010/2011	Php 98,200
	Personal Standard Tools	4 lots	2008-2011	Php 58,700

These are incidental requirements for the additional four (one every year starting 2008 to 2011) Re-connectors for Cash & Collection Department. The additional Re-connectors are due to the increase in reconnection activities due to the increase of disconnected customers with the increase of customers within the 2nd Regulatory Period.

FCSD-CSD

3.22.	Computer	1 unit	2010	Php 54,200
	Printer, Dot Matrix	1 unit	2010	Php 35,000
	Computer Table	1 unit	2010	Php 2,500

These are capital requirements for the additional SAS Service Staff/Processor.

FCSD-DSD

3.23.	Motorcycle, Yamaha, Crypton	1 unit	2009	Php 49,100
	Radix FW500	1 unit	2009	Php 140,000
	Radix Printer FP40B	1 unit	2009	Php 60,000

These are incidental capital expenditure requirements for the additional Meter Reader for District Services Department.

3.24.	Lineman Personal Tools	1 Lot	2010	Php 46,477
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These are incidental capital requirements for the additional Lineman in 2010 for District Services Department.

FCSD-ACCOUNTING

3.25.	Filing Cabinet, Wooden	1 unit	2008	Php 10,000
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This will be for Accounting Department due to increasing volume of documents.

ASD-HRMD

3.26.	Computer Set, Printer, Computer Table, Office Table & chair	1 set	2008	Php 71,700
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These are capital requirements incidental to the hiring of additional one (1) Staff for Occupational Health, Safety and Security Section, to meet the monitoring and reportorial requirements of external regulating agencies.

3.27.	Safety Measuring Equipment			
	Noise Meter	1 unit	2010	Php 50,000
	Lux & Temperature Meter	1 unit	2010	Php 30,000

These are necessary for the monitoring of ambient factors in the workplace, such as noise, illumination and temperature.

Local and international standards on Occupational Health and Safety requires that no employee may be exposed to a noise level greater than 85dB(A) for a duration of more than 8 hours per day.

The Noise Meter would be necessary in the determination of noise level in the workplace, to ensure that no employee may be exposed to hazardous noise level and serve as basis for the enforcement of using hearing protection when it becomes necessary.

The Lux and Temperature Meter is also necessary in determining the minimum limits for illumination intensity in the workplace. Precautionary measures to minimize and control optical problems due to poor workplace illumination could be put in place with the aid of the equipment. The temperature meter will aid to adequately address the risks of extreme temperatures and maintenance of reasonable and appropriate temperatures in the workplace.

The above equipments are necessary to provide safe and healthful workplace for employees and to meet the local and international standards on Occupational Health and Safety.

3.28.	Fire Extinguishers, HCFC-123)			
	20MVA 69KV/34.5KV Baloy Substation	2 pcs.	2008	Php 20,000

Rank	1st Priority			
CAPEX Driver Classification	Non-Network			
CAPEX Type Classification	Renewal			
Cost	Schedule	Communication Link (Wireless)	Network Switches	Network Cabling
	Jul -Dec2006	400,000.00	50,000.00	15,000.00
	Jan-Jun2007	800,000.00	345,000.00	255,000.00
	Jul-Dec2007	830,000.00	300,000.00	0.00
	Jan-Jun2008	200,000.00	50,000.00	70,000.00
	Jul-Dec2008	30,000.00	50,000.00	0.00
	Jan-Jun2009	0.00	0.00	25,000.00
	Jul-Dec 2009	30,000.00	0.00	0.00
	Jan-Jun2010	0.00	0.00	15,000.00
	Jul-Dec 2010	30,000.00	200,000.00	0.00
	Jan-Jun2011	0.00	0.00	25,000.00
	Jul-Dec 2011	0.00	300,000.00	0.00
TOTALS		2,320,000.00	1,295,000.00	405,000.00
JUSTIFICATION				
CAPEX Requirement and Magnitude				
This is intended for the replacement of all network infrastructures which will reach to its 5 year life as provided standard for the network/computer peripherals which is set to 5 years. Also included is the provision for the additional link to ESD-Tagoloan as a back up link and the incidental requirement of equipments/cabling intended for the service centers (ESD, Carmen and the Eastbound)				
Reason to Support Justification				
Ensures continuous operations of the running applications that are all connected with the networking of the company and to go with the fast trend of technology, replacement of all ICT infrastructures is necessary.				

