Republic of the Philippines
ENERGY REGULATORY COMMISSION
San Miguel Avenue, Pasig City

IN THE MATTER OF THE APPLICATION FOR THE APPROVAL OF THE PROPOSED FIVE (5) YEAR CAPITAL EXPENDITURE PROJECTS AND AUTHORITY TO SECURE LOAN FROM THE NATIONAL ELECTRIFICATION ADMINISTRATION (NEA)

ERC CASE NO. 2011-004 RC

CEBU I ELECTRIC COOPERATIVE, INC. (CEBECO I),
Applicant.
x- -x

D E C I S I O N

Before this Commission for resolution is the application filed on January 7, 2011 by Cebu I Electric Cooperative, Inc. (CEBECO I) for the approval of its proposed five (5) year capital expenditure projects and authority to secure loan from the National Electrification Administration (NEA).

Having found said application sufficient in form and in substance with the required fees having been paid, an Order and a Notice of Public Hearing, both dated January 18, 2011, were issued setting the case for jurisdictional hearing, expository presentation, pre-trial conference and evidentiary hearing on February 10, 2011.

In the same Order, CEBECO I was directed to cause the publication of the Notice of Public Hearing, at its own expense, twice (2x) for two (2) successive weeks in two (2) newspapers of general circulation in the Philippines, with the date of the last publication to be made not later than ten (10) days before the date of the scheduled initial hearing. It was also directed to inform the consumers, by any other means available and appropriate, of the filing of the instant

application, its reasons therefor and of the scheduled hearing thereon.

The Office of the Solicitor General (OSG), the Commission on Audit (COA) and the Committees on Energy of both Houses of Congress were furnished with copies of the Order and Notice of Public Hearing and were requested to have their respective duly authorized representatives present at the initial hearing.

Likewise, the Offices of the Mayors of the Municipalities and Cities within the franchise area of CEBECO I were furnished with copies of the Order and Notice of Public Hearing for the appropriate posting thereof on their respective bulletin boards.

On February 4, 2011, CEBECO I filed its *"Pre-Trial Brief"*.

During the February 10, 2011 initial hearing, only CEBECO I appeared. No intervenor/oppositor appeared nor was there any intervention/opposition registered.

At the said hearing, CEBECO I presented proofs of its compliance with the Commission's posting and publication of notice requirements which were duly marked as Exhibits "D" to "DD-1", inclusive. Thereafter, it conducted an expository presentation of its application.

At the termination of the expository presentation, CEBECO I presented the following witnesses: 1) Engr. Getulio Z. Crodua, its Chief Engineer and designated Assistant General Manager for Operations; and 2) Mr. Juanito Gabales, Jr., its Finance Manager, who both testified in support of the application.

In the course of their direct examinations, additional documents were identified and duly marked as exhibits. Thereafter, the Commission propounded clarificatory questions on the said witnesses and directed the submission of various documents.

On February 25, 2011, CEBECO I filed its "*Formal Offer of Exhibits*".

On March 14, 2011, CEBECO I filed its *"Manifestation of Compliance"*.

On May 16, 2011, CEBECO I wrote the Commission requesting for partial approval of its Capital Expenditure Projects.

On December 7, 2012, CEBECO I filed its "Urgent Motion for Partial Approval".

On April 21, 2014, CEBECO I filed its "Urgent Motion for Decision".

On November 17, 2014, the Commission issued an Order admitting CEBECO I's "*Formal Offer of Exhibits*" and declaring the case submitted for resolution.

DISCUSSION

CEBECO I sought the Commission's approval of the following capital projects:

PARTICULARS	PROPOSED COST (PhP)
Substation Projects	
Installation of 10MVA Substation in Argao	40,530,000.00
Installation of 10MVA Substation in Badian	40,530,000.00
Subtransmission Line Projects	
Acquisition of Subtransmission Asset from the National Transmission Corporation (TRANSCO) through a Consortium with VECO	3,500,000.00
Construction of 70.5 km 69kV subtransmission line from Suba, Samboan to Bito-on, Dumanjug	248,705,300.00
Primary Distribution Projects	
Installation of Recloser along Barili Feeder	700,000.00
Installation of Recloser along Dumanjug Feeder	700,000.00
Installation of Recloser along Sibonga Feeder1	700,000.00
Installation of Recloser along Sibonga Feeder2	700,000.00
Installation of Recloser along Dalaguete Feeder1	700,000.00
Installation of Recloser along Dalaguete Feeder3	700,000.00
Installation of Recloser along Dalaguete Feeder4	700,000.00
Installation of Recloser along Carcar 2, Feeder1	700,000.00
Installation of Recloser along Samboan Feeder1	700,000.00
Installation of Recloser along Samboan Feeder2	700,000.00
Installation of Capacitors	2,958,000.00
Installation of Line AVRs along the feeders	16,800,000.00
Installation of 15kVA Distribution Transformers	7,518,456.29

Installation of 25kVA Distribution Transformers	12,139,382.30
Installation of 37.5kVA Distribution Transformers	9,938,230.85
Installation of 50kVA Distribution Transformers	6,277,914.72
Secondary Distribution Projects	
Open Secondary Low Voltage Distribution Lines	38,744,627.60
Under Built Low Voltage Distribution Lines	6,147,068.47
Other Network Projects	
Customer Service Drops	37,750,648.70
60A KWh meter for Customer Metering Equipment	31,738,205.83
100A KWh meter for Customer Metering Equipment	23,590,397.06
3-phase KWh meter for Customer Metering Equipment	2,487,113.13
Installation of Circuit Breaker for two (2) existing substations and replacement of AVR and Reclosers	27,244,054.00
Replacement of 60A KWh meters	3,405,843.00
Replacement of 100A KWh meters	2,537,866.80
Replacement of KWh meters with infrared reading features	19,630,144.80
Replacement of 3-phase KWh meters with Load Profiling features	1,413,132.46
Replacement of aging poles with Concrete poles preferably along 3-phase system	12,896,709.70
Replacement of aging poles with Steel poles preferably along 3-phase system	6,141,137.45
Rural Electrification Projects	91,397,000.00
Non-Network Projects	
Communication System Equipment (VHF Radio & Repeater System)	862,500.00
Geographical Information System (hardware & software)	300,000.00
Meter Reading, Billing Collection System (hardware & software)	7,438,000.00
Management Information System	400,000.00
Tools, Instruments & Test Equipment	29,235,260.20
Vehicles	53,055,000.00
Computers & Other Equipment	2,809,400.00
Buildings & Lots	37,238,537.56
TOTAL Project Cost per Application (PhP)	**832,359,930.93**

OVERVIEW OF CEBECO I'S SYSTEM

CEBECO I serves the eighteen (18) southern municipalities of the Province of Cebu, namely: Barili, Dumanjug, Ronda, Alcantara, Moalboal, Badian, Alegria, Malabuyoc, Ginatilan, Samboan, Santander, Carcar, Sibonga, Argao, Dalaguete, Alcoy, Boljoon, and Oslob. It is being classified by the National Electrification Administration (NEA) as an *"Extra Large"* cooperative considering

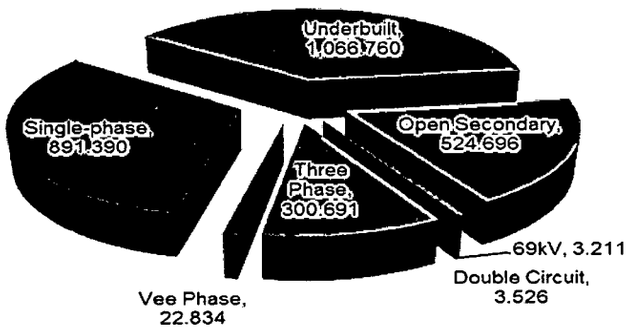
that CEBECO I serves 366 barangays from the seventeen municipalities and one city in the southern part of the province with a total of 95,000 registered customers.

As of the year 2009, CEBECO I's distribution lines have already reached far flung areas and continued to provide electricity up to the sitio levels due to the fact that local government units and barangays have prioritized electrification projects through subsidies. CEBECO I had already accumulated a total of 6,000 km of lines including service drops. It has a total capacity of 43.75 MVA including privately owned substation situated in different locations.

CEBECO I also owns and operates three Mini-Hydro plants with a combined plant capacity of 1,720 KW which are separately located. These Mini-Hydro plants have been operating since the mid-eighties as voltage support during peak hours and are presently situated in the areas of Barili and Badian.

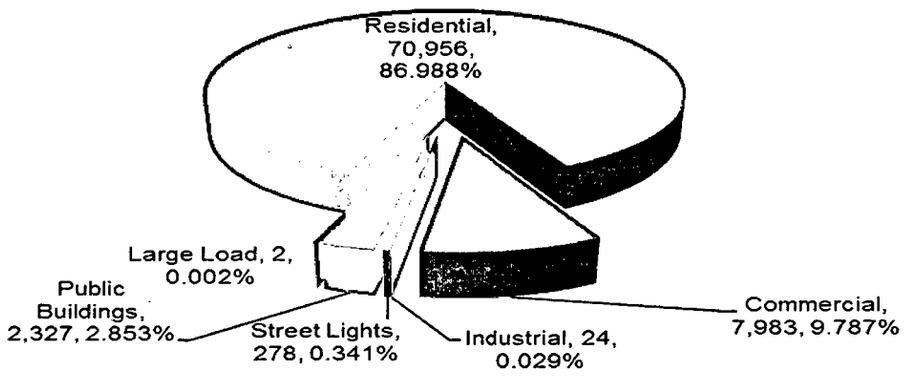
The supply of power is presently being distributed through 15 feeders in the entire franchise area of CEBECO I. The figure below shows that CEBECO I's distribution lines comprise of more than 50% secondary lines, 32% single phase primary lines, and 11% 3-phase primary lines:

Length per Line Configuration (km)



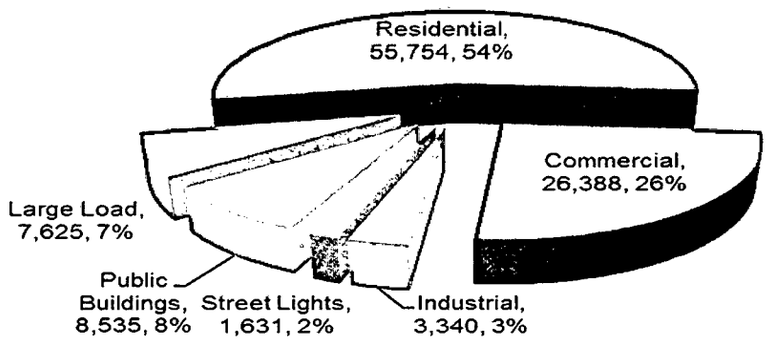
As shown in the figure below, approximately 87% of the connected customers are composed of residential customers, 10% are commercial customers, while the remaining 3% comprises of street lights, large loads, industrial and public buildings:

Customers per Class



On the other hand, the chart below indicates that majority of the revenue of CEBECO I comes from the residential consumers which is equivalent to 54% for the year 2009. The commercial type of customers which include small business establishments, resorts, sari-sari stores and other similar businesses in the coverage area, contributed 26% of the entire energy sales. Meanwhile, public buildings such as local government owned buildings and complexes have begun to upgrade their facilities like putting up air-conditioning units and more lighting fixtures contributed 8% of the entire energy sales, large load consumers contributed 7%, industrial consumers contributed 3% and street lights contributed 2% of the entire energy sales.

Energy Sales (MWh) per Class



The relationship of both the energy purchases and sales for the past seven (7) years is directly proportional as shown in the figure below. An abrupt increase on both energy purchases and sales were observed from years 2003 to 2005 but a slim increase, with an average growth of 3%, for both parameters was encountered for the

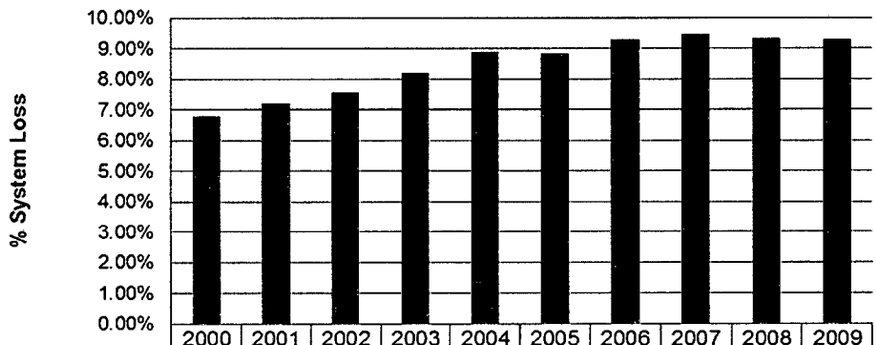
years 2006 to 2009. Hotels, commercial establishments, provincial and city development plans, tourism industry are good indicators of additional demand for electrical energy:

Historical Energy Purchased & Sales

	2003	2004	2005	2006	2007	2008	2009
Energy Generated	5,989	6,814	4,541	5,156	4,868	6,242	5,778
Energy Purchased	74,942	81,887	91,427	95,838	102,747	102,945	108,575
Energy Sales	74,288	80,819	87,503	91,976	97,436	99,023	103,757

CEBECO I sustained its distribution system loss at a single digit level for the last ten (10) years. But at present, it is already approaching the 10% level, as reflected in the graph below. CEBECO I has to determine the major contributor of the increase through technical simulations of the distribution system data in order to prioritize projects that will correspondingly address the increasing system loss:

System Loss



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
System Loss	6.80%	7.22%	7.57%	8.21%	8.89%	8.82%	9.30%	9.46%	9.31%	9.27%

FORECASTING

To determine the optimal project for a particular scenario, it is imperative to have an accurate forecast of the future energy, future demand and future customers of an electric cooperative. This forecast will ensure that the prescribed solution will redound to the benefit of the consumers.

CEBECO I simulated several forecasting models to get an accurate forecast of its future energy, demand requirement and future customers. The table shows the summary of the forecast used by CEBECO I in its distribution development planning:

		Forecasting Model	Validity Tests				Accuracy Test	Annual Average Growth Rate	
			Adj. R^2 (>0.99/0.8)	t-stat (|t| > 2)		p-value (<0.1)	MAPE (<5%)	Historical	Forecast
Energy Sales per Substation	Residential	$a + bt^2 - ct^{-1}$	0.9962	*a*	133.3104	1.899E-08	0.69%	5.64%	6.39%
				b	466.9852	1.2616E-10			
				c	8.5835	0.001012			
	Commercial	$a - bt^2 + ct + d*\ln(t)$	0.9910	*a*	99.2436	2.2553E-06	0.53%	5.37%	2.69%
				b	2.9677	0.059177			
				c	7.4647	0.004978			
				d	2.9165	0.061672			
	Public Building	$a + bt^2 + c*\ln(t)$	0.9961	*a*	13.7634	0.00016148	2.56%	16.20%	9.01%
				b	144.2597	1.3849E-08			
				c	13.2005	0.00019026			
	Street Lights	$a + bt + ct^3$ w/horizon	0.9932	*a*	15.8728	1.80609E-05	3.33%	7.63%	6.39%
				b	6.1506	0.001651802			
				c	5.4024	0.002936515			
Demand per Substation	Dumanjug	$a + b*\ln(t) + ct^{-1}$	0.9910	*a*	5.5143	0.001494799	2.55%	4.39%	3.03%
				b	27.8815	1.408E-07			
				c	9.8085	6.46628E-05			
	Carcar 1	$a + b*\ln(t) + ct^{-3} + dt^{-2}$	0.9960	*a*	63.8807	8.45236E-06	0.36%	1.01%	0.61%
				b	14.8626	0.000660933			
				c	5.5880	0.011317678			
				d	6.4850	0.007443356			
	Sibonga	$a + bt + ct^{-1}$	0.9996	*a*	363.5017	0.001751349	0.09%	3.52%	2.87%
				b	215.2007	0.00295824			
				c	43.2872	0.014704252			
	Dalaguete	$a + bt$	0.9934	*a*	77.0155	4.82472E-06	0.54%	6.20%	5.06%
				b	24.7224	0.000145093			
	Entire System	$a + bt + ct^2$	0.9982	*a*	33.5220	4.69083E-08	1.67%	3.69%	2.93%
				b	19.0873	1.33723E-06			
				c	11.6676	2.38901E-05			
No. of Customers per Class	Residential	$a + bt^2 + ct^{-1} + d*\ln(t)$	0.9920	*a*	10.7293	0.00173	0.64%	6.98%	7.56%
				b	132.0250	0.000000958			
				c	2.3534	0.1			
				d	5.1291	0.0144			
	Commercial	$a + bt + ct^3$ w/horizon	0.9915	*a*	32.8571	4.90748E-07	2.05%	4.50%	5.20%
				b	5.7093	0.002302895			
				c	4.6345	0.005660857			
	Public Building	$a + bt$	0.9980	*a*	295.4234	8.43E-12	0.38%	6.57%	4.42%
				b	348.8262	3.67E-12			
	Street Lights	$a + bt$	0.9915	*a*	78.9104	6.19E-09	1.33%	4.50%	4.24%
				b	56.0021	3.43E-08			

CEBECO I used the econometric method in determining the forecasted energy purchase. Other forecast such as entire system energy sale, customer sales, substation demand, and number of customer per class were determined using polynomial trend method. The sales from industrial and large load class customers do not exhibit a good trend due to its seasonal nature, thus, no valid model was formulated. The sale of these customer classes, however, increases with respect to the total sale. This was resolved by utilizing the percentage weight of customer class sale from the last historical year.

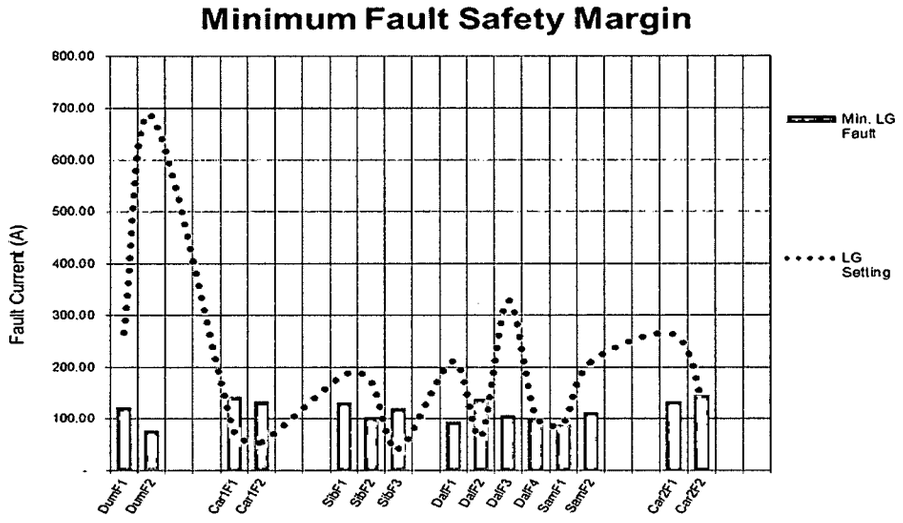
The entire distribution system and substation's forecasted peak demand were derived from the forecasted energy purchase using the system's load factor. Said parameters are crucial in determining the projected percent loading of the substation and the entire system.

PERFORMANCE ASSESSMENT

Evaluating the performance of a distribution network will provide a complete picture of the needs of an electric cooperative in formulating project ideas. CEBECO I identified and quantified these problems and categorized these requirements to address safety, capacity (including customer requirements), reliability improvements and system loss reduction.

Safety

CEBECO I determined some portions within the distribution system that needs serious action due to safety problems. Through short circuit analysis, CEBECO I identified the primary lines/feeders that would basically need corrective measures to ensure safety within the distribution system, namely: DumF1; DumF2; SibF1; SibF2; DalF1; DalF3; DalF4; SamF1; SamF2; and Car2F1. The said analysis, represented in the graph below, only shows that the existing protective devices installed within these lines may not be able to sense the minimum fault current if in case fault occurred within the system considering that the computed minimum fault current is lower than the existing protection setting of these devices. In order to correct this problem, the said lines need additional protective device that will sense the minimum fault current even at the farthest end of the line during fault:



Capacity

The existing maximum capacity of CEBECO I is 56.25 MVA which comprises the merged capacities of its six (6) substations. Based on the forecasted demand, as shown in the table below, the loading percentage of the entire distribution system is still within the 70% criteria for capacity margin. Moreover, each substation is within the said margin even until year 2015.

One of the six (6) substations, which is the Sibonga Substation, is presently owned by NGCP. CEBECO I plans to pull-out from the said substation and construct its own substation:

No.	Substation	Rated MVA Capacity	Power Factor	Max. MVA Capacity	Max. MW Capacity	Capacity Parameters	Historical	Forecasted				
							2010	2011	2012	2013	2014	2015
1	Dumanjug	10.00	90%	12.50	11.25	Demand (MW)	7.79	6.52	6.55	7.31	7.52	7.72
						% Loading	69.24%	57.94%	58.24%	64.96%	66.81%	68.58%
2	Carcar 1	5.00	90%	6.25	5.63	Demand (MW)	4.83	4.40	3.30	3.16	3.18	3.20
						% Loading	85.78%	78.15%	58.74%	56.25%	56.52%	56.80%
3	Sibonga	5.00	90%	6.25	5.63	Demand (MW)	4.26	4.35	3.02	3.41	3.51	3.60
						% Loading	75.64%	77.35%	53.76%	60.62%	62.40%	64.04%
4	Dalaguete	10.00	90%	12.50	11.25	Demand (MW)	7.85	6.95	6.22	5.94	6.23	6.53
						% Loading	69.76%	61.80%	55.25%	52.76%	55.40%	58.02%
5	Samboan	5.00	90%	6.25	5.63	Demand (MW)	N/A	1.42	3.23	3.60	3.75	3.91
						% Loading	N/A	25.24%	57.35%	63.91%	66.65%	69.53%
6	Carcar 2	10.00	90%	12.50	11.25	Demand (MW)	N/A	1.54	3.52	4.00	4.46	4.92
						% Loading	N/A	13.69%	31.30%	35.59%	39.64%	43.74%
	Entire System	**45.00**	**90%**	**56.25**	**50.63**	Demand (MW)	**28.51**	**27.62**	**28.53**	**29.39**	**30.22**	**31.01**
						% Loading	**56.32%**	**54.56%**	**56.35%**	**58.06%**	**59.69%**	**61.25%**

Power Quality

At present, customers in some areas within the franchise of CEBECO I are experiencing low voltage during peak-load condition. Some of the existing feeders are also experiencing problems in terms of voltage unbalance. The Philippine Distribution Code (PDC) provides that the voltage levels at the customer's connection point must be within ±10% of the nominal voltage level of 230 volts. Further, the maximum voltage unbalance at the customer's connection point shall not exceed 2.5% during normal operating conditions. Voltage unbalances are harmful to consumers using 3-phase motors. Excessive heat caused by circulating currents may be produced on these motors if voltage unbalances are high or beyond the allowable limit discussed above.

