PB ASSOCIATES

REVIEW OF FORECAST EXPENDITURE: SECOND REGULATORY PERIOD

Cotabato Light and Power Company

Prepared for

ENERGY REGULATORY COMMISSION

26 September 2008

TABLE OF CONTENTS

SECTIONS

EXECUTIVE SUMMARY

CAPITAL EXPENDITURE (CAPEX)

We recommend that the Energy Regulatory Commission (ERC) make the following adjustments to the capital expenditure proposed by Cotabato Light and Power Company (CLPC):

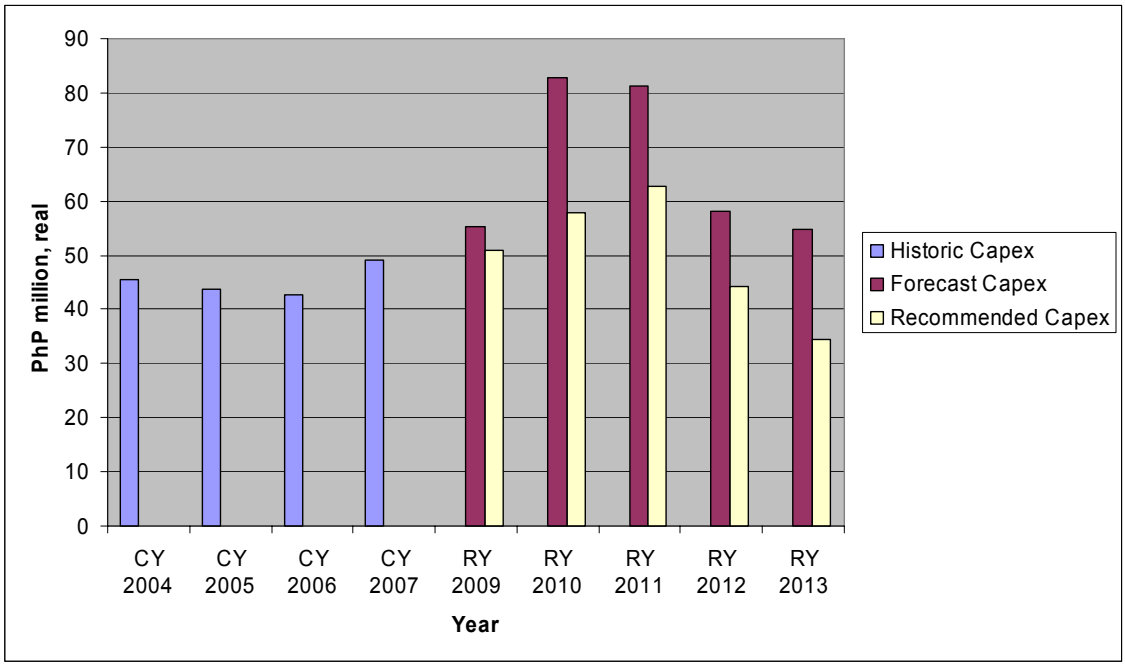
Forecast Capital Expenditure (PhP million, real 2008)

Table 2.9: Summary of Recommended Capex (PhP Million, real 2008)

	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013	Total[1]
Major Projects						
Forecast capex	14.13	38.89	43.77	23.73	20.81	141.33
Adjustments						
Deletion of 69 kV line purchase		(16.57)				(16.57)
Deletion of administration building			(9.31)	(9.31)	(12.70)	(31.32)
Rescheduling of warehouse			(2.35)	2.35		-
Adjustment to Salimbao 69 kV cost	(0.78)					(0.78)
Adjustment to Salimbao 13.8 kV cost		(0.89)				(0.89)
Deletion of Saludes GO ABS		(0.43)				(0.43)
Adjustment to Sinsuat CB Replacement Cost				(0.25)		(0.25)
Recommended Major Project Capex	**13.35**	**21.00**	**32.11**	**16.52**	**8.11**	91.09
Residual Capex						
Forecast Capex	41.12	43.99	37.56	34.50	33.92	191.09
Adjustments						
Deletion of biannual meter testing	(3.52)	(3.52)	(4.35)	(4.34)	(4.35)	(20.08)
Reduction of information systems capex		(3.62)	(2.48)	(2.52)	(3.16)	(11.78)
Recommended Residual Capex	**37.60**	**36.85**	**30.73**	**27.64**	**26.41**	159.23
TOTAL FORECAST CAPEX	**55.25**	**82.88**	**81.33**	**58.23**	**54.73**	**332.42**
TOTAL RECOMMENDED CAPEX	**50.95**	**57.85**	**62.84**	**44.16**	**34.52**	**250.32**
Total Recommended Adjustment	(4.30)	(25.03)	(18.49)	(14.07)	(20.21)	(82.10)
Impact of Recommended Adjustment	(7.8%)	(30.2%)	(22.7%)	(24.2%)	(36.9%)	(24.7%)

Note 1: Total for period RY 2009-13

Comparison of Recommended Capex with CLPC's Historic and Forecast Capex (PhP million, real 2008)



The key findings of our capex review are as follows:

- Capex related installation costs are charged to capex if the installation is done by contract labor and to opex if the installation is done in-house. This cost allocation methodology is applied to both historic and forecast expenditures. Hence reported historic and forecast opex and capex can be directly compared and no adjustment is required.

- CLPC is planning to construct a new 10 MVA 69/13.8 kV substation at Malagapas. We recommend that this project proceed at an estimated cost of PhP 24.7 million.

- CLPC has provided insufficient information to allow us to determine a reasonable capex provision for the purchase of TransCo subtransmission assets. We are also concerned that, if a provision is made for the acquisition of these assets, any delay in completing the transaction would result in a windfall gain to CLPC. Customers would pay twice for the period of any delay, firstly through the transmission charge and secondly through the distribution rate. We think this would make it very difficult for the ERC to decline to approve any purchase contract. We have therefore recommended that capex for the purchase of subtransmission assets is not approved and that this issue be dealt with outside of the RDWR process.

- CLPC is planning to construct a new warehouse, transmission and distribution engineering building and administration building over the forecast period. We recommend that the administration building be deferred until the third regulatory period but that funding is provided to allow the other two buildings to proceed.

- We have recommended that the forecast capex on metering equipment to support the full implementation of the Magna Carta biannual meter testing requirement not be approved. This is consistent with the final decision for the first entry point IOUs, when the ERC advised that implementation of this requirement was on hold and expenditure was not to be allocated for this purpose.

- We have recommended that capex for the provision of IT equipment to be located on the Davao Light and Power Company premises not be allowed at this point. We understand that this equipment is to be shared with Davao Light but CLPC has not provided any information

on the estimated capital cost of this equipment or on how these costs are to be shared. Section 11.4 of the Position Paper requires a much higher level of disclosure for transactions involving related parties, but CLPC has not met these requirements.

OPERATIONS AND MAINTENANCE EXPENDITURE (OPEX)

We recommend that the ERC make the following adjustments to the forecast proposed by CLPC in its revenue application.

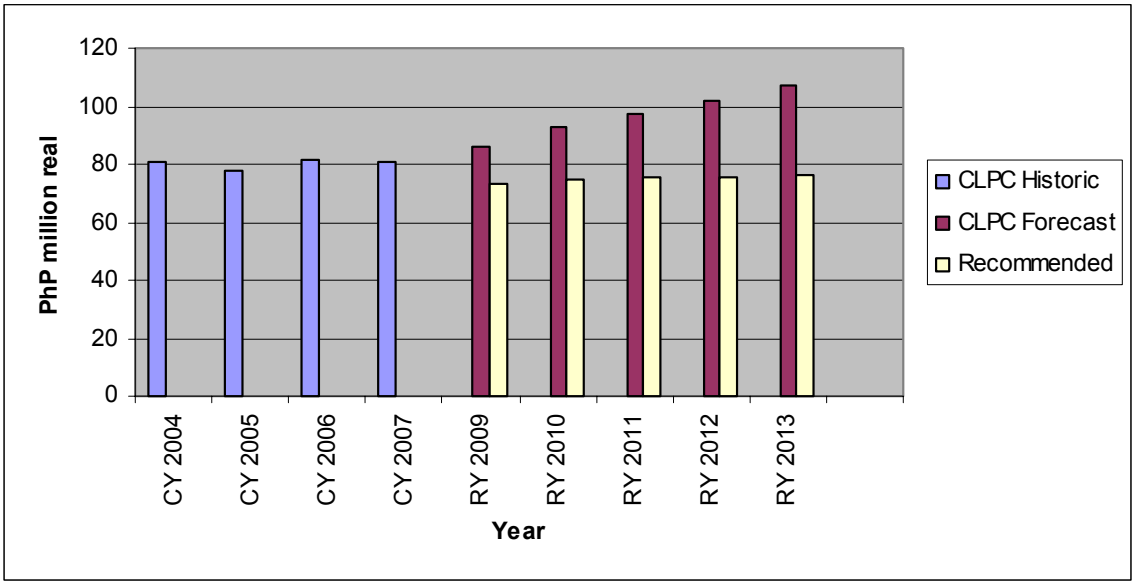
Forecast Operations and Maintenance Expenditure (PhP million, real 2008)

	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013	Total[1]
Distribution System Operations						
Revenue Application forecast	16.69	18.45	19.78	20.06	20.98	95.96
Model	16.69	16.92	17.10	17.21	17.18	85.10
DSOAR Adjustment		(0.11)	(0.23)	(0.34)	(0.45)	(1.13)
Recommended Opex	**16.69**	**16.81**	**16.87**	**16.87**	**16.73**	**83.97**
Distribution System Maintenance						
Revenue Application Forecast	5.65	6.23	6.51	6.99	7.33	32.72
Model	6.03	6.14	6.22	6.27	6.26	30.92
DSOAR Adjustment		(0.05)	(0.11)	(0.16)	(0.21)	(0.53)
Recommended Opex	**6.03**	**6.08**	**6.11**	**6.11**	**6.05**	**30.39**
Regulated Retail Services						
Revenue Application Forecast	15.26	17.75	18.37	19.17	19.90	90.45
Recommended Opex	16.22	16.64	17.06	17.48	17.90	85.32
Administrative & General Expenditure						
Revenue Application Forecast	48.36	50.71	52.72	55.65	58.86	266.31
Recommended Opex	35.13	35.20	35.25	35.29	35.28	176.15
Totals						
Revenue Application Forecast	85.96	93.15	97.39	101.87	107.07	485.44
Recommended Opex	74.07	74.73	75.30	75.75	75.96	375.82
Recommended Adjustment	**(11.89)**	**(18.41)**	**(22.08)**	**(26.12)**	**(31.12)**	**(109.62)**
Percentage Adjustment	(13.8%)	(19.8%)	(22.7%)	(25.6%)	(29.1%)	(22.6%)

Note 1: Total for period RY 2009-13
Source: PB Associates

A comparison between CLPC's historic opex, its forecast opex and our recommended opex over the second regulatory period is shown in the graph below.

Comparison of Recommended Opex with CLPC's Historic and Forecast Opex (PhP million, real 2008)



The key findings of our opex review are as follows:

- As CLPC provided insufficient information as to how it derived its forecast opex, we were unable to review its methodology for reasonableness. Therefore we used PB Associates' opex forecasting model to estimate CLPC's future opex needs and adjusted for the differences between CLPC's forecast and the required opex determined from our modelling. Our modelling was based on CLPC's actual opex for CY 2007, after adjustment to remove the estimated capex related installation expenditures. We also made some relatively minor adjustments to the base year costs to include expenditures that were not incurred in the base year but which were likely to be incurred over the forecast period.

- As part of this review we benchmarked CLPC's operational efficiency against the other first and second entry point IOUs. This exercise indicated that CLPC does not benchmark well against the first entry point utilities, particularly in the key benchmark of adjusted opex per kWh. However, based on the limited data available, the employee utilization looks more reasonable. The main reason for CLPC's good labor utilization but high opex per kWh appears to be its extensive use of outside services, which amounted to 23% of its total opex. These costs relate primarily to payments to its parent Aboitiz Power Company (APC) and also to its sister company Davao Light and Power for services provided. These related party transactions were not documented or justified to the level required by Section 11.4 of the Position Paper. We were particularly concerned with the size of the PhP 11.93 million management fee paid to APC in the CY 2007 base year. CLPC was not able to quantify the value of the services provided and based on the qualitative information in its revenue application we have valued these services at PhP 3.15 million. This reduction is the main reason for the step change between historic and forecast opex that is apparent in the diagram above.

- Other reasons for our recommended opex being lower than forecast by CLPC could include:

    - the exclusion of opex related to the assets that were not included in our recommended capex;

    - our assumption that labor rates would remain constant in real throughout the forecast period

- our assumption that 90% of administrative and general expenditures are fixed and will not increase in real terms over the forecast period; and

- our assumption that generation related opex was a fixed cost and would not increase in real terms over the forecast period.

- Consistent with the final determination for the first entry point IOUs, we have made a reduction to the forecast opex to account for the expected progressive introduction of Distribution Services Open Access Rules (DSOAR). If this provision was not made, then any charges made to customers for the provision of contestable distribution services during the second regulatory period would also be recovered through the distribution wheeling rate. This would result in a double recovery of these charges.

- At the end of the second regulatory period we estimate that CLPC's key performance indicator of total opex per kWh will reduce from a current level of 0.59 to 0.49, when measured in real 2008 PhP and after removal of generation related expenditure and also an estimated provision for capex-related in-house labor costs. This reduction is based on our adjusted energy sales forecast, which is lower than submitted by CLPC in its revenue application. If the CLPC forecast was used, the total opex per kWh at the end of the regulatory period would reduce further to 0.45.