II. Computer and Peripherals (Maintenance and replacements with license requirements)

DETAIL				
Name	Computer and Peripherals			
Description	1) Computers/Servers with Softwares 2) Peripherals			
Date Needed	1) Jan- Jun2007 2) Jul – Dec2007 3) Jan – Jun2008 4) Jul – Dec2008 5) Jan- Jun 2009 6) July – Dec2009 7) Jan – Jun2010 8) Jul – Dec2010 9) Jan – Jun2011 10) Jul – Dec2011			
CLASSIFICATION				
Rank	1st Priority			
CAPEX Driver Classification	Non-Network			
CAPEX Type Classification	Renewal			
Cost	Schedule	Computers/Servers with Softwares	Peripherals	
	Jan-Jun 2007	6,401,000.00	1,875,000.00	
	Jul-Dec 2007	4,195,000.00	174,000.00	
	Jul-Dec 2008	3,783,000.00	565,000.00	
	Jul-Dec 2009	2,814,000.00	315,000.00	
	Jul-Dec 2010	1,428,000.00	239,000.00	
	Jan- Jun2011	16,131,000.00	0.00	
	Jul – Dec2011	4,200,000.00	89,000.00	
Totals		38,982,500.00	3,257,000.00	
JUSTIFICATION				
CAPEX Requirement and Magnitude				
This is intended for the replacement of all computers/servers/peripherals including softwares that will reach to its 4 year life or 5 year life as provided standard for the computers/servers and other peripherals.				

Reason to Support Justification
Ensures continuous operations of the running mission critical applications and to go with the fast trend of technology, replacement of all computers/servers is necessary.

III. Corporate Servers (Network, Applications, Database)

DETAIL					
Name	High Availability Project				
Description	<ol style="list-style-type: none"> 1. Server Clustering 2. Total Storage 3. Additional Servers for Data Security 4. Management Tools and Devices 				
Date Needed	<ol style="list-style-type: none"> 1) Jan- Jun2007 2) Jul – Dec2007 3) Jan – Jun2008 4) Jul – Dec2008 5) Jan- Jun 2009 6) July – Dec2009 7) Jan – Jun2010 8) Jul – Dec2010 9) Jan – Jun2011 10) Jul – Dec2011 				
CLASSIFICATION					
Rank	1st Priority				
CAPEX Driver Classification	Non-Network				
CAPEX Type Classification	100% New Asset				
Cost	Schedule	Server Clustering	Total Storage	Add. Servers	Mngt. Tools
	Jan-Jun2007		66,000	520,000	80,000
	Jul-Dec2007		1,350,000	50,000	675,000
	Jan-Jun2008		80,000		150,000
	Jul-Dec2008	1,500,000	300,000		
	Jan-Jun2009	1,000,000	4,000,000		
	Jul-Dec 2009		80,000		
	Jan-Jun2010				
	Jul-Dec 2010		80,000		
	Jan-Jun2011				
	Jul-Dec 2011		80,000		80,000
	TOTALS	2,500,000	6,036,000	570,000	985,000
JUSTIFICATION					
CAPEX Requirement and Magnitude					
<p>High-availability clusters (also known as <i>HA Clusters</i>) are computer clusters that are implemented primarily for the purpose of improving the availability of services which the cluster provides. They operate by having redundant computers or <i>nodes</i> which are then used to provide service when system components fail.</p> <p>High Availability refers to the ability of the user community to access the system, whether to submit new work, updated or alter existing work, or collect the results of previous work. If a user cannot access the system, it is said to be <i>unavailable</i>. Generally, the term <i>downtime</i> is used to refer to periods when a system is unavailable.</p> <p>HA cluster implementations attempt to build redundancy into a cluster to eliminate single points of failure, including multiple network connections and data storage which is multiply connected via <i>Storage Area Networks</i></p>					
Reason to Support Justification					
<p>The project High Availability is intended to achieve the least unplanned downtime in our corporate application system, it will include setting up of a clustered server environment, disaster recovery solution, storage and data protection. Thus assuring as a continuous operation on our mission critical applications currently running on our servers.</p>					