In compliance with the above-mentioned standards, CEBECO I has included in its application some projects intended to address the power quality issues of the distribution system. The table below shows the forecasted voltage profile in per unit values and maximum voltage unbalance percentage of each feeder:

No.	Substation	Feeder Name	Voltage Variation (p.u.)				Max. Unbalance			
			2011	2012	2013	2014	2011	2012	2013	2014
1	Dumanjug	DumF1	0.9296	0.9318	0.9406	***0.8913***	***6.11%***	***3.28%***	***2.68%***	***2.42%***
		DumF2	0.9000	0.9173	0.9295	***0.8901***	***7.29%***	***4.01%***	2.41%	***2.52%***
2	Carcar 1	Car1F1	0.9013	0.9183	0.9367	0.9183	0.20%	0.85%	1.83%	1.86%
		Car1F2	0.9409	0.9477	***0.8828***	0.9302	0.31%	1.73%	1.68%	2.09%
3	Sibonga	SibF1	0.9000	0.9283	0.9378	0.9361	***3.54%***	2.38%	2.43%	2.35%
		SibF2	***0.8905***	***0.8397***	0.9256	0.9308	***5.28%***	***4.98%***	2.49%	2.38%
		SibF3	0.9486	0.9527	0.9868	0.9853	1.17%	1.74%	1.93%	2.38%
4	Dalaguete	DalF1	0.9008	***0.8862***	0.9474	0.9517	***4.34%***	***3.28%***	2.41%	2.40%
		DalF2	0.9761	0.9794	0.9801	0.9783	0.41%	1.33%	1.92%	1.89%
		DalF3	***0.8823***	0.9474	0.9418	0.9635	***4.39%***	2.44%	2.30%	2.51%
		DalF4	***0.8787***	0.9278	0.9307	0.9481	***5.70%***	2.95%	2.35%	2.38%
5	Samboan	SamF1	0.9774	0.9129	0.9015	***0.8727***	1.75%	1.98%	2.25%	2.25%
		SamF2	0.9374	0.9120	***0.8641***	0.9188	1.82%	2.06%	***2.79%***	2.38%
6	Carcar 2	Car2F1	***0.8401***	***0.8836***	0.9579	0.9628	***3.84%***	***3.04%***	2.31%	2.31%
		Car2F2	0.9359	0.9563	0.9494	0.9512	0.76%	1.38%	2.04%	2.34%

Note: ***Bold & Italic*** values are voltage values below the required minimum voltage level.

System Efficiency

At the end of year 2009, the entire system loss of CEBECO I is ***9.27%*** which is within the 13% system loss cap for electric cooperatives. The said system loss comprises of technical loss (6.40%) and non-technical loss (2.86%). The data depicts that the technical losses contributed to the biggest share among the segregated losses, thus, CEBECO I included in the application some

projects that will improve the efficiency of the distribution system. Summary of the technical system loss being experienced in each feeder is shown in the table below:

No.	Substation	Feeder Name	Historical	Forecasted			
			2010	2011	2012	2013	2014
1	Dumanjug	DumF1	10.93%	6.93%	6.84%	6.84%	6.85%
		DumF2	16.19%	11.26%	10.93%	10.86%	10.75%
2	Carcar 1	Car1F1	9.04%	2.47%	2.47%	2.32%	2.26%
		Car1F2	2.48%	2.32%	2.32%	2.21%	2.16%
3	Sibonga	SibF1	5.07%	5.31%	5.31%	5.32%	5.35%
		SibF2	7.60%	7.50%	7.50%	7.46%	7.76%
		SibF3	2.29%	2.27%	2.27%	2.45%	2.45%
4	Dalaguete	DalF1	12.50%	8.11%	8.08%	8.06%	8.29%
		DalF2	4.87%	4.53%	4.40%	4.29%	4.19%
		DalF3	11.41%	12.60%	12.86%	12.51%	12.71%
		DalF4	9.09%	8.39%	8.37%	8.36%	8.37%
5	Samboan	SamF1	N/A	4.95%	5.14%	3.75%	3.80%
		SamF2	N/A	9.79%	9.79%	9.73%	11.11%
6	Carcar 2	Car2F1	N/A	3.45%	3.49%	3.38%	3.41%
		Car2F2	N/A	2.77%	2.73%	2.69%	2.66%
		Entire System	**8.32%**	**6.18%**	**6.17%**	**6.02%**	**6.14%**

Reliability

The reliability performance of CEBECO I is being measured through indices namely, the System Average Interruption Frequency Index (SAIFI) and the System Average Interruption Duration Index (SAIDI). These indices are required as reliability indicators in the Electric Cooperatives Distribution Utility Planning Manual (ECDUPM) of which its value shall not exceed the interim criteria for SAIFI at 20 customer-interruptions per customer-year and for SAIDI at 45 hours per customer-year. CEBECO I's entire reliability performance index for SAIFI and SAIDI for the year 2009 are 11.40 and 21.48, respectively. These values are within the above-mentioned criteria. However, based on the reliability monitoring per feeder, there are some feeders that require improvement, as shown in the table below:

No.	Substation	Feeder Name	SAIFI	SAIDI	MAIFI
1	Dumanjug	DumF1	11.36	23.65	-
		DumF2	***23.61***	***40.90***	-
2	Carcar 1	Car1F1	10.15	20.39	-
		Car1F2	11.79	35.39	-
3	Sibonga	SibF1	6.51	6.16	-
		SibF2	12.49	8.99	-
		SibF3	10.78	32.45	-
4	Dalaguete	DalF1	***20.55***	39.96	0.01
		DalF2	1.62	1.77	-
		DalF3	7.32	7.42	-
		DalF4	9.23	19.15	-
5	Samboan	SamF1	0.00	0.00	-

		SamF2	0.00	0.00	-
6	Carcar 2	Car2F1	0.00	0.00	-
		Car2F2	0.00	0.00	-
		Entire System	11.40	21.48	0.01
	NGCP/Power Supply		5.813	3.558	0.081

Note: Bold & Italic values are reliability indicators which exceeded the required maximum limit.

CEBECO I identified the main factors for the unreliability of these feeders which is the over-extended feeders with deficiency in protection equipment or disconnect switches. The existing subtransmission line's configuration and condition also contributed to the entire system's reliability issue. To address this problem, CEBECO I has included some reliability projects in the application.

Rural Electrification

There are still several barangays within the franchise area of CEBECO I that needs to be energized. Since it is CEBECO I's mandate to provide rural electrification, the detailed plan in energizing the remaining barangays and sitios were conscientiously prepared and included in the CAPEX application.

PROJECT EVALUATION

As provided in the ECDUPM, the power system model or electric circuits used to assess the distribution system's performance should be modified to reflect the proposed projects or solutions. Likewise, the conduct of appropriate technical analysis is necessary in order to predict the performance of the distribution system.

CEBECO I provided several alternative projects for each quantified problems and ranked the technically feasible projects in terms of technical effectiveness. Projects that were considered technically feasible were subjected to economic evaluation, wherein, the project that presented the least cost was selected.

Upon evaluation of all the proposed projects, the Commission determined that out of the forty-two (42) proposed capital projects of CEBECO I, thirty-six (36) projects are approved, twenty (20) of which have been revised as to costs. On the other hand, the Commission excludes one (1) project from the RFSC expense (as it should be re-aligned to "Other Revenue Income") and the remaining five (5) projects are deferred.

Accordingly, the proposed estimated total CAPEX cost, amounting to Eight Hundred Thirty-Two Million Three Hundred Fifty-Nine Thousand Nine Hundred Thirty and 93/100 Pesos **(PhP832,359,930.93)**, should be reduced to Three Hundred Fifty-Four Million Eight Hundred Eighty-Six Thousand Eight Hundred Five and 84/100 Pesos **(PhP354,886,805.84)** only.

The summary of the projects with modification is shown in the table below:

CAPEX Projects with Modification

No.	Project Name	Project Cost (PhP)		Commission's Action	Reason
		Proposed	Recommended		
	Substation Projects				
1	Installation of 10MVA Substation in Argao	40,530,000.00	-	Deferment	Not least cost
2	Installation of 10MVA Substation in Badian	40,530,000.00	-	Deferment	Lack of technical justification
	Subtransmission Line Projects				
3	Acquisition of subtransmission Asset from TransCo through a Consortium with VECO	3,500,000.00	-	Re-aligned to Other Revenue Income	The proposed asset is not a capital expenditure project
4	Construction of 70.5 km 69kV subtransmission line from Suba, Samboan to Bito-on, Dumanjug	248,705,300.00	-	Deferment	B/C is less than 1
	Secondary Distribution Projects				
15	Installation of Capacitors	2,958,000.00	1,901,849.32	Cost Revision	Revised unit cost and qty.
16	Installation of Line AVRs along the feeders	16,800,000.00	9,600,000.00	Cost Revision	Revised unit cost and qty.
17	Installation of 15kVA Distribution Transformers	7,518,456.29	4,472,874.75	Cost Revision	Revised unit cost and qty.
18	Installation of 25kVA Distribution Transformers	12,139,382.30	7,351,100.00	Cost Revision	Revised unit cost and qty.
19	Installation of 37.5kVA Distribution Transformers	9,938,230.85	5,762,487.00	Cost Revision	Revised unit cost and qty.
20	Installation of 50kVA Distribution Transformers	6,277,914.72	3,975,660.00	Cost Revision	Revised unit cost and qty.
21	Open Secondary Low Voltage Distribution Lines	38,744,627.60	19,823,782.32	Cost Revision	Revised unit cost and qty.
22	Under Built Low Voltage Distribution Lines	6,147,068.47	3,270,438.19	Cost Revision	Revised unit cost and qty.
	Other Network Projects				
23	Customer Service Drops	37,750,648.70	26,350,484.60	Cost Revision	Revised unit cost
24	60A KWh meter for Customer Metering Equipment	31,738,205.83	19,583,394.84	Cost Revision	Revised unit cost
25	100A KWh meter for Customer Metering Equipment	23,590,397.06	22,851,280.89	Cost Revision	Revised unit cost
26	3-phase KWh meter for Customer Metering Equipment	2,487,113.13	-	Deferment	Lack of technical justification
28	Replacement of 60A KWh meters	3,405,843.00	2,101,403.00	Cost Revision	Revised unit cost and qty.
29	Replacement of 100A KWh meters	2,537,866.80	2,405,566.80	Cost Revision	Revised unit cost
30	Replacement of KWh meters with infrared reading features	19,630,144.80	18,748,144.80	Cost Revision	Revised unit cost
31	Replacement of 3-phase KWh meters with Load Profiling features	1,413,132.46	700,549.78	Cost Revision	Revised unit cost
32	Replacement of aging poles with Concrete poles preferably along 3-phase system	12,896,709.70	7,563,284.40	Cost Revision	Revised unit cost
33	Replacement of aging poles with Steel poles preferably along 3-phase system	6,141,137.45	4,106,943.25	Cost Revision	Revised unit cost
	Non-network Projects				
39	Tools, Instruments & Test Equipment	29,235,260.20	24,368,260.20	Cost Revision	Revised unit cost and qty.
40	Vehicles	53,055,000.00	-	Deferment	Lack of technical justification
41	Computers & Other Equipment	2,809,400.00	1,390,000.00	Cost Revision	Revised unit cost and qty.
42	Buildings & Lots	37,238,537.56	33,917,747.70	Cost Revision	Revised unit cost

COST ANALYSIS

The cost estimates used by CEBECO I in its capital expenditure projects were based on the prevailing market price with the assistance of its Professional Engineering Consultants subject to public, transparent and competitive biddings.

The Commission, on the other hand, re-assessed the cost estimates of each proposed projects in reference with the ERC Valuation Handbook provided in Resolution No. 17, Series of 2010, entitled *"A Resolution Adopting the Valuation Handbook for the Optimized Depreciated Replacement Cost Valuation of System Fixed Assets of Privately Owned Distribution Utilities Operating Under Performance-Based Regulation (PBR)"* and the latest NEA Price Index for the year 2012. The proposed cost estimates that exceeded the benchmark provided in the said ERC Valuation Handbook or the NEA price index were reduced while the estimated costs that are close to the said benchmarks were retained.

Comparison of the proposed estimated cost, the ERC Price Benchmark and the 2012 NEA Price Index are shown in the table below. The proposed costs and the NEA price benchmark were based only on the material costs while the ERC valuation already includes all the necessary cost in establishing and installing such equipment or materials:

Project No.	No.	Equipment	Specification	Unit	Unit Cost (PhP/unit)			Adopted Unit Cost
					Proposed[1]	ERC[2]	NEA[2]	
1 & 2	1	Power Transformer	10MVA	No.	12,361,734.00	-	11,676,151.48	NEA
	2	Conductors	ACSR 336.4 MCM	km	3,900,000.00	-	106,270.00	NEA
	3	Poles	Concrete, 65 ft.	No.	-	-	72,009.60	NEA
	4	Power Circuit Breaker	69kV, substation	No.	-	-	3,169,956.28	NEA
	5	Potential Transformer	69kV, substation	No.	-	-	293,780.15	NEA
	6	Current Transformer	69kV, substation	No.	-	-	275,377.12	NEA
	7	Surge Arrester	69kV, substation	No.	-	-	58,414.95	NEA
	8	Disconnect Switch	69kV, substation	No.	-	-	440,904.39	NEA
	9	Power Circuit Breaker	15kV, substation	No.	-	-	1,252,986.90	NEA
	10	Potential Transformer (PT)	15kV, substation	No.	-	-	71,194.30	NEA
	11	Current Transformer (CT)	15kV, substation	No.	-	-	58,891.15	NEA
	12	Surge Arrester, 15kV	15kV, substation	No.	-	-	26,745.40	NEA
	13	Disconnect Switch, 15kV	15kV, substation	No.	-	-	16,284.16	NEA
	14	Metering Equipment, Switchgear, Protection & Control Panel	69kV & 15kV, substation	No.	-	-	2,356,644.64	NEA
	15	Cable & other Accessories	15kV, substation	No.	-	-	17,022.50	NEA
4	16	Conductor	336.4 MCM ACSR	km	123,489.79	-	-	Proposed
	17	Pole	65 ft. concrete	No.	112,263.44	-	-	Proposed
	18	Power Circuit Breaker	69kV	No.	1,631,538.46	-	-	Proposed
	19	Disconnect Switch	Air Break, 69kV	No.	1,090,384.62	-	-	Proposed
5 to 14	20	Automatic Recloser	Vacuum, 630A	No.	700,000.00	805,400.00	-	Proposed

[1] The proposed unit cost does not include contingency rate factors and VAT
[2] The ERC and NEA price benchmarks already includes contingency rate factors and VAT

15	21	Capacitors	50kVAR	No.	35,000.00	35,400.00	12,465.46	NEA
	22	Hanger	Cluster Type	No.	5,000.00	-	2,400.00	NEA
16	23	Automatic Voltage Regulator (AVR)	167kVA	No.	1,050,000.00	-	-	Proposed
	24	Automatic Voltage Regulator (AVR)	333kVA	No.	1,330,000.00	-	-	Proposed
17 to 20	25	Distribution Transformer	15kVA	No.	80,843.62	75,000.00	59,638.33	NEA
	26	Distribution Transformer	25kVA	No.	102,011.62	95,000.00	77,380.00	NEA
	27	Distribution Transformer	37.5kVA	No.	127,413.22	107,000.00	94,467.00	NEA
	28	Distribution Transformer	50kVA	No.	139,509.22	124,000.00	110,435.00	NEA
21 & 22	29	Conductor	#1/0 AWG Bare ACSR	km	45,885.00	52,200.00	30,140.00	NEA
	30	Poles	Steel, 30 ft.	No.	9,879.22	16,100.00	10,204.05	NEA
23	31	Conductor	ACSR #6 TW	km	24,249.12	27,000.00	20,770.00	NEA
	32	Compression Connector	#6-#1/0 ACSR run to #6-#2	No.	50.78	-	39.35	NEA
24 & 28	33	KWh Meter	Class 10, 10/60A, 240V	No.	1,216.87	-	818.57	NEA
25 & 29	34	KWh meter	Class 100, 15/100A, 240V	No.	1,581.72	2,300.00	1,768.69	Proposed
26 & 30	35	KWh meter	Electronic 3-phase, 50A,120-480V	No.	56,150.51	35,500.00	28,000.00	NEA
27	36	Automatic Voltage Regulator (AVR)	167kVA, 1-ph, 7.62kV	No.	1,210,333.33	-	-	Proposed
	37	AVR Control	Universal, digital	No.	266,666.67	-	-	Proposed
	38	Power Circuit Breaker	69kV, 1-ph	No.	1,950,180.00	-	-	Proposed
	39	Current Transformer	69kV,1-phase, CT substation	No.	870,000.00	-	-	Proposed
	40	Potential Transformer	69kV,1-phase, PT substation	No.	750,000.00	-	-	Proposed
31	41	KWh meter	Electronic 1-ph, 15A, 240V	No.	1,852.82	2,200.00	-	Proposed
32	42	Pole	35 ft. concrete	No.	21,168.00	18,000.00	12,303.89	NEA
	43	Pole	40 ft. concrete	No.	25,872.00	21,500.00	19,622.00	NEA
	44	Pole	45 ft. concrete	No.	31,620.29	27,700.00	20,420.75	NEA
	45	Pole	50 ft. concrete	No.	33,122.17	37,300.00	24,522.32	NEA
	46	Pole	55 ft. concrete	No.	38,205.89	43,000.00	26,843.44	NEA
33	47	Pole	30 ft. steel	No.	11,617.96	16,100.00	10,204.05	NEA
	48	Pole	35 ft. steel	No.	18,816.00	19,300.00	12,716.92	NEA
	49	Pole	40 ft. steel	No.	20,456.81	27,800.00	17,395.25	NEA
42	50	Carcar Area Office	127.31 sq. m.	No.	4,350,057.00	1,289,715.57	-	ERC
	51	Carcar, Cebu	3,000 sq. m.	No.	5,000.00	-	-	Proposed
	52	Argao Area Office	127.31 sq. m.	No.	1,289,715.57	1,289,715.57	-	ERC
	53	Covered Storage Building	150 sq. m.	No.	1,310,307.57	-	-	Proposed
	54	Ginatilan Area Office	127.31 sq. m.	No.	1,550,164.00	1,289,715.57	-	ERC
	55	Moalboal, Cebu	2,000 sq. m.	No.	3,000.00	-	-	Proposed
	56	Mulit-purpose Building	960 sq. m.	No.	6,448,577.85	-	-	Proposed
	57	Moalboal Area Office	127.31 sq. m.	No.	1,289,715.57	1,289,715.57	-	ERC

It can be observed that most of the proposed material costs are close if not lesser than the above-mentioned price benchmarks. However, the Commission reduced the rate factors, such as the contingency rate factor, that were used by CEBECO I as an additional cost in determining the project costs. These factors are adopted in order to cushion the effect of price differences in the different regions due to handling of such materials or equipment. The Commission only accepted an allocation cost spurred by these factors amounting to 5% of the material cost.

PROJECT DESIGN

The acquisition of major equipment such as the distribution transformers are required to address the forecasted load growth while equipment such as circuit breakers, reclosers, disconnect switches,

fuse cut-outs and surge arresters are mainly for the protection and safety of the entire distribution system. Meanwhile, the acquisition of equipment for the substation control rooms and the acquisition of engineering hardware and software programs are appropriate in order to monitor the quality and reliability of the system and other parameters needed to provide efficient and reliable power service to the customers of CEBECO I. These parameters are also in compliance with the provisions of the Philippine Distribution Code (PDC).

Further, the design of the proposed electrical projects complies with the standards of the NEA Engineering Bulletin and the Philippine Electrical Code.

PROJECT STATUS

The entire proposed capital projects have not yet been implemented as manifested during the initial hearing of this case and as verified by the Commission. CEBECO I submitted a report regarding the revised implementation of its capital expenditure projects considering that 2011 to 2013 had already lapsed.

AUTHORITY TO SECURE LOAN

As per application, CEBECO I intends to avail of loans from the NEA to finance its entire network and other network capital expenditure projects, with a fixed annual interest rate of 10%, payable within 10 years, subject to the present lending policies on loan approval and releases. The probable mode of payment shall be in quarterly basis. CEBECO I shall then use its previous collection and the projected revenues from the Reinvestment Fund for Sustainable Capital Expenditures (RFSC) to remit the annual amortization gained from availing such loans and also to finance the entire non-network capital expenditure projects.