TAXES, LEVIES AND DUTIES

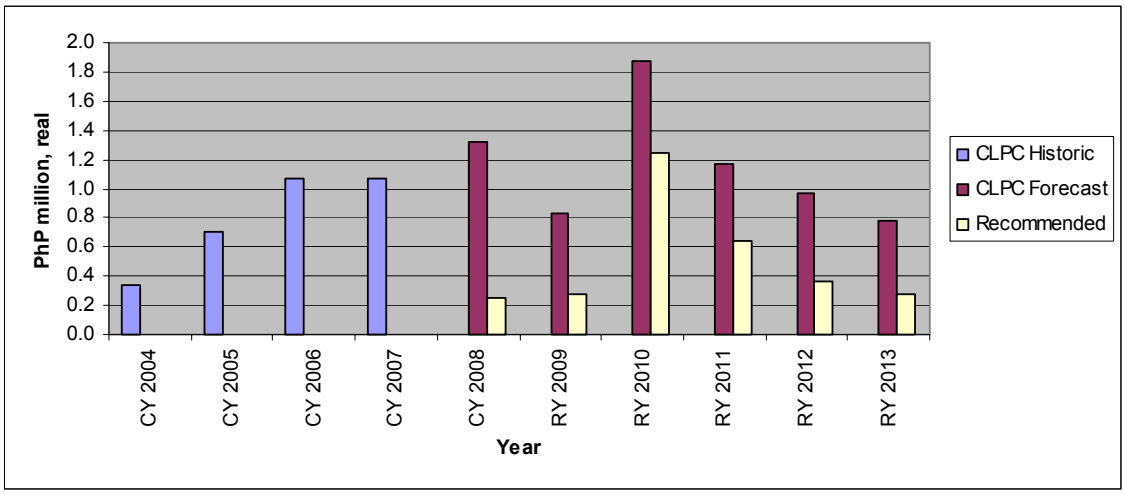
We recommend the following reductions in CLPC's proposed provisions for taxes, levies and duties:

Forecast Taxes, Levies and Duties (PhP million, real 2008)

Year	CY 2008	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013	Total[1]
Proposed in CLPC's Revenue Application							
Taxes, Levies and Duties	1.32	0.83	1.88	1.17	0.97	0.79	6.96
Adjustments							
Cebu - Other Taxes	0.008	0.008	0.008	0.008	0.008	0.008	0.045
Regulatory Reset Expert Fees	0.419	-	-	-	-	-	0.419
Custom Duties and Other Related Charges	0.641	0.551	0.629	0.528	0.602	0.506	3.457
Recommended Provision for Taxes, Levies and Duties	**0.25**	**0.27**	**1.24**	**0.64**	**0.36**	**0.27**	**3.03**

A comparison between CLPC's actual taxes, levies and duties expenditure, its forecast expenditure and our recommended taxes, levies and duties expenditure is shown in the chart below.

Comparison of Recommended Taxes, Levies and Duties with CLPC's Historic and Forecast Taxes, Levies and Duties (PhP million, real 2008)



The key findings of our review of forecast taxes, levies and duties are as follows:

- The reduction in the provision for taxes levies and duties is due primarily to the exclusion of the provision for custom duties and other related charges since these costs should be provided for in the capex forecast.

- The taxes for the APC office in Cebu were excluded from the recommended forecast because we do not consider that tax payments made by a parent company are a valid expenditure, particularly in view of the high management fee paid to APC.

- Regulatory reset expert fees for CY 2008 were also excluded from the forecast given that the costs provided by ERC for the regulatory reset expert fees from RY 2010-12 include all costs that have been or will be incurred until the end of the Second Regulatory Period.

1. INTRODUCTION

The Energy Regulatory Commission (ERC) has promulgated a performance-based form of regulation (PBR) for investor owned electricity distribution utilities (IOUs) in the Philippines. Under the PBR framework an IOU will be subject to a price-cap for the delivery of distribution wheeling services. The reset process for the setting of the price cap for the three IOUs entering the PBR at the second entry point is currently underway. This process will result in the setting of a maximum price path that will determine the maximum average price (MAP) an IOU can charge for the provision of electricity distribution services for each year of the Second Regulatory Period (which commences on 1 April 2009 and ends on 31 March 2013).

The mechanism for the calculation of the price cap and the procedure and timelines for the introduction of this cap, are described in the Rules for Setting the Distribution Wheeling Rate (RDWR), which was released by the ERC on December 13 2006[1]. The ERC has also formulated its position on the reset process, which is set out in a Position Paper dated March 14 2007[2].

An important requirement of the reset process going forward is the review of the expenditure forecasts submitted by the IOUs as part of the rate-setting process under PBR. These expenditure components are critical to the determination of the revenue that IOUs will require for the provision of regulated distribution services over the second regulatory period and on which the price caps will be based.

The RDWR require that the expenditure forecasts provided by an IOU be reviewed by a Regulatory Reset Expert as part of the PBR regulatory reset process. Parsons Brinckerhoff Associates (PB Associates) has been engaged by the ERC to review the expenditure forecasts of the three IOUs that will be entering PBR at the second entry point.

The following expenditure forecasts form part of this review process:

- capital expenditure (capex);
- disposal of fixed assets;
- operating and maintenance expenditure (opex); and
- taxes (other than corporate income tax), levies and duties.

The three IOUs entering PBR at the second entry point are:

- Cotabato Light and Power Company (CLPC);
- Iligan Light and Power Incorporated (ILPI); and
- Mactan Electric Company (MECO).

This report presents the PB Associates' review of the expenditure forecasts of CLPC. These forecasts were submitted to the ERC as part of CLPC's revenue and performance incentive scheme application (revenue application), on May 23, 2008.

In undertaking this review we have relied on the accuracy of the information provided to the ERC by CLPC. While, during the clarificatory meeting process, we queried information that appeared to be incomplete, inconsistent or inaccurate, we did not undertake an audit or attempt to verify the information on which we relied. We therefore

[1] *Rules for Setting Distribution Wheeling Rates for Privately Owned Distribution Utilities Entering Performance Based Regulation (Second and Later Entry Points)*, Energy Regulatory Commission, December 13 2006.

[2] *Regulatory Reset for the October 2008 to September 2012 Regulatory Period for Privately Owned Distribution Utilities subject to Performance Based Regulation, Position Paper*, Energy Regulatory Commission, March 14 2007. Note that the start and finish dates of the regulatory period to which this Position Paper applies were subsequently changed to April 1 2008 and March 31 2013 respectively, by ERC Resolution No 24 Series of 2007, dated October 24 2007.

cannot be held responsible for any conclusions based on misleading or inaccurate information provided to us.

2. CAPITAL EXPENDITURE

2.1 REVIEW METHODOLOGY

The capex review has been undertaken on the basis that proposed expenditure should only be recommended for approval if it is:

1. used for the provision of regulated distribution services;
2. either:
   - required, in that the expenditure is unable to be avoided if distribution services to customers are to continue over time to be provided in accordance with the Philippines Distribution Code and the IOU's other legal and regulatory obligations; or
   - discretionary, and the IOU is able to demonstrate that the value to customers of the benefits that it expects to receive through making the expenditure outweighs the cost of the expenditure, after taking due account of any uncertainties in the assumptions used in this analysis; and
3. economically efficient in that the timing of the expenditure is appropriate and the level of expenditure is no higher than necessary to achieve the required outcome.

2.2 OVERVIEW OF EXISTING DISTRIBUTION NETWORK

CLPC's 13.8 kV distribution network is currently supplied from a CLPC-owned single circuit 69 kV line that is teed off TransCo's Nuling-Tacurong 69 kV line. A single TransCo-owned metering point meters all power drawn from the grid, allowing CLPC's coincident peak demand to be directly measured. This line currently feeds two 69/13.8 kV power substations at Salimbao and Sinsuat.

CLPC has recently constructed an extension to its 69 kV line that will connect to the Nuling-Tacurong line at Tamontaka, closer to Tacurong. This line has still to be energized as TransCo will not permit the connection of the extension to the grid without a circuit breaker being installed, in compliance with clause 5.5.1.2 of the Grid Code[3]. When connected, reliability should be improved as there will be two points of connection to the existing TransCo network, although we understand there may be insufficient capacity in the TransCo network for CLPC's load to be fully supplied from Tacurong.

In addition to its supply from the TransCo grid, CLPC owns and operates a heavy fuel oil / diesel fired power station that is capable of injecting power into its 13.8 kV network at Sinsuat. This power station has six machines with a maximum available capacity of about 8 MW and was used to supply power to consumers in CLPC's franchise area prior to the availability of the grid connection in 1986. CLPC continues to maintain and operate this power station and it is used to supply power to the network in the event that the grid supply is not available[4]. ERC has accepted the need for this power station and agreed that it should be included in the regulatory asset base (RAB). This means that both the capital and fixed operating costs associated with the plant form part of this expenditure review.

[3] CLPC considers this circuit breaker is not required as it is planning to purchase the TransCo line. After the purchase CLPC believes that the Grid Code will not apply.

[4] The grid supply continues to be vulnerable to sabotage.

CLPC's 13.8 kV distribution network includes eight feeders, four from Sinsuat and four from Salimbao. There is a relatively high level of interconnection available through normally open interconnection points between feeders, which allows for a significant amount of load transfer between the two substations.

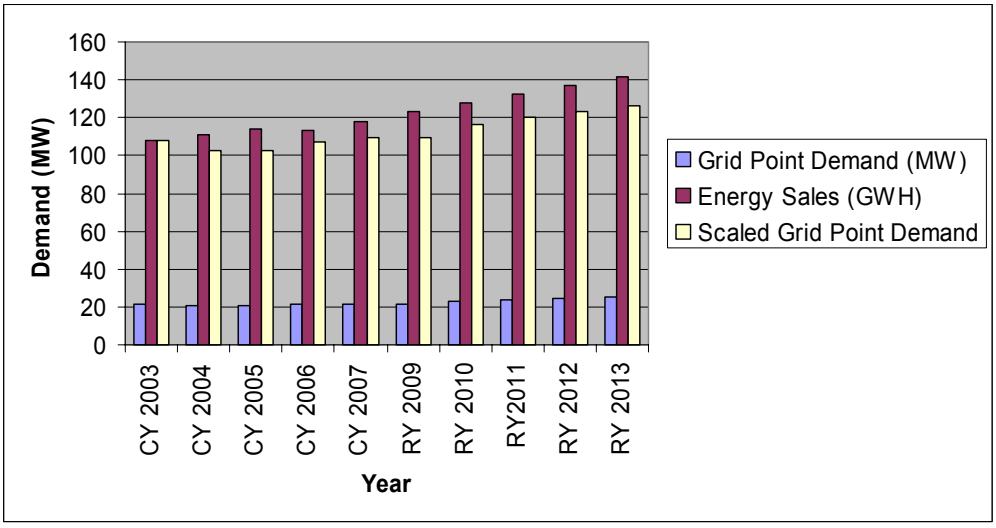
2.3 DEMAND FORECAST

It is not within the terms of reference of this review to undertake a detailed study of the forecasts of energy sales, peak demand and customer numbers included in CLPC's revenue application. However, as load driven capex is dependent on the growth in peak demand on the network, we have reviewed the demand forecast at a high level in order to be satisfied that the assumptions made by CLPC as the basis for its capex forecast are reasonable. The critical factor driving load related capex is the peak grid point demand, as this will determine the required amount of 69/13.8 kV power transformer capacity.

Figure 2.1 compares CLPC's forecast actual and forecast total energy sales with its grid point demand. CLPC has not provided us with its actual energy sales and demand for CY 2003 but we derived this number from the 2003-04 growth rates, which were supplied. In order to graphically compare the rates of growth in energy sales and demand more easily, we have also scaled all demands by a factor of 5.03. This technique means that the 2003 energy sales (in GWh) and the scaled demand are numerically equal and that the actual or forecast growth rates of energy and demand can be directly compared. In Figure 2.1, CLPC's forecast demand in RY 2009 (22.5 MW) has also been replaced by the actual peak demand in April 2008 (21.8 MW) because in the Philippines the peak electricity demand typically occurs in April or May.

A review of Figure 2.1 shows that over the period CY 2003-07 there has been some differences in the growth rates of energy sales and demand. In 2004 and 2005 energy sales increased while peak demand reduced. In 2006 there was a correction and the effect was reversed. Over the whole period energy sales grew by 2.2% per annum but demand grew by under 0.5% per year.

Figure 2.1: CLPC's Actual and Forecast Demand and Energy Sales



A divergence between the rate of growth of energy sales and demand is unsustainable over time without a change in the nature of the load being supplied. In its revenue application CLPC provided no evidence of such a change nor did it provide substantive evidence to support the increase in the rate of growth of energy sales over the forecast

period. At the clarificatory meeting CLPC indicated that the ARMM[5] elections would result in people who had previously moved out of its franchise area returning to Cotabato, but it appeared to modify this position in a subsequent submission which states that only the governor and his support staff were likely to return. We do not see how these returning residents would underpin a significant and sustained growth in energy sales.

With no substantive indication of a significant and ongoing change in historic growth rates, we think it reasonable to assume that only the growth in energy sales experienced over the historic period CY 2003-07 will be sustained over the forecast period. It is also reasonable to assume that demand will increase at a similar rate. If this rationale is accepted, the one issue that remains to be resolved to produce a demand forecast that could form the basis for determining load related capex requirements is whether the CY 2003 grid point demand is a suitable base point for the forecast. There is some evidence to indicate that the grid point demand in CY 2003 was abnormally high, as this demand was not subsequently exceeded until CY 2007 in spite of the moderate growth in energy sales over the intervening period. However given the fluctuations in load factor over the historic period and the inherent uncertainties in demand forecasts, we have preferred a conservative approach and have taken the CY 2003 peak grid point demand as the base point for the demand forecast.

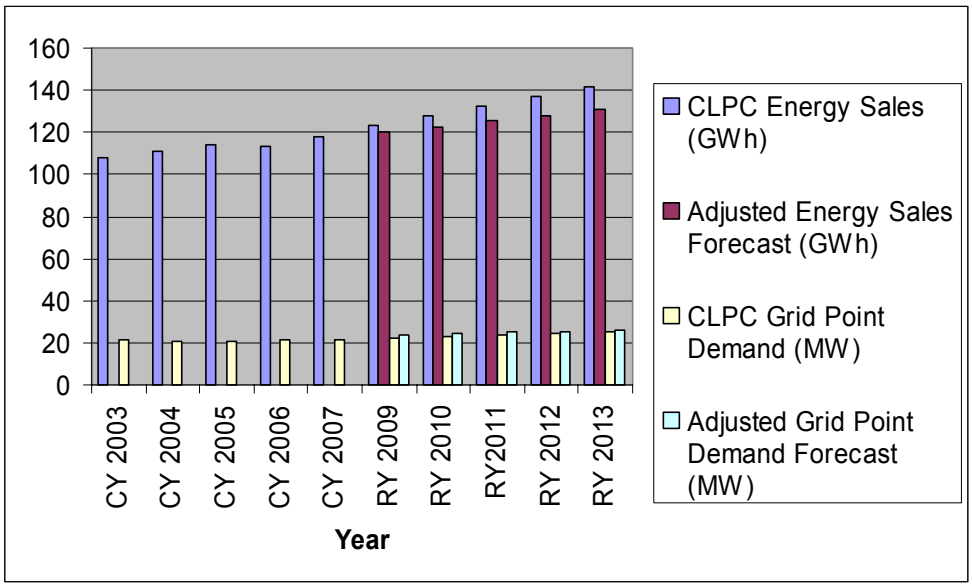
Our proposed forecasts therefore assume a growth rate of 2.2% for both energy sales and demand. The demand forecast acknowledges that there may still be some rebound from the relatively low peak demands experienced over the period CY 2004-07 and assumes the CY 2003 peak demand as the base point for the demand extrapolation. As shown in Figure 2.2 this results in a lower energy sales forecast but a higher grid point peak demand forecast than provided by CLPC. Our view is that this merely recognises the volatility of the load factor year on year and the fact that the network must be designed and constructed to cater for a worst demand case scenario. Our forecast energy sales and peak grid point demands are shown in Table 2.1 and our adjusted forecasts are compared graphically with CLPC's historic and forecast levels in Figure 2.2.