IV. Maintenance of Corporate Applications and Support Systems:

a. Meter Reading Management System (MRMS)

DETAIL		
Name	Meter Reading Management System	
Description	MRMS- with Read & Bill-on site capability	
Date Needed	1) Jul- Dec2007 2) Jul – Dec2008 3) Jul – Dec2009 4) Jul – Dec2010 5) Jul – Dec2011	
CLASSIFICATION		
Rank	1st Priority	
CAPEX Driver Classification	Non-Network	
CAPEX Type Classification	Replacement	
Cost	Schedule	Radix PDT/ThermalPrinter/MemoryCard
	Jul -Dec2007	30,600
	Jul-Dec 2008	321,050
	Jul-Dec2009	898,205
	Jul –Dec2010	40,975
	Jul-Dec 2011	332,500
	Totals	1,623,330
JUSTIFICATION		
CAPEX Requirement and Magnitude		
This is intended for the additional & back up for the Radix PDT. Printer & replacement of the memory card for the full implementation of the Read & bill on site system.		
Reason to Support Justification		
Ensures continuous operations of the meter reading management system with the the read & bill on site system, additional, back-up & replacement is necessary.		

b. Customer Information Management System (CIMS)

DETAIL			
Name	Customer Information Management System (CIMS)		
Description	1) Licenses needed for additional users 2) Customizations for the enhancement needed		
Date Needed	1) Jan- Jun2007 2) Jul – Dec2007 3) Jan – Jun2008 4) Jul – Dec2008 5) Jan- Jun 2009 6) July – Dec2009 7) Jan – Jun2010 8) Jul – Dec2010 9) Jan – Jun2011 10) Jul – Dec2011		
CLASSIFICATION			
Rank	1st Priority		
CAPEX Driver Classification	Non-Network		
CAPEX Type Classification	100% New Asset		
Cost	Schedule	Licenses	Programs Customization
	Jan-Jun2007	572,000	600,000
	Jul-Dec2007		800,000
	Jan-Jun2008		
	Jul-Dec2008	234,300	
	Jan-Jun2009		
	Jul-Dec 2009	234,300	
	Jan-Jun2010		
	Jul-Dec 2010	234,300	
	Jan-Jun2011		
Jul-Dec 2011	234,300		

	TOTALS	1,509,200	1,400,000
JUSTIFICATION			
CAPEX Requirement and Magnitude			
Licenses: These additional concurrent user licenses are provisioned for the projected increase in the number of users by year 2007 up to 2011 due to the full implementation of CIMS with MMS features, accessing thru web and the setting up of the remote customer service centers and the necessary enhancements needed to cater Government mandatory requirements such as the DSOAR, Magna Carta and others.			
Reason to Support Justification			
To effectively serve the valued customers, expected additional users/staff to cater those running application system and to complied with the Government mandatory requirements, enhancements cost is provided for.			

b. CITRIX

DETAIL			
Name	CITRIX		
Description	CITRIX		
Date Needed	1) Jul- Dec2007 6) Jul – Dec2008 7) Jul – Dec2009 8) Jul – Dec2010 9) Jul – Dec2011		
CLASSIFICATION			
Rank	1st Priority		
CAPEX Driver Classification	Non-Network		
CAPEX Type Classification	Replacement		
Cost	Schedule	Additional CITRIX Licenses/Terminal Server 2003-CAL	
	Jul -Dec2007	472,000	
	Jul-Dec 2008	319,500	
	Jul-Dec2009	220,500	
	Jul –Dec2010	242,000	
	Jul-Dec 2011	266,200	
	Totals	1,520,200	
JUSTIFICATION			
CAPEX Requirement and Magnitude			
These additional concurrent user licenses are provisioned for the projected increase in the number of users by year 2007 up to 2011 due to the full implementation of IPAMS, CIMS with MMS features, accessing thru web and the setting up of the remote customer service centers and all other corporate running applications.			
Reason to Support Justification			
To effectively serve the valued customers, expected additional users/staff to cater those corporate running application system.			