Funding for annual requirement is to be given on hand before the periodic implementation of the project. To be conservative and prudent, CEBECO I proposed a staggered scheme on the NEA loan releases. The release shall be on an annual basis as projected in the annual implementation of the projects (no drawdown yet). Considering the cost modifications and the revised schedule of capital expenditure projects, the projected annual NEA loan amount and the amount incurred from the RFSC collections intended for the non-network projects shall be as follows:

Financiers based on the Application	Projected Loan Amount (PhP)					Total (PhP)
	2014	2015	2016	2017	2018	
NEA	28,393,542.15	55,551,688.60	43,672,482.60	37,286,591.74	29,908,992.85	**194,813,297.94**
RFSC	26,609,851.57	6,367,009.37	10,731,150.37	12,774,459.37	12,194,037.22	**68,676,507.90**
Grand Total	55,003,393.72	61,918,697.97	54,403,632.97	50,061,051.11	42,103,030.07	**263,489,805.84**

The Commission made a simulation on the probable effect on CEBECO I's existing RFSC rate if it opts not to avail of any loan and will utilize its RFSC in financing the entire capital expenditure projects. The Commission further conducted several simulations to test the indicative effect on CEBECO I's existing RFSC rate using several financing scheme for the capital expense:

	2014	2015	2016	2017	2018	Entire 5-years
Energy Sales Forecast, KWh	114,658,910	120,302,540	126,392,250	132,933,210	139,929,220	634,216,130
Approved RFSC Rate, PhP/KWh	0.2904	0.2904	0.2904	0.2904	0.2904	0.2904
Cash balance beginning, PhP, excess/(shortfall)	10,953,279.00	(30,898,531.12)	(78,144,818.33)	(116,051,225.76)	(147,640,461.54)	**10,953,279.00**
CASH INFLOWS						
Current year RFSC Collection, PhP	33,296,947.46	34,935,857.62	36,704,309.40	38,603,804.18	40,635,445.49	184,176,364.15
50% income on leased properties, PhP	3,103,603.00	3,103,603.00	3,103,603.00	3,103,603.00	3,103,603.00	15,518,015.00
Total Cash Inflows, PhP	36,400,550.46	38,039,460.62	39,807,912.40	41,707,407.18	43,739,048.49	199,694,379.15
Available cash for disbursement, PhP	47,353,829.46	7,140,929.50	(38,336,905.93)	(74,343,818.57)	(103,901,413.06)	**210,647,658.15**
CASH OUTFLOWS						
CAPEX Requirement, PhP	55,003,393.72	61,918,697.97	54,403,632.97	50,061,051.11	42,103,030.07	263,489,805.84
Previous Loan Amortization, PhP	22,757,368.86	22,757,368.86	22,757,368.86	22,757,368.86	22,757,368.86	113,786,844.30
ERC Permit Fees, PhP	491,598.00	609,681.00	553,318.00	478,223.00	528,833.00	2,661,653.00
Total Cash Outflows, PhP	78,252,360.58	85,285,747.83	77,714,319.83	73,296,642.97	65,389,231.93	379,938,303.14
Cash balance ending, PhP, excess/(shortfall)	(30,898,531.12)	(78,144,818.33)	(116,051,225.76)	(147,640,461.54)	(169,290,644.99)	**(169,290,644.99)**
Rate Impact on RFSC, PhP/KWh, excess/(shortfall)	(0.2695)	(0.6496)	(0.9182)	(1.1106)	(1.2098)	**(0.2669)**

The results of the simulations showed that the revenues derived from CEBECO I's existing RFSC rate are not sufficient to finance the entire capital expenditure projects. There is a need to increase the RFSC rate by PhP0.2669/KWh if such financing scheme shall be pursued.

Based on the said simulations, CEBECO I's RFSC rate will be sufficient, provided that it shall avail of loans for the entire capital expenses.

Thus, CEBECO I is hereby directed to exert its best effort in negotiating for longer terms, lower interest rate, and reasonable loan amount in order to negate any possible increase in its RFSC rate without compromising the need of its distribution system and for the benefit of its consumers.

After thorough evaluation, CEBECO I's prayer for authority to secure loan is hereby approved with the following modifications:

Approved Financiers	Approved Maximum Loan Amount (PhP)					Total (PhP)
	2014	2015	2016	2017	2018	
NEA / other banks with better loan terms & conditions	55,003,393.72	61,918,697.97	54,403,632.97	50,061,051.11	42,103,030.07	**263,489,805.84**

The Commission believes that there will still be a reduction in the overall rate, due to improved efficiency, reliability (less ENS) and system loss reduction caused by the implementation of the proposed projects. The DSM component and the overall rate impact will still be subjected to further review in the rate adjustment application on the regulatory reset period of CEBECO I as indicated in the Tariff Glide Path (TGP) Guidelines.

The detailed discussion of the Commission's resolution of CEBECO I's proposed capital expenditures is embodied in a separate document attached as Annexes "A", "B", "C", and "D" and made as an integral part of this Decision.

A perusal of the evidence presented herein showed that the approval of CEBECO I's proposed five (5) year capital expenditure projects and authority to secure loan from the National Electrification Administration (NEA) is in accordance with the provisions of R.A. 9136, the Commission's "*Resolution Amending the Rules for Approval of Regulated Entities' Capital Expenditure Projects*", Section 20 (e)[3] of Commonwealth Act No. 146 (C.A. 146) or the "*Public Service Act*", as amended and will redound to the benefit of the consumers in terms of continuous, reliable and efficient power supply as mandated by R.A. 9136, or the Electric Power Industry Reform Act of 2001 (Section 2. Declaration of Policy – (b) *"to ensure the quality, reliability, security and affordability of the supply of electric power"*).

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3 "**Sec. 20.** Acts requiring the approval of the Commission. - Subject to established limitations and exceptions and saving provisions to the contrary, it shall be unlawful for any public service or for the owner, lessee or operator thereof, without the approval and authorization of the Commission previously had - Xxx

(e) Hereafter to issue any stock or stock certificates representing an increase of capital; or issue any share of stock without par value; or issue any bonds or other evidence of indebtedness payable in more than one year from the issuance thereof, provided that it shall be the duty of the Commission, after hearing, to approve any such issue maturing in more than one year from the date thereof, when satisfied that the same is to be made in accordance with law, and the purpose of such issue be approved by the Commission."

WHEREFORE, the foregoing premises considered, the application filed by the Cebu I Electric Cooperative, Inc. (CEBECO I) for approval of its proposed five (5) year capital expenditure projects and authority to secure loan from the National Electrification Administration (NEA) is hereby **APPROVED with MODIFICATION**, subject to the following conditions:

1. The modified 5-year capital expenditure projects amounting to Three Hundred Fifty-Four Million Eight Hundred Eighty-Six Thousand Eight Hundred Five and 84/100 Pesos **(PhP354,886,805.84)** are APPROVED;

2. The following capital expenditure projects are DEFERRED which may be included in its next capital expenditure application with additional justification:

   a. Installation of 10 MVA Substation in Argao;
   b. Installation of 10 MVA Substation in Badian;
   c. Construction of 70.5 km 69 kV Subtransmission Line from Suba, Samboan to Bito-on, Dumanjug;
   d. 3-phase KWh meter for Customer Metering Equipment; and
   e. Acquisition of vehicles.

3. The application to secure loan from NEA to finance its capital expenditure projects is APPROVED with modification, as provided below:

Recommended Financiers	Recommended Maximum Loan Amount (PhP)					Total (PhP)
	2014	2015	2016	2017	2018	
NEA / other banks with better loan terms & conditions	55,003,393.72	61,918,697.97	54,403,632.97	50,061,051.11	42,103,030.07	**263,489,805.84**

4. The acquisition of subtransmission asset from the National Transmission Corporation (TRANSCO) through a Consortium, as approved under ERC Case No. 2007-492 MC, should not be charged to its RFSC;

Relative thereto, CEBECO I is hereby directed to remit to the Commission, within fifteen (15) days from receipt hereof, a total permit fee in the amount of **Two Million Six Hundred Sixty-One Thousand Six Hundred Fifty-Three Pesos (PhP2,661,653.00)**, computed as follows:

$$\frac{\text{PhP354,886,805.84}}{\text{PhP100.00}} \times \text{PhP0.75} = \text{PhP2,661,653.00}$$

Breakdown of Permit Fees

Year	Project Cost (PhP)	Permit Fees (PhP)	Due Date
2014	65,546,393.72	491,598.00	Within fifteen (15) days from receipt hereof
2015	81,290,697.97	609,681.00	December 15, 2015
2016	73,775,632.97	553,318.00	December 15, 2016
2017	63,763,051.11	478,223.00	December 15, 2017
2018	70,511,030.07	528,833.00	December 15, 2018
Total (PhP)	**354,886,805.84**	**2,661,653.00**	-

Further, CEBECO I is hereby directed to: 1) submit a progress report with an indication of any variance in the implementation of the project and time schedule; 2) conduct a competitive bidding for the purchase of major materials in the implementation of the proposed project; and 3) exert best efforts in negotiating/refinancing its loan with reasonable term and lower interest rate.

SO ORDERED.

Pasig City, December 1, 2014.

ZENAIDA G. CRUZ-DUCUT
Chairperson

ALFREDO J. NON
Commissioner

GLORIA VICTORIA C. YAP-TARUC
Commissioner

JOSEFINA PATRICIA A. MAGPALE-ASIRIT
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13. **The Office of the Municipal Mayor**
Boljoon, Cebu

14. **The Office of the Municipal Mayor**
Oslob, Cebu

15. **The Office of the Municipal Mayor**
Santander, Cebu

16. **The Office of the Municipal Mayor**
Samboan, Cebu

17. **The Office of the Municipal Mayor**
Ginatilan, Cebu

18. **The Office of the Municipal Mayor**
Malabuyoc, Cebu

19. **The Office of the Municipal Mayor**
Alegria, Cebu

20. **The Office of the Municipal Mayor**
Badian, Cebu

21. **The Office of the Municipal Mayor**
Moalboal, Cebu

22. **The Office of the Municipal Mayor**
Alcantara, Cebu

23. **The Office of the Municipal Mayor**
Ronda, Cebu

24. **The Office of the Municipal Mayor**
Dumanjug, Cebu

25. **The Office of the Municipal Mayor**
Barili, Cebu

26. **Mr. Edgardo G. Lacson**
Office of the President
Philippine Chamber of Commerce and Industry (PCCI)
3rd Floor, Chamber and Industry Plaza (CIP)
1030 Campus Avenue corner Park Avenue
McKinley Town Center, Fort Bonifacio, Taguig City

ANNEX A

Proposed 5-year CAPEX Projects of CEBECO I

No.	Project Name	Proposed Project Cost (PhP)					Total (PhP)
		2011	2012	2013	2014	2015	
	Substation Projects						
1	Installation of 10MVA Substation in Argao	-	40,530,000.00	-	-	-	**40,530,000.00**
2	Installation of 10MVA Substation in Badian	-	-	-	-	40,530,000.00	**40,530,000.00**
	Subtransmission Line Projects						
3	Acquisition of subtransmission Asset from TransCo through a Consortium with VECO	3,500,000.00	-	-	-	-	**3,500,000.00**
4	Construction of 70.5 km 69kV subtransmission line from Suba, Samboan to Bito-on, Dumanjug	-	-	-	-	248,705,300.00	**248,705,300.00**
	Primary Distribution Projects						
5	Installation of Recloser along Barili Feeder	700,000.00	-	-	-	-	**700,000.00**
6	Installation of Recloser along Dumanjug Feeder	700,000.00	-	-	-	-	**700,000.00**
7	Installation of Recloser along Sibonga Feeder1	700,000.00	-	-	-	-	**700,000.00**
8	Installation of Recloser along Sibonga Feeder2	700,000.00	-	-	-	-	**700,000.00**
9	Installation of Recloser along Dalaguete Feeder1	700,000.00	-	-	-	-	**700,000.00**
10	Installation of Recloser along Dalaguete Feeder3	700,000.00	-	-	-	-	**700,000.00**
11	Installation of Recloser along Dalaguete Feeder4	-	-	700,000.00	-	-	**700,000.00**
12	Installation of Recloser along Carcar 2 Feeder1	700,000.00	-	-	-	-	**700,000.00**
13	Installation of Recloser along Samboan Feeder1	-	-	700,000.00	-	-	**700,000.00**
14	Installation of Recloser along Samboan Feeder2	700,000.00	-	-	-	-	**700,000.00**
15	Installation of Capacitors	845,000.00	845,000.00	423,000.00	845,000.00	-	**2,958,000.00**
16	Installation of Line AVRs along the feeders	7,200,000.00	3,200,000.00	3,200,000.00	3,200,000.00	-	**16,800,000.00**
17	Installation of 15kVA Distribution Transformers	1,293,497.86	1,374,341.47	1,536,028.70	1,616,872.32	1,697,715.94	**7,518,456.29**
18	Installation of 25kVA Distribution Transformers	2,040,232.32	2,244,255.55	2,448,278.78	2,652,302.02	2,754,313.63	**12,139,382.30**
19	Installation of 37.5kVA Distribution Transformers	1,656,371.81	1,783,785.02	2,038,611.46	2,166,024.67	2,293,437.89	**9,938,230.85**
20	Installation of 50kVA Distribution Transformers	1,116,073.73	1,116,073.73	1,255,582.94	1,395,092.16	1,395,092.16	**6,277,914.72**
	Secondary Distribution Projects						
21	Open Secondary Low Voltage Distribution Lines	6,632,580.23	7,178,121.89	7,737,914.86	8,308,512.27	8,887,498.35	**38,744,627.60**
22	Under Built Low Voltage Distribution Lines	1,052,298.79	1,138,852.26	1,227,666.79	1,318,195.50	1,410,055.13	**6,147,068.47**
	Other Network Projects						
23	Customer Service Drops	6,469,954.43	6,995,487.13	7,537,327.93	8,091,765.03	8,656,114.18	**37,750,648.70**
24	60A KWh meter for Customer Metering Equipment	5,424,643.07	5,873,705.07	6,336,702.16	6,810,462.65	7,292,692.88	**31,738,205.83**
25	100A KWh meter for Customer Metering Equipment	4,061,134.26	4,380,754.75	4,710,293.56	5,047,493.23	5,390,721.26	**23,590,397.06**
26	3-phase KWh meter for Customer Metering Equipment	395,677.09	452,202.39	508,727.69	565,252.98	565,252.98	**2,487,113.13**
27	Installation of Circuit Breaker for two (2) existing substations and replacement of AVR and Reclosers	10,162,000.00	17,082,054.00	-	-	-	**27,244,054.00**
28	Replacement of 60A KWh meters	681,168.60	681,168.60	681,168.60	681,168.60	681,168.60	**3,405,843.00**
29	Replacement of 100A KWh meters	507,573.36	507,573.36	507,573.36	507,573.36	507,573.36	**2,537,866.80**

30	Replacement of KWh meters with infrared reading features	-	9,815,072.40	-	9,815,072.40	-	**19,630,144.80**
31	Replacement of 3-phase KWh meters with Load Profiling features	282,626.49	282,626.49	282,626.49	282,626.49	282,626.49	**1,413,132.46**
32	Replacement of aging poles with Concrete poles preferably along 3-phase system	2,579,341.94	2,579,341.94	2,579,341.94	2,579,341.94	2,579,341.94	**12,896,709.70**
33	Replacement of aging poles with Steel poles preferably along 3-phase system	1,228,227.49	1,228,227.49	1,228,227.49	1,228,227.49	1,228,227.49	**6,141,137.45**
34	Rural Electrification Projects	10,543,000.00	19,372,000.00	19,372,000.00	13,702,000.00	28,408,000.00	**91,397,000.00**
	Non-network Projects						
35	Communication System Equipment (VHF Radio & Repeater System)	334,500.00	112,500.00	112,500.00	226,500.00	76,500.00	**862,500.00**
36	Geographical Information System (hardware & software)	180,000.00	-	-	120,000.00	-	**300,000.00**
37	Meter Reading, Billing Collection System (hardware & software)	1,392,900.00	1,989,600.00	620,500.00	771,000.00	2,664,000.00	**7,438,000.00**
38	Management Information System	-	-	400,000.00	-	-	**400,000.00**
39	Tools, Instruments & Test Equipment	9,203,736.00	3,882,693.80	8,911,342.80	5,116,743.80	2,120,743.80	**29,235,260.20**
40	Vehicles	13,170,000.00	9,050,000.00	15,705,000.00	10,080,000.00	5,050,000.00	**53,055,000.00**
41	Computers & Other Equipment	600,000.00	530,850.00	530,850.00	575,850.00	571,850.00	**2,809,400.00**
42	Buildings & Lots	19,350,057.00	1,289,715.57	1,310,307.57	7,550,164.00	7,738,293.42	**37,238,537.56**
	Grand Total (PhP)	117,502,594.47	145,516,002.92	92,601,573.13	95,253,240.91	381,486,519.50	**832,359,930.93**

ANNEX B

Revised Schedule of the 5-year CAPEX Projects of CEBECO I

No.	Project Name	Proposed Project Cost (PhP)					Total (PhP)
		2014	2015	2016	2017	2018	
	Substation Projects						
1	Installation of 10MVA Substation in Argao	40,530,000.00	-	-	-	-	**40,530,000.00**
2	Installation of 10MVA Substation in Badian	-	40,530,000.00	-	-	-	**40,530,000.00**
	Subtransmission Line Projects						
3	Acquisition of subtransmission Asset from TransCo through a Consortium with VECO	3,500,000.00	-	-	-	-	**3,500,000.00**
4	Construction of 70.5 km 69kV subtransmission line from Suba, Samboan to Bito-on, Dumanjug	-	-	248,705,300.00	-	-	**248,705,300.00**
	Primary Distribution Projects						
5	Installation of Recloser along Barili Feeder	700,000.00	-	-	-	-	**700,000.00**
6	Installation of Recloser along Dumanjug Feeder	700,000.00	-	-	-	-	**700,000.00**
7	Installation of Recloser along Sibonga Feeder1	700,000.00	-	-	-	-	**700,000.00**
8	Installation of Recloser along Sibonga Feeder2	700,000.00	-	-	-	-	**700,000.00**
9	Installation of Recloser along Dalaguete Feeder1	700,000.00	-	-	-	-	**700,000.00**
10	Installation of Recloser along Dalaguete Feeder3	700,000.00	-	-	-	-	**700,000.00**
11	Installation of Recloser along Dalaguete Feeder4	-	700,000.00	-	-	-	**700,000.00**
12	Installation of Recloser along Carcar 2 Feeder1	700,000.00	-	-	-	-	**700,000.00**
13	Installation of Recloser along Samboan Feeder1	-	700,000.00	-	-	-	**700,000.00**
14	Installation of Recloser along Samboan Feeder2	700,000.00	-	-	-	-	**700,000.00**
15	Installation of Capacitors	-	845,000.00	845,000.00	423,000.00	845,000.00	**2,958,000.00**
16	Installation of Line AVRs along the feeders	-	16,800,000.00	-	-	-	**16,800,000.00**
17	Installation of 15kVA Distribution Transformers	1,293,497.86	1,374,341.47	1,536,028.70	1,616,872.32	1,697,715.94	**7,518,456.29**
18	Installation of 25kVA Distribution Transformers	2,040,232.32	2,244,255.55	2,448,278.78	2,652,302.02	2,754,313.63	**12,139,382.30**
19	Installation of 37.5kVA Distribution Transformers	1,656,371.81	1,783,785.02	2,038,611.46	2,166,024.67	2,293,437.89	**9,938,230.85**
20	Installation of 50kVA Distribution Transformers	1,116,073.73	1,116,073.73	1,255,582.94	1,395,092.16	1,395,092.16	**6,277,914.72**
	Secondary Distribution Projects						
21	Open Secondary Low Voltage Distribution Lines	6,632,580.23	7,178,121.89	7,737,914.86	8,308,512.27	8,887,498.35	**38,744,627.60**
22	Under Built Low Voltage Distribution Lines	1,052,298.79	1,138,852.26	1,227,666.79	1,318,195.50	1,410,055.13	**6,147,068.47**
	Other Network Projects						
23	Customer Service Drops	6,469,954.43	6,995,487.13	7,537,327.93	8,091,765.03	8,656,114.18	**37,750,648.70**
24	60A KWh meter for Customer Metering Equipment	5,424,643.07	5,873,705.07	6,336,702.16	6,810,462.65	7,292,692.88	**31,738,205.83**
25	100A KWh meter for Customer Metering Equipment	4,061,134.26	4,380,754.75	4,710,293.56	5,047,493.23	5,390,721.26	**23,590,397.06**
26	3-phase KWh meter for Customer Metering Equipment	395,677.09	452,202.39	508,727.69	565,252.98	565,252.98	**2,487,113.13**
27	Installation of Circuit Breaker for two (2) existing substations and replacement of AVR and Reclosers	-	10,162,000.00	17,082,054.00	-	-	**27,244,054.00**
28	Replacement of 60A KWh meters	681,168.60	681,168.60	681,168.60	681,168.60	681,168.60	**3,405,843.00**
29	Replacement of 100A KWh meters	507,573.36	507,573.36	507,573.36	507,573.36	507,573.36	**2,537,866.80**
30	Replacement of KWh meters with infrared reading features	-	9,815,072.40	-	9,815,072.40	-	**19,630,144.80**

31	Replacement of 3-phase KWh meters with Load Profiling features	282,626.49	282,626.49	282,626.49	282,626.49	282,626.49	**1,413,132.46**
32	Replacement of aging poles with Concrete poles preferably along 3-phase system	2,579,341.94	2,579,341.94	2,579,341.94	2,579,341.94	2,579,341.94	**12,896,709.70**
33	Replacement of aging poles with Steel poles preferably along 3-phase system	1,228,227.49	1,228,227.49	1,228,227.49	1,228,227.49	1,228,227.49	**6,141,137.45**
34	Rural Electrification Projects	10,543,000.00	19,372,000.00	19,372,000.00	13,702,000.00	28,408,000.00	**91,397,000.00**
	Non-network Projects						
35	Communication System Equipment (VHF Radio & Repeater System)	334,500.00	112,500.00	112,500.00	226,500.00	76,500.00	**862,500.00**
36	Geographical Information System (hardware & software)	180,000.00	120,000.00	-	-	-	**300,000.00**
37	Meter Reading, Billing Collection System (hardware & software)	1,392,900.00	1,989,600.00	620,500.00	771,000.00	2,664,000.00	**7,438,000.00**
38	Management Information System	-	-	400,000.00	-	-	**400,000.00**
39	Tools, Instruments & Test Equipment	9,203,736.00	3,882,693.80	8,911,342.80	5,116,743.80	2,120,743.80	**29,235,260.20**
40	Vehicles	13,170,000.00	9,050,000.00	15,705,000.00	10,080,000.00	5,050,000.00	**53,055,000.00**
41	Computers & Other Equipment	600,000.00	530,850.00	530,850.00	575,850.00	571,850.00	**2,809,400.00**
42	Buildings & Lots	19,350,057.00	1,289,715.57	1,310,307.57	7,550,164.00	7,738,293.42	**37,238,537.56**
	Grand Total (PhP)	139,825,594.47	153,715,948.92	354,210,927.13	91,511,240.91	93,096,219.50	**832,359,930.93**