Table 2.1: Forecast Grid Point Demand and Energy Sales

	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Energy Sales (GWh)					
CLPC Forecast	123.3	127.9	132.5	137.1	141.6
Adjusted Forecast	120.1	122.8	125.5	128.2	131.0
Grid Point Peak Demand (MW)					
CLPC Forecast	22.5	23.2	23.9	24.5	25.2
Adjusted Forecast	23.9	24.4	25.0	25.5	26.1

[5] Autonomous Region in Muslim Mindanao

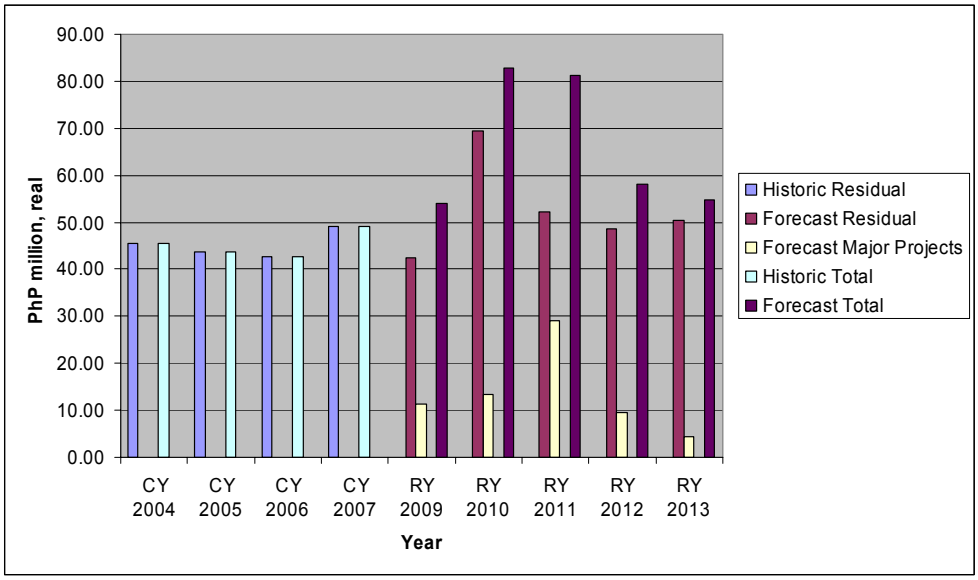
Figure 2.2: Comparison of CLPC and Adjusted Forecasts



2.4 OVERVIEW OF HISTORIC, BUDGET AND FORECAST CAPITAL EXPENDITURE.

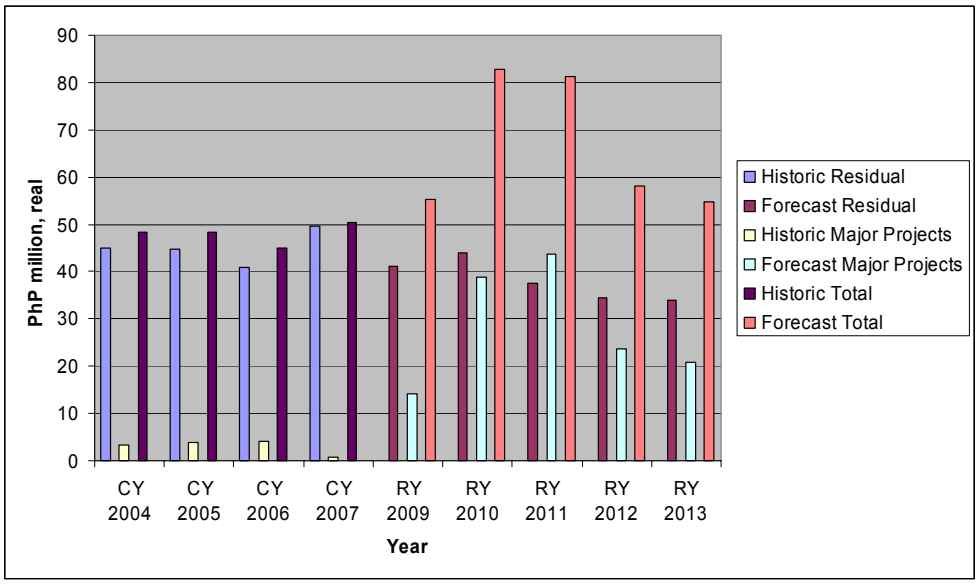
In its revenue application CLPC did not disaggregate its total capex forecast into major projects and the ERC's different categories of residual expenditure. This was noted during our initial review the revenue application and CLPC subsequently submitted a capex breakdown, which is shown in Figure 2.3. This indicates an anticipated small, but nevertheless material, increase over historic levels of the residual capex during the forecast period. However the major project expenditure shown in the template was much lower than the aggregated costs indicated by the major project spreadsheets submitted during the revenue application.

Figure 2.3: Actual and Forecast Expenditure (PhP million, real 2008)



Following discussion of these discrepancies at the clarificatory meeting, CLPC subsequently submitted a revised capex template as shown in Figure 2.4.

Figure 2.4: Revised Actual and Forecast Expenditure (PhP million, real 2008)



It can be seen in the revised template that the forecast total capex is similar to that included in the original revenue application. However forecast residual expenditure has reduced significantly and CLPC now forecasts this to progressively reduce over the second regulatory period. This reduction is offset by an increase in forecast major project expenditure. There has also been an increase in CLPC's reported historic capex, including the addition of major projects that were not included in the earlier template. CLPC has not explained these historic capex increases.

CLPC has advised that both its historic and forecast capex include material and contract labor costs, which means that the forecast capex is directly comparable with the reported historic capex. In-house labor costs are treated as opex even when used for the design and construction of capital assets.

The actual historic and forecast expenditures provided by CLPC and represented by Figure 2.3 and Figure 2.4 are shown in Table 2.2.

Table 2.2: Actual and Forecast Capex (PhP million, real 2008)

	CY 2004	CY 2005	CY 2006	CY 2007	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
INITIAL TEMPLATE									
Major Projects					11.38	13.36	29.14	9.55	4.45
Residual Capex	45.63	43.76	42.60	49.13	42.55	69.51	52.19	48.67	50.28
Total	**45.63**	**43.76**	**42.60**	**49.13**	**53.92**	**82.87**	**81.33**	**58.22**	**54.73**
REVISED TEMPLATE									
Major Projects	3.24	3.74	4.01	0.68	14.13	38.89	43.77	23.73	20.81
Residual Capex	45.01	44.70	40.96	49.64	41.12	43.99	37.56	34.50	33.92
Total	**48.25**	**48.43**	**44.97**	**50.32**	**55.25**	**82.88**	**81.33**	**58.23**	**54.73**

In undertaking this review we have assumed the historic expenditure submitted in the revenue application to be accurate because CLPC has not explained the increase

reported in its revised template. However we have based our review of the forecast capex on the figures in the revised template as these are more consistent with the major project costs reported in the project sheets. We note that the total forecast capex is the same in both the initial and revised templates for each year of the forecast period except for a relatively minor discrepancy in RY 2009.

2.5 REVIEW OF MAJOR PROJECTS

2.5.1 Malagapas Substation

CLPC proposes to construct a new 10 MVA substation to increase its total 68/13.8 kV transformer capacity. The site of the substation has been selected to address the load growth in the southern part of the franchise area, which includes two large hospitals, a military camp, the new city hall and the airport. The estimated total cost of the project is PhP 24.7 million and the expenditure is forecast to occur in RY 2011.

Comments

- CLPC currently has three 69/13.8 kV distribution transformers in service with a total capacity of 37 MVA. The largest transformer is the 15 MVA unit at Salimbao. If this transformer is out of service, the total transformer capacity is limited to 22 MVA. As CLPC has no customers directly connected to the network at 69 kV, all its energy must be transformed to 13.8 kV using the available power transformers. Hence, in the event of the worst case n-1 contingency (the loss of the 15 MVA transformer), assuming our grid point demand forecast and a 0.95 power factor, the capacity utilization of the remaining transformers would be 114% in RY 2009 increasing to 125% in RY 2013. Even if the lower CLPC grid point demand forecast is assumed, the capacity utilization in RY 2013 would still be 121%.

- With the loss of the smallest 10 MVA transformer, the capacity utilization of the remaining 27 MVA of transformer capacity at the end of the forecast period would be 98% based on the CLPC forecast and 102% if our forecast was assumed.

- In a contingency situation it would be technically possible for CLPC to relieve the load on the remaining transformers by using its own generation. For this reason we would be reluctant to recommend that this project proceed if there was a high probability that any transformer fault could be repaired within a short period of time. However a transformer fault could potentially take months to repair. Oil fired generation is expensive and the costs would likely be prohibitive in the event of a major internal fault requiring an extended transformer outage. We therefore do not consider the oil fired generation to be a viable backup for the loss of a transformer.

- CLPC appears to have selected the transformer location to provide appropriate support to its 13.8 kV network.

We therefore recommend that this project proceed and that the estimated cost of PhP 24.7 million be included in the forecast capex for RY 2011.

2.5.2 Acquisition of the Cotabato-Simuay-Nuling 69 kV Line

CLPC's expenditure forecast proposes a total expenditure of PhP 16.57 million in RY 2010 for the purchase of a section of TransCo 69 kV Nuling-Tacurong transmission line. It is proposed to purchase the section of line between Nuling substation and MAGELCO's Awang substation.

The Nuling-Tacurong subtransmission line, in addition to supplying CLPC's total load, also supplies MAGELCO, via two 5 MVA substations at Awang and Salbu, and

SUKELCO, via two 5/10 MVA substations at Isulan and Dukan. It is normally operated with an open point between the Awang and Salbu substations, which means that the line section that CLPC is proposing to purchase supplies MAGELCO's Awang load, as well as CLPC's total load, under normal operating conditions. CLPC advised in its final submission on the expenditure review that the Awang load is only 9% of the total load on the line section under normal operating conditions. It also advises that MAGELCO has no interest in the purchase of the asset and that MAGELCO is financially burdened and in debt to NPC.

Comments:

- Section 8 of the Electric Power Industry Reform Act (EPIRA) requires subtransmission assets to be segregated from the transmission assets and further requires TransCo to sell these assets to qualified distribution utilities. It provides that the disposal value of the assets shall be based on their revenue potential.

- ERC has issued guidelines for the sale and transfer of subtransmission assets pursuant to Section 8 of EPIRA[6] (Subtransmission Guidelines). Article III of these Subtransmission Guidelines sets out criteria to distinguish transmission assets from subtransmission assets and requires that, to be classified a subtransmission asset, a line must:

    - be radial;

    - directly connect an end-user or group of end-users to the grid; and

    - be exclusively dedicated to the service of that end-user or group of end-users.

- We have assessed whether the line that CLPC proposes to purchase from TransCo meets the above criteria and comment as follows.

    - The line that CLPC is proposing to buy is a section of a line that interconnects two TransCo substations and it could be argued that it is therefore not radial. However the line is normally operated in a radial configuration with a normally open point between the Awang and Nuling substations and so, arguably, meets the criteria of being a radial line.

    - The line directly connects two end users, CLPC and MAGELCO, to the grid.

    - If the normally open switch at the Awang substation was closed, it would be possible to use the line to supply the balance of the MAGELCO load and some or all of the SUKELCO load, provided the transmission capacity was sufficient[7]. We have not analysed whether it is possible to operate the line in this way, but consider that such operation could be possible at times of light grid load, particularly if CLPC's generation plant was operating. On the evidence we have, we therefore do not accept that the line meets the criteria of being exclusively dedicated to CLPC and MAGELCO.

- CLPC and TransCo entered into a contract dated September 5 2006 for the sale and purchase of this line for PhP 21.79 million. However the ERC did not approve the contract on the basis that the sale price was different from the

[6] Guidelines to the Sale and Transfer of the TransCo's Subtransmission Assets and the Franchising of Qualified Consortiums, Energy Regulatory Commission, October 17 2003.

[7] Under normal operating conditions the SUKELCO load is only supplied from TransCo's Tacurong substation.

appraisal value used for TransCo's PBR revenue application[8]. The provision requested in the revenue application for the purchase of this line (PhP 16.57 million) is significantly lower than the original contract price but also substantially higher than the amended contract price of (PhP 9.54 million)[9]. CLPC has not explained the difference between the amended contract price and the amount in its revenue application.

- Section 8 of EPIRA states that:

  The takeover by a distribution utility of any subtransmission asset shall not cause a diminution of service and quality to the end users. Where there are two or more connected distribution utilities, the consortium or juridical entity shall be formed by and composed of all of them and thereafter shall be granted a franchise to operate the subtransmission asset by ERC.

  CLPC's submission does not deal in detail with the interest of MAGELCO in this transaction, other than to say that it is under financial stress and is not showing interest in procuring the line. Notwithstanding this, with the current network configuration MAGELCO relies on the line to provide supply to its Awang substation and we consider that ERC should not approve the contract unless MAGELCO explicitly agrees to the transaction and the ERC is satisfied that MAGELCO's long term interest in the asset is legally protected. We have seen no evidence that MAGELCO has agreed to the transaction, nor any evidence of how CLPC proposes to protect MAGELCO's interests. It may be that Section 8 of EPIRA legally precludes the sale of the asset to CLPC in its own right.

- We understand that the asset is classified by TransCo as a residual subtransmission asset for pricing purposes. This means that the price currently paid by CLPC and MAGELCO for the use of the assets is based on the value of the specific assets affected. It is therefore possible to directly assess the impact of the sale on CLPC's subtransmission costs. The benefits to CLPC would presumably include avoided subtransmission charges and payments by MAGELCO to CLPC for the use of the asset. However these payments will depend on the final agreement between CLPC and MAGELCO.

Having considered the above issues we have concluded that the forecast cost of procuring subtransmission assets from TransCo should not be (and need not be) taken into account in determining CLPC's allowed revenue for the second regulatory period. The compelling reason for this is that any delay in executing a sale and purchase contract will result in a windfall gain for CLPC, since the funding provided through the MAP for the purchase of the assets would not be needed until the transaction was completed. Therefore, over the period of the delay, customers would be paying twice for the use of these assets – once through the transmission component of the unbundled rate and also through the distribution wheeling rate. Under clause 12.2 of the RDWR, any delay would not trigger a reopening of the revenue determination until its length exceeded 18 months.

We are also concerned that inclusion of the forecast purchase costs of these assets in the allowed revenue used to determine the MAP would prejudice the ERC's own review of the any sale and purchase contract. It will be more difficult for the ERC to decline approval of the contract knowing that the purchase cost is already included in CLPC's allowed revenue and that any delay in finalising the transaction could result in a windfall gain for CLPC at the expense of its customers. However, the ERC's decision as to whether or not it should approve the acquisition of the assets will necessarily involve

[8] Decision, ERC Case No. 2005-291 MC, In the Matter of the Application for the Approval of the Sale of the Various Sub-Transmission Line / Assets Within the Franchise Area of Cotabato Light and Power Company (CLPC), (TransCo) (4/4/2008).