d. HRIS

DETAIL			
Name	Development of HRIS		
Description	A full blown and tailored fit HRIS		
Date Needed	1) Jul- Dec2007 10) Jul – Dec2008 11) Jul – Dec2009 12) Jul – Dec2010 13) Jul – Dec2011		
CLASSIFICATION			
Rank	1st Priority		
CAPEX Driver Classification	Non-Network		
CAPEX Type Classification	Replacement		
Cost	Schedule	Project-based Staff	PC / Printer Development Tools
	Jul -Dec2007	130,000	192,500
	Jul-Dec 2008	130,000	13,000

	Jul-Dec2009	130,000	708,000
	Jul –Dec2010		58,000
	Jul-Dec 2011		58,000
	Totals	390,000	1,029,500

JUSTIFICATION			
CAPEX Requirement and Magnitude			
<p>The development of an in-house HRIS will help the company refrain from costly annual maintenance fees and software licenses. In a long-term aspect the development of a tailored fit design system will serve the company longer than the commercial systems and will support the unpredictable and changing electric distribution regulations for the reason that we have a strong and direct on-hand maintenance and enhancements. The inclusion of contract based programmers and their corresponding workstations and other requirements like printer set and email automation program will help facilitate a prompt development and will help boost the objective to effectively develop a full blown HRIS.</p>			
Reason to Support Justification			
To ensure that the mother of all support applications (HRIS) will be reliable on all HR related requirements and reports.			

e. RE6/Financials

1. Computer Notebook

DETAIL			
Name	Computer Notebook for Solomon		
Description	IBM X-Series with Wifi feature		
Date Needed	January-June 2007		
CLASSIFICATION			
Rank	1st Priority		
CAPEX Driver Classification	Non-network		
CAPEX Type Classification	100% New Asset		
Cost (Php Peso)	150,000.00		
JUSTIFICATION			
CAPEX Requirement and Magnitude			
<p>This computer notebook will be used in supporting corporate-wide system implementation and maintenance of Solomon modules. This mobile computer will also serve as development and test environment for all system enhancements done for Solomon as well as portable storage of Solomon database backups.</p> <p>Solomon modules are deployed in disparate parts of the franchise area including Manila Office. To minimize downtime by improving the response time of ICTSD staff in attending trouble calls related to Solomon system implementation. The responding staff is necessary to have portable pc during the maintenance and repair, on-site troubleshooting of the Solomon and other support applications. Frequent on-site maintenance is expected especially in the first 2 years of operation of Inventory and Fixed Assets considering most of the users are from remote sites (i.e. DSD, ESD, Manila and possibly affiliates like Minergy and CESTCO).</p>			
Reason to Support Justification			
Solomon implementation setup has multi-application server deployment on each major site (Main Office, ESD, DSD). This is to provide redundancy incase the Citrix server is unavailable. Each of these servers should contain a replica of the main application server in main office. Until such time when Solomon will be fully integrated with other support applications, it will be dynamically updated to cater new requirements. Prior to updating of live application server, all customizations shall be tested in a test environment to ensure integrity of data. Thus making this computer the main equipment for Solomon system support and maintenance.			

2. Solomon License

DETAIL			
Name	Solomon License		
Description	Additional Solomon 3-User License for 2007 -2009		
Date Needed	February 2007	February 2008	February 2009
CLASSIFICATION			

Rank		1st Priority	1st Priority	1st Priority
CAPEX Driver Classification		Non-network	Non-network	Non-network
CAPEX Type Classification		100% New Asset	100% New Asset	100% New Asset
Cost	Schedule 2007	343,200.00		
Cost	Schedule 2008		377,520.00	
Cost	Schedule 2009			415,272.00
JUSTIFICATION				
CAPEX Requirement and Magnitude				
These additional concurrent user licenses are provisioned for the projected increase in the number of users by year 2007 due to the full implementation of IPAMS and interface systems (WMS, CIMS, AM/FM, EMS) in 2008, and Solomon web portal in 2009.				
Reason to Support Justification				
Existing license count does not include projected users for new applications for that are still for deployment (integrated IPAMS-WMS-CIMS and Solomon Web Portal, which will be eventually used by higher management users)				