ANNEX C

Approved 5-year CAPEX Projects of CEBECO I

No.	Project Name	Recommended Project Cost (PhP)					Total (PhP)
		2014	2015	2016	2017	2018	
	Primary Distribution Projects						
5	Installation of Recloser along Barili Feeder	700,000.00	-	-	-	-	**700,000.00**
6	Installation of Recloser along Dumanjug Feeder	700,000.00	-	-	-	-	**700,000.00**
7	Installation of Recloser along Sibonga Feeder1	700,000.00	-	-	-	-	**700,000.00**
8	Installation of Recloser along Sibonga Feeder2	700,000.00	-	-	-	-	**700,000.00**
9	Installation of Recloser along Dalaguete Feeder1	700,000.00	-	-	-	-	**700,000.00**
10	Installation of Recloser along Dalaguete Feeder3	700,000.00	-	-	-	-	**700,000.00**
11	Installation of Recloser along Dalaguete Feeder4	-	700,000.00	-	-	-	**700,000.00**
12	Installation of Recloser along Carcar 2 Feeder1	700,000.00	-	-	-	-	**700,000.00**
13	Installation of Recloser along Samboan Feeder1	-	700,000.00	-	-	-	**700,000.00**
14	Installation of Recloser along Samboan Feeder2	700,000.00	-	-	-	-	**700,000.00**
15	Installation of Capacitors	-	543,385.52	543,385.52	271,692.76	543,385.52	**1,901,849.32**
16	Installation of Line AVRs along the feeders	-	9,600,000.00	-	-	-	**9,600,000.00**
17	Installation of 15kVA Distribution Transformers	775,298.29	834,936.62	894,574.95	954,213.28	1,013,851.61	**4,472,874.75**
18	Installation of 25kVA Distribution Transformers	1,238,080.00	1,392,840.00	1,470,220.00	1,547,600.00	1,702,360.00	**7,351,100.00**
19	Installation of 37.5kVA Distribution Transformers	1,039,137.00	1,039,137.00	1,133,604.00	1,228,071.00	1,322,538.00	**5,762,487.00**
20	Installation of 50kVA Distribution Transformers	662,610.00	773,045.00	773,045.00	883,480.00	883,480.00	**3,975,660.00**
	Secondary Distribution Projects						
21	Open Secondary Low Voltage Distribution Lines	3,343,614.24	3,693,555.84	4,019,264.88	4,209,426.24	4,557,921.12	**19,823,782.32**
22	Under Built Low Voltage Distribution Lines	562,151.90	612,122.64	646,541.14	702,719.33	746,903.18	**3,270,438.19**
	Other Network Projects						
23	Customer Service Drops	4,516,083.00	4,883,124.40	5,261,394.60	5,648,086.40	6,041,796.20	**26,350,484.60**
24	60A KWh meter for Customer Metering Equipment	3,347,114.70	3,624,499.89	3,910,290.70	4,201,965.44	4,499,524.10	**19,583,394.84**
25	100A KWh meter for Customer Metering Equipment	3,933,903.57	4,243,419.84	4,562,558.36	4,889,715.45	5,221,683.67	**22,851,280.89**
27	Installation of Circuit Breaker for two (2) existing substations and replacement of AVR and Reclosers	-	10,162,000.00	17,082,054.00	-	-	**27,244,054.00**
28	Replacement of 60A KWh meters	420,280.60	420,280.60	420,280.60	420,280.60	420,280.60	**2,101,403.00**
29	Replacement of 100A KWh meters	481,113.36	481,113.36	481,113.36	481,113.36	481,113.36	**2,405,566.80**
30	Replacement of KWh meters with infrared reading features	-	9,374,072.40	-	9,374,072.40	-	**18,748,144.80**
31	Replacement of 3-phase KWh meters with Load Profiling features	140,109.96	140,109.96	140,109.96	140,109.96	140,109.96	**700,549.78**
32	Replacement of aging poles with Concrete poles preferably along 3-phase system	1,512,656.88	1,512,656.88	1,512,656.88	1,512,656.88	1,512,656.88	**7,563,284.40**
33	Replacement of aging poles with Steel poles preferably along 3-phase system	821,388.65	821,388.65	821,388.65	821,388.65	821,388.65	**4,106,943.25**
34	Rural Electrification Projects	10,543,000.00	19,372,000.00	19,372,000.00	13,702,000.00	28,408,000.00	**91,397,000.00**
	Non-Network Projects						
35	Communication System Equipment (VHF Radio & Repeater System)	334,500.00	112,500.00	112,500.00	226,500.00	76,500.00	**862,500.00**
36	Geographical Information System (hardware & software)	180,000.00	120,000.00	-	-	-	**300,000.00**

37	Meter Reading, Billing Collection System (hardware & software)	1,392,900.00	1,989,600.00	620,500.00	771,000.00	2,664,000.00	**7,438,000.00**
38	Management Information System	-	-	400,000.00	-	-	**400,000.00**
39	Tools, Instruments & Test Equipment	8,142,736.00	2,574,693.80	8,007,342.80	4,206,743.80	1,436,743.80	**24,368,260.20**
41	Computers & Other Equipment	270,000.00	280,500.00	280,500.00	280,500.00	278,500.00	**1,390,000.00**
42	Buildings & Lots	16,289,715.57	1,289,715.57	1,310,307.57	7,289,715.57	7,738,293.42	**33,917,747.70**
	Grand Total (PhP)	65,546,393.72	81,290,697.97	73,775,632.97	63,763,051.11	70,511,030.07	**354,886,805.84**

ANNEX D

DETAILED PROJECT DISCUSSION

I. NETWORK PROJECTS

Project No.	1
Project Title	Installation of 10 MVA Substation in Argao
Project Code	DSC-01
Project Type	Capacity
Priority Rank	2
Project Category	Substation Project

Project Description	Duration
▪ Construction of a new 69/13.2 kV, 10 MVA power substation at Lamacan, Argao.	2012

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
-	40,530,000.00	-	-	-	**40,530,000.00**

Project Justification

- Based on the application, the project is intended to address the impending capacity problem within areas presently being served by the existing NGCP owned Sibonga substation on year 2012. The proposed substation shall replace the said NGCP substation.

Technical Analysis

- The 5 MVA Sibonga Substation is presently owned by the National Grid Corporation of the Philippines (NGCP). CEBECO I intends to have its own substation that would cater the existing loads of the said substation either by acquiring the said substation from NGCP or by constructing a new one.

- Based on the cooperative analysis, the construction of a new substation and upgrading its capacity to 10 MVA is appropriate considering that the existing loading percentage of the combined capacities of Sibonga and Dalaguete substations is above the 70% loading criterion that would trigger substation capacity augmentation planning, as shown in the table below.

Substation	Rated MVA Capacity	Max. MVA Capacity		Forecast Years				
				2011	2012	2013	2014	2015
Sibonga	5	6.25	MW Demand	4.86	5.01	5.15	5.30	5.44
			% Loading	**86.39%**	**89.02%**	**91.61%**	**94.18%**	**96.73%**
Dalaguete	10	12.5	MW Demand	6.52	6.88	7.23	7.59	7.95
			% Loading	**57.98%**	**61.14%**	**64.31%**	**67.47%**	**70.63%**
Sibonga & Dalaguete	15	18.75	MW Demand	11.38	11.89	12.39	12.89	13.39
			% Loading	**67.45%**	**70.43%**	**73.41%**	**76.37%**	**79.33%**

- The Commission, on the other hand, reviewed the present loading situation of the Sibonga and Dalaguete substations considering that there are 2 substations that were not included in the submitted technical analysis. The 2 substations namely, the Samboan and the Carcar2, were the previous approved CAPEX projects prior to this application. The supposed additional forecasted demands of the Sibonga and Dalaguete prior to the construction of the Samboan and Carcar2 substations shall be catered by the 2 latter substations after its construction. It is therefore necessary to re-evaluate the present loading assessment of the existing substations of CEBECO I.

- Based on the said review, the individual loading percentages of the Sibonga and Dalaguete substations, as well as the combined capacities of both substations, did not exceed 70%, as shown in the table below. The computation was based on the submitted additional data containing demand forecast of the entire substations of CEBECO I and using the maximum capacities of each substations with 90% power factor.

Substation	Rated MVA Capacity	Max. MVA Capacity		Forecast Years				
				2011	2012	2013	2014	2015
Sibonga	5	6.25	MW Demand	4.351	3.024	3.410	3.510	3.602
			% Loading	77.35%	53.76%	60.62%	62.40%	64.04%
Dalaguete	10	12.5	MW Demand	6.952	6.216	5.936	6.232	6.527
			% Loading	70.68%	55.25%	52.76%	55.40%	58.02%
Sibonga & Dalaguete	15	18.75	MW Demand	11.30	9.24	9.35	9.74	10.13
			% Loading	72.91%	54.76%	55.38%	57.73%	60.02%

- The findings above would only limit the discussion on whether it is practical for CEBECO I to provide the following alternative projects:
  a) Maintain with the existing NGCP 5MVA Sibonga Substation;
  b) Acquire the NGCP 5MVA Sibonga Substation; and
  c) Construct a new 5MVA Substation.

Economic and Cost Analysis

- Based on the review made by the Commission, the first option is the most practical approach considering that it presented the least cost among the alternatives. Summary of the analysis is shown in the table below.

Project Name	Effective Years	Initial Cost (PhP)	O&M Expense (PhP)	Annual CC/RST Charges (PhP)	Lifetime Cost NPV (PhP)
a) Maintain with NGCP 5MVA Sibonga SS	10	-	-	959,396.76	6,437,630.35
b) Acquisition of NGCP 5MVA Sibonga SS	10	17,230,197.00	516,905.91	-	20,698,677.73
c) 5MVA Argao Substation	10	21,767,033.25	217,670.33	-	23,227,618.89

- The computation of lifetime cost was based on the assumption that the assets are technically effective within 10 years, the O&M cost for options b and c having 3% and 1% of its estimated costs, respectively, and a discount rate of 8%, which is the existing interest rate for NEA loans.

▪ The estimated cost for the construction of a new 5MVA substation was based on the NEA price benchmark while the cost for acquiring the existing NGCP 5MVA Sibonga Substation was based on the additional data submitted by the cooperative.

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	✓

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
-	-	-	-	-	-

Project No.	2
Project Title	Installation of 10MVA Substation in Badian
Project Code	DSC-02
Project Type	Capacity
Priority Rank	2
Project Category	Substation Project

Project Description	Duration
▪ Construction of a new 69/13.2 kV, 10 MVA power substation in Badian, Cebu.	2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
-	-	-	-	40,530,000.00	**40,530,000.00**

Project Justification

- Based on the application, the project is intended to address the impending capacity problem and the existing power quality problem within areas presently being served by the Dumanjug substation on year 2015.

Technical Analysis

- Based on CEBECO I's analysis, the construction of a new 10 MVA power substation is appropriate not only because it will address the alleged capacity issue but it will also solve the existing and the impending power quality issue being experienced in some areas being catered by the Dumanjug Substation. The said loading assessment is above the 70% loading criterion that would trigger substation capacity augmentation planning, as shown in the table below.

Substation	Rated MVA Capacity	Max. MVA Capacity		Forecast Years				
				2011	2012	2013	2014	2015
Dumajug	10	12.5	MW Demand	7.91	8.18	8.44	8.68	8.91
			% Loading	**70.28%**	**72.73%**	**75.02%**	**77.17%**	**79.19%**

- The loading assessment of CEBECO I, however, needs re-evaluation considering that the Samboan and Carcar 2 substations was not yet included in the said analysis, as previously discussed in Project No. 1. ROS included the Samboan Substation in the loading performance re-evaluation since some of its existing load shall be transferred to the proposed substation.

- Based on the review made by the Commission, the individual loading percentages of the Dumanjug and Samboan substations, as well as the combined capacities of both substations, did not exceed 70%, as manifested in the table below. The computation was based on the submitted additional data containing demand forecast of the entire substations of CEBECO I and using the maximum capacities of each substations with 90% power factor.

Substation	Rated MVA Capacity	Max. MVA Capacity		Forecast Years				
				2011	2012	2013	2014	2015
Dumajug	10	12.5	MW Demand	6.52	6.55	7.31	7.52	7.72
			% Loading	57.94%	58.24%	64.96%	66.81%	68.58%
Samboan	5	6.25	MW Demand	1.42	3.23	3.60	3.75	3.91
			% Loading	25.24%	57.35%	63.91%	66.65%	69.53%
Dumajug & Samboan	15	18.75	MW Demand	7.94	9.78	10.90	11.27	11.63
			% Loading	47.04%	57.94%	64.61%	66.76%	68.89%

- The proposed project will no longer be needed considering that the existing and impending power quality issues of the Dumanjug and Samboan substations will be addressed by Project Nos. 15 & 16.

Economic and Cost Analysis

- The economic assessment of the proposed project is already irrelevant considering the findings discussed above.

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	✓

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
-	-	-	-	-	-

Project No.	3
Project Title	Acquisition of subtransmission Asset from TransCo through a Consortium with VECO
Project Code	STR-01
Project Type	Reliability
Priority Rank	3
Project Category	Subtransmission Line Project

Project Description	Duration
▪ The proposed amount shall be used as a capital investment of CEBECO I on the newly created entity/consortium with Visayas Electric Corporation (VECO) named as *"CEBECO I-VECO South Sub-transmission Company, Inc."* which was registered with Securities and Exchange Commission (SEC) as another private corporation.	2011

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
3,500,000.00	-	-	-	-	**3,500,000.00**

Project Justification
▪ CEBECO I perceived that it is necessary for them to recover the amount through the RFSC collections which will be used as stockholder's share to the abovementioned company.

Technical / Economic and Cost Analysis
▪ On September 6, 2010, the Commission approved the application regarding the sale of subtransmission assets of TransCo/NGCP to be acquired by CEBECO I and VECO through a Consortium. The said application was filed on October 30, 2007 under ERC Case No. 2007-492 MC. The approved purchased cost for the said assets amounted to **PhP50,446,849.58**. The following are the approved subtransmission assets to be acquired by CEBECO I and VECO: a) Naga–Sibonga–Dumanjug 69kV line; and b) Sibonga–Alcoy 69kV line. ▪ CEBECO I and VECO executed an Amended and Restated Shareholders' Agreement to define and regulate the rights and duties as shareholders of the Consortium. The agreement is requiring CEBECO I to provide a share amounting to **PhP3,500,000.00** as its share of stock in the consortium wherein said amount is 70% of the total capital stock. It is the intention of the cooperative to recover the said share of CEBECO I through this project. ▪ The proposed project is not a capital expenditure project since capital expenditure is an amount spent to acquire or upgrade productive assets in order to increase the capacity or efficiency of a company for

more than one (1) accounting period. Moreover, the said expense (share of stocks) is not included in the list of assets or Operation and Maintenance (O&M) expense that could be capitalized as specified in the CAPEX Guidelines.

- Based on the letter by CEBECO I dated September 3, 2013, that it already paid the required proportionate share of the price of the subtransmission asset amounting to more than PhP35 Million using its general fund as investment to the consortium in acquiring the said asset. CEBECO I also stated that it does not intend to recover from its consumers the investment in acquiring the assets since any income by the consortium will be treated as other revenue item. In this regard, the Commission deems that it is only reasonable that the proposed project should come from the Other Revenue Income (ORI) or charged to Investment in accordance to its Accounting and Cost Allocation Manual (ACAM).

- The Commission, thereby, approves that the funding of the project be charged to CEBECO I's general fund as investment.

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	
Project to be disapproved	✓

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
-	-	-	-	-	-

Project No.	4
Project Title	Construction of 70.5 km, 69 kV subtransmission line from Suba, Samboan to Bito-on, Dumajug
Project Code	STR-02
Project Type	Reliability
Priority Rank	3
Project Category	Subtransmission Line Project

Project Description	Duration
▪ The project consists of constructing a 70.5km, 69 kV subtransmission line from Suba, Samboan to Bito-on, Dumanjug.	2015

Proposed CAPEX Cost (PhP)

2011	2012	2013	2014	2015	**Total**
-	-	-	-	248,705,300.00	**248,705,300.00**

Project Justification

- The proposed project intends to improve the reliability performance of the entire distribution system by focusing on the 69 kV voltage-level lines. The proposed 69 kV line shall serve as a tie line between the Dumanjug Substation, the proposed Badian Substation, and the Samboan Substation.

Technical Analysis

- Several alternative projects were developed by CEBECO I in order to attain reliability performance improvement. The proposed project was selected since it has the shortest route and it shall provide the least cost among the alternative projects.

- The forecasted benefit derived from the project was based on the avoided Expected Energy Not Served (EENS) with the project's implementation. The forecasted annual benefit for at least five years is shown in the table below.

Year	EENS (KWh)		EENS Saved (KWh) - Benefit
	Existing	With Project	
2015	6,806,347.87	213,388.71	6,592,959.16
2016	6,997,265.84	219,374.26	6,777,891.58
2017	7,178,684.92	225,062.01	6,953,622.92
2018	7,350,605.12	230,451.95	7,120,153.17
2019	7,513,026.43	235,544.09	7,277,482.34

- The existing line configuration and the proposed line configuration with the project are shown in figures 4.1 and 4.2, respectively.

Figure 4.1. Existing Line Configuration

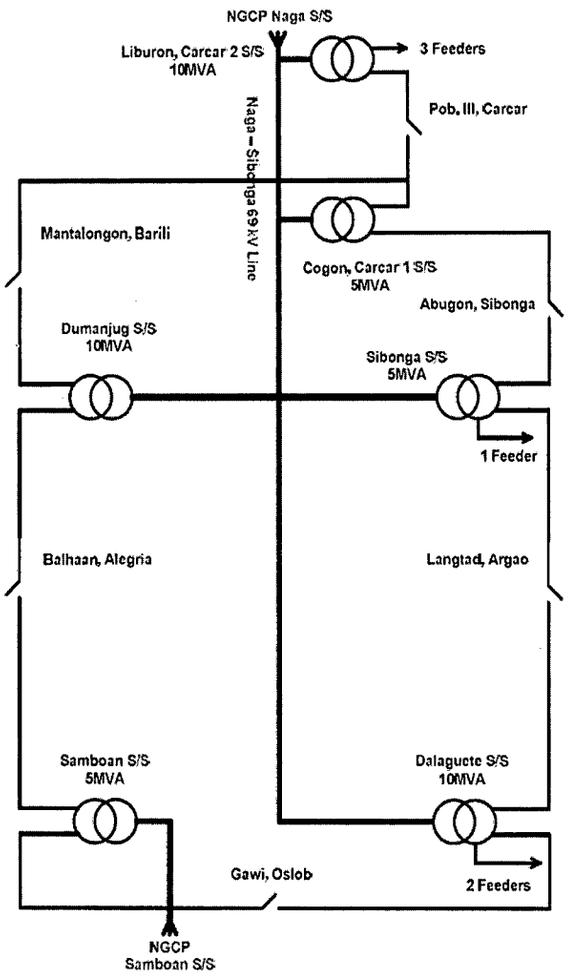
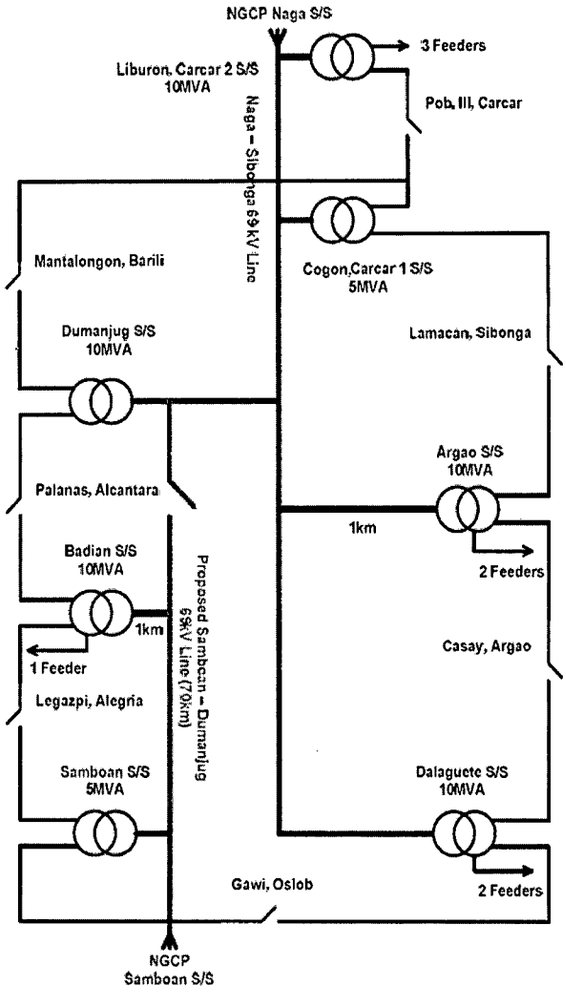


Figure 4.2. Proposed Line Configuration



Economic and Cost Analysis

- Based on CEBECO I's analysis, the proposed project is economically viable considering that the computed benefit/cost (B/C) ratio is more than 1. The B/C ratio was determined based on the probable monetary savings derived from the avoided EENS with the project and using the existing generation, transmission and distribution charges.