[9] As stated in letter from CLPC to MAGELCO dated July 25 2008.

consideration of issues, such as the need to ensure that the interests of MAGELCO are protected, that are outside the scope of this expenditure review.

Furthermore we do not see any need for the forecast purchase cost of subtransmission assets to be included in the allowed revenue. As noted above, the purchase of subtransmission assets will provide benefits to CLPC in the form of avoided subtransmission charges and payments from directly connected customers. We submit that these benefits, which do not accrue until any sale is executed, should be used to fund the purchase. This approach could involve setting the purchase cost on the basis of the net benefit of the purchase to CLPC as calculated from a discounted cash flow analysis. Such an analysis could assess the benefits on the basis of ERC's currently approved connection charges and the costs on the basis of forecast operating, maintenance and refurbishment costs.

Should the Commission decide to adopt an approach whereby the cost of assets purchased from TransCo is funded by the benefits of the transaction to the purchaser, we see two further issues that need to be addressed.

- In order for this approach to work, CLPC will need to retain the avoided transmission charges as these will be needed to fund the purchase and any subsequent maintenance. Technically this would involve reducing CLPC's transmission connection charges and increasing its distribution wheeling rates. However, if the purchase cost has been correctly set there should be no net impact on the total cost of electricity to customers. Nevertheless, under the unbundled rate structure it will be necessary for ERC to authorise the increase in the distribution wheeling rate. If this cannot be done as part of the ERC's approval of the sale and purchase contract, it may be necessary to adjust the X factor in accordance with clause 12.4 of the RDWR.

- We see this adjustment to be an interim step that would adjust the MAP applying to CLPC's current customers for the remainder of the regulatory period during which the assets were purchased. At the reset for the following regulatory period, the value of the purchased assets would be rolled into the RAB and costs associated with refurbishing, operating and maintaining the assets would be included in the expenditure forecast. At that time revised subtransmission charges to MAGELCO would also be determined.

On the basis of the above considerations we recommend that no provision for the purchase of TransCo subtransmission assets be included in the allowed capex.

2.5.3 Building Additions and Replacements

CLPC is proposing to construct three new buildings during the second regulatory period in its Sinsuat compound as shown in Table 2.3.

Table 2.3: Proposed New Buildings

Description	No Storeys	Floor Area (m^2)	Completion (RY)	Cost (PhP million real 2008)
Warehouse	1	400	2011	2.35
T & D Building	2	600	2010	8.32
Administration Building	3	1581	2013	31.33
Total				**42.00**

CLPC further proposes that the expenditure be staggered across the regulatory period in accordance with Table 2.4. It argued that the new administration building would be occupied in stages and the staggered costs would therefore meet the RDWR criteria for capitalization into the RAB.

Table 2.4: Timing of Expenditure on Building Additions and Replacements (PhP million, real 2008)

	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Transmission and Distribution Building		8.23			
Warehouse			2.35		
Administration Building			9.31	9.31	12.70
Total		**8.23**	**11.66**	**9.31**	**12.70**

The administration building will be utilized by CLPC's customer services and administration departments, while the transmission and distribution building will house engineering staff. The warehouse will be utilized by the materials management department, which handles CLPC's inventory.

In its revenue application CLPC stated that these new buildings were needed because of the overcrowding of its existing facilities and supported this with photographs. It also subsequently noted that the existing administration building is constructed mainly from wood and is thus a potential fire hazard. Activities during the All Saints' Day and All Souls' Day festivities and the proximity of fuel tanks for the power plant heighten the risk.

Comments

- On the evidence provided we acknowledge that CLPC warehouse space is insufficient to meet its requirements and also that the public space available for customer service operations is inadequate. We also acknowledge that the available office space is crowded, in some areas at least. These problems are likely to result in less efficient operations, which are detrimental to customers, staff and the company. However during the asset valuations, we visited the CLPC offices and considered the space allocated to the social / meeting room to be generous. This suggests that there is scope for a more efficient allocation of space in the existing administration building.

- The construction of new building and depot facilities is discretionary in that its impact on the quality of supply provided to customers is indirect. CLPC acknowledged this during the clarificatory meeting, when it stated that it was in the process of consulting with customers and would not proceed with its proposed building program unless it had customer support. CLPC subsequently stated that it had consulted with the Cotabato City Consumer's Association, which is not in opposition to the construction of the new buildings. Apparently the new buildings are in fact welcomed by the group as they will provide more room for consumers when they visit the CLPC compound to pay their bills and consult with the CLPC staff on other matters. However there is no evidence that during these consultations CLPC discussed the likely costs of the new building and, more particularly, the impact of these costs on the price of electricity to consumers.

- In its final submission CLPC projected that 60-70 staff would occupy the new transmission and distribution building and 30 staff would occupy the administration building. This is excessive when compared to the total 57 staff (excluding power plant staff) that CLPC indicated in its submission on opex expenditure that it would require over the second regulatory period. Furthermore these 57 staff include field staff who would not normally be allocated permanent office space.

- In New Zealand the standard for mid-scale office accommodation is about 15.5 m^2 per person. This includes all space requirements (not just each person's personal work area) except stairs, bathrooms and other public service areas. If space is currently required for 40 staff, this indicates a total space requirement of

around 800 m^2, assuming a requirement of 30% for service areas. The transmission and distribution building, and one floor of the proposed administration building would more than accommodate this requirement, indicating that one of the proposed three storeys of the administration building is not required[10].

- We have benchmarked CLPC's building costs with those submitted by CEPALCO in its revenue application and consider them reasonable.

- Notwithstanding the wish by CLPC's customers for more space to be allocated to customer services, we think there is a need for utilities providing monopoly services to be sensitive to the economic circumstances of their customers and for the ERC to take these into account in making regulatory pricing decisions. Cotabato is an economically deprived city with few new buildings (apart from the aid-funded new city hall). In these circumstances it may not be appropriate for CLPC to be operating out of brand new buildings, when its customers have no real choice but to pay for them. Balanced against this, however, is the need for sufficient space to be provided to support CLPC's efficient operation.

- We note CLPC's comment about the current administration building being a fire hazard. However, given that the building has existed for some considerable time, and that there are a number of other wooden buildings within the compound, we do not think that this factor alone justifies its replacement. Indeed, CLPC has not suggested this.

Taking the above factors into account, we recommend that funding be allowed for the construction of the new warehouse and also the transmission and distribution building, but that construction of any new administration building be deferred until after the end of the second regulatory period. The new transmission and distribution building will relieve the pressure on the existing administration building and allow more space to be allocated to accommodate customers using the public office. We further recommend that the provision for the cost of the warehouse be deferred by one year to allow a more achievable building program.

We note that construction of the Malagapas substation will meet CLPC's power transformer requirements for some years and that there is no indication of a need for significant major project expenditure on the distribution network during the third regulatory period. Should it be confirmed that a new administration building is required, CLPC will be in a much better position to fund it after RY 2013.

Our recommended capex for new administration and warehouse buildings within the CLPC compound is shown in Table 2.5.

Table 2.5: Recommended Capex for Proposed New Buildings (PhP million, real 2008)

	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
CLPC Forecast		8.23	11.66	9.31	12,70
Recommended capex		8.23		2.35	
Recommended Adjustment			(11.66)	(6.96)	(12.70)

[10] The ground floor of the administration building is allocated to car parking and customer service space, which is additional to the space considered in this analysis.

2.5.4 Generation

CLPC has classified forecast expenditure on parts for its generation plant as major project expenditure. Historic and forecast expenditure is shown in Table 2.6.

Table 2.6: Historic and Forecast Capex on Generation Plant (PhP million, real 2008)

CY 2004	CY 2005	CY 2006	CY 2007	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
0.33	0.01	0.22	16.17	1.43	0.72	3.07	4.97	3.73

CLPC has indicated that all generation equipment capex is for parts. CLPC's in-house generation maintenance staff are capable of undertaking major refurbishment work on the generators and their costs are charged to opex.

CLPC's generation plant, while rated for continuous operation as a primary generator, is now operated in a standby role. In the recent asset valuation, PB Associates optimised the replacement cost to that of standby rated plant and also valued the asset as being close to the end of its standard asset life. By RY 2012 the generation plant will have less than five years of its standard economic life remaining and CLPC will earn a return only on the residual asset value. Hence the standing cost to CLPC customers for having the plant available is not considered excessive.

CLPC considers that the plant is well maintained and in good condition for its age. It believes that it is worthwhile to keep it operational as standby generation given that supply from the transmission grid can be lost, particularly as a result of sabotage. The ERC has implicitly concurred with this by allowing the generation to be included in the RAB.

It can be seen from Table 2.6 that CLPC incurred significant expenditure on parts in CY 2007. We understand that these parts were required for refurbishment of the three larger Mirrlees engines. While the forecast average annual expenditure over the period RY 2009-13 is lower than the average annual expenditure over the period CY 2004-07, this is only due the very high expenditure incurred in CY 2007. Average annual expenditure is significantly higher than the annual expenditure incurred over the period CY 2004-06.

CLPC advises that the forecast capex is required for (i) turbocharger modifications and reconditioning; (ii) purchase of spare connecting rods, cylinder heads and liners and (iii) refurbishment of auxiliary equipment such as fuel tanks, steam heaters and the atmospheric cooling towers. It is not possible for us to give a firm opinion on the extent that the forecast expenditure is actually required without undertaking a detailed on-site condition assessment of the plant. This is outside the scope of this review. We can however say that the forecast costs do not seem unreasonable given the replacement cost of new plant. We also note that some of the expenditure is required for outdoor auxiliary plant, which is likely to deteriorate faster than indoor plant and which may not have been as well maintained in the past. We therefore recommend that CLPC's forecast capex for generation plant parts be allowed in full.

2.5.5 Other Major Projects

Other major one-off projects included in CLPC's major project expenditure forecast are shown and commented on in Table 2.7.

Table 2.7: Other Projects in Major Project Forecast

Project	Cost (PhP million, real 2008)	Year	Comment
Substation 1 Battery and Charger Replacement	0.51	RY 2009	Substation 1 is one of the 2.4/13.8 kV generator step-up transformers in the CLPC compound. While the project sheet gives no information on the existing asset, the asset valuation schedule stated that the battery was 120 V and that both battery and charger were installed in 1967. The battery was described as a bank of 10 12 V automotive batteries, which are unlikely to last 30 years. However we accept that the charger may be original. We accept the need for the replacement. The total forecast cost, which includes materials only, is comparable with the costs used in the asset valuation and we therefore recommend that the capex be allowed in full.
Sinsuat Substation Disconnector and Protection Replacement	2.62	RY 2009	This project involves the replacement of 24 single phase disconnectors, the transformer protection and the protection on all four feeders at Sinsuat substation. The replaced assets were installed in 1984, which means that they are being replaced about 5 years earlier than we would normally expect. However many factors impact asset condition and the life of specific assets cannot be predicted with certainty. Replacement after 25 years is therefore within the expected timeframe. CLPC's forecast cost is 7% higher than our estimate, which is based on the costs used for the asset valuation. This is within the expected range and we recommend that the full forecast capex be allowed.
Salimbao Substation 69 kV Installation	9.87	RY 2009	At present the two transformers at Salimbao substation are each protected by 69 kV fuse switches. The project involves the installation of a 69 kV incoming circuit breaker, associated switchgear and miscellaneous ancillary equipment as well as the installation of new transformer and feeder protection. We agree that, from a technical viewpoint, the installation of the new assets is reasonable. We note that CLPC's estimate includes the cost of 15 kV disconnectors, a cost that is also included in the VCB and disconnector replacement project below. We therefore recommend that the project cost be reduced by PhP 0.78 million to avoid this double counting. Once this adjustment has been made, the CLPC forecast cost is 4% higher than our estimate based on the standard costs used in the asset valuation. This is within the expected range and we recommend that an adjusted cost of **PhP 9.09 million** be allowed.
Salimbao Substation Structure Rehabilitation, VCB and Disconnector Replacement	5.80	RY 2010	This project involves the installation of two new 13.8 kV circuit breakers at Salimbao substation and the installation of replacement disconnectors in the 13.8 kV switchyard. We accept the need for the new circuit breakers as the existing circuit breakers are of an obsolete design. We note however that the procurement costs in the cost estimate are higher than the costs for similar equipment in earlier projects. For example the unit costs for 15 kV, 1200 A disconnectors are PhP 31.28 thousand for this project, compared to only PhP 25.54 thousand for the earlier Sinsuat project. This indicates that a nominal project cost has been used whereas a real 2008 cost is required. We recommend that an adjusted total of **PhP 4.91 million** be allowed, based on our estimate of the real 2008 cost of the work required.

Saludes Substation Gang Operated ABS Replacement	0.43	RY2010	While CLPC has provided no information on this project, we think it relates to the replacement of a three phase gang operated 69 kV air break switch (ABS). As CLPC does not appear to own a Saludes substation we suspect this capex may relate to the replacement of an air break switch that CLPC is planning to buy from TransCo. If this is the case, the work is contingent on the purchase of the TransCo assets proceeding. We recommend that the capex for this project **not** be allowed. However this recommendation may be reviewed after the draft decision should CLPC provide satisfactory information on the need for and the scope of the project.
Sinsuat Substation Circuit Breaker Replacements	5.12	RY2012	This project involves the replacement of the 69 kV circuit breaker and two 13.8 kV circuit breakers. While CLPC has not provided any justification for this project the single line diagram shows that the 69 kV circuit breaker was manufactured in 1957 and that the two 13.8 kV circuit breakers have oil immersed interrupters. We therefore accept the replacements as prudent, since oil immersed switchgear is now an obsolete design. We note that the procurement costs used in the cost estimate are marginally higher than that used by CLPC in other projects indicating that the project costs may be nominal rather than real. We therefore recommend that the allowed project cost be adjusted to **PhP 4.87 million**, which is our estimate of the cost in real 2008 PhP.