3. Solomon Customization Package

DETAIL							
Name	Solomon Customization Package						
Description	Acquisition of VB Tools .NET for Solomon and Training						
Date Needed	April 2007						
CLASSIFICATION							
Rank	2nd Priority						
CAPEX Driver Classification	Non-network						
CAPEX Type Classification	100% New Asset						
Cost (Php Peso)	315,000.00						
JUSTIFICATION							
CAPEX Requirement and Magnitude							
<p>Since we are expecting additional customizations in the implementation of Inventory and Fixed Assets due to PBR requirements and Solomon version upgrading by year 2008, we have planned to get the auxiliary software (i.e. VB tools for Solomon) to enable us to build <u>unlimited customizations in-house</u>. By investing in this software package and have ICTSD programmer trained with this development tool, we can <u>save cost on high customization and implementation services from service provider</u>. This one-time investment will directly translate into cost saving benefits since it costs cheaper that projected customization expenditure for the succeeding years (approximately P550,000.00). Such tool does not only provide transfer of technology but also long term cost saving measure for systems development/enhancement costs since it sets us free from being too tied up from external developers whose rates rapidly increase each year.</p> <p>Customization package includes the following:</p> <table> <tr> <td>Software investment - VB Tools .NET for Solomon</td> <td>P250,000.00</td> </tr> <tr> <td>Training Investment (1 staff).....</td> <td>50,000.00</td> </tr> <tr> <td>Out-of-town expenses (1 staff)</td> <td>15,000.00</td> </tr> </table>		Software investment - VB Tools .NET for Solomon	P250,000.00	Training Investment (1 staff).....	50,000.00	Out-of-town expenses (1 staff)	15,000.00
Software investment - VB Tools .NET for Solomon	P250,000.00						
Training Investment (1 staff).....	50,000.00						
Out-of-town expenses (1 staff)	15,000.00						
Reason to Support Justification							
Due to our lack of technical expertise and development tools to be able to do in-house customizations, we have just availed of the customization services from Infosoft International Solutions, Inc. (IISI) for quite some time now. Because of this we have spent over P600,000.00 on various customizations from the time we implemented Solomon in year 2001. Without such tool, we will continue to be dependent from external providers for customization of new requirements.							

4. Solomon System Version Upgrading

DETAIL	
Name	Solomon System Version Upgrading Project
Description	Solomon system upgrading and major data migration

Date Needed	July-August 2007
CLASSIFICATION	
Rank	2nd Priority
CAPEX Driver Classification	Non-network
CAPEX Type Classification	100% New Asset
Cost (Php Peso)	235,800.00
JUSTIFICATION	
CAPEX Requirement and Magnitude	
<p>Upgrading of Solomon (the main application software for Financials and IPAMS) to latest version is necessary to secure our system of maintenance and support from Microsoft as well as take advantage of the new features, particularly the web applications since we are gearing towards web application access in a multi-company setup. We already have the latest version on-hand released by Microsoft from our AEP subscription. There is no need for additional software investment however we need to spend for system migration services from service provider who has the expertise in migration of entire system and database for Solomon. System migration is critical considering it involves conversion of historical data (2001-2006). Migration services will ensure restoration and preservation of integrity of our data to be made available in the new version of Solomon.</p>	
Reason to Support Justification	
<p>Our current and active version (Solomon Ver. 4.21) has been declared by Microsoft with end-of-support. This means they won't be providing anymore fixes for any program hitches that may be arise due to incompatibility with the latest hardware and operating systems. Thus, we will be upgrading our system to version Solomon 6.5 which makes use of web/internet features.</p>	