- The Commission finds that the said rates, except for distribution, should not be used in the computation for the project's projected annual benefits since these rates are just pass-on charges. It is essential that the existing distribution, supply, metering, and RFSC rates should be used in the analysis thus, reassessment of the project was made.

- Based on the review made by the Commission, the project is not economically feasible since the computed benefit/cost ratio is less than 1. Summary of the analysis is shown in the table below:

	B/C	0.43
	Discount Rate	8%
	PV of Benefits	PhP140,437,189.71
	PV of Cost	PhP328,351,502.43
	Total Benefits (NPV)	-PhP187,914,312.72

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	✓

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
-	-	-	-	-	-

Project Nos.	5 to 14
Project Title	Installation of Recloser along feeders
Project Code	PDS-01 to PDS-10
Project Type	Safety
Priority Rank	1
Project Category	Primary Distribution Line Project

Project Description	Duration
▪ Installation of 630A, Automatic Recloser within several backbone lines of the entire system. These devices shall be installed along the mid-range part of the primary distribution lines.	2011 & 2013

Proposed CAPEX Cost (PhP)

2011	2012	2013	2014	2015	**Total**
5,600,000.00	-	1,400,000.00	-	-	**7,000,000.00**

Project Justification

- Based on the result of CEBECO I's short circuit simulation study, there is a need to install 3-phase reclosers along several identified feeders in order to maintain a safe electric power system and service.

Technical Analysis

- Some of the existing feeders of CEBECO I were found to have a minimum fault below the existing protection setting of the protection devices designated along these feeder lines. Based on CEBECO I's short-circuit analysis, the existing substation recloser cannot sense the minimum fault current in the farthest end of the line in the event fault occurred within the area. This situation poses danger to the safety of the consumers living nearby these lines or any passers-by.

- Summary of the short circuit analysis and the existing minimum setting of the feeders involve for additional back-up protection is shown in the table below:

Substation	Feeder Name	Minimum Fault Current (A)	Pick-up Setting (A)	Safety Margin	Feeder Status
Dumanjug	DumF1	122.97	267.00	217.13%	inadequate
	DumF2	76.57	685.00	894.61%	inadequate
Sibonga	SibF1	131.49	185.00	140.70%	inadequate
	SibF2	103.33	172.00	166.46%	inadequate
Dalaguete	DalF1	95.06	212.00	223.02%	inadequate
	DalF3	107.94	329.00	304.80%	inadequate
	DalF4	101.42	104.00	102.54%	inadequate
Samboan	SamF1	89.80	91.00	101.34%	inadequate
	SamF2	111.94	210.00	187.60%	inadequate
Carcar 2	Car2F1	132.76	263.00	198.10%	inadequate

Economic and Cost Analysis

- The EC has come up with an alternative solution to address the problem by installing single phase fuse for each phase of the distribution line. However, said solution is not technically feasible

considering that the equipment's capability is limited only for single phase lines. Its feature, particularly its incapability to switch each phase of the three-phase distribution lines simultaneously, is unsafe for three-phase customers. Moreover, the said equipment is incapable of detecting zero-sequence component which only adds to its disadvantage.

- The only technically feasible solution to address the existing problem of the distribution system, without having disadvantages as mentioned above, is to install an additional backup recloser nearby the affected areas not being sensed by the main substation recloser during minimum fault.

- The proposed project cost is recommended considering that the equipment is unavailable in both the NEA Price Index and the ERC Valuation Handbook. Moreover, the said cost of equipment is within the available price inquired in the internet as well as the previous applications of the Commission.

- Shown in the table below is the proposed project cost breakdown:

No.	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Material Cost (PhP)	Project Cost (PhP)
1	Automatic Recloser	Vacuum, 630A	8	700,000.00	2011	5,600,000.00	**7,000,000.00**
2	Automatic Recloser	Vacuum, 630A	2	700,000.00	2013	1,400,000.00	

Approved	Remarks
Project to continue as proposed	✓
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
5,600,000.00	-	1,400,000.00	-	-	**7,000,000.00**

Project Nos.	15 & 16
Project Title	Installation of Capacitors and Line AVRs along feeders
Project Code	PDQ-01 & PDQ-02
Project Type	Power Quality
Priority Rank	2
Project Category	Primary Distribution Line Project

Project Description	Duration
▪ The project will require forty two (42) units of 50kVAR capacitors and fifteen (15) units of AVR. Six (6) units of capacitors, which are accompanied by a timer switch, and three (3) units of AVR to be installed in each feeder. ▪ It also includes load balancing or transferring of loads from one phase to another.	2011 to 2014

Proposed CAPEX Cost (PhP)

2011	2012	2013	2014	2015	**Total**
8,045,000.00	4,045,000.00	3,623,000.00	4,045,000.00	-	**19,758,000.00**

Project Justification

▪ CEBECO I proposed the installation of capacitors and Automatic Voltage Regulator (AVR) and balancing of loads within these feeders in order to address the power quality problem within the distribution system.

Technical Analysis

▪ Several primary distribution lines of CEBECO I have power quality problem as shown in the table below.

Substation	Feeder Name	Year Affected	Existing Condition		Solution	With the Project	
			Voltage (p.u.)	Unbalance (%)		Voltage (p.u.)	Unbalance (%)
Dumanjug	DumF1	2014	0.8913	2.42	Capacitor	0.9323	2.40
	DumF2	2014	0.8901	2.52	Capacitor	0.9219	2.40
Carcar 1	Car1F2	2013	0.8828	1.68	Capacitor	0.9408	0.30
Sibonga	SibF2	2011	0.8905	5.28	Capacitor	0.9064	2.34
Dalaguete	DalF1	2012	0.8862	3.28	Capacitor	0.9031	2.26
	DalF3	2011	0.8787	4.39	Capacitor	0.9311	2.25
	DalF4	2011	0.8787	5.70	AVR	0.9552	2.30
Samboan	SamF1	2014	0.8727	2.25	AVR	0.9773	1.75
	SamF2	2013	0.8641	2.79	AVR	0.9374	1.82
Carcar 2	Car2F1	2012	0.8836	3.04	Capacitor	0.9744	2.40
Carcar 2-Totalizer	Car2-Tot	-	-	-	AVR	-	-
Argao	ArgF4	-	-	-	AVR	-	-

▪ The phase voltage magnitudes and the deviation of phase voltage magnitudes *(voltage unbalance)* of these feeders are beyond the power quality standards provided in the PDC. The said provision is requiring distribution utilities to maintain a voltage magnitude within ±10% of the nominal voltage level of 230 volts or per unit values

ranging from 0.9 to 1.1 at the customer's connection point and a maximum voltage unbalance not exceeding 2.5% during normal operating conditions.

- There were several alternative solutions that were prepared by CEBECO I for each deficient feeder however, the proposed project presented the only technically feasible solution to address the problem. There is no other recourse but to implement these projects considering that such problem is mandatory to resolve.

- All of the proposed locations/feeders for the AVR projects were supported with technical justification and performance assessment, except for feeders Car2-totalizer and ArgF4. The Commission therefore approves the deferment of the supposed AVR project intended for the said two (2) feeders.

Economic and Cost Analysis

- Shown in the following tables are the proposed project cost breakdowns, to wit:

CAPACITOR PROJECTS

No.	Feeder Name	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	SibF2 & DalF3	Capacitors	50kVAR	12	35,000.00	2011	420,000.00
		Hanger	Cluster Type	12	5,000.00		60,000.00
		Oil Switch	-	8	45,000.00		360,000.00
		Capacitor Switch	-	2	2,500.00		5,000.00
2	DalF1 & Car2F1	Capacitors	50kVAR	12	35,000.00	2012	420,000.00
		Hanger	Cluster Type	12	5,000.00		60,000.00
		Oil Switch	-	8	45,000.00		360,000.00
		Capacitor Switch	-	2	2,500.00		5,000.00
3	Car1F2	Capacitors	50kVAR	6	35,000.00	2013	210,000.00
		Hanger	Cluster Type	6	5,000.00		30,000.00
		Oil Switch	-	4	45,000.00		180,000.00
		Capacitor Switch	-	1	3,000.00		3,000.00
4	DumF1 & DumF2	Capacitors	50kVAR	12	35,000.00	2014	420,000.00
		Hanger	Cluster Type	12	5,000.00		60,000.00
		Oil Switch	-	8	45,000.00		360,000.00
		Capacitor Switch	-	2	2,500.00		5,000.00
					Grand Total		**2,958,000.00**

AVR PROJECTS

No.	Feeder Name	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	DalF4	AVR	167kVA	3	1,050,000.00	2011	3,150,000.00
			Accessories	1 set	50,000.00		50,000.00
	Car2-totalizer	AVR	333kVA	3	1,330,000.00		3,990,000.00
			Accessories	1 set	10,000.00		10,000.00
2	ArgF4	AVR	167kVA	3	1,050,000.00	2012	3,150,000.00
			Accessories	1 set	50,000.00		50,000.00
3	SamF2	AVR	167kVA	3	1,050,000.00	2013	3,150,000.00
			Accessories	1 set	50,000.00		50,000.00
4	SamF1	AVR	167kVA	3	1,050,000.00	2014	3,150,000.00
			Accessories	1 set	50,000.00		50,000.00
					Grand Total		**16,800,000.00**
					Cumulative Project Cost		**19,758,000.00**

Note: Highlighted rows are feeders with unavailable analysis and was not discussed in the application

- The Commission reviewed the proposed costs of the approved projects and determined that such costs be reduced. The Commission cost assessment involves adjustment of the unit costs of equipment and materials required for the capacitor projects in reference with the 2012 NEA price index. Moreover, the proposed unit costs of the materials and equipment required for the AVR projects were then used, however, the project costs intended for the Car2-totalizer and ArgF2 feeders were no longer included, considering the basis discussed in the technical analysis.

- Breakdown of the approved project cost are shown in the following tables.

CAPACITOR PROJECTS

No.	Feeder Name	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	SibF2 & DalF3	Capacitors	50kVAR	12	12,465.46	2011	149,585.52
		Hanger	Cluster Type	12	2,400.00		28,800.00
		Oil Switch	-	8	45,000.00		360,000.00
		Capacitor Switch/Timer	-	2	2,500.00		5,000.00
2	DalF1 & Car2F1	Capacitors	50kVAR	12	12,465.46	2012	149,585.52
		Hanger	Cluster Type	12	2,400.00		28,800.00
		Oil Switch	-	8	45,000.00		360,000.00
		Capacitor Switch/Timer	-	2	2,500.00		5,000.00
3	Car1F2	Capacitors	50kVAR	6	12,465.46	2013	74,792.76
		Hanger	Cluster Type	6	2,400.00		14,400.00
		Oil Switch	-	4	45,000.00		180,000.00
		Capacitor Switch/Timer	-	1	2,500.00		2,500.00
4	DumF1 & DumF2	Capacitors	50kVAR	12	12,465.46	2014	149,585.52
		Hanger	Cluster Type	12	2,400.00		28,800.00
		Oil Switch	-	8	45,000.00		360,000.00
		Capacitor Switch/Timer	-	2	2,500.00		5,000.00
					Grand Total		1,901,849.32

AVR PROJECTS

No.	Feeder Name	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	DalF4	AVR	167kVA	3	1,050,000.00	2011	3,150,000.00
			Accessories	1 set	50,000.00		50,000.00
2	SamF2	AVR	167kVA	3	1,050,000.00	2013	3,150,000.00
			Accessories	1 set	50,000.00		50,000.00
3	SamF1	AVR	167kVA	3	1,050,000.00	2014	3,150,000.00
			Accessories	1 set	50,000.00		50,000.00
					Grand Total		9,600,000.00
					Cumulative Project Cost		11,501,849.32

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	✓
Project to continue with Technical Amendments	✓
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
3,743,385.52	543,385.52	3,471,692.76	3,743,385.52	-	**11,501,849.32**

Project Nos.	17 to 20
Project Title	Installation of Distribution Transformers
Project Code	DTX-01 to DTX-04
Project Type	Capacity
Priority Rank	2
Project Category	Primary Distribution Line Project

Project Description	Duration
▪ The following are the required specifications of the proposed DTs, to wit: a) The transformer ratings are 15, 25, 37.5 and 50 KVA; b) All transformers are of conventional type, oil immersed and pole-mounted; c) With primary voltage of 13.2 / 7.62 KV; and d) And secondary voltage of 120 / 240 or 240/480 V.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
6,106,175.71	6,518,455.78	7,278,501.89	7,830,291.17	8,140,559.62	**35,873,984.16**

Project Justification
▪ The installation of additional distribution transformers (DT) to the network is a continuing process in the distribution utility to address the increase of additional loads. Additional loads require additional capacity in the distribution network assets.

Technical Analysis
▪ The DT requirement was predicted by CEBECO I based on a 7-year historical trend of the installed communal transformers in the distribution system. The historical and forecasted number of customers and energy sales are used as the regressor to predict the annual DT requirement. The forecasted model used to determine the quantity of DT requirement is represented by the equation: $DT = (5.9254 \times 10^{-3} \times (Consumers)) + (3.6720 \times 10^{-6} \times (Sales))$. However, the necessary data using this regression model is unacceptable considering that it did not meet the required criteria to validate the accuracy of the forecasted model. The said model has an Adjusted R^2 of 0.6952 and a MAPE of 33.14%. ▪ The Commission conducted its own simulations to determine the most acceptable quantity of the DT's per rated capacity to be acquired by CEBECO I. Based on the said simulations, the proposed quantity of the DT's should be reduced. ▪ Summary of the computation are shown in the tables below:

Year	Load Growth (KW)	Required Demand (KVA)	Catered capacity of DT per rated capacity (KVA)			
			15 KVA	25 KVA	37.5 KVA	50 KVA
2011	1,121.06	1,245.63	186.57	395.09	378.63	285.34
2012	1,215.57	1,350.63	202.30	428.39	410.54	309.39
2013	1,311.64	1,457.38	218.29	462.25	442.99	333.85
2014	1,408.84	1,565.38	234.46	496.51	475.82	358.59
2015	1,506.85	1,674.28	250.77	531.05	508.92	383.54

Year	Load Growth (KW)	Required Demand (KVA)	Forecasted no. of units of DT per rated capacity			
			15 KVA	25 KVA	37.5 KVA	50 KVA
2011	1,121.06	1,245.63	13	16	11	6
2012	1,215.57	1,350.63	14	18	11	7
2013	1,311.64	1,457.38	15	19	12	7
2014	1,408.84	1,565.38	16	20	13	8
2015	1,506.85	1,674.28	17	22	14	8

- The said simulation involves the following procedure:
  1. Determine the annual load growth of the entire DU through the demand forecast;
  2. Convert the annual demand forecast to apparent power (KVA);
  3. Determine the required KVA demand per DT rating using the annual forecasted KVA demand and the submitted percentage load sharing of each DT ratings presently installed within the distribution system; and
  4. Determine the required units for each DT rating by dividing the KVA demand per DT rating and the particular rating capacity of the DT.

Cost Analysis

- Shown below is the proposed project cost breakdown:

No.	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	Distribution Transformer	15kVA	16	80,843.62	2011	1,293,497.86
		25kVA	20	102,011.62		2,040,232.32
		37.5kVA	13	127,413.22		1,656,371.81
		50kVA	8	139,509.22		1,116,073.73
2	Distribution Transformer	15kVA	17	80,843.62	2012	1,374,341.47
		25kVA	22	102,011.62		2,244,255.55
		37.5kVA	14	127,413.22		1,783,785.02
		50kVA	8	139,509.22		1,116,073.73
3	Distribution Transformer	15kVA	19	80,843.62	2013	1,536,028.70
		25kVA	24	102,011.62		2,448,278.78
		37.5kVA	16	127,413.22		2,038,611.46
		50kVA	9	139,509.22		1,255,582.94
4	Distribution Transformer	15kVA	20	80,843.62	2014	1,616,872.32
		25kVA	26	102,011.62		2,652,302.02
		37.5kVA	17	127,413.22		2,166,024.67
		50kVA	10	139,509.22		1,395,092.16
5	Distribution Transformer	15kVA	21	80,843.62	2015	1,697,715.94
		25kVA	27	102,011.62		2,754,313.63
		37.5kVA	18	127,413.22		2,293,437.89
		50kVA	10	139,509.22		1,395,092.16
				Grand Total		**35,873,984.16**

- The Commission, on the other hand, approved the reduction of the proposed project cost primarily because the quantities of DTs to be acquired are to be adjusted. The basis for the project cost reduction also involved adjusting the unit costs of the DT per rating capacity in

reference with the 2012 NEA price index.

- Breakdown of the approved project cost is shown in the table below:

No.	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	Distribution Transformer	15kVA	13	59,638.33	2011	775,298.29
		25kVA	16	77,380.00		1,238,080.00
		37.5kVA	11	94,467.00		1,039,137.00
		50kVA	6	110,435.00		662,610.00
2	Distribution Transformer	15kVA	14	59,638.33	2012	834,936.62
		25kVA	18	77,380.00		1,392,840.00
		37.5kVA	11	94,467.00		1,039,137.00
		50kVA	7	110,435.00		773,045.00
3	Distribution Transformer	15kVA	15	59,638.33	2013	894,574.95
		25kVA	19	77,380.00		1,470,220.00
		37.5kVA	12	94,467.00		1,133,604.00
		50kVA	7	110,435.00		773,045.00
4	Distribution Transformer	15kVA	16	59,638.33	2014	954,213.28
		25kVA	20	77,380.00		1,547,600.00
		37.5kVA	13	94,467.00		1,228,071.00
		50kVA	8	110,435.00		883,480.00
5	Distribution Transformer	15kVA	17	59,638.33	2015	1,013,851.61
		25kVA	22	77,380.00		1,702,360.00
		37.5kVA	14	94,467.00		1,322,538.00
		50kVA	8	110,435.00		883,480.00
				Grand Total		**21,562,121.75**

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	✓
Project to continue with Technical Amendments	✓
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
3,715,125.29	4,039,958.62	4,271,443.95	4,613,364.28	4,922,229.61	**21,562,121.75**

Project Nos.	21 & 22
Project Title	Open Secondary and Under Built Low Voltage Distribution Lines
Project Code	LVD-01 & LVD-02
Project Type	Capacity
Priority Rank	2
Project Category	Secondary Distribution Line Project

Project Description	Duration
▪ The following are the required specifications of the projects, to wit: a) The low voltage distribution lines are line to ground system with the nominal voltage of 240 volts; b) Open secondary lines are to be installed with 30 or 35 footer steel poles; and c) The secondary lines will be installed with either bare or insulated conductors.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
7,684,879.02	8,316,974.15	8,965,581.64	9,626,707.77	10,297,553.48	**44,891,696.07**

Project Justification
▪ To accommodate the expected additional loads, CEBECO I proposed the expansion of its secondary network. This will provide secondary lines for the expected new residential consumers and other 230-volt customers.

Technical Analysis
▪ The forecasted secondary line expansions were based on the clustering analysis conducted by CEBECO I. The said analysis includes the following procedures, to wit: 1. The secondary lines are classified into under-built lines and open secondary lines; 2. They are further classified according to its location whether in the urban or rural areas; 3. The average circuit-length of secondary lines for each capacity of the installed transformers and the assumed ratio for each line configuration in a specified area were based on its existing distribution line configuration, as shown in table 8.1; and 4. The length of the secondary lines were then determined based on the forecasted number of transformers and using the ratio of capacities.

Table 8.1. Existing Low Voltage Distribution Data

Capacity (KVA)	Length (km)
15	0.8
25	0.9
37.5	0.4
50	0.6

Rural (existing ratio/percentage)		Urban (existing ratio/percentage)	
Under-built	Open Secondary	Under-built	Open Secondary
30%	70%	80%	20%

- The submitted forecasted secondary line length requirement which was determined based on the procedures discussed above is shown in the table below:

Year	Length Requirement (km)	
	Under-built	Open
2011	17.24	23.75
2012	18.66	25.70
2013	20.12	27.71
2014	21.60	29.75
2015	23.11	31.82

- Based on the review made by the Commission, however, said line length requirement should be reduced considering that the forecasted distribution transformers were reduced, as discussed in project nos. 17 to 20. The table below shows the approved line requirement for the projects:

Year	Length Requirement (km)	
	Under-built	Open
2011	13.84	18.96
2012	15.10	20.90
2013	15.93	22.17
2014	17.24	23.56
2015	18.34	25.46

Cost Analysis

- The determination by CEBECO I of the proposed project costs includes contingency factor of 5% and 7% of the material cost for the open secondary line project and under-built secondary line project, respectively. It also includes labor costs allotting 35% and 20% of the material cost for the open secondary line project and under-built secondary line project, respectively. It can also be noted that the required length for the open secondary line project was doubled considering that said configuration allegedly requires 2 main conductors.