2.6 REVIEW OF RESIDUAL CAPITAL EXPENDITURE

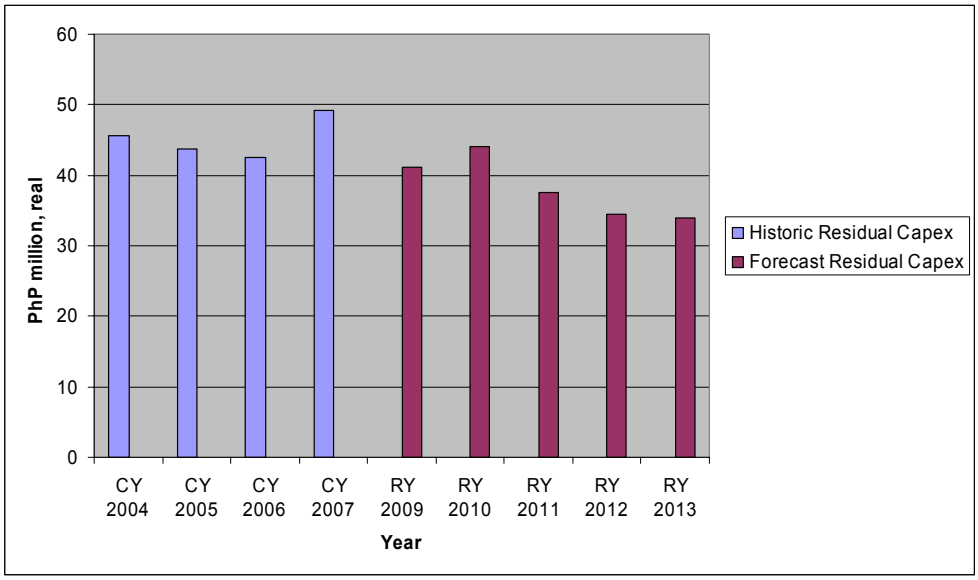
As indicated in Section 2.4, we have used the historic capex breakdown submitted following our initial review of the revenue application as the baseline residual capex expenditure for this review. However the residual capex submitted following the clarificatory meetings is taken to be CLPC's final residual capex forecast for this review[11]. As shown in Figure 2.5, this indicates a declining residual capex over time. We have therefore focused this review on those line items in the template where the forecast capex is substantially higher than the historic expenditure. We think that this approach is reasonable and also fair to CLPC, given that the historic expenditure is likely to include the costs of some significant one-off projects, which would have been recorded as major projects had they been planned over the forecast period. Indeed, we suspect that this may be the reason for the declining trend in residual expenditure as seen from Figure 2.5.

We therefore compared the average residual expenditure over the period CY 2004-07 with the corresponding average expenditure over the period RY 2009-13 for each line item on the ERC's capex template. In most cases there was a decrease but substantial increases were noted for metering instrument and metering transformers (57%), information systems equipment (171%) and transportation equipment (257%)[12]. These line items are discussed in more detail in the following sections.

[11] As noted in Section 2.4, CLPC's first forecast capex template could not be used because this showed major project expenditure to be substantially lower than the aggregate expenditure in the major project descriptions.

[12] Forecast average residual on conductor increased by 52% over historic levels. However this expenditure was offset by a 24% decline in the average expenditure on poles. Overall average forecast expenditure on lines was 11% lower than historic expenditure so the conductor line item was not investigated further.

Figure 2.5: Historic and Forecast Residual Capex (PhP million, real 2008)



Note: Historic Residual Capex obtained from pre-clarificatory meeting submission and Forecast Residual Capex obtained from post-clarificatory meeting submission.

2.6.1 Meters, Instruments and Metering Transformers

The 57% increase in expenditure on this line item is required to allow CLPC meet the biannual residential meter test requirement of the Anti-pilferage Act and the Magna Carta. CLPC advised that the expenditure was required to increase meter inventories by 15% to allow the extra meter testing to take place in the laboratory rather than on site. It considered this a more efficient way of undertaking the testing.

However during the first entry point expenditure review the ERC advised that the meter test requirement was under review and as a consequence no provisions for meeting these requirements were included in the allowed capex or opex. This position is well documented in the first entry point expenditure review reports and we understand that the ERC position on this matter has not changed.

We therefore recommend that the provision to meet the biannual residential meter test requirement not be included in the forecast capex. The required adjustment, based on the costs advised by CLPC in its final submission, is shown in Table 2.8. In its submission, CLPC did not provide any cost for RY 2009 but advised a cost of PhP 7.04 million for RY 2010. As the RY 2010 cost is greater than the total forecast for that year, we have spread this adjustment across RY 2009-10.

Table 2.8: Recommended Adjustment to Meters, Instruments and Metering Transformers Forecast Capex (PhP million, real 2008)

	CY 2004	CY 2005	CY 2006	CY 2007	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Actual and Forecast Capex	2.34	5.48	6.06	3.29	8.85	6.18	6.98	7.02	7.05
Recommended Adjustment					(3.52)	(3.52)	(4.35)	(4.34)	(4.35)
Recommended Forecast					5.33	2.66	2.63	2.68	2.70

2.6.2 Information System Equipment

Average forecast annual capex on information system equipment is forecast to increase to PhP 3.14 million over the period RY 2009-13 from PhP 1.16 million in CY 2004-07.

CLPC has provided a breakdown of the forecast capex. While some expenditure relates to replacement computers and additional software, we are primarily concerned about expenditure on systems software that we would expect CLPC to share with other Aboitiz distribution utilities, specifically the SynerGEE network analysis software and the billing, collection, and customer cares systems upgrades. We also note there is provision for data center / server upgrades for IT systems located in Davao.

Section 11.4 of the Position Paper discusses related party transactions and notes that a higher level of justification is required for these transactions than for transactions with external parties. We specifically asked CLCP for more details on its related party information system expenditure but information to the level of detail indicated by the Position Paper was not supplied.

Our concerns include:

- whether some of the expenditure such as software maintenance fees should be classed as opex;
- whether the expenditure should be covered by the management fee paid to Aboitiz Power Corporation;
- the variability in the maintenance fees for the SynerGEE software package. This is PhP 1.08 million in RY 2010, PhP 0.29 million in RY 2011 and PhP 0.95 million in RY 2013.

On the information provided, we are unable to recommend that the increase sought by CLPC be allowed. We therefore recommend that expenditure over the period RY 2009-13 be maintained at the average level of historic capex (in real PhP) over the period CY 2004-07. This adjustment is shown in Table 2.9.

Table 2.9: Recommended Adjustment to Information Systems Equipment Forecast Capex (PhP million, real 2008)

	CY 2004	CY 2005	CY 2006	CY 2007	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Actual and Forecast Capex	1.92	1.86	0.64	0.22	1.25	4.78	3.64	3.68	4.32
Recommended Adjustment						(3.62)	(2.48)	(2.52)	(3.16)
Recommended Forecast						1.16	1.16	1.16	1.16

2.6.3 Transportation Equipment

The increase in the forecast cost for transportation equipment is due to the purchase of a boom truck in RY 2009 at a cost of PhP 5.19 million and an insulated bucket truck in RY 2010 at a cost of PhP 5.20 million. CLPC has indicated that it currently does not own this type of plant.

We consider that ownership of this equipment by CLPC is reasonable and therefore do not recommend any change to the forecast capex for transportation equipment.

2.7 SUMMARY OF RECOMMENDED CAPITAL EXPENDITURE

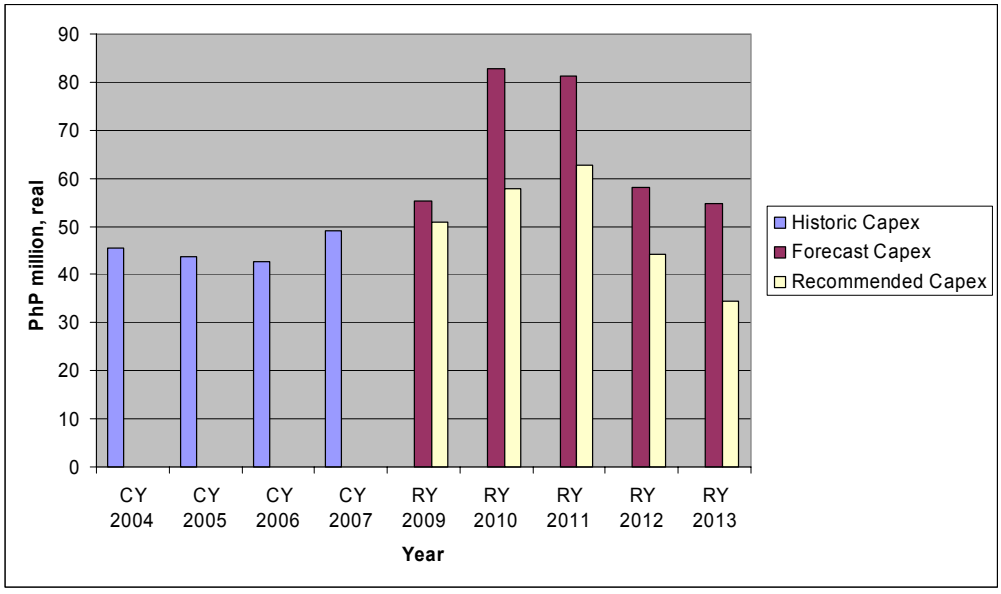
On the basis of the analysis above we recommend the capex shown in Table 2.10 be allowed for the period RY 2009-13.

Table 2.10: Summary of Recommended Capex (PhP Million, real 2008)

	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Major Projects					
Forecast capex	14.13	38.89	43.77	23.73	20.81
Adjustments					
Deletion of 69 kV line purchase		(16.57)			
Deletion of administration building			(9.31)	(9.31)	(12.70)
Rescheduling of warehouse			(2.35)	2.35	
Adjustment to Salimbao 69 kV cost	(0.78)				
Adjustment to Salimbao 13.8 kV cost		(0.89)			
Deletion of Saludes GO ABS		(0.43)			
Adjustment to Sinsuat CB Replacement Cost				(0.25)	
Recommended Major Project Capex	**13.35**	**21.00**	**32.11**	**16.52**	**8.11**
Residual Capex					
Forecast Capex	41.12	43.99	37.56	34.50	33.92
Adjustments					
Deletion of biannual meter testing	(3.52)	(3.52)	(4.35)	(4.34)	(4.35)
Reduction of information systems capex		(3.62)	(2.48)	(2.52)	(3.16)
Recommended Residual Capex	**37.60**	**36.85**	**30.73**	**27.64**	**26.41**
TOTAL FORECAST CAPEX	**55.25**	**82.88**	**81.33**	**58.23**	**54.73**
TOTAL RECOMMENDED CAPEX	**50.95**	**57.85**	**62.84**	**44.16**	**34.52**
Total Recommended Adjustment	(4.30)	(25.03)	(18.49)	(14.07)	(20.21)
Impact of Recommended Adjustment	(1.5%)	(23.6%)	(15.7%)	(14.0%)	(26.9%)

The impact of these adjustments is shown graphically in Figure 2.6 below.

Figure 2.6: Recommended Capex RY 2009-13 (PhP million, real 2008)



3. OPERATIONS AND MAINTENANCE EXPENDITURE

3.1 CLPC'S HISTORICAL OPERATIONAL EXPENDITURE

CLPC's historical total opex in nominal Philippine PhP is shown in Table 3.1.

Table 3.1: Historical Total Opex (PhP million, nominal)

Operational Expenditure Category	CY 2004	CY 2005	CY 2006	CY 2007
Distribution and Connection Services Operation and Maintenance	14.98	17.91	21.30	21.99
Regulated Retail Services	10.59	13.30	13.75	15.10
Administrative and General	40.30	36.83	40.61	40.27
Total Operational & Maintenance Expenditure	**65.87**	**68.04**	**75.66**	**77.36**

Source: CLPC Additional Information Submission, July 2008

Since the actual expenditures reported by CLPC and shown in Table 3.1 are expressed in nominal PhP, it includes the impact of inflation. A better assessment of the relative expenditure from year to year can be obtained if historic expenditures are expressed in real 2008 PhP, using historical inflation indicators. Table 3.2 shows historical operational expenditure in real 2008 PhP.

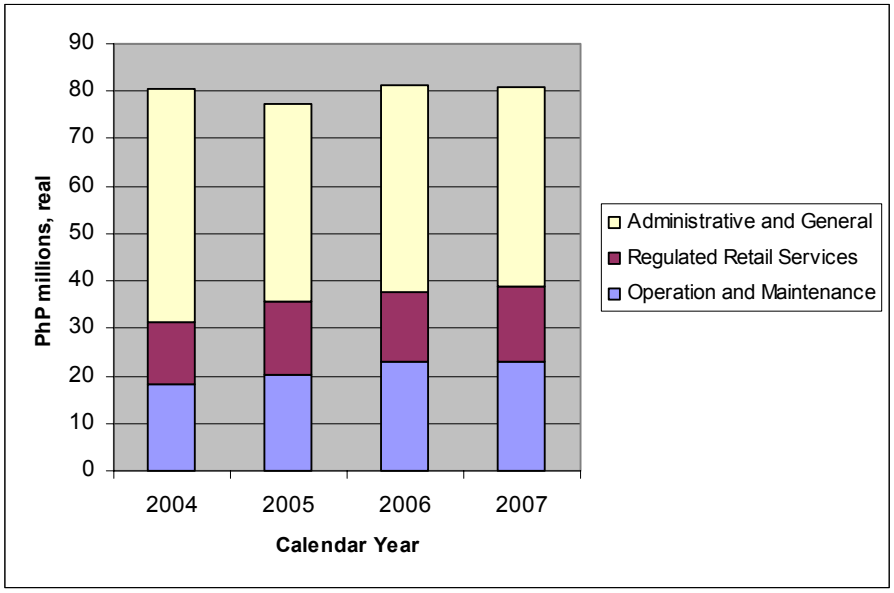
Table 3.2: Historical Total Opex (PhP million, real 2008)

Operational Expenditure Category	CY 2004	CY 2005	CY 2006	CY 2007
Distribution and Connection Services Operation and Maintenance	18.33	20.40	22.87	22.98
Regulated Retail Services	12.96	15.15	14.77	15.78
Administrative and General	49.31	41.95	43.61	42.07
Total Operational & Maintenance Expenditure	**80.60**	**77.51**	**81.25**	**80.83**

Source: CLPC Additional Information Submission, July 2008

This historical opex, expressed in real 2008 PhP, is shown graphically in Figure 3.1.

Figure 3.1: Historical Total Opex (PhP million, real 2008)



Source: PB Associates

Table 3.2 and Figure 3.1 indicate that historic opex remained relatively constant in real terms over the period CY 2004-07.

3.2 CLPC'S FORECASTING METHODOLOGY

Our review of the information submitted indicated that CLPC used its actual opex for CY 2007 as the base year for computing the opex budget for CY 2008 and forecast opex for the RY 2009-13. It appears as if the budget and forecast expenditures for each cost category were correlated with business activities, energy consumption forecasts, load growth and customer numbers. However CLPC's revenue application did not include an explanation of the correlation process nor did it provide any details of the model used to forecast each cost category.