5. Solomon SL Integration with other Legacy Applications

DETAIL	
Name	Solomon SL Integration Project
Description	Solomon SL Integration with other Legacy Applications Project
Date Needed	January – December 2008
CLASSIFICATION	
Rank	2nd Priority
CAPEX Driver Classification	Non-network
CAPEX Type Classification	100% New Asset
Cost (Php Peso)	170,000.00
JUSTIFICATION	
CAPEX Requirement and Magnitude	
<p>Most of our major support applications come in different platforms and different sets of data. However these data coming from varied sources are essential in coming up with relevant information for decision making purposes. An example of this report is the Distribution Plant Asset Additions report, where data are taken from Purchasing, Work Order and Financial systems. With an integrated system, these kinds of report can be easily generated using live data (i.e. doesn't need further data extraction and processing). This Integration of Solomon with GIS-based WMS, AM/FM, and CIMS is necessary to obtain standard reporting, particularly for management and regulatory reportorial requirements. That is to link all related data and translate these electronic data from various application systems into useful data for decision making.</p>	
Reason to Support Justification	
<p>Integration, as one of the most important aspect for computerization, should be worked out as soon as the GIS-based WMS and CIMS are in place.</p>	

5. Executive Information System Web Portal

DETAIL	
Name	Executive Information System Web Portal
Description	Development and Implementation of Executive Information System and Solomon Web Portal with Multi-Company feature
Date Needed	January – December 2009
CLASSIFICATION	
Rank	2nd Priority
CAPEX Driver Classification	Non-network
CAPEX Type Classification	100% New Asset

Cost (Php Peso)	182,500.00
JUSTIFICATION	
CAPEX Requirement and Magnitude	
<p>By the time all major applications (CIMS, IPAMS, WMS, & FINANCIALS) are in place and fully integrated by year 2008, it will follow that all relevant information needed for top-level decision making can now be accessed from a single entry-point. This entry point shall be the Executive Information System (EIS). It will be a web-based application from which standard managerial reports to TM will be formatted accessing online electronic data from respective application databases (i.e. CIMS, Solomon, Work Order, etc.)</p> <p>EIS will be interfaced with another web based auxiliary of Solomon called Solomon Business Portal (SBP). This web portal is designed primarily to cater multi-company transactions like Purchase and cash requisitions with online approval system. The online approval feature makes it very cost effective since it eliminates cost of supplies and avoids delayed processing of requests due to late transmittal and even misplacement of hard copies. Its higher accessibility offers approving officers to access and approve to pending requests for anywhere through internet by simply using the web browser.</p> <p>The same web application will be used by financial managers to view bank account balances, cash position reports online.</p>	
Reason to Support Justification	
These web-based applications will be the pilot systems to lead the way towards paperless corporate transactions.	

6. Barcode Facility Upgrading

DETAIL	
Name	Barcode Facility
Description	Maintenance of barcode facility acquired in year 2006
Date Needed	January – December 2009
CLASSIFICATION	
Rank	2nd Priority
CAPEX Driver Classification	Non-network
CAPEX Type Classification	100% New Asset
Cost (Php Peso)	253,500.00
JUSTIFICATION	
CAPEX Requirement and Magnitude	
Upgrading of bar-coding facility includes barcode scanners for all 5 main sites, 1 barcode printer used for IPAMS.	
Reason to Support Justification	
Barcode facility needs to be replaced due to expected wear and tear of equipment.	

f. Intranet/Internet Applications

DETAIL			
Name	Intranet / Internet Applications		
Description	Project-based Programmer, Workstation, DigiCam, Web Tools		
Date Needed	1) Jan- Jun2007 14) Jul – Dec2007 15) Jan – Jun2008		
CLASSIFICATION			
Rank	1st Priority		
CAPEX Driver Classification	Non-Network		
CAPEX Type Classification			
Cost	Schedule	Project-based Staff	PC / Web Development Tools
	Jan-Jun 2007	50,000	75,000
	Jul-Dec 2007	50,000	25,000
	Jul-Dec 2008	50,000	
	Totals	150,000	100,000
JUSTIFICATION			