- Shown in the table below is the proposed cumulative project cost breakdown:

No.	Project	Materials	Specifications	Length (km)	No. of Units	Unit Cost (PhP/unit/km)	Year	Project Cost (PhP)
1	Open Secondary Line Extension	Conductor	#1/0 AWG Bare ACSR	47.50	-	45,885.00	2011	2,950,582.66
		Poles	30 ft.	-	240	9,879.22		3,209,820.97
		Accessories	-	-	240	1,453.27		472,176.60
		Conductor	#1/0 AWG Bare ACSR	51.41	-	45,885.00	2012	3,191,502.84
		Poles	30 ft.	-	260	9,879.22		3,475,378.02
		Accessories	-	-	260	1,453.27		511,241.03

		Conductor	#1/0 AWG Bare ACSR	55.42	-	45,885.00	2013	3,442,280.43
		Poles	30 ft.	-	280	9,879.22		3,744,765.50
		Accessories	-	-	280	1,453.27		550,868.93
		Conductor	#1/0 AWG Bare ACSR	59.50	-	45,885.00	2014	3,700,538.97
		Poles	30 ft.	-	300	9,879.22		4,017,050.27
		Accessories	-	-	300	1,453.27		590,923.03
		Conductor	#1/0 AWG Bare ACSR	63.65	-	45,885.00	2015	3,964,620.55
		Poles	30 ft.	-	320	9,879.22		4,291,571.65
		Accessories	-	-	320	1,453.27		631,306.15
2	Under-built Secondary Line Extension	Conductor	#1/0 AWG Bare ACSR	17.24	-	46,759.00	2011	972,696.58
		Accessories	-	-	180	366.59		79,602.22
		Conductor	#1/0 AWG Bare ACSR	18.66	-	46,759.00	2012	1,054,670.62
		Accessories	-	-	190	366.59		84,181.64
		Conductor	#1/0 AWG Bare ACSR	20.12	-	46,759.00	2013	1,134,797.62
		Accessories	-	-	210	366.59		92,869.16
		Conductor	#1/0 AWG Bare ACSR	21.60	-	46,759.00	2014	1,220,724.62
		Accessories	-	-	220	366.59		97,470.88
		Conductor	#1/0 AWG Bare ACSR	23.11	-	46,759.00	2015	1,303,879.03
		Accessories	-	-	240	366.59		106,176.10
						Grand Total		**44,891,696.07**

- The Commission approved the reduction of the proposed costs of the projects primarily due to the reduction of quantities for the forecasted additional DTs to be acquired, as previously discussed. The said assessment also involved the adjustment of the required major materials' unit costs in reference with the 2012 NEA price index and allowing only one (1) set of main conductor for both underbuilt and open secondary lines considering that the said line configurations only requires as such. The said lines also require one (1) set of ground wire but said material was already included in the accessories. Moreover, the labor cost was adjusted by allotting an acceptable margin of 20% of the material cost for consistency considering that both projects are similar in nature.

- Breakdown of the approved project cost is shown in the table below:

No.	Project	Materials	Specifications	Length (km)	No. of Units	Unit Cost (PhP/unit/km)	Year	Project Cost (PhP)
1	Open Secondary Line Extension	Conductor	#1/0 AWG Bare ACSR	18.96	-	30,140.00	2011	685,745.28
		Poles	Steel, 30 ft.	-	190	10,204.05		2,326,523.40
		Accessories	-	-	190	1,453.27		331,345.56
		Conductor	#1/0 AWG Bare ACSR	20.90	-	30,140.00	2012	755,911.20
		Poles	Steel, 30 ft.	-	210	10,204.05		2,571,420.60
		Accessories	-	-	210	1,453.27		366,224.04
		Conductor	#1/0 AWG Bare ACSR	22.17	-	30,140.00	2013	801,844.56
		Poles	Steel, 30 ft.	-	230	10,204.05		2,816,317.80
		Accessories	-	-	230	1,453.27		401,102.52
		Conductor	#1/0 AWG Bare ACSR	23.56	-	30,140.00	2014	852,118.08
		Poles	Steel, 30 ft.	-	240	10,204.05		2,938,766.40
		Accessories	-	-	240	1,453.27		418,541.76

		Conductor	#1/0 AWG Bare ACSR	25.46	-	30,140.00	2015	920,837.28
		Poles	Steel, 30 ft.	-	260	10,204.05		3,183,663.60
		Accessories	-	-	260	1,453.27		453,420.24
2	Under-built Secondary Line Extension	Conductor	#1/0 AWG Bare ACSR	13.84	-	30,140.00	2011	500,565.12
		Accessories	-	-	140	366.59	2011	61,586.78
		Conductor	#1/0 AWG Bare ACSR	15.10	-	30,140.00	2012	546,136.80
		Accessories	-	-	150	366.59	2012	65,985.84
		Conductor	#1/0 AWG Bare ACSR	15.93	-	30,140.00	2013	576,156.24
		Accessories	-	-	160	366.59	2013	70,384.90
		Conductor	#1/0 AWG Bare ACSR	17.24	-	30,140.00	2014	623,536.32
		Accessories	-	-	180	366.59	2014	79,183.01
		Conductor	#1/0 AWG Bare ACSR	18.34	-	30,140.00	2015	663,321.12
		Accessories	-	-	190	366.59	2015	83,582.06
						Grand Total		**23,094,220.51**

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	✓
Project to continue with Technical Amendments	✓
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
3,905,766.14	4,305,678.48	4,665,806.02	4,912,145.57	5,304,824.30	**23,094,220.51**

II. OTHER NETWORK PROJECTS

Project Nos.	23 to 26
Project Title	Customer Service Drops and 60A, 100A & 3-phase KWh meters for Customer Metering Equipment
Project Code	SDM
Project Type	Capacity
Priority Rank	2
Project Category	Secondary Distribution Line Project

Project Description	Duration
▪ The following are the required specifications of the projects, to wit: a) The service drop wire is a twisted bare and insulated duplex AWG #6 ACSR conductor. Consumers at low voltage have the same service drop wire size; b) The single phase KWH meters are rated 60A and 100A at 240V which are either bottom or socket connected type. The meters are either solid state or electromechanical with infrared communicator for specified meters; and c) Three-phase KWH meters are rated 20 up to 200A at 120-480V, bottom-connected type, with load profile and power quality monitoring features.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
16,351,408.84	17,702,149.34	19,093,051.34	20,514,973.90	21,904,781.30	**95,566,364.72**

Project Justification
▪ The DU is mandated to provide its customers the distribution services and connections in its distribution system consistent with the distribution code. As load growth dictates the addition of new equipments and assets, it is therefore necessary to forecast the number of new connections to determine the quantity of metering equipment and other materials the cooperative needs to prepare.

Technical Analysis
▪ The forecasting of the new customers were based on the 7-year historical customer data of CEBECO I. The customer types are forecasted separately to capture the best model fitted to each customer type. CEBECO I mainly focused on residential, commercial and industrial customer types for these particular projects. The chosen models passed and met all the criteria necessary to validate the accuracy of the forecasted model. Details of the forecast are discussed in item 3.2 of this memorandum.

- The annual additional number of customers will then be identified by subtracting the forecasted number of customer in a year from the total number of customers of the previous year. Shown in the table below are the forecasted additional customer requirement of CEBECO I.

Customer Class	Forecasted No. of Customers						Load growth / Requirement				
	2010	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Residential	75,861	81,550	87,709	94,354	101,495	109,142	5,689	6,159	6,645	7,141	7,647
Commercial / Public Bldgs.	10,786	11,533	12,332	13,184	14,090	15,053	746	799	852	907	962
Industrial	28	28	28	28	28	28	-	-	-	-	-
Large Load	2	2	2	2	2	2	-	-	-	-	-
Entire System	**86,677**	**93,113**	**100,071**	**107,568**	**115,615**	**124,225**	**6,435**	**6,958**	**7,497**	**8,048**	**8,609**

- The additional metering equipment and service drop wires required within the entire system were based on the forecasted load growth. The required metering equipment was then classified into three (3) based on specifications, as manifested in the table below. The quantity for the 60A KWh meters were based on 70% of the additional residential customers while the quantity for the 100A KWh meters were based on 30% of the additional residential customers and the commercial and public building customers.

AS PER APPLICATION						RECOMMENDED				
Meter Specification	Quantity					Quantity				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Single Phase, 60A, mechanical	3,982	4,312	4,652	4,999	5,353	3,982	4,312	4,652	4,999	5,353
Single Phase, 100A, mechanical	2,453	2,646	2,845	3,049	3,256	2,453	2,646	2,845	3,049	3,256
Sub-total	**6,435**	**6,958**	**7,497**	**8,048**	**8,609**	**6,435**	**6,958**	**7,497**	**8,048**	**8,609**
3-phase, electronic	7	8	9	10	10	-	-	-	-	-
Grand Total	**6,442**	**6,966**	**7,506**	**8,058**	**8,619**	**6,435**	**6,958**	**7,497**	**8,048**	**8,609**

- There is no basis for the proposed quantity of 3-phase KWh meters as per perusal of the application. The proposed 60A and 100A KWh already covers 100% of the forecasted additional customers. It is therefore deferred.

Cost Analysis

- The determination of the proposed project costs by CEBECO I includes contingency factor and VAT of 5% and 12%, respectively. It also includes labor costs allotting 21%, 7%, 3% and 1% of the material costs for the service drop wires, 60A, 100A, and 3-phase KWh meter projects, respectively.

- The following is the cumulative proposed project cost breakdown:

No.	Activity	Materials	Specifications	Length (km)	No. of Units	Unit Cost (PhP/unit/km)	Year	Project Cost (PhP)
1	Customer Service Drops	Conductor	ACSR #6 TW	193	-	24,249.12	2011	5,677,362.98
		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	12,870	50.78		792,591.44
		Conductor	ACSR #6 TW	209	-	24,249.12	2012	6,138,516.14

		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	13,916	50.78		856,970.99
		Conductor	ACSR #6 TW	225	-	24,249.12	2013	6,613,979.60
		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	14,994	50.78		923,348.33
		Conductor	ACSR #6 TW	241	-	24,249.12	2014	7,100,496.26
		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	16,096	50.78		991,268.76
		Conductor	ACSR #6 TW	258	-	24,249.12	2015	7,595,710.72
		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	17,218	50.78		1,060,403.46
2	60A KWh meters	KWh Meter	Class 10, 10/60A, 240V	-	3,982	1,216.87	2011	5,180,810.76
		Cooperative Seal	-	-	7,964	2.18		18,525.25
		ERC Seal	-	-	11,946	17.64		225,307.06
		KWh Meter	Class 10, 10/60A, 240V	-	4,312	1,216.87	2012	5,609,687.87
		Cooperative Seal	-	-	8,624	2.18		20,058.80
		ERC Seal	-	-	12,936	17.64		243,958.40
		KWh Meter	Class 10, 10/60A, 240V	-	4,652	1,216.87	2013	6,051,873.70
		Cooperative Seal	-	-	9,304	2.18		21,639.94
		ERC Seal	-	-	13,956	17.64		263,188.52
		KWh Meter	Class 10, 10/60A, 240V	-	4,999	1,216.87	2014	6,504,339.13
		Cooperative Seal	-	-	9,998	2.18		23,257.84
		ERC Seal	-	-	14,997	17.64		282,865.68
		KWh Meter	Class 10, 10/60A, 240V	-	5,353	1,216.87	2015	6,964,893.59
		Cooperative Seal	-	-	10,706	2.18		24,904.67
		ERC Seal	-	-	16,059	17.64		302,894.62
3	100A KWh meters	KWh meter	Class 100, 15/100A, 240V	-	2,453	1,581.72	2011	4,005,445.17
		Cooperative Seal	-	-	4,906	2.18		11,018.70
		ERC Seal	-	-	2,453	17.64		44,670.39
		KWh meter	Class 100, 15/100A, 240V	-	2,646	1,581.72	2012	4,320,682.80
		Cooperative Seal	-	-	5,292	2.18		11,885.89
		ERC Seal	-	-	2,646	17.64		48,186.05
		KWh meter	Class 100, 15/100A, 240V	-	2,845	1,581.72	2013	4,645,702.75
		Cooperative Seal	-	-	5,690	2.18		12,780.00
		ERC Seal	-	-	2,845	17.64		51,810.81
		KWh meter	Class 100, 15/100A, 240V	-	3,049	1,581.72	2014	4,978,278.51
		Cooperative Seal	-	-	6,098	2.18		13,694.89
		ERC Seal	-	-	3,049	17.64		55,519.83
		KWh meter	Class 100, 15/100A, 240V	-	3,256	1,581.72	2015	5,316,799.95
		Cooperative Seal	-	-	6,512	2.18		14,626.14
		ERC Seal	-	-	3,256	17.64		59,295.17
4	3-phase KWh meters	KWh meter	electronic 3-phase, 50A,120-480V	-	7	56,150.51	2011	395,522.18
		Cooperative Seal	-	-	14	2.18		30.65
		ERC Seal	-	-	7	17.64		124.26
		KWh meter	electronic 3-phase, 50A,120-480V	-	8	56,150.51	2012	452,025.35

		Cooperative Seal	-	-	16	2.18		35.03
		ERC Seal	-	-	8	17.64		142.01
		KWh meter	electronic 3-phase, 50A,120-480V	-	9	56,150.51	2013	508,528.52
		Cooperative Seal	-	-	18	2.18		39.41
		ERC Seal	-	-	9	17.64		159.76
		KWh meter	electronic 3-phase, 50A,120-480V	-	10	56,150.51	2014	565,031.69
		Cooperative Seal	-	-	20	2.18		43.79
		ERC Seal	-	-	10	17.64		177.51
		KWh meter	electronic 3-phase, 50A,120-480V	-	10	56,150.51	2015	565,031.69
		Cooperative Seal	-	-	20	2.18		43.79
		ERC Seal	-	-	10	17.64		177.51
						Grand Total		**95,566,364.72**

- The Commission approved the reduction of the proposed costs of the projects primarily due to the disapproval of the 3-phase electronic KWh meter project. The said assessment also involved the adjustment of the required major materials' unit costs in reference with the 2012 NEA price index. The said NEA price benchmark already included 5% contingency and 12% Value Added Tax (VAT). Moreover, the assessment also excluded the associated manpower or labor costs considering that the activity should be done by the EC.

- The following is the approved cumulative project cost breakdown:

No.	Activity	Materials	Specifications	Length (km)	No. of Units	Unit Cost (PhP/unit/km)	Year	Project Cost (PhP)
1	Customer Service Drops	Conductor	ACSR #6 TW	193	-	20,770.00	2011	4,009,648.50
		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	12,870	39.35		506,434.50
		Conductor	ACSR #6 TW	209	-	20,770.00	2012	4,335,529.80
		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	13,916	39.35		547,594.60
		Conductor	ACSR #6 TW	225	-	20,770.00	2013	4,671,380.70
		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	14,994	39.35		590,013.90
		Conductor	ACSR #6 TW	241	-	20,770.00	2014	5,014,708.80
		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	16,096	39.35		633,377.60
		Conductor	ACSR #6 TW	258	-	20,770.00	2015	5,364,267.90
		Compression Connector	#6-#1/0 ACSR run to #6-#2	-	17,218	39.35		677,528.30
2	60A KWh meters	KWh Meter	Class 10, 10/60A, 240V	-	3,982	818.57	2011	3,259,545.74
		Cooperative Seal	-	-	7,964	2.18		17,326.48
		ERC Seal	-	-	11,946	17.64		70,242.48
		KWh Meter	Class 10, 10/60A, 240V	-	4,312	818.57	2012	3,529,673.84
		Cooperative Seal	-	-	8,624	2.18		18,762.37
		ERC Seal	-	-	12,936	17.64		76,063.68
		KWh Meter	Class 10, 10/60A, 240V	-	4,652	818.57	2013	3,807,987.64
		Cooperative Seal	-	-	9,304	2.18		20,241.78

		ERC Seal	-	-	13,956	17.64		82,061.28
		KWh Meter	Class 10, 10/60A, 240V	-	4,999	818.57	2014	4,092,031.43
		Cooperative Seal	-	-	9,998	2.18		21,751.65
		ERC Seal	-	-	14,997	17.64		88,182.36
		KWh Meter	Class 10, 10/60A, 240V	-	5,353	818.57	2015	4,381,805.21
		Cooperative Seal	-	-	10,706	2.18		23,291.97
		ERC Seal	-	-	16,059	17.64		94,426.92
3	100A KWh meters	KWh meter	Class 100, 15/100A, 240V	-	2,453	1,581.72	2011	3,879,959.16
		Cooperative Seal	-	-	4,906	2.18		10,673.49
		ERC Seal	-	-	2,453	17.64		43,270.92
		KWh meter	Class 100, 15/100A, 240V	-	2,646	1,581.72	2012	4,185,231.12
		Cooperative Seal	-	-	5,292	2.18		11,513.28
		ERC Seal	-	-	2,646	17.64		46,675.44
		KWh meter	Class 100, 15/100A, 240V	-	2,845	1,581.72	2013	4,499,993.40
		Cooperative Seal	-	-	5,690	2.18		12,379.16
		ERC Seal	-	-	2,845	17.64		50,185.80
		KWh meter	Class 100, 15/100A, 240V	-	3,049	1,581.72	2014	4,822,664.28
		Cooperative Seal	-	-	6,098	2.18		13,266.81
		ERC Seal	-	-	3,049	17.64		53,784.36
		KWh meter	Class 100, 15/100A, 240V	-	3,256	1,581.72	2015	5,150,080.32
		Cooperative Seal	-	-	6,512	2.18		14,167.51
		ERC Seal	-	-	3,256	17.64		57,435.84
						Grand Total		**68,785,160.33**

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	✓
Project to continue with Technical Amendments	✓
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
11,797,101.27	12,751,044.13	13,734,243.67	14,739,767.29	15,763,003.97	**68,785,160.33**

Project No.	27
Project Title	Installation of Circuit Breaker for two (2) existing substations and replacement of AVR and Reclosers
Project Code	OCR-01
Project Type	Safety
Priority Rank	1
Project Category	Primary Distribution Line Project

Project Description	Duration
▪ The project intends to replace the existing protection equipment of both Dumanjug and Carcar1 Substations from power fuse to power circuit breakers. The said equipment shall include protection relays and monitoring equipment. ▪ The project also includes replacement and upgrading the existing Reclosers. The said protective devices shall be installed along the midrange part of the primary distribution of the feeder. ▪ The project also includes replacement of the existing aged AVR. ▪ The said Reclosers and AVRs shall have the following specifications: a) Reclosers are three-phase at different ratings and a rated voltage of 13.2 kV with digital monitoring and controls; b) AVRs are rated 167 KVA single-phase at a rated voltage of 7.62 kV complete with digital control and monitoring; and c) The digital controls for the AVRs are universal with digital monitor.	2011 & 2012

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
10,162,000.00	17,082,054.00	-	-	-	**27,244,054.00**

Project Justification
▪ The installation of power circuit breaker shall comply with the safety standards required by the Philippine Grid and Distribution Codes. ▪ The replacement of the existing installed Reclosers and AVRs shall maintain a safe, reliable and efficient electric power service considering that these equipments are already beyond its standard asset life.

Technical Analysis

- The existing high voltage primary side protection of both the Dumanjug and Carcar1 Substations, which is power fuses, is not compliant with the safety provisions of the PGC. In order to comply with such requirement, CEBECO I shall install power circuit breaker and replace the existing power fuses. The presence of the proposed equipment will eliminate the possibility of exploding fuses during faults, thus, improving the standards of safety as well as reliability of the entire distribution system.

- At present, there are six (6) AVRs and (8) eight Reclosers installed with the system that requires replacement due to its condition. Based on CEBECO I inventories and inspection, the accounted equipments are already worn out and beyond their asset lives. These equipments could no longer provide the optimum performance needed in the operation.

- Consumers are subjected to unwanted outages and receiving poor power quality service due to failure of the said equipments. The distribution system is at risk in times when worn out Recloser failed to isolate the faulted lines.

Cost Analysis

- The proposed project cost is approved considering that the price for the required equipments are unavailable in both the NEA Price Index and the ERC Valuation Handbook. Moreover, the said cost of equipment is within the available price inquired in the internet as well as the previous applications of the Commission.

- The following is the proposed project cost breakdown:

No.	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	Automatic Voltage Regulator	167kVA, 1-ph, 7.62kV	6	1,210,333.33	2011	7,262,000.00
	AVR Control	Universal, digital	6	266,666.67		1,600,000.00
	Automatic Recloser	Vacuum, 630A	2	650,000.00		1,300,000.00
2	Automatic Voltage Regulator	167kVA, 1-ph, 7.62kV	3	1,210,333.33	2012	3,631,000.00
	AVR Control	Universal, digital	3	266,666.67		800,000.00
	Automatic Recloser	Vacuum, 630A	6	650,000.00		3,900,000.00
	Battery Charger	with Battery Storage	2	558,481.00		1,116,962.00
	Multifunction Protection Relay	-	2	237,211.00		474,422.00
	Power Circuit Breaker	69kV, 1-ph	2	1,950,180.00		3,900,360.00
	Transformer Differential Relay	-	2	384,655.00		769,310.00
	Current Transformer	69kV,1-phase, CT substation	2	870,000.00		1,740,000.00
	Potential Transformer	69kV,1-phase, PT substation	1	750,000.00		750,000.00
				Grand Total		**27,244,054.00**

Approved	Remarks
Project to continue as proposed	✓
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
10,162,000.00	17,082,054.00	-	-	-	**27,244,054.00**

Project Nos.	28 to 31
Project Title	Replacement of 60A KWh meter, 100A KWh meter, KWh meter with infrared reading features and 3-phase KWh meters with load profiling features
Project Code	OCR-02 to OCR-05
Project Type	Efficiency
Priority Rank	3
Project Category	Secondary Distribution Line Project

Project Description	Duration
▪ The following are the required specifications of the proposed projects, to wit: a) The single phase KWH meters are rated 60A and 100A at 240V which are either bottom or socket connected type. The meters are either solid state or electromechanical with infrared communicator for specified meters; and b) Three-phase KWH meters are rated up to 50A at 120-480V, bottom-connected type, with load profile and power quality monitoring.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
1,471,368.45	11,286,440.85	1,471,368.45	11,286,440.85	1,471,368.45	**26,986,987.06**

Project Justification

- CEBECO I intends to replace the existing old and dilapidated KWh meters of various specifications in order to improve the efficiency of the distribution system.

Technical Analysis

- Based on CEBECO I site survey, some of its existing installed KWh meters have exceeded their operational life which leads to the ineffectiveness of the meters and can no longer operate reliably. The presence of these meters contributes to the continuous amplification of unaccounted losses or high non-technical losses of the distribution utility.

- In order to reduce technical system losses, CEBECO I proposed to purchase new KWh meters to replace these assets with brand new meters with the same specifications accordingly. The probable advantage in terms of the entire system efficiency is shown in the table below. The energy saved was based on the probable accuracy improvement brought about by replacing each defective/aged KWh meter which will then be multiplied by the total number of proposed KWh meters.