3.2.1 CLPC's Forecast Opex

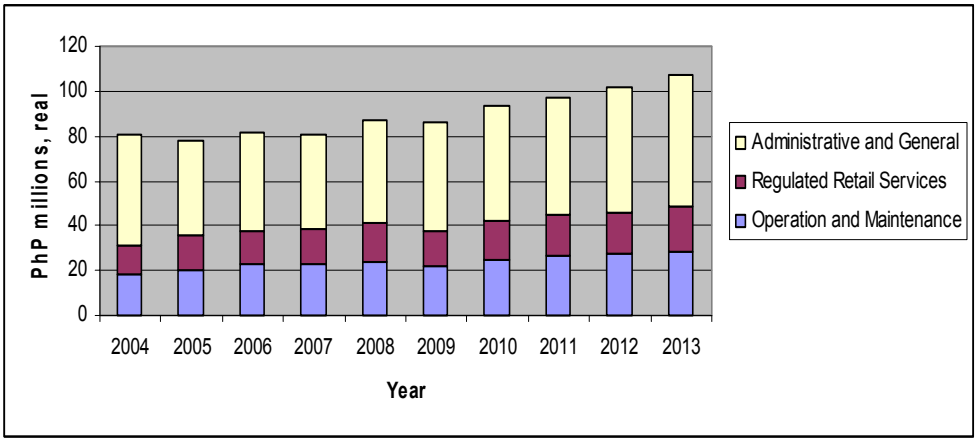
Expenditures for CY 2008 and opex forecasts for RY 2009-13, as included in CLPC's revenue application, are shown in the Table 3.3 in real 2008 PhP. These results are also shown graphically in Figure 3.2. It should be noted that there is a nine month overlap between CY 2008 and RY 2009 so the expenditure in these two columns also overlaps.

Table 3.3: Forecast Total Opex (Real PhP million, 2008)

Operational Expenditure Category	CY 2008[1]	RY 2009[2]	RY 2010	RY 2011	RY 2012	RY 2013
Distribution and Connection Services Operation and Maintenance	23.88	22.34	24.69	26.29	27.05	28.32
Regulated Retail Services	17.23	15.26	17.75	18.37	19.17	19.90
Administrative and General	45.63	48.36	50.71	52.72	55.65	58.86
Total Operational & Maintenance Expenditure	**86.74**	**85.96**	**93.15**	**97.39**	**101.87**	**107.07**

Source: CLPC Application May, 2008
Note 1: The information is budgeted figures and for CY 2008.
Note 2: The information is forecasted for RY 2009-13.

Figure 3.2: Total Opex (PhP million, real 2008)



Source: CLPC Application May, 2008

3.3 REVIEW METHODOLOGY AND ASSUMPTIONS

Table 3.3 and Figure 3.2 show that, while CLPC's historic opex remained relatively constant in real terms, its forecast opex increases significantly, particularly over the second regulatory period, RY 2010-13. The average annual forecast opex for the second regulatory period is PhP 99.9 million, compared to an average annual expenditure of PhP 80.0 million over the four year historical period. As noted above, CLPC provided little information on the methodology that it used to forecast future opex and it is therefore not possible for us to meaningfully review the reasonableness of these increases.

Hence in order to assess the reasonableness of the CLPC opex forecasts we have used PB Associates' opex forecasting model to derive what we consider a realistic level of opex for each year in the forecast period. The forecasts calculated from PB Associates' model were then compared with the expenditure forecast provided by CLPC in its revenue application.

PB Associates' opex forecasting model forecasts by escalating the base year values of opex in different broad cost categories to reflect forecast changes in key cost drivers. For example the key cost driver for changes in opex for the operation and maintenance of distribution system network assets is the change in the size of the asset base, which is closely aligned to proposed capex. Similarly the key cost driver for changes in the opex for regulated retail services expenditures is the change in customer numbers[13].

The opex in the base year is used as the starting point for the extrapolation. However, this base year has first to be tested for cost efficiency and any one-off or non-business-as-usual expenditures in the base year have to be removed prior to modelling, since such expenditures would not be incurred over the forecast period. Furthermore, additional expenditures, or expenditures on new initiatives that are not included in the base year forecast, need to be reviewed and modelled independently. Such expenditures are then added to the base opex derived from PB Associates' model to determine the total forecast annual expenditure.

Hence the overall process we used to assess CLPC's efficient and prudent annual opex forecasts included the following steps:

[13] In our extrapolation of base year opex we have modified the PB model so that the first forecast year following the base year CY 2007 is RY 2009. This means that there is no duplication of the costs shown in the model and the opex over the three month intervening period (1 January – 31 March 2008) is not shown. We have however adjusted the escalation factors that apply from CY 2007 to RY 2009 to reflect anticipated changes in the cost drivers over this three month period.

- Determine the base year opex for each cost category;
- Confirm that the base year opex is efficient;
- Identify cost drivers;
- Project the base year opex forward for each year of the regulatory period, taking into account projected changes in the cost drivers;
- Compare CLPC's base forecasts with our model forecasts to identify any adjustments to the base opex forecast;
- Assess each component of the additional expenditures individually, compare them to CLPC's forecast expenditures and develop recommended allowances; and
- Combine the recommended base opex forecast and our additional expenditure recommendations to obtain the total recommended annual opex forecast.

These steps are discussed in more detail in the following sections.

3.3.1 Determination of Efficient Base Year Opex

In order to assess the efficiency of the base year opex we took the following two approaches.

- We benchmarked the expenditure against the expenditure of other IOUs that are entering PBR at the first or second entry points.
- We reviewed the itemized CY 2007 expenditure to identify line items that appeared abnormally high or low. Identified line items were reviewed in more detail and adjusted as necessary to ensure that the line item represented an efficient use of funds and was consistent with expected recurring expenditure levels for that line item.

3.3.1.1 Benchmarking

Benchmarking provides an indication of the relative performance of different utilities and is often used internationally for this purpose, not only by regulators but by utilities themselves. As a performance assessment tool, benchmarking has limitations because each business is different and it is difficult to ensure that these differences are properly accounted for in making performance comparisons. It is also necessary to ensure that the indicators used for benchmarking are measured in a similar way by each utility. However, these measurement issues can be minimized by benchmarking at a high level. For example, for our benchmarking analysis we have used total opex as a performance indicator because the measure will not be affected by differences between businesses in the allocation of expenditures to different line items.

In spite of these limitations, benchmarking can provide a useful indication of the relative efficiency of different businesses, particularly where a business performs consistently well or poorly across a range of normalized indicators.

We have considered a range of possible benchmarks and, having regard to the availability of data, we have identified the following normalized benchmarks as being particularly appropriate for assessing the relative efficiency of the reported opex spend.

- *Ratio of total opex to kWh sold.* Total opex is one of the building blocks of PBR and the normalized indicator is a direct measure of one of the main components of the MAP.

- *Ratio of total opex to the optimized replacement cost (ORC) of the RAB.* This indicator is relevant because the size of the asset base is one of the key drivers of opex and ORC is the best measure of the size of the asset base.

- *Ratio of total number of customers to total employees.* This is a commonly used indicator of staff productivity and is one of the performance indicators used in MERALCO's annual report. Its main limitation is that the ratio may be influenced by the extent to which a utility outsources the construction and maintenance of distribution system assets. We have no information on the total staff numbers of any of the first entry point utilities but used MERALCO's ratio from its 2007 annual report.

- *Ratio of total number of customers to total number of administration employees.* We have used this ratio in order to mitigate problems arising from the use of the total staff indicator. The use of this indicator assumes that only special administrative projects are outsourced. We were unable to measure this ratio for any of the three first entry point utilities.

We also tried to develop a measure of average salary levels to use as a benchmark. However we were unable to develop a measure that seemed sufficiently robust to use as a reliable benchmark, possibly because of differences between the three IOUs in the manner in which staff related costs were identified and allocated to the different line items.

The benchmark data for the second entry point IOUs was taken from their revenue applications or from their asset valuation reports, while data for the first entry point utilities was taken from their final determinations for RY 2008, the first year of their second regulatory period. Hence the performance indicators of the first entry point IOUs can be considered to represent the ERC's view of an efficient level of operation at this time and thus form a reasonable baseline for assessing the relative efficiency of the second entry point IOUs

In developing measures to use for benchmarking the second entry point IOUs, we made the following adjustments to the RY 2007 total opex reported in their revenue applications.

- We adjusted out the RY 2007 opex related to the operation and maintenance of CLPC's generating station, since none of the other IOUs operate generation plant.

- We adjusted out the estimated component of total opex related to installation of capital assets. This adjustment was part of the expenditure review for both ILPI and MECO in order to ensure that forecast and historic expenditures were directly comparable and that there was no double counting. In the case of CLPC a similar adjustment was not necessary for the expenditure review as the cost allocation methodology used for both historic and forecast expenditure streams was similar[14]. However in order to ensure comparability of the CLPC opex with the adjusted opex of the other two second entry point IOUs it is necessary to adjust out CLPC's in-house capex related labor costs. As a first approximation this was assumed to be 50% of the average relative adjustment of ILPI and MECO[15]. This adjustment is only an approximation but we are satisfied that any inaccuracies were not material, in that they have not affected the indicative conclusions made from this benchmark analysis.

[14] For both historic and forecast expenditure streams, all in-house labor was charged to opex but all contracting costs were capitalized.

[15] The adjustment was limited to 50% as CLPC's outsourced labor costs are already capitalized.

- The value of CLPC's generation plant was not included in the ORC of the CLPC asset base.

- Staff used for the operation of CLPC's generation plant were not included in CLPC's total staff numbers.

The benchmarking data and the normalized benchmarks are shown in Table 3.4.

Table 3.4: Benchmark Data and Normalized Benchmarks.

	Second Entry Point (CY 2007)			First Entry Point (RY 2008)[1]		
	CLPC	**ILPI[2]**	**MECO**	**CEPALCO**	**DECORP**	**MERALCO**
Data						
Energy Sales (GWh)	117.5	175.7	238.2	686.3	219.4	26,242.5
Customers	27,966	44,357	58,551	109,672	83,224	4,416,999
ORC (PhP million)	682.06	791.71	918.50	2,966.51	1,347.78	155,257.93
Total Opex (PhP million)	71.91	108.67	57.95			
Adjustment (PhP million)	(2.90)	(6.74)	(5.76)			
Adjusted Opex (PhP million)	69.01	101.93	52.19	217.19	107.08	11,496.72
Total Staff	48	161	69			
Admin Staff	21	71	32			
Normalized Benchmarks						
Adjusted Opex / kWh	0.59	0.58	0.22	0.32	0.49	0.44
Adjusted Opex / ORC	0.10	0.13	0.06	0.07	0.08	0.07
Customers per employee	583	276	849			747
Customers per administration employee	1,332	625	1,830			

Note 1: The second regulatory period for the first entry point IOUs is from 1 July 2007-30 June 2008.
Note 2: Includes customers connected at 69 kV

Table 3.4 indicates that CLPC does not benchmark well against the first entry point utilities, particularly in the key benchmark of adjusted opex per kWh. However, based on the limited data available the employee utilization looks more reasonable. We have seen an old analysis of publicly available National Electrification Authority data (2002) that shows that the customers per employee of Philippine Electric Cooperatives ranged at the time from a high of 468 to a low of 98 with an average of 261. We would expect all IOU's to all be at the high end of this range given the acknowledged inefficiency of many electric cooperatives and CLPC benchmarks very well against this criteria.

The main reason for CLPC's good labor utilization but high opex appears to be its high use of outside services. The outside services employed line item for RY 2007 was PhP 16.63 million or 23% of the total adjusted opex. This includes a PhP 11.93 million management fee paid to its owner, Aboitiz Power Corporation (APC). We understand that the balance of this line item is largely payments to its sister companies, particularly Davao Light and Power, for the provision of support services. If the outside services employed line item was removed the opex per kWh would reduce to 0.45, which is more consistent with what the benchmarking would suggest to be an efficient operating level. While under clause 11.4 of the Position Paper, CLPC should have provided a much higher level of disclosure on the nature and cost of these related party transactions, we believe that the services provided, as described in the application, are necessary. Our concern is the magnitude of the management fee, which is discussed further in Section 3.3.1.2 below.

3.3.1.2 Review of Opex Line Items

As noted above, PB Associates' opex model is based on the assumption of business as usual in forecasting future opex and changes in future expenditure patterns need to be modelled independently. In addition any one-off or non-business-as-usual expenditures, as well as expenditures that are considered inefficient, that are included in the base year costs, need to be identified and backed out of the base year costs prior to modelling. Hence CLPC was requested to provide information with regards to any known changes in future expenditure patterns or any one-off expenditures included in the base year costs which did not represent business as usual expenditures.

Training Expenses

It is apparent that the base year expenditure of PhP 0.80 million for the training expenses line item is low compared to the average expenditure of PhP 1.32 million over the period RY 2004-06. Furthermore, CLPC's additional expenditures submission identified and justified an additional amount for training that averages PhP 1.1 million per year over the second regulatory period. Hence we have adjusted the training expenses line item for the base year to cater for this additional training expenditure requirement in our modelling. We have therefore increased the base year training expenditure from PhP 0.8 million to PhP 2 million for modelling future expenditures.

Rents

We note that historic expenditure in the rents line item varied significantly from year to year and hence we have used the average rental expenses for the CY 2004-07 as the base year value. The impact on the overall expenditure value in the base year is an increase of PhP 0.52 million.

Miscellaneous

In relation to miscellaneous expenditure under both distribution system operations and distribution system maintenance we note that the historic expenditure varied significantly from year to year. Hence, we have used the corresponding average miscellaneous expenses for the CY 2004-07 as the base year values. The impact on the overall expenditure value of the distribution system operations and distribution system maintenance miscellaneous expenses in the base year is a decrease of PhP 0.91 million and an increase of PhP 0.15 million respectively.

Management Contract

CLPC has a management contract in place with APC for the provision of management expertise and services. In return it pays APC for a management fee of 2% of its gross revenue. The management fee for year 2007 amounted to PhP 11.93 million, which represented 17% of its total adjusted non-generation opex. Services provided by APC that are charged to the management fee and not directly to CLPC include the following:

- legal and corporate secretary services;
- treasury;
- corporate finance;
- computer service;
- human resources development;
- internal audit;
- messengerial and liaison services;
- corporate support service group; and
- regulatory services

A comprehensive description of these services is provided in the revenue application but no attempt was made to quantify the value of these services. In response to a

clarificatory question asking CLPC to provide a breakdown of how this management fee is used CLPC stated:

> *Since earlier regulations of CLPC's power rates, this matter on the management fees has been allowed as allowable part of the revenue requirements. The details on how this operates have been fully disclosed in the original application filing.*

In principle, we have no concerns about a process whereby CLPC's parent company provides management support and where the support is paid for by a management fee. However, the management fee must reflect the fair value of the services provided. If the management fee is excessive, the amount of the fee over and above the value of services provided is effectively a profit distribution, and should be funded from the profit provided for in the PBR rate setting mechanism rather than funded by customers as an additional operating expense.

A management fee amounting to 17% of the total opex of the business seems excessive. If this is the case, then the high management fee could be one explanation for the benchmarking outcome that indicates a relatively high opex in spite of an apparent efficient use of employee labor. The problem that arises is how to place a fair value on the services provided. This is complicated by the fact that the services are generally provided in an ad-hoc manner and very often will be shared with other APC companies, which in turn creates synergies that we consider should be passed through to customers.

Section 11.4 of the Position Paper addresses the issue of related party transactions and specifies the level of detail that must be provided in a revenue application to support the claimed costs. CLPC has not met the requirements of the Position Paper in respect of this transaction or, indeed, in respect of the amounts paid to sister companies such as Davao Light and Power for other services provided.