CAPEX Requirement and Magnitude
To be able to develop a short messaging system portal and web portal interfaced with our current CIMS system. In this way, customers could make an inquiry on their respective account via their mobile phones as well as via the internet. The project will cover from linkage to CIMS and SMS service providers, authentication modules and transactions/payment modules.
Reason to Support Justification
Considering the number of staffs, capabilities and projects handled respectively by ICTSD personnel, there might be a need to hire project based programmers to handle web development. Hired staffs will facilitate in the enhancement of our web based applications. Maintenance of the said projects will be turned over to regular cepalco staff after acceptance will be made.

g. Help Desk

DETAIL								
Name	Help Desk							
Description	HelpDesk System, Workstation and Portable hard drives							
Date Needed	1) Jan- Jun2007							
CLASSIFICATION								
Rank	1st Priority							
CAPEX Driver Classification	Non-network							
CAPEX Type Classification	100% New Asset							
Cost (Php Peso)	Schedule	Help Desk System						
	Jan - Jun2007	385,000						
JUSTIFICATION								
CAPEX Requirement and Magnitude								
<p>A <i>help desk</i> is an information and assistance resource that troubleshoots problems with computers and similar products. It provides the users a central point to receive help on various computer issues. The help desk typically manages its requests via help desk software that allows them to track user requests with a unique ticket number. This way we could monitor common issues, response time of the support group, and provide solutions much easier.</p> <p>The system will be composed of three teams:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%; vertical-align: top;">DeskSide Team:</td> <td>Responsible for the desktops, laptops and peripherals such as printers. The help desk will assign the desktop team the second level deskside issues that the first level was not able to solve. They set up and configure computers for new users and are typically responsible for any physical work relating to the computers such as repairing software or hardware issues and moving workstations to another location.</td> </tr> <tr> <td style="vertical-align: top;">Network Team:</td> <td>Responsible for the network software, hardware and infrastructure such as Servers, switches, backup systems and firewalls. They are responsible for the network services such as email, file, and security. The help desk will assign the network team issues that are in their field of responsibility.</td> </tr> <tr> <td style="vertical-align: top;">Other Team:</td> <td>Responsible for the phone infrastructure such as PBX, voicemail, VOIP, telephone sets, modems and fax machines. They are responsible for configuring and moving telephone numbers, voicemail setup and configuration and are assigned these types of issues from the help desk.</td> </tr> </table>			DeskSide Team:	Responsible for the desktops, laptops and peripherals such as printers. The help desk will assign the desktop team the second level deskside issues that the first level was not able to solve. They set up and configure computers for new users and are typically responsible for any physical work relating to the computers such as repairing software or hardware issues and moving workstations to another location.	Network Team:	Responsible for the network software, hardware and infrastructure such as Servers, switches, backup systems and firewalls. They are responsible for the network services such as email, file, and security. The help desk will assign the network team issues that are in their field of responsibility.	Other Team:	Responsible for the phone infrastructure such as PBX, voicemail, VOIP, telephone sets, modems and fax machines. They are responsible for configuring and moving telephone numbers, voicemail setup and configuration and are assigned these types of issues from the help desk.
DeskSide Team:	Responsible for the desktops, laptops and peripherals such as printers. The help desk will assign the desktop team the second level deskside issues that the first level was not able to solve. They set up and configure computers for new users and are typically responsible for any physical work relating to the computers such as repairing software or hardware issues and moving workstations to another location.							
Network Team:	Responsible for the network software, hardware and infrastructure such as Servers, switches, backup systems and firewalls. They are responsible for the network services such as email, file, and security. The help desk will assign the network team issues that are in their field of responsibility.							
Other Team:	Responsible for the phone infrastructure such as PBX, voicemail, VOIP, telephone sets, modems and fax machines. They are responsible for configuring and moving telephone numbers, voicemail setup and configuration and are assigned these types of issues from the help desk.							
Reason to Support Justification								
This will serve as a vital tool for ICTSD organization to monitor common computer related issues, response time of the support group, and provide solutions much easier.								