Year	Technical System Loss (KWh)		No. of meters	Energy Saved (KWh)
	Existing	With Project		
2011	7,888,412.01	7,834,129.93	805	54,282.08
2012	8,156,544.06	7,765,106.24	5,805	391,437.82
2013	8,365,738.54	8,311,456.46	805	54,282.08
2014	8,981,291.68	8,589,853.86	5,805	391,437.82
2015	9,522,128.83	9,467,846.75	805	54,282.08

Economic and Cost Analysis

- Based on CEBECO I's assessment, the proposed project is viable considering that the project's Net Present Value (NPV) is positive and the Benefit-Cost Ratio is greater than one (1), as manifested in the table below. The assessment was determined using the abovementioned technical benefits while incorporating some significant variables such as its asset life and discount rate of 10 years and 8%, respectively. The discount rate shall be the NEA interest rate considering that the projects will be funded through NEA loan.

B/C	1.20
Discount Rate (cost of debt)	8%
PV of Benefits	30,388,884.22
PV of Cost	25,283,333.62
Total Benefits (NPV)	5,105,550.59

- CEBECO I determined the proposed project costs by including contingency factor and VAT of 5% and 12%, respectively. It also includes labor costs allotting 7%, 5.5%, 4.7% and 1% of the material costs for the 60A, 100A, electronic single-phase and 3-phase KWh meter projects, respectively.

- The following is the proposed cumulative project cost breakdown wit:

Activity	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
60A KWh meters	KWh Meter	Class 10, 10/60A, 240V	500	1,216.87	2011	650,550.75
	Cooperative Seal	-	1,000	2.18		2,326.20
	ERC Seal	-	1,500	17.64		28,291.65
	KWh Meter	Class 10, 10/60A, 240V	500	1,216.87	2012	650,550.75
	Cooperative Seal	-	1,000	2.18		2,326.20
	ERC Seal	-	1,500	17.64		28,291.65
	KWh Meter	Class 10, 10/60A, 240V	500	1,216.87	2013	650,550.75
	Cooperative Seal	-	1,000	2.18		2,326.20
	ERC Seal	-	1,500	17.64		28,291.65
	KWh Meter	Class 10, 10/60A, 240V	500	1,216.87	2014	650,550.75
	Cooperative Seal	-	1,000	2.18		2,326.20
	ERC Seal	-	1,500	17.64		28,291.65
	KWh Meter	Class 10, 10/60A, 240V	500	1,216.87	2015	650,550.75
	Cooperative Seal	-	1,000	2.18		2,326.20
	ERC Seal	-	1,500	17.64		28,291.65
100A KWh meters	KWh meter	Class 100, 15/100A, 240V	300	1,581.72	2011	500,613.16
	Cooperative Seal	-	600	2.18		1,377.15
	ERC Seal	-	300	17.64		5,583.05
	KWh meter	Class 100, 15/100A, 240V	300	1,581.72	2012	500,613.16
	Cooperative Seal	-	600	2.18		1,377.15
	ERC Seal	-	300	17.64		5,583.05
	KWh meter	Class 100, 15/100A, 240V	300	1,581.72	2013	500,613.16
	Cooperative Seal	-	600	2.18		1,377.15
	ERC Seal	-	300	17.64		5,583.05

	KWh meter	Class 100, 15/100A, 240V	300	1,581.72		500,613.16
	Cooperative Seal	-	600	2.18	2014	1,377.15
	ERC Seal	-	300	17.64		5,583.05
	KWh meter	Class 100, 15/100A, 240V	300	1,581.72		500,613.16
	Cooperative Seal	-	600	2.18	2015	1,377.15
	ERC Seal	-	300	17.64		5,583.05
1-phase electronic KWh meters	KWh meter	Electronic 1-ph, 15A, 240V	5,000	1,852.82		9,699,943.56
	Cooperative Seal	-	10,000	2.18	2012	22,779.50
	ERC Seal	-	5,000	17.64		92,349.34
	KWh meter	Electronic 1-ph, 15A, 240V	5,000	1,852.82		9,699,943.56
	Cooperative Seal	-	10,000	2.18	2014	22,779.50
	ERC Seal	-	5,000	17.64		92,349.34
3-phase electronic KWh meters	KWh meter	electronic 3-phase, 50A,120-480V	5	56,150.51		282,515.85
	Cooperative Seal	-	10	2.18	2011	21.89
	ERC Seal	-	5	17.64		88.75
	KWh meter	electronic 3-phase, 50A,120-480V	5	56,150.51		282,515.85
	Cooperative Seal	-	10	2.18	2012	21.89
	ERC Seal	-	5	17.64		88.75
	KWh meter	electronic 3-phase, 50A,120-480V	5	56,150.51		282,515.85
	Cooperative Seal	-	10	2.18	2013	21.89
	ERC Seal	-	5	17.64		88.75
	KWh meter	electronic 3-phase, 50A,120-480V	5	56,150.51		282,515.85
	Cooperative Seal	-	10	2.18	2014	21.89
	ERC Seal	-	5	17.64		88.75
	KWh meter	electronic 3-phase, 50A,120-480V	5	56,150.51		282,515.85
	Cooperative Seal	-	10	2.18	2015	21.89
	ERC Seal	-	5	17.64		88.75
				Grand Total		**26,986,987.06**

- The Commission approved the reduction of the proposed costs of the projects based on its review. The said assessment involves adjusting of the required major materials' unit costs in reference with the 2012 NEA price index. The said NEA price benchmark already included 5% contingency and 12% Value Added Tax (VAT). Moreover, the assessment also excluded the associated manpower or labor costs considering that the activity should be done by the EC.

- The following is the approved cumulative project cost breakdown:

Activity	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
60A KWh meters	KWh Meter	Class 10, 10/60A, 240V	500	818.57		409,285.00
	Cooperative Seal	-	1,000	2.18	2011	2,175.60
	ERC Seal	-	500	17.64		8,820.00
	KWh Meter	Class 10, 10/60A, 240V	500	818.57		409,285.00
	Cooperative Seal	-	1,000	2.18	2012	2,175.60
	ERC Seal	-	500	17.64		8,820.00
	KWh Meter	Class 10, 10/60A, 240V	500	818.57		409,285.00
	Cooperative Seal	-	1,000	2.18	2013	2,175.60
	ERC Seal	-	500	17.64		8,820.00
	KWh Meter	Class 10, 10/60A, 240V	500	818.57		409,285.00
	Cooperative Seal	-	1,000	2.18	2014	2,175.60
	ERC Seal	-	500	17.64		8,820.00
	KWh Meter	Class 10, 10/60A, 240V	500	818.57		409,285.00
	Cooperative Seal	-	1,000	2.18	2015	2,175.60
	ERC Seal	-	500	17.64		8,820.00
100A KWh meters	KWh meter	Class 100, 15/100A, 240V	300	1,581.72		474,516.00
	Cooperative Seal	-	600	2.18	2011	1,305.36
	ERC Seal	-	300	17.64		5,292.00
	KWh meter	Class 100, 15/100A, 240V	300	1,581.72		474,516.00
	Cooperative Seal	-	600	2.18	2012	1,305.36
	ERC Seal	-	300	17.64		5,292.00

	KWh meter	Class 100, 15/100A, 240V	300	1,581.72		474,516.00
	Cooperative Seal	-	600	2.18	2013	1,305.36
	ERC Seal	-	300	17.64		5,292.00
	KWh meter	Class 100, 15/100A, 240V	300	1,581.72		474,516.00
	Cooperative Seal	-	600	2.18	2014	1,305.36
	ERC Seal	-	300	17.64		5,292.00
	KWh meter	Class 100, 15/100A, 240V	300	1,581.72		474,516.00
	Cooperative Seal	-	600	2.18	2015	1,305.36
	ERC Seal	-	300	17.64		5,292.00
1-phase electronic KWh meters	KWh meter	Electronic 1-ph, 15A, 240V	5,000	1,852.82		9,264,116.40
	Cooperative Seal	-	10,000	2.18	2012	21,756.00
	ERC Seal	-	5,000	17.64		88,200.00
	KWh meter	Electronic 1-ph, 15A, 240V	5,000	1,852.82		9,264,116.40
	Cooperative Seal	-	10,000	2.18	2014	21,756.00
	ERC Seal	-	5,000	17.64		88,200.00
3-phase electronic KWh meters	KWh meter	electronic 3-phase, 50A,120-480V	5	28,000.00		140,000.00
	Cooperative Seal	-	10	2.18	2011	21.76
	ERC Seal	-	5	17.64		88.20
	KWh meter	electronic 3-phase, 50A,120-480V	5	28,000.00		140,000.00
	Cooperative Seal	-	10	2.18	2012	21.76
	ERC Seal	-	5	17.64		88.20
	KWh meter	electronic 3-phase, 50A,120-480V	5	28,000.00		140,000.00
	Cooperative Seal	-	10	2.18	2013	21.76
	ERC Seal	-	5	17.64		88.20
	KWh meter	electronic 3-phase, 50A,120-480V	5	28,000.00		140,000.00
	Cooperative Seal	-	10	2.18	2014	21.76
	ERC Seal	-	5	17.64		88.20
	KWh meter	electronic 3-phase, 50A,120-480V	5	28,000.00		140,000.00
	Cooperative Seal	-	10	2.18	2015	21.76
	ERC Seal	-	5	17.64		88.20
				Grand Total		**23,955,664.38**

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	✓
Project to continue with Technical Amendments	✓
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
1,041,503.92	10,415,576.32	1,041,503.92	10,415,576.32	1,041,503.92	**23,955,664.38**

Project Nos.	32 & 33
Project Title	Replacement of aging poles with concrete poles and steel poles preferably along 3-phase system
Project Code	OCR-06 & OCR-07
Project Type	Safety
Priority Rank	1
Project Category	Primary Distribution Line Project

Project Description	Duration
▪ Aging wood poles shall be replaced with the following specifications, to wit: a) New steel poles with length varying from 30 to 40 feet; and b) New concrete poles with length varying from 35 up to 55 feet.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
3,807,569.43	3,807,569.43	3,807,569.43	3,807,569.43	3,807,569.43	**19,037,847.15**

Project Justification

- CEBECO I intends to replace its existing old and damaged poles in order to maintain a safe, efficient and reliable distribution system.

Technical Analysis

- Based on CEBECO I site survey, it was determined that some of the existing poles within the distribution system are already aged, decaying, and damaged. These distribution network assets are threat to public safety and a contributing factor to the inefficiency and unreliability of the distribution system. It also contributes to the distribution system's continuous amplification of unaccounted losses or non-technical losses.

- The proposed projects will provide an assurance of eliminating hazard and reducing nuisance interruptions caused by these assets. It will also provide efficiency and reliability improvement in the distribution system.

Cost Analysis

- CEBECO I determined the quantity of poles which requires replacement based on the actual inventory done by the cooperative. The determination of the proposed project costs includes contingency factor and VAT of 5% and 12%, respectively. It also includes labor costs allotting 19% for both proposed projects.

- The following is the proposed project cost breakdown:

No.	Activity	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	Damaged poles replaced with concrete poles	Pole	35 ft. concrete	15	21,168.00	2011	378,000.00
		Pole	40 ft. concrete	30	25,872.00		924,000.00
		Pole	45 ft. concrete	15	31,620.29		564,648.00
		Pole	50 ft. concrete	10	33,122.17		394,311.54
		Pole	55 ft. concrete	7	38,205.89		318,382.40
		Pole	35 ft. concrete	15	21,168.00	2012	378,000.00
		Pole	40 ft. concrete	30	25,872.00		924,000.00
		Pole	45 ft. concrete	15	31,620.29		564,648.00
		Pole	50 ft. concrete	10	33,122.17		394,311.54
		Pole	55 ft. concrete	7	38,205.89		318,382.40
		Pole	35 ft. concrete	15	21,168.00	2013	378,000.00
		Pole	40 ft. concrete	30	25,872.00		924,000.00
		Pole	45 ft. concrete	15	31,620.29		564,648.00
		Pole	50 ft. concrete	10	33,122.17		394,311.54
		Pole	55 ft. concrete	7	38,205.89		318,382.40
		Pole	35 ft. concrete	15	21,168.00	2014	378,000.00
		Pole	40 ft. concrete	30	25,872.00		924,000.00
		Pole	45 ft. concrete	15	31,620.29		564,648.00
		Pole	50 ft. concrete	10	33,122.17		394,311.54
		Pole	55 ft. concrete	7	38,205.89		318,382.40
		Pole	35 ft. concrete	15	21,168.00	2015	378,000.00
		Pole	40 ft. concrete	30	25,872.00		924,000.00
		Pole	45 ft. concrete	15	31,620.29		564,648.00
		Pole	50 ft. concrete	10	33,122.17		394,311.54
		Pole	55 ft. concrete	7	38,205.89		318,382.40
2	Damaged poles replaced with steel poles	Pole	30 ft. steel	30	11,617.96	2011	414,927.24
		Pole	35 ft. steel	20	18,816.00		448,000.00
		Pole	40 ft. steel	15	20,456.81		365,300.25
		Pole	30 ft. steel	30	11,617.96	2012	414,927.24
		Pole	35 ft. steel	20	18,816.00		448,000.00
		Pole	40 ft. steel	15	20,456.81		365,300.25
		Pole	30 ft. steel	30	11,617.96	2013	414,927.24
		Pole	35 ft. steel	20	18,816.00		448,000.00
		Pole	40 ft. steel	15	20,456.81		365,300.25
		Pole	30 ft. steel	30	11,617.96	2014	414,927.24
		Pole	35 ft. steel	20	18,816.00		448,000.00
		Pole	40 ft. steel	15	20,456.81		365,300.25
		Pole	30 ft. steel	30	11,617.96	2015	414,927.24
		Pole	35 ft. steel	20	18,816.00		448,000.00
		Pole	40 ft. steel	15	20,456.81		365,300.25
					Grand Total		**19,037,847.15**

- The Commission approved the reduction of the proposed costs of the projects based on its review. The said assessment involves adjusting of the required major materials' unit costs in reference with the 2012 NEA price index. The said NEA price benchmark already included 5% contingency and 12% Value Added Tax (VAT). Moreover, the assessment also includes the exclusion of the associated manpower or labor costs considering that the activity should be done by the administration.

- The following is the approved cumulative project cost breakdown:

No.	Activity	Materials	Specifications	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	Damaged poles replaced with concrete poles	Pole	35 ft. concrete	15	12,303.89	2011	184,558.35
		Pole	40 ft. concrete	30	19,622.00		588,660.00
		Pole	45 ft. concrete	15	20,420.75		306,311.25
		Pole	50 ft. concrete	10	24,522.32		245,223.20

		Pole	55 ft. concrete	7	26,843.44		187,904.08
		Pole	35 ft. concrete	15	12,303.89		184,558.35
		Pole	40 ft. concrete	30	19,622.00		588,660.00
		Pole	45 ft. concrete	15	20,420.75	2012	306,311.25
		Pole	50 ft. concrete	10	24,522.32		245,223.20
		Pole	55 ft. concrete	7	26,843.44		187,904.08
		Pole	35 ft. concrete	15	12,303.89		184,558.35
		Pole	40 ft. concrete	30	19,622.00		588,660.00
		Pole	45 ft. concrete	15	20,420.75	2013	306,311.25
		Pole	50 ft. concrete	10	24,522.32		245,223.20
		Pole	55 ft. concrete	7	26,843.44		187,904.08
		Pole	35 ft. concrete	15	12,303.89		184,558.35
		Pole	40 ft. concrete	30	19,622.00		588,660.00
		Pole	45 ft. concrete	15	20,420.75	2014	306,311.25
		Pole	50 ft. concrete	10	24,522.32		245,223.20
		Pole	55 ft. concrete	7	26,843.44		187,904.08
		Pole	35 ft. concrete	15	12,303.89		184,558.35
		Pole	40 ft. concrete	30	19,622.00		588,660.00
		Pole	45 ft. concrete	15	20,420.75	2015	306,311.25
		Pole	50 ft. concrete	10	24,522.32		245,223.20
		Pole	55 ft. concrete	7	26,843.44		187,904.08
2	Damaged poles replaced with steel poles	Pole	30 ft. steel	30	10,204.05		306,121.50
		Pole	35 ft. steel	20	12,716.92	2011	254,338.40
		Pole	40 ft. steel	15	17,395.25		260,928.75
		Pole	30 ft. steel	30	10,204.05		306,121.50
		Pole	35 ft. steel	20	12,716.92	2012	254,338.40
		Pole	40 ft. steel	15	17,395.25		260,928.75
		Pole	30 ft. steel	30	10,204.05		306,121.50
		Pole	35 ft. steel	20	12,716.92	2013	254,338.40
		Pole	40 ft. steel	15	17,395.25		260,928.75
		Pole	30 ft. steel	30	10,204.05		306,121.50
		Pole	35 ft. steel	20	12,716.92	2014	254,338.40
		Pole	40 ft. steel	15	17,395.25		260,928.75
		Pole	30 ft. steel	30	10,204.05		306,121.50
		Pole	35 ft. steel	20	12,716.92	2015	254,338.40
		Pole	40 ft. steel	15	17,395.25		260,928.75
					Grand Total		**11,670,227.65**

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	✓
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
2,334,045.53	2,334,045.53	2,334,045.53	2,334,045.53	2,334,045.53	**11,670,227.65**

Project No.	34
Project Title	Rural Electrification Project
Project Code	-
Project Type	Rural Electrification
Priority Rank	2
Project Category	Secondary Distribution Line Project

Project Description	Duration
▪ CEBECO I will construct secondary distribution line extension in far-flung areas within its franchise. A potential 313 locations with approximately 3,178 customers are expected to be served through this project.	

Proposed CAPEX Cost (PhP)

2011	2012	2013	2014	2015	**Total**
10,543,000.00	19,372,000.00	19,372,000.00	13,702,000.00	28,408,000.00	**91,397,000.00**

Project Justification

- The construction of distribution line extension to energize customers located at far-flung areas or sitios is a mandate of the cooperative.

Technical Analysis

- The project shall execute the said obligation through providing missionary electrification within the remotest and the countryside areas of the franchise.

Economic and Cost Analysis

- The project shall be subsidized by the Department of Energy (DOE), Congressional funds, concerned LGU, and NEA.
- The proposed project cost is approved considering that the required material unit costs are close with the NEA price benchmark.
- The following is the proposed project cost breakdown:

Year	Line Length (km)				Project Cost (PhP)			
	1-Ph	OS	UB	Sub-total	1-Ph	OS	UB	Sub-total
2011	9.44	18.66	8.74	**36.85**	6,266,911.49	2,971,334.36	1,304,754.15	**10,543,000.00**
2012	29.04	22.66	24.43	**76.13**	12,119,726.45	3,606,900.28	3,645,373.26	**19,372,000.00**
2013	12.31	22.86	11.64	**46.80**	13,996,967.79	3,638,742.26	1,736,289.94	**19,372,000.00**
2014	14.13	27.75	10.83	**52.71**	7,667,297.44	4,418,233.93	1,616,468.63	**13,702,000.00**
2015	45.62	28.93	38.10	**112.65**	18,116,886.85	4,605,942.41	5,685,170.75	**28,408,000.00**
Total	**110.54**	**120.85**	**93.74**	**325.13**	**58,167,790.01**	**19,241,153.25**	**13,988,056.73**	**91,397,000.00**

Approved	Remarks
Project to continue as proposed	✓
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	

Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
10,543,000.00	19,372,000.00	19,372,000.00	13,702,000.00	28,408,000.00	**91,397,000.00**

III. NON-NETWORK PROJECTS

Project No.	35
Project Title	Communication System Equipment
Project Code	COM
Project Type	Customer Efficiency
Priority Rank	4
Project Category	Non-Network Requirements

Project Description	Duration
▪ CEBECO I intends to acquire a new communication equipment and installation of two (2) radio communication repeater facilities.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
334,500.00	112,500.00	112,500.00	226,500.00	76,500.00	**862,500.00**

Project Justification

- The communication system is one of the key factors in providing the best consumer services. Acquisition of equipment to create said system shall speed up the coordination of field personnel that lead to prompt actions to consumer requests, complaints and line services, thus, enhancing the EC's existing communication system. Generally, the communication system makes the DU's operation more efficient.

- Considering that the DU's distribution lines are extended even on mountainous part of its franchise area, additional radio equipments are needed to communicate with the field personnel. And the installations of the two radio repeater facilities will ensure that there is communication coverage in the entire franchise area.

Cost Analysis

- The proposed cost is comparable with the existing market price and available price reference in the internet. The following is the proposed project cost breakdown:

No.	Materials	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	Handheld VHF Radio (portable)	3	13,500.00	2011	40,500.00
	Mobile Radio w/ accessories	8	18,000.00		144,000.00
	VHF Radio Repeater System	1	150,000.00		150,000.00
2	Handheld VHF Radio (portable)	3	13,500.00	2012	40,500.00
	Mobile Radio w/ accessories	4	18,000.00		72,000.00
3	Handheld VHF Radio (portable)	3	13,500.00	2013	40,500.00
	Mobile Radio w/ accessories	4	18,000.00		72,000.00
4	Handheld VHF Radio (portable)	3	13,500.00	2014	40,500.00
	Mobile Radio w/ accessories	2	18,000.00		36,000.00
	VHF Radio Repeater System	1	150,000.00		150,000.00
5	Handheld VHF Radio (portable)	3	13,500.00	2015	40,500.00
	Mobile Radio w/ accessories	2	18,000.00		36,000.00
			Grand Total		**862,500.00**

Approved	Remarks
Project to continue as proposed	✓
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
334,500.00	112,500.00	112,500.00	226,500.00	76,500.00	**862,500.00**

Project No.	36
Project Title	Geographical Information System (hardware & software)
Project Code	GIS
Project Type	Customer Efficiency
Priority Rank	4
Project Category	Non-Network Asset Project

Project Description	Duration
▪ CEBECO I intends to acquire computer software and equipment specifically 10 units of GPS portable units.	2011 & 2014

Proposed CAPEX Cost (PhP)

2011	2012	2013	2014	2015	**Total**
180,000.00	-	-	120,000.00	-	**300,000.00**

Project Justification

- Automated Mapping/Facilities Management (AM/FM) is a subset of Geographic Information System (GIS) software which allows utility users to manage and analyze the network system. The data is stored in GIS database which maintains the associations between the graphical entities and the attributes.