We have therefore reduced the proportion of the management fee to be recovered from the allowed opex to our assessment of the value of the service provided, which we have determined using the analysis shown in Table 3.5. On this basis we have reduced the management fee component of the opex to PhP 3.15 million. This adjustment alone had reduced the key adjusted opex per kWh indicator from 0.59, as shown in Table 3.4, to a more acceptable level of 0.51.

Table 3.5: Breakdown of the Management Fee

Service	No of Management Employees	No of Rank and File employees	Percentage Time Utilized by CLPC	Rate per Employee per Year[1] (PhP million)	Management Fee Component (PhP million)
Board & Key Officers	12		10%	1.00	1.20
Legal, Treasury Finance	1		20%	1.00	0.20
		1	100%	0.50	0.50
Human Resources		1	30%	0.50	0.15
Computer Services		1	50%	0.50	0.25
Internal Audit		1	20%	0.50	0.10
Messengerial		1	100%	0.50	0.50
Corporate Support		1	10%	0.50	0.05
Regulatory Services	1		20%	1.00	0.20
Total					**3.15**

Note 1: Assuming 100% Utilization

The effect of this adjustment is to apportion the management fee between the opex and profit components of the regulated rate. It should not necessarily be read as being critical of the management contract, which as indicated in the revenue application has been in place for a number of years.

Metering

CLPC has indicated the increase in expenditure from CY 2004 to CY 2007 in the planning, installation & maintenance of consumer meters line item was due to the implementation of Magna Carta provisions. However as noted in Section 2.6.1, the Magna Carta provisions in respect of meter testing are under review and no provisions are to be made in the forecast for the full implementation of the Magna Carta meter test requirements. We have therefore based our forecast on the current CY 2007 base metering expenditure, which should allow testing to continue at its present level over the forecast period.

However additional expenditure to provide for further implementation of the Magna Carta meter testing provisions has not been allowed. To this end, a reduction has been made to the proposed capex for meter related asset purchases as described in Section 2.6.1. A corresponding reduction in opex is not required as these additional costs were not allowed for in our opex modelling.

Generation

CLPC has advised that its generation related opex for CY 2007 is PhP 8.89 million. This has not been included in the base year opex but treated as an additional expenditure, as discussed in Section 3.3.3.

The impact of the aforementioned adjustments on the base year opex used in our model is shown in Table 3.6.

Table 3.6: 2007 Opex Adjustments (PhP million, real 2008)

	CY 2007
Total RY 2007 opex (Table 3.2)	**80.8**
Adjustments	
Training Expenses	1.2
Rent	0.5
Operation Miscellaneous	(0.9)
Maintenance Miscellaneous	0.2
Management Contract	(8.8)
Generation	(8.9)
Revised RY 2007 base opex	**64.1**

These expenditures have been allocated against the major opex categories for modelling purposes as shown in Table 3.7.

Table 3.7: Base 2007 Opex (PhP million, real 2008)

Operational Expenditure Category	CY 2007
Distribution System Operation	10.5
Distribution System Maintenance	4.9
Administrative and General	32.9
Regulated Retail Services	15.8
Total Operational & Maintenance Expenditure	**64.1**

Source: PB Associates based on CLPC data

We consider that our recommended level of base year opex to be satisfactory and sustainable for the existing size of the network. This view is based on the fact that the network's performance is acceptable and not exhibiting excessive deterioration. Naturally, going forward, opex will have to be adjusted to compensate for the increasing size of the asset base being maintained and operated and the increasing number of customers being supplied.

3.3.2 Identification of Cost Drivers and Impact of Efficiency Initiatives

We have used the following cost drivers in our opex model:

- *Size of the Asset Base*

  We have used the undepreciated ORC value of the RAB as a surrogate for asset size, but have modified the RAB going forward to compensate for the impact of refurbishment and renewal capex on future opex. We consider that renewal and refurbishment capex replaces existing assets at or near the end of their service lives and therefore reduces the opex required to maintain these assets.

  We also believe that the commissioning of new assets results in lower forecast opex as these new assets generally require minimal condition based maintenance during the regulatory period in which they are commissioned. Our experience is that the savings in forecast opex resulting from the commissioning of new assets or the replacement of aged assets averages 20% and this efficiency factor has been incorporated into PB Associates' opex forecasting model.

  In addition numerous studies carried out by PB Associates, including in the Philippines, indicate that on average the variable component of the administrative & general expenditure is 10%. Only this variable component of administrative and general expenditures has been escalated in PB Associates' opex model.

  In determining the RAB for each year of the forecast period we took into account the recommended reductions in capex described in Section 2.7.

- *Customer Numbers*

  We have modelled the impact of increasing customer numbers on the regulated retail services opex as there is a well accepted correlation between regulated retail service expenditures and customer numbers.

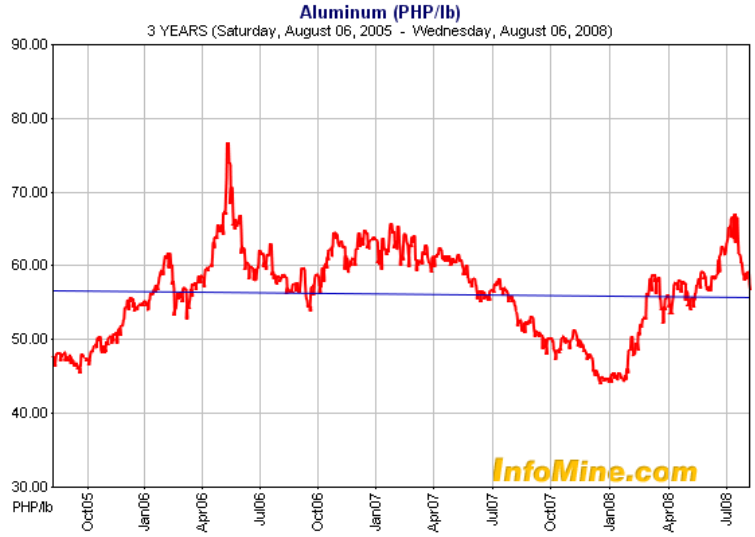
  In our model we made no changes to the customer numbers forecast by CLPC.

- *Material Prices*

  PB Associates' opex model allows real growth inflators to be input for both material and labor costs.

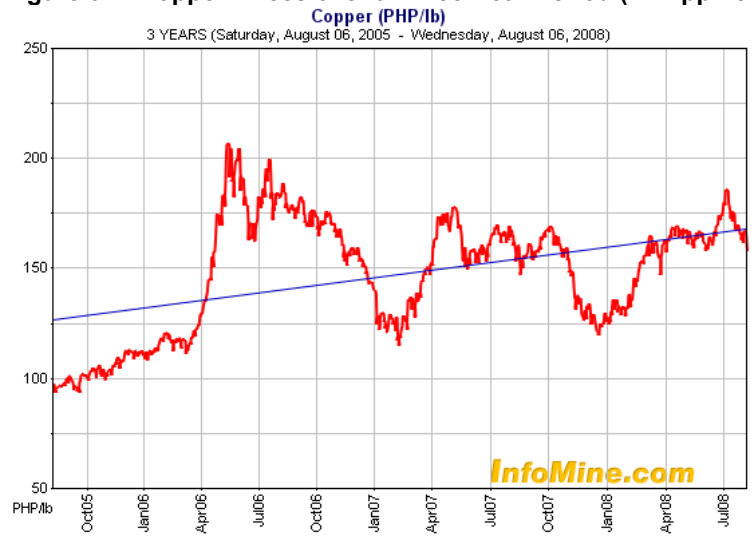
By looking at Figures 3.3 and 3.4, it is clear that copper and aluminium prices have not changed significantly over the past three years. Other major cost drivers that may influence material cost include exchange rates as well as the market conditions for electrical equipment. It is difficult to predict how the exchange rate changes and market conditions for electrical equipment will influence material costs and therefore we assumed that these factors will remain relatively constant over the regulatory period. Hence we have assumed that equipment costs will remain constant in real terms. This means that nominal material costs will increase over the regulatory period in line with forecast CPI.

Figure 3.3: Aluminium Prices over a Three-Year Period (Philippine Peso/Pound)



Source: www.infomine.com

Figure 3.4: Copper Prices over a Three-Year Period (Philippine Peso/Pound)



Source: www.infomine.com

The model further assumes that material costs comprise 25% of total costs for office based functions such as administrative and general, 20% for operations and 30% for maintenance.

- *Labor Costs*

  Labor costs form a significant proportion of operating and maintenance costs and hence our model allows this variable to be altered to reflect any expected real change in labor costs. It is recognised that it is always difficult to select an appropriate real escalator for future labor rates and our modelling was carried out with the real labor escalator set to zero. This allows labor costs to increase at the rate of inflation.

  We believe this to be a reasonable assumption since labor costs are a major driver of inflation and economic theory indicates that increases above the rate of inflation cannot be sustained over time, unless there are real increases in productivity throughout the economy. No evidence has been provided that labor costs for electricity distribution workers will, on average, escalate at a rate that is materially different from labor costs in other sectors of the economy.

  We note also that labor costs form a significant component of the distribution wheeling rate and all utilities must carefully manage their labor costs if electricity prices are to be contained. Utilities have more control over the cost of labor than over the cost of materials and for this reason regulators are generally very reluctant to allow prices that reflect real increases in labor costs, unless there is a compelling reason to do so. We would point out that controlling labor costs is not simply a matter of limiting wage rates. Other tools that are potentially available include reducing staff numbers, increasing the level of outsourcing and multi-tasking.

3.3.3 Additional Opex

Additional opex is expenditure above and beyond expenses incurred in a business-as-usual environment or expenditure on new initiatives where costs were not incurred in the base year and hence have not been allowed for in our modelling. As noted above, generation expenses fall into this category as they are not generally a normal business activity of a distribution business.

CLPC proposed an overall increase of more than 20% for generation opex over the second regulatory period due to salary increases expected over that time. We do not foresee any increase in salaries and wages in real terms, as discussed in Section 3.3.2. Hence, we have assumed that the base year expenses for generation will not change in real terms over the regulatory period.

The additional operational expenditure that relates to the generation assets used in our model is shown in Table 3.8.

Table 3.8: Additional Expenditure – Generation (PhP million, real 2008)

	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Generation Related Expenses	8.89	8.89	8.89	8.89	8.89

Source: PB Associates based on CLPC data

CLCP has also identified additional expenditure for enhancements to computer systems in order to improve customer service. These enhancements include new billing and collection and a new accounting system. It is estimated that the total expenditure for these enhancements will be PhP 3.25 million over the regulatory period. However, for the same reasons as identified in section 2.6.2, we did not include these expenditures as additional expenditure in the opex model.

3.3.4 Implementation of DSOAR

Prior to the implementation of DSOAR, CLPC was unable to charge customers directly for work such as connections and disconnections, which is undertaken at the request of, or for the benefit of, individual customers. Now that DSOAR is implemented, such work is considered potentially contestable and CLPC is able to apply to ERC for approval to charge customers directly for these services. We acknowledge that this process is time consuming and that the outcomes at this stage are uncertain. Nevertheless it seems reasonable to assume that income resulting from the implementation of DSOAR has the potential to increase progressively over the second regulatory period and that some provision should be made for this in the opex forecast[16]. If no provision is made, there will be a double recovery of costs for services provided under DSOAR, through the distribution wheeling rate and also through the charges made directly to customers. Inclusion of a DSOAR provision will provide CLPC with an incentive to take the necessary action to recover revenue directly from customers where appropriate and not to continue to rely on cost reimbursement through the regulated distribution wheeling rate.

We therefore propose to reduce our recommended total distribution system operation and maintenance expenditure on a sliding scale commencing at 1% in RY 2010 through to 4% in 2013 to avoid the potential double recovery of costs that can be recovered directly from customers under the DSOAR provisions. No adjustment is recommended for RY 2009.

This adjustment is shown in Table 3.9 below.

Table 3.9: Recommended Adjustment for DSOAR Recoveries (PhP million, real 2008)

	RY 2010	RY 2011	RY 2012	RY 2013
Recommended Distribution System Operation and Maintenance	23.06	23.32	23.48	23.44
Recommended Adjustment	(0.16)	(0.33)	(0.50)	(0.67)

3.4 RECOMMENDED OPEX

As discussed in Section 3.3.2 above, we have used PB Associates' opex model to forecast future base opex with the real labor inflator set at 0% and the real material inflator set at 0%. With these inputs the model produced the forecast base opex shown in Table 3.10. We have shown the DSOAR adjustment in Section 3.3.4 separately.

Table 3.10 also compares, for each major opex category, our annual forecast opex with the forecast opex CLPC included in its revenue application.

[16] It is noted that CLPC is able to deduct any costs associated with providing related business revenue from the net income derived before declaring the net profit from these services to the ERC. In terms of clause 4.3 of the RDWR, 50% of the net profit will be taken into account in the annual resets of the maximum average price cap. It is therefore also in CLPC's own interest to recover these costs directly from customers.

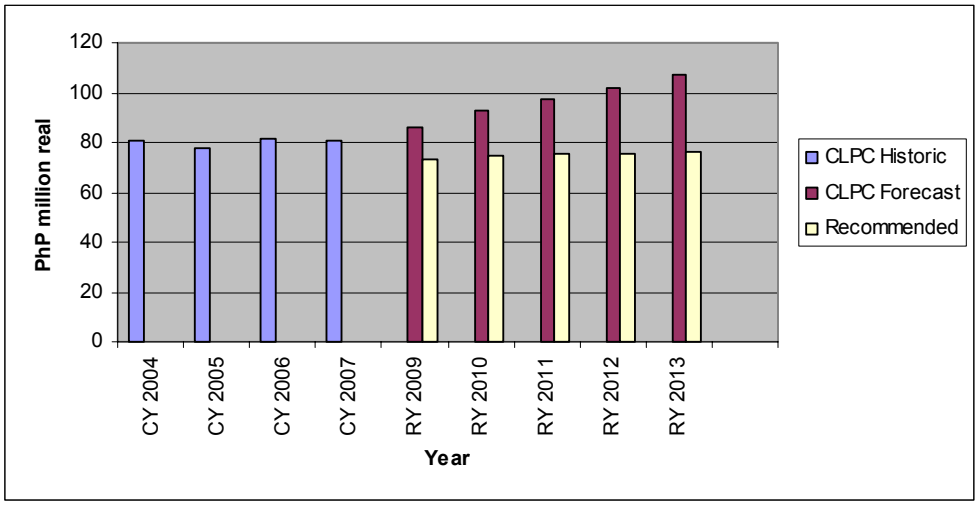
Table 3.10: Comparison of CLPC and PB Associates Forecast Base Opex (PhP million, real 2008.