h. Office Productivity/Management Systems

DETAIL			
Name	Office Productivity / Management Systems		
Description	Software Licensing / Office Automation		
Date Needed	1)Jan- Jun2007 2)Jul- Dec2008 3)Jan- Jun2010		
CLASSIFICATION			
Rank	1st Priority		
CAPEX Driver Classification	Non-Network		
CAPEX Type Classification	100% New Asset		
Cost	Schedule	Software Licensing	Office Automation
	Jan-Jun 2007	897,000	
	Jul-Dec 2008		5,000,000
	Jan-Jun 2010	115,000	
	Totals	1,012,000	5,000,000
JUSTIFICATION			
CAPEX Requirement and Magnitude			
Acquisition of productivity softwares to be used by SA/Programmers and Office personnels in there development and reports requirement. Office automation project would provide a soft copy of all documents.			
Reason to Support Justification			
Most of this software copies will serve as development tools for ICTSD programmers and the other softwares will be used by supervisors for their reports. Office automation will be for provision of softcopy in optical forms of all documents.			

V. Internet Infrastructure:

DETAIL			
Name	Network Firewall Device		
Description	Replacement of Firewall		
Date Needed	1) Jul- Dec2009		
CLASSIFICATION			
Rank	1st Priority		
CAPEX Driver Classification	Non-network		
CAPEX Type Classification	Replacement		
Cost (Php Peso)	Schedule	Help Desk System	
	Jul – Dec 2009	600,000	
JUSTIFICATION			
CAPEX Requirement and Magnitude			
Replacement of the existing Firebox Firewall Device.			
Reason to Support Justification			
We need to replace our Firewall Device to a new / full featured firewall appliance to keep our network safe from intrusion and viruses.			

New Requirements:

VI. VoIP Communication Infrastructure: (Telephone System – CALL CENTER)

DETAIL	
Name	Telephone System –Call Center
Description	Call Center
Date Needed	1) Jan- Jun2007 2) Jul – Dec2007 3) Jan – Jun2008 4) Jul – Dec2009 5) July – Dec2010

		6) Jan – Jun2011			
CLASSIFICATION					
Rank		1st Priority			
CAPEX Driver Classification		Non-Network			
CAPEX Type Classification		100% New Asset			
Cost	Schedule	Software Licensing & Media Gateway	CIMS License (Programs/users)	Computers & other peripherals	Furniture & Fixture, Miscellaneous, Manpower & Supplies
	Jan-Jun2007	200,000			
	Jul-Dec2007	1,000,000			
	Jul-Dec2008	1,000,000			
	Jul-Dec2009	1,000,000			
	Jul-Dec 2010	1,000,000			
	Jan-Jun2011	600,000	812,900	701,000	1,834,900
TOTALS		4,800,000	812,900	701,000	1,834,900
JUSTIFICATION					
CAPEX Requirement and Magnitude					
Our call center as mandated by ERC will be under the supervision of the CSD - Customer Assistance Section (CAS). The call center will handle service related calls, general or personal calls covering Main Office, Engineering and District offices. This will relieve front liners from handling telephone calls.					
Work Shifting Schedules:					
Monday to Saturday:					
1) 6 AM - 2 PM (2 personnel)					
2) 9 AM - 5 PM (2 personnel)					
3) 2 PM -10 PM (2 personnel)					
4) 10 PM - 6 AM (1 personnel)					
Sunday:					
1) 8 AM - 4 PM (1 personnel)					
The Call Center will be based our Toribio Chavez St. office preferably in one contiguous area. Staffing is based on the number of main office front liners who are currently receiving calls (CAS-3; SAS-2; BSD-1; CCD-2; Secretaries -2). This is also the minimum requirement in the acquisition of software for call management.					
All job orders and inspection orders processed at the Call Center will be auto forwarded and printed and sent to the concerned unit.					
Reason to Support Justification					
The new envisioned telephone system shall at least feature an integrated and centralized receiving of calls from all existing telephone lines and can be transferred to specific person through automatic or manual settings.					

IAG

3.36. Computer Set, Computer Table, Office Table & chair

1 Lot

2008

Php 56,700

These are incidental requirements on computers and its peripherals for one additional Audit Staff to complement for the manpower requirements of Internal Audit Group.