- The data and information is being gathered through a hardware called Global Positioning System (GPS) portable units which is then being transferred to the said GIS software.

- The software contributes in distribution system planning and other potential information and engineering applications can also be identified. The data gathered will be utilized by the engineering software to provide a better and wider view of the distribution system. This will help the DU to further understand and analyze the system efficiently.

- The acquisition of this software will give the cooperative an opportunity to improve accurate gathering of data, create automated system map and real time computation of its distribution system loss.

Cost Analysis

- The following is the proposed project cost breakdown:

No.	Materials	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	GPS Portable Unit	6	30,000.00	2011	180,000.00
2	GPS Portable Unit	4	30,000.00	2014	120,000.00
			Grand Total		**300,000.00**

Approved	Remarks
Project to continue as proposed	✓
Project to continue with REVISED Capital Expenditure	

Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
180,000.00	-	-	120,000.00	-	**300,000.00**

Project Nos.	37 & 38
Project Title	Meter Reading, Billing, Collection (hardware & software) & Management Information System (MIS)
Project Code	MRBS & MIS
Project Type	Customer Efficiency
Priority Rank	4
Project Category	Non-Network Asset Project

Project Description	Duration
▪ CEBECO I intends to acquire new equipment for its meter reading, billing and collection system.	2011 to 2015

Proposed CAPEX Cost (PhP)

2011	2012	2013	2014	2015	**Total**
1,392,900.00	1,989,600.00	1,020,500.00	771,000.00	2,664,000.00	**7,838,000.00**

Project Justification

- CEBECO I deems it appropriate to acquire additional and upgrade its existing meter reading, billing, collection and management information system in order to meet the fast growing demand of consumers with regard to its customer services. Considering the availability of modern day technology, the cooperative would likewise take the opportunity to utilize such in order to provide its customers adequate services it rightfully deserves.

- The upgraded new system will significantly improve the performance of the meter readers' capability. Posting and printing of materials for billing will take less time thus, ensuring a timely billing of its consumers. Moreover, the technology includes interfacing the entire devices which eventually transforms into fast, reliable and efficient way of collecting the payment.

Cost Analysis

- The following is the approved project cost breakdown:

Materials	No. of Units					Unit Cost (PhP/unit)
	2011	2012	2013	2014	2015	
Billing/Collection System						
Desktop Computer	-	-	10	10	10	25,000.00
Computer Servers	2	4	-	-	2	40,000.00
Laptop	-	5	5	-	-	30,000.00
Printers, LX-300	4	5	3	2	2	18,000.00
Printers, desk-jet	3	-	9	-	-	3,500.00
Printer, high-speed, dot matrix	-	1	-	-	-	200,000.00
Routers	-	3	-	-	-	8,000.00
Central Processing Unit	5	5	5	5	5	17,000.00
Uninterruptible Power Supply	3	3	-	-	-	25,000.00
Meter Reading Facilities						
Meter Reading Equipment	4	6	-	-	5	42,600.00
Meter Reading Equipment Printer	20	-	-	-	20	45,000.00

Meter Reading Equipment, Infrared	-	2	-	2	-	50,000.00
Software						
Licensed Microsoft Server 2008	-	1	-	-	1	800,000.00
Anti-Virus	-	-	-	1	1	300,000.00
Trainings/Seminars						
Visual Studio 2010 Programming	-	-	1	-	-	50,000.00
SQL Server Administration	-	1	-	-	-	50,000.00
MIS						
Interconnection fees	-	-	1	-	-	400,000.00
Project Cost (PhP)	1,392,900.00	1,989,600.00	1,020,500.00	771,000.00	2,664,000.00	**7,838,000.00**

Approved	Remarks
Project to continue as proposed	✓
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
1,392,900.00	1,989,600.00	1,020,500.00	771,000.00	2,664,000.00	**7,838,000.00**

Project No.	39
Project Title	Tools, Instruments & Test Equipment
Project Code	TTE
Project Type	Customer Efficiency
Priority Rank	4
Project Category	Non-Network Asset Project

Project Description	Duration
▪ CEBECO I proposed the acquisition of several tools, devices and equipment, as detailed in the cost analysis.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
9,203,736.00	3,882,693.80	8,911,342.80	5,116,743.80	2,120,743.80	**29,235,260.20**

Project Justification

- The project is essential in order to improve the DU's performance in terms of efficiency, reliability while maintaining a safe distribution system. The proposed procurements are categorized as follows:

Line Tools	The addition of line maintenance tools for line personnel is crucial in order to meet the demand with regard to customer service.
Testing Equipment	The equipments shall be used for the testing, commissioning and maintaining the network assets of CEBECO I as a compliance to the monitoring and technical standard requirements of the Philippine Grid and Distribution Codes (PGDC).
Line Monitoring Equipment	The equipment shall be used as a tool to monitor and gather essential data within the distribution system in order to construct technical planning and ensure the best electric service to its customers.
Consumer Services Equipment	The equipment shall be used as a tool to communicate information to the member consumers in a more presentable way. Documentation of important events will be easier. Relaying of important information and messages through audio-visuals will be the most efficient and presentable way in providing better services to consumers.
Engineering Software and Training	The software shall serve as a tool to aid the engineers in solving and analyzing distribution system while the training shall enhance their technical capabilities.
Motor Pool Equipment	Acquisition of new motor pool equipment shall shorten the repair time of vehicles during maintenance operation.

- The Commission, on the other hand, believes that the customer services equipment and trainings should form part of CEBECO I's operations and maintenance (O&M) expenditures.

- The proposed project is hereby approved to be re-aligned to form part of CEBECO I's O&M budget.

Cost Analysis

- The following is the proposed project cost breakdown, to wit:

Materials	No. of Units					Unit Cost (PhP/unit)
	2011	2012	2013	2014	2015	
Testing Equipment						
Earth Resistance Tester	1	-	-	-	-	300,000.00
70kV Hi-Pot Tester	-	1	-	-	-	1,200,000.00
Insulation Power Factor Tester	-	-	1	-	-	1,825,000.00
10kV Insulation Tester	-	-	-	1	-	850,000.00
Transformer Turns Ratio Tester	-	-	1	-	-	1,100,000.00
Burden Tester (CT & PT)	1	-	-	-	-	1,250,000.00
Working Meter Standards	-	-	1	-	-	2,507,599.00
Portable Meter Standards	1	-	-	-	-	1,205,456.00
Line Monitoring Equipment						
Load Profiler	2	-	-	4	-	550,000.00
Voltage Recorder	4	-	-	2	-	80,000.00
Line Tool						
15kV Wireless Ammeter	4	-	-	2	-	100,000.00
Ampact Tool	2	-	-	-	2	120,000.00
Chain Saw	3	-	-	2	-	45,000.00
6-ton Hydraulic Compression Tool	3	-	-	-	-	84,160.00
10kV Conductor Cover	-	-	12	-	-	50,000.00
Construction Tools Set	-	10	10	10	10	23,469.38
Crimping Tool	5	1	1	1	4	25,000.00
Grounding Cluster	-	1	-	-	-	150,000.00
10ft. Hot Stick	5	4	-	-	-	28,650.00
Hot Stick Telescopic	4	2	-	2	-	35,500.00
Hot Stick, Grip-all clamp stick	6	3	1	1	1	33,800.00
Ladder, Fiber Glass	-	1	1	-	1	20,000.00
Lineman Climbers Set	15	-	25	5	5	43,450.00
Load Buster	-	-	3	-	3	165,000.00
Clamp Digital Multi Tester	2	2	2	2	2	40,000.00
10kV Pole Top Cover	9	-	-	-	-	45,000.00
Rangefinder	6	-	-	3	-	15,000.00
Sling, Webbing	-	6	-	-	2	8,000.00
Transit Surveying Tool, Theodolite	2	-	-	-	-	150,000.00
Consumer Services Equipment						
Camera, still (professional)	4	1	2	1	1	15,000.00
Camera, video	2	2	3	1	1	45,000.00
Gen Set 5 KVA	2	1	1	2	1	61,000.00
Monitor, LCD	1	2	2	2	1	9,000.00
Photocopier	1	2	1	2	1	80,000.00
Printer, desk-jet with scanner	4	2	2	2	3	9,000.00
Printer, heavy duty	2	1	1	1	1	17,000.00
Projector, multi-media	2	1	1	2	1	85,000.00
Public Address System	-	1	-	-	-	384,000.00
Engineering Software & Training						
Engineering Software	1	-	-	-	-	800,000.00
Trainings for Engineers	4	4	4	3	3	115,000.00

Motor Pool Equipment						
Electric Tire Changer	-	1	-	-	-	80,000.00
Electric Vehicle Lifter	-	2	-	-	-	150,000.00
Pneumatic torque gun	-	1	-	-	-	150,000.00
Project Cost (PhP)	9,203,736.00	3,882,693.80	8,911,342.80	5,116,743.80	2,120,743.80	**29,235,260.20**

- With the above cited technical approval, the total project cost should be reduced. The breakdown of the approved project cost should be as follows:

Materials	No. of Units					Unit Cost (PhP/unit)
	2011	2012	2013	2014	2015	
Testing Equipment						
Earth Resistance Tester	1	-	-	-	-	300,000.00
70kV Hi-Pot Tester	-	1	-	-	-	1,200,000.00
Insulation Power Factor Tester	-	-	1	-	-	1,825,000.00
10kV Insulation Tester	-	-	-	1	-	850,000.00
Transformer Turns Ratio Tester	-	-	1	-	-	1,100,000.00
Burden Tester (CT & PT)	1	-	-	-	-	1,250,000.00
Working Meter Standards	-	-	1	-	-	2,507,599.00
Portable Meter Standards	1	-	-	-	-	1,205,456.00
Line Monitoring Equipment						
Load Profiler	2	-	-	4	-	550,000.00
Voltage Recorder	4	-	-	2	-	80,000.00
Line Tool						
15kV Wireless Ammeter	4	-	-	2	-	100,000.00
Ampact Tool	2	-	-	-	2	120,000.00
Chain Saw	3	-	-	2	-	45,000.00
6-ton Hydraulic Compression Tool	3	-	-	-	-	84,160.00
10kV Conductor Cover	-	-	12	-	-	50,000.00
Construction Tools Set	-	10	10	10	10	23,469.38
Crimping Tool	5	1	1	1	4	25,000.00
Grounding Cluster	-	1	-	-	-	150,000.00
10ft. Hot Stick	5	4	-	-	-	28,650.00
Hot Stick Telescopic	4	2	-	2	-	35,500.00
Hot Stick, Grip-all clamp stick	6	3	1	1	1	33,800.00
Ladder, Fiber Glass	-	1	1	-	1	20,000.00
Lineman Climbers Set	15	-	25	5	5	43,450.00
Load Buster	-	-	3		3	165,000.00
Clamp Digital Multi Tester	2	2	2	2	2	40,000.00
10kV Pole Top Cover	9	-	-	-	-	45,000.00
Rangefinder	6	-	-	3	-	15,000.00
Sling, Webbing	-	6	-	-	2	8,000.00
Transit Surveying Tool, Theodolite	2	-	-	-	-	150,000.00
Engineering Software & Training						
Engineering Software	1	-	-	-	-	800,000.00
Motor Pool Equipment						
Electric Tire Changer	-	1	-	-	-	80,000.00
Electric Vehicle Lifter	-	2	-	-	-	150,000.00
Pneumatic torque gun	-	1	-	-		150,000.00
Project Cost (PhP)	8,142,736.00	2,574,693.80	8,007,342.80	4,206,743.80	1,436,743.80	**24,368,260.20**

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	✓
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
8,142,736.00	2,574,693.80	8,007,342.80	4,206,743.80	1,436,743.80	**24,368,260.20**

Project No.	40
Project Title	Vehicles
Project Code	VHL
Project Type	Customer Efficiency
Priority Rank	4
Project Category	Non-Network Asset Project

Project Description	Duration
▪ CEBECO I intends to acquire utility and service vehicles for operation and maintenance.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
13,170,000.00	9,050,000.00	15,705,000.00	10,080,000.00	5,050,000.00	**53,055,000.00**

Project Justification / Cost Analysis

- CEBECO I intends to augment its existing fleet of vehicles and also to replace the ones that are already beyond its standard asset life.

- CEBECO I deems the project necessary in order to meet the growing demand of consumers. The continuous increase in the distribution lines, the power demand and the number of customers should definitely require an expansion of service vehicles in order to maintain these assets appropriately and responding to customer demands more efficiently.

- The following table shows the proposed number and type of vehicles for the entire applied CAPEX years:

Vehicle Type	Cargo truck	Pick-up truck	Boom truck	Van	Jeep	Motorcycle	Forklift	Mini-Bus	TOTAL
Proposed Qty. (Unit)	9	10	8	1	6	35	1	1	**71**

- The following table is the proposed project cost breakdown, to wit:

Vehicle Type	No. of Units					Unit Cost (PhP)
	2011	2012	2013	2014	2015	
Jeep	2	1	1	1	1	300,000.00
Motorcycle	11	5	5	9	5	70,000.00
Boom truck, 6-wheel	2	1	1	1	1	1,250,000.00
Boom truck, Bucket	1	-	-	-	-	5,850,000.00
Boom truck, Palfinger / Fascii	-	-	1	-	-	7,355,000.00
Cargo Truck, 4x4	1	1	-	1	-	1,750,000.00
Forklift truck	-	1	-	-	-	2,250,000.00
Cargo Truck, light	1	1	2	1	1	500,000.00
Mini-bus	-	-	-	1	-	3,000,000.00
Pick-up truck	1	1	2	1	1	1,200,000.00
Pick-up truck	-	1	1	1	1	1,450,000.00
Van	-	-	1	-	-	1,600,000.00
Project Cost (PhP)	13,170,000.00	9,050,000.00	15,705,000.00	10,080,000.00	5,050,000.00	**53,055,000.00**

- The Commission, however, deferred the proposed project considering that CEBECO I failed to provide any proof or justification on each of the vehicle type's purpose in its operation. Moreover, it failed to justify the required number of vehicles that the EC should possess in order to satisfy the demand in terms of customer services. CEBECO I should properly determine the required number of vehicles, corresponding to its use, that will serve and satisfy the entire franchise or for each municipality.

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	
Project to continue with Technical Amendments	
Project to be deferred which may be included in its next application with additional justification	✓

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
-	-	-	-	-	-

Project No.	41
Project Title	Computers & Other Equipment
Project Code	COMP
Project Type	Customer Efficiency
Priority Rank	4
Project Category	Non-Network Asset Project

Project Description	Duration
▪ The project consists of replacing some of the existing computer set-up of the cooperative with brand new computers. The replacement shall be prioritized according to units with outdated systems and incapable of performing at its expected level.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
600,000.00	530,850.00	530,850.00	575,850.00	571,850.00	**2,809,400.00**

Project Justification

- CEBECO I intends to offer the best possible services to its customers through this project. The acquisition of new computer units for the distribution utility personnel shall further extend their capabilities in terms of performing customer services.

- Obsolete units shall be replaced with the latest unit in order for the personnel to cope up with the modern technology which in effect, achieves the goal of the cooperative as stated above.

- However, it failed to justify the proposed units of laptops to be acquired as well as its detailed designation to its personnel.

- The Commission, thereby, approved the reduction of laptop units to be procured. The Commission considered allotting the said devices to the existing number of head officials of CEBECO I considering that these personnel require additional tasks and field works.

Cost Analysis

- The following is the proposed project cost breakdown:

Materials	No. of Units					Unit Cost (PhP/unit)
	2011	2012	2013	2014	2015	
Computers, desktop	6	6	6	6	6	30,000.00
Hard-disk, portable, USB	-	4	4	4	3	4,000.00
Laptop1	4	4	4	4	4	60,000.00
Laptop2	4	2	2	3	3	45,000.00
UPS	-	1	1	1	1	4,850.00
Project Cost (PhP)	600,000.00	530,850.00	530,850.00	575,850.00	571,850.00	**2,809,400.00**

- The Commission approved the reduction of the proposed project cost and the adjustment of the unit cost of the laptop consistent with the initial proposal for its unit cost which was also included in the other projects.

- The following is the approved project cost breakdown:

Materials	No. of Units					Unit Cost (PhP/unit)
	2011	2012	2013	2014	2015	
Computers, desktop	6	6	6	6	6	25,000.00
Hard-disk, portable, USB	-	4	4	4	3	2,000.00
Laptop	4	4	4	4	4	30,000.00
UPS	-	1	1	1	1	2,500.00
Project Cost (PhP)	270,000.00	280,500.00	280,500.00	280,500.00	278,500.00	**1,390,000.00**

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	✓
Project to continue with Technical Amendments	✓
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
270,000.00	280,500.00	280,500.00	280,500.00	278,500.00	**1,390,000.00**

Project No.	42
Project Title	Buildings & Lots
Project Code	BLDG
Project Type	Customer Efficiency
Priority Rank	4
Project Category	Non-Network Asset Project

Project Description	Duration
▪ The location of the proposed area office building shall be constructed at the municipalities of Carcar, Argao, Ginatilan and Moalboal. The said sub-offices shall serve as the collection and payment center and the headquarters for each specified area's technical crew intended for line maintenance routine and customer services. ▪ The project also includes the construction of covered storage and customer's assembly buildings/multi-purpose building. The Multi-purpose building design shall have a capacity of 4,000 persons and will be constructed with a stage and comfort rooms.	2011 to 2015

Proposed CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
19,350,057.00	1,289,715.57	1,310,307.57	7,550,164.00	7,738,293.42	**37,238,537.56**

Project Justification

- The existing sub-offices in the municipalities of Carcar, Argao, Ginatilan and Moalboal are being rented by CEBECO I. These sub-offices are generally where transactions take place such as customer payments, monetary and material collections, data processing, and other necessary customer services.

- The proposed construction of sub-offices and storage building in the main office shall address the following problems being encountered particularly by the customers with the existing conditions and location of the said sub-offices:
  a) The location of Carcar and Argao sub-offices are within city proper wherein traffic is normally congested. The said situation provides difficulty for the customers during their billing payments as well as for the area crew during line and customer emergency responses;
  b) The location of Ginatilan and Moalboal sub-offices compromises safety considering that it is located near the highway road wherein collection activities inside the office can easily be seen from the outside;
  c) The location of Ginatilan and Moalboal sub-offices also provides physical difficulties for the customers, such as sun exposure and exhaustion, due to insufficient customer lounge;

d) The parking space of these sub-offices are limited; and
e) The storage area for the required materials and other significant equipment are very limited. It is crucial for the cooperative to have more than enough storage area considering that the demand for said materials is continuously increasing.

- It shall provide great positive impact for both the customers and the cooperative's staff and crew in terms of safe and conducive place for the necessary transactions. The DU shall also achieve its goal of providing a better service performance to its customers.

- The proposed multi-purpose building, located in the main office, shall be used as a place for annual general membership meetings, anniversaries and other programs of the cooperative.

Cost Analysis

- The following is the proposed project cost breakdown:

No.	Project	Lot / Building Area (sq. m.)	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	Carcar Area Office	127.31	1 set	4,350,057.00	2011	4,350,057.00
	Lot acquisition at Carcar, Cebu	3,000.00	3,000	5,000.00		15,000,000.00
2	Argao Area Office	127.31	1 set	1,289,715.57	2012	1,289,715.57
3	Covered Storage Bldg. at main office	150.00	1 set	1,310,307.57	2013	1,310,307.57
4	Ginatilan Area Office	127.31	1 set	1,550,164.00	2014	1,550,164.00
	Lot acquisition at Moalboal, Cebu	2,000.00	2,000	3,000.00		6,000,000.00
5	Multi-purpose Building at main office	960.00	1 set	6,448,577.85	2015	6,448,577.85
	Moalboal Area Office	127.31	1 set	1,289,715.57		1,289,715.57
				Grand Total		**37,238,537.56**

- The Commission approved the reduction of the proposed costs of the projects based on its review. It can be noted that there are inconsistencies in the proposed cost for the construction of sub-offices. The proposed costs should have been the same considering that based on the submitted designs, the dimensions and land area of the buildings are exactly the same. CEBECO I did not provide further justification. The Commission, therefore, adjusted and set a consistent cost for the said activity.

- The following is the approved project cost breakdown:

No.	Project	Lot / Building Area (sq. m.)	No. of Units	Unit Cost (PhP/unit)	Year	Project Cost (PhP)
1	Carcar Area Office	127.31	1 set	1,289,715.57	2011	1,289,715.57
	Lot acquisition at Carcar, Cebu	3,000.00	3,000	5,000.00		15,000,000.00
2	Argao Area Office	127.31	1 set	1,289,715.57	2012	1,289,715.57
3	Covered Storage Bldg. at main office	150.00	1 set	1,310,307.57	2013	1,310,307.57
4	Ginatilan Area Office	127.31	1 set	1,289,715.57	2014	1,289,715.57
	Lot acquisition at Moalboal, Cebu	2,000.00	2,000	3,000.00		6,000,000.00
5	Multi-purpose Building at main office	960.00	1 set	6,448,577.85	2015	6,448,577.85
	Moalboal Area Office	127.31	1 set	1,289,715.57		1,289,715.57
				Grand Total		**33,917,747.70**

Approved	Remarks
Project to continue as proposed	
Project to continue with REVISED Capital Expenditure	✓
Project to continue with Technical Amendments	✓
Project to be deferred which may be included in its next application with additional justification	

Approved CAPEX Cost (PhP)					
2011	2012	2013	2014	2015	**Total**
16,289,715.57	1,289,715.57	1,310,307.57	7,289,715.57	7,738,293.42	**33,917,747.70**