	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Distribution System Operations					
Revenue Application Forecast	16.69	18.45	19.78	20.06	20.98
Model	16.69	16.92	17.10	17.21	17.18
DSOAR Adjustment	-	(0.11)	(0.23)	(0.34)	(0.45)
Recommended Opex	**16.69**	**16.81**	**16.87**	**16.87**	**16.73**
Distribution System Maintenance					
Revenue Application Forecast	5.65	6.23	6.51	6.99	7.33
Model	6.03	6.14	6.22	6.27	6.26
DSOAR Adjustment	-	(0.05)	(0.11)	(0.16)	(0.21)
Recommended Opex	**6.03**	**6.08**	**6.11**	**6.11**	**6.05**
Regulated Retail Services					
Revenue Application Forecast	15.26	17.75	18.37	19.17	19.90
Recommended Opex	16.22	16.64	17.06	17.48	17.90
Administrative & General Expenditure					
Revenue Application Forecast	48.36	50.71	52.72	55.65	58.86
Recommended Opex	35.13	35.20	35.25	35.29	35.28
Totals					
Revenue Application Forecast	85.96	93.15	97.39	101.87	107.07
Recommended Opex	74.07	74.73	75.30	75.75	75.96
Recommended Adjustment	**(11.89)**	**(18.41)**	**(22.08)**	**(26.12)**	**(31.12)**
Percentage Adjustment	(13.8%)	(19.8%)	(22.7%)	(25.6%)	(29.1%)

Source: PB Associates

A graphical comparison between CLPC's forecasts and our forecast opex is shown in Figure 3.5. It shows the variations between the CLPC forecast opex and our forecast opex. In total we recommend a reduction of 22.6% of the opex requested by CLPC amounting to PhP 109.62 million over the 5 year forecast period.

Figure 3.5: Comparison between CLPC and PB Associates Base Opex Forecast (PhP million, real 2008)



CLPC's opex modelling shows regulated retail services expenditures increasing 12.1% over the second regulatory period and administration & general expenditures increasing 16.1% over the same period. However our modelling has indicated significantly lower percentage increases of 7.6% for regulated retail services and 0.2% for administration and general over the second regulatory period. CLPC's modelling shows distribution and connection services opex increasing by 14.7% over the second regulatory period whereas our modelling indicates a small decrease of 0.5% over the same period.

With regard to regulated retail services, there is a relationship between the number of customers connected to the CLPC network and the annual consumer accounts opex and we have assumed that expenditure in this category will increase in real terms at the same rate as growth in customer numbers. This operational area is one where it is relatively easy for a large utility to achieve efficiencies of scale with the use of computerisation and business process redesign. However it is much difficult for a small utility to achieve similar cost efficiencies and our modelling reflects this. It is likely that the difference between CLPC's forecast and our modelling is primarily due to our assumption that unit labor costs will not change in real terms over the forecast period.

CLPC forecast administrative and general expenditures to increase 16.1% in real terms over the second regulatory period. We believe an increase of this magnitude is difficult to justify as there are many opportunities to achieve scale and scope efficiencies in these business functions, even for a small utility. It is likely that the differences between CLPC's forecast opex and the opex shown by our model are due primarily to:

- our reduction in the allowed management fee. This is the major reason for the step reduction between historic and forecast opex that is apparent in Figure 3.5;
- our assumption that 90% of administrative and general expenses is fixed and that this component will not change in real terms over the forecast period; and
- our assumption that unit labor costs will not change in real terms over the forecast period.

We are less clear on the basis on which CLPC is likely to have forecast its opex for the operations and maintenance of distribution network assets. However, factors driving the small forecast opex reduction indicted by our modelling include:

- the impact of reductions in forecast capex and in particular the removal of the capex provision for the purchase of the TransCo line;
- our assumption that unit labor costs will not change in real terms over the forecast period;
- the fact the over the forecast period, 57% of capex is renewal or refurbishment expenditure. As this expenditure replaces existing assets, it does not increase the ORC of the RAB and or the total opex requirement. In fact, our model assumes that the replacement of existing assets with new assets will reduce their opex costs for the remainder of the regulatory period in which the new assets were installed.
- our assumption that generation related costs will be fixed in real terms over the forecast period; and
- the impact of the DSOAR adjustment. This adjustment does not impact the forecast opex requirement but does affect the manner in which it is assumed that some costs will be recovered.

4. TAXES LEVIES AND DUTIES

4.1 HISTORICAL AND FORECAST TAXES, LEVIES AND DUTIES

4.1.1 Historical Taxes, Levies and Duties Expenditure

CLPC's historical expenditure on taxes levies and duties over the period CY 2004-07 calendar years is shown in Table 4.1. The average annual expenditure over this period was approximately PhP 0.73 million in nominal terms including the comparatively higher spend in CY 2005-07[17].

Table 4.1: Historical Taxes, Levies and Duties (PhP million, nominal)

Year	CY 2004	CY 2005	CY 2006	CY 2007
Taxes, Levies and Duties	0.28	0.62	1.00	1.02

Source: PB Associates based on CLPC Additional Information Submission, July 2008

In order to obtain a better assessment of the relative expenditure, the actual historic expenditures were inflated to real 2008 PhP using historic inflation indicators. The table below shows the actual historic taxes, levies and duties expenditure in real 2008 PhP.

Table 4.2: Historical Taxes, Levies and Duties (PhP million, real 2008)

Year	CY 2004	CY 2005	CY 2006	CY 2007
Taxes, Levies and Duties	0.34	0.70	1.07	1.06

Source: PB Associates based on CLPC Additional Information Submission, July 2008

The average annual expenditure over this period in real terms was approximately PhP 0.79 million.

4.1.2 Forecast Taxes, Levies and Duties Expenditure

CLPC's forecast taxes, levies and duties are shown in Table 4.3.

Table 4.3: Forecast Taxes, Levies and Duties (PhP million, real 2008)

Year	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Taxes, Levies and Duties	0.83	1.88	1.17	0.97	0.79

Source: PB Associates based on CLPC Additional Information Submission, July 2008

The average annual taxes, levies and duties expenditure forecast for the second regulatory period, which excludes RY 2009, is approximately PhP 1.2 million. The main components contributing to the significant differences for each year of the second regulatory period when compared to RY 2009 are the regulatory reset expert fees and the customs duties. A discussion on these costs is provided in Section 4.3 below.

[17] The significant increase in the 2005 to 2007 amounts can be attributed to the high expenditure on custom duties and other related charges.

4.2 TAXES, LEVIES AND DUTIES BREAKDOWN

4.2.1 Historic Taxes, Levies and Duties Expenditure Breakdown

A breakdown of CLPC's taxes, levies and duties over the period CY 2004-07 is presented in Table 4.4 below. Real property tax and custom duties comprise, on average, 76% of the total annual taxes, levies and duties expenditure across the period.

Table 4.4: Disaggregated Historic Taxes, Levies and Duties (PhP million, real 2008)

Year	CY 2004	CY 2005	CY 2006	CY 2007
Taxes				
Real Property Tax	0.180	0.169	0.147	0.140
Community Tax	0.013	0.024	0.023	0.022
Business Tax, License, etc.	0.002	0.019	0.020	0.019
Professional and Occupational Tax	0.006	0.006	0.006	0.013
Radio License Fees	0.051	0.046	0.058	0.044
Firearms Licenses	-	0.024	-	0.024
Generation - DENR Fees and other taxes	0.019	0.008	0.017	0.009
Cebu - Other Taxes	0.009	0.009	0.008	0.114
Other Taxes and Fees	0.002	0.004	0.001	0.003
Levies				
Regulatory Reset Expert Fees	-	-	-	0.085
Generation - Fuel for power plant	0.004	0.003	0.003	0.003
Duties				
Custom Duties and Other Related Charges	0.054	0.392	0.791	0.588
Taxes, Levies and Duties	**0.34**	**0.70**	**1.07**	**1.06**

Source: PB Associates based on CLPC Additional Information Submission July 2008

4.2.2 Forecast Taxes, Levies and Duties Expenditure Breakdown

CLPC's forecast expenditure on taxes, levies and duties can be disaggregated into the components shown in Table 4.5 below. It can be seen that regulatory reset expert fees and custom duties comprise, on average, 83% of the total annual taxes, levies and duties expenditure across the second regulatory period.

Table 4.5: Disaggregated Forecast Taxes, Levies and Duties (PhP million, real 2008)

Year	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Taxes					
Real Property Tax	0.137	0.137	0.137	0.137	0.137
Community Tax	0.021	0.021	0.021	0.021	0.021
Business Tax, License, etc.	0.017	0.017	0.017	0.017	0.017
Professional and Occupational Tax	0.012	0.012	0.012	0.012	0.012
Radio License Fees	0.050	0.050	0.050	0.050	0.050
Firearms Licenses	0.025	-	0.025	-	0.025
Generation - DENR Fees and other taxes	0.006	0.016	0.006	0.006	0.006
Cebu - Other Taxes	0.008	0.008	0.008	0.008	0.008
Other Taxes and Fees	0.001	0.001	0.001	0.001	0.001
Levies					
Regulatory Reset Expert Fees	-	0.986	0.363	0.116	-
Generation - Fuel for power plant	0.003	0.003	0.003	0.003	0.003
Duties					
Custom Duties and Other Related Charges	0.551	0.629	0.528	0.602	0.506
Taxes, Levies and Duties	**0.83**	**1.88**	**1.17**	**0.97**	**0.79**

Source: PB Associates based on CLPC Additional Information Submission July 2008

4.3 COMMENTARY

The main difference in the forecast levels of taxes, levies and duties compared to historic payments arise from expenditures for regulatory reset expert fees and custom duties and other related charges. These are discussed further in the sections below.

The taxes, levies and duties in CLPC's application cover expenditure relating to the distribution business as well as expenditure relating to CLPC's generation facility.

4.3.1 Regulatory Reset Expert Fees

As stated in Section 2.3.3 of the Position Paper, the costs for the Regulatory Reset Experts during the Second Regulatory Period are considered to be a levy and are therefore recoverable under the "levies, duties or taxes other than corporate income tax" building block. Furthermore, the position paper states that ERC will provide the Regulated Entities the forecasts costs to be included in their Revenue Applications.

As part of its application, CLPC has included the following amounts which consist of the costs for the engagement of experts to undertake the asset valuation; review the expenditure forecasts; prepare the Issues Paper and Position Paper; and to assist the ERC with financial modelling and project management:

Table 4.6: Forecast Regulatory Reset Expert Fees (PhP million, real 2008)

Year	CY 2008	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Regulatory Reset Expert Fees	0.42	-	0.99	0.36	0.12	-

Source: PB Associates based on CLPC Additional Information Submission July 2008

4.3.2 Custom Duties and Other Related Charges

Table 4.7 below provides the custom duties and other related charges that CLPC has included in its application:

Table 4.7: Forecast Custom Duties and other Related Charges (PhP million, real 2008)

Year	CY 2008	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Custom Duties and Other Related Charges	0.64	0.55	0.63	0.53	0.60	0.51

Source: PB Associates based on CLPC Additional Information Submission July 2008

This component pertains to custom duties based on the Import Entry Declaration provided by the Bureau of Customs. It should be noted however that CLPC did not provide information that clearly explains how the expenditure was determined.

4.3.3 Permit Fees

We note that CLPC has made no provision for Permit Fees payable to ERC in respect of opex and assume that these fees have been included in the opex forecast. This treatment is appropriate.

4.4 RECOMMENDATIONS

CLPC has not included a provision for real property taxes on poles and substations situated on public land given that such taxes had not been approved by Congress at the time of this expenditure review. In the event of future imposition of taxes for these assets, or should CLPC become liable for taxes that are not included in the annual revenue requirement, Article XI of the RDWR allows for unexpected tax liabilities imposed during the Second Regulatory Period to be recovered by means of a “Tax Event Pass Through”.

Upon the detailed review of each line item of the taxes, levies and duties expenditure application of CLPC we recommend that:

- The taxes for the APC office in Cebu should be excluded from forecast because insufficient information was provided to justify CLPC’s liability for such payments. We do not consider that tax payments made by a parent company should be included in the expenditure forecast and Section 11.4 of the Position Paper requires a much higher standard of justification for payments made on behalf of related parties;

- The regulatory reset expert fees for CY 2008 should be excluded from the forecast given that the costs provided by ERC for the regulatory reset expert fees for RY 2010-12 already include all costs that have been or will be incurred until the end of the Second Regulatory Period; and

- Custom duties and other related charges should also be excluded from the annual revenue requirement since such costs should be provided for in the capex forecast.

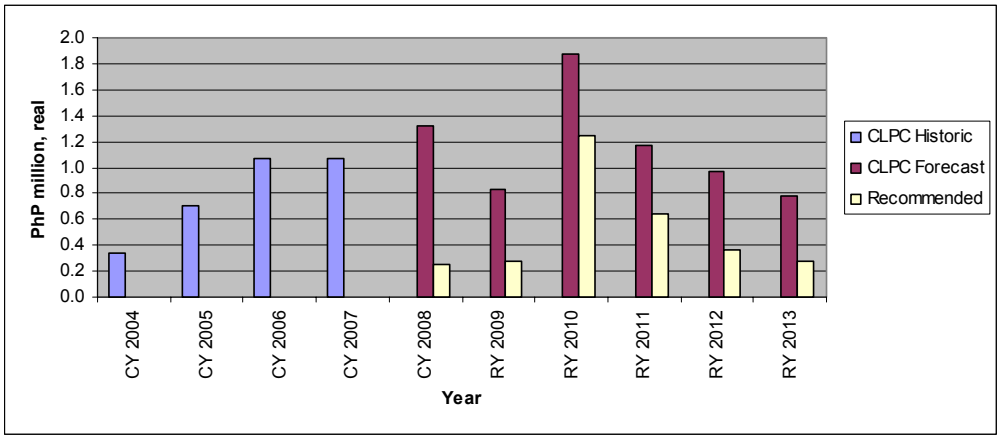
Consequently, our recommended provision for taxes, levies and duties is provided in Table 4.8 below:

Table 4.8: Recommended Provision for Taxes, Levies and Duties (PhP million, real 2008)

Year	CY 2008	RY 2009	RY 2010	RY 2011	RY 2012	RY 2013
Proposed in CLPC's Revenue Application						
Taxes, Levies and Duties	1.32	0.83	1.88	1.17	0.97	0.79
Adjustments						
Cebu - Other Taxes	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Regulatory Reset Expert Fees	(0.419)	-	-	-	-	-
Custom Duties and Other Related Charges	(0.641)	(0.551)	(0.629)	(0.528)	(0.602)	(0.506)
Recommended Provision for Taxes, Levies and Duties	**0.25**	**0.27**	**1.24**	**0.64**	**0.36**	**0.27**

A graphical comparison between CLPC's forecasts and our forecast for taxes, levies and duties is shown in Figure 4.1.

Figure 4.1: Comparison between CLPC's Forecast and our Recommended Forecast (PhP million, real 2008)



The graph shows an average difference between CLPC's forecast and our recommended forecast of 59% over the forecast period.