



**REVIEW OF OPERATING AND MAINTENANCE
EXPENDITURE (OPEX) FORECAST:
SECOND REGULATORY PERIOD**

Cabanatuan Electric Corporation (CELCOR)

Prepared

by the

ENERGY REGULATORY COMMISSION

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1. INTRODUCTION

The Energy Regulatory Commission (ERC) has promulgated a Performance Based Rate-Making (PBR) methodology that applies to privately owned electricity distribution utilities (DU) in the Philippines. Under the PBR framework a DU is entitled to a price cap to compensate for delivering its distribution wheeling services. The reset process for setting of the price cap for the six (6) DUs entering the PBR at the third entry point includes review of the expenditure forecasts. This process, among others, will result in the setting of a maximum price path that will determine the Maximum Average Price (MAP) that a DU can charge for the provision of electricity distribution services for each year of the Second Regulatory Period (which commences on 1 July 2010 and ends on 30 June 2014).

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) for the Third Entry Group, which was released by the ERC on December 8, 2008¹. The ERC has also formulated its position on the reset process – as set out in a Position Paper dated December 8, 2008².

An important requirement of the reset process going forward is the review of the expenditure forecasts submitted by the DUs as part of their revenue applications filed with the ERC. These expenditure forecasts are critical to the determination of the revenue to which DUs are entitled and on which the price caps will be determined.

Section 4.13.4 of the RDWR requires that the expenditure forecasts provided by a DU be reviewed by a Regulatory Reset Expert/s in isolation or in cooperation with ERC staff as part of the PBR regulatory reset process. Geoff Brown and Associates (GB Associates) has been engaged by the ERC to provide guidance to the ERC staff in reviewing the operating and maintenance expenditure forecasts as well as to review the capital expenditure forecasts of the six DUs that will be entering PBR at the third entry point.

The six DUs entering PBR at the third entry point are:

- Cabanatuan Electric Corporation (CELCOR);
- Davao Light and Power Company (DLPC);
- Ibaan Electric and Engineering Corporation (IEEC);
- La Union Electric Company (LUECO);
- Tarlac Electric Incorporated (TEI); and
- Visayan Electric Company (VECO);

This report presents the ERC review of the operating and maintenance expenditure forecasts of CELCOR. These forecasts were submitted to the ERC as part of CELCOR's revenue and performance incentive scheme application (revenue application), on June 15, 2009.

¹ *Rules for Setting Distribution Wheeling Rates for Privately Owned Distribution Utilities Entering Performance Based Regulation (Third Entry Point)*, Energy Regulatory Commission, December 8, 2008.

² *Regulatory Reset for the July 2010 to June 2014 Regulatory Period for Privately Owned Distribution Utilities subject to Performance Based Regulation, Position Paper*, Energy Regulatory Commission, December 8, 2008.

2. EXECUTIVE SUMMARY

OPERATING AND MAINTENANCE EXPENDITURE (OPEX)

The ERC reviewed the expenditure forecasts submitted by CELCOR as part of its revenue application including the additional information supplied in response to questions put forward during the clarificatory meeting conducted.

In the initial review process, the ERC adjusted the 2008 CY audited expenditure to remove abnormal and non-recurring expenditures and tested this adjusted year data for cost efficiency. The resulting adjusted CY 2008 served as the base year input to an OPEX Model which generated OPEX forecasts believed to be prudent and efficient for Distribution Utilities, CELCOR in this particular report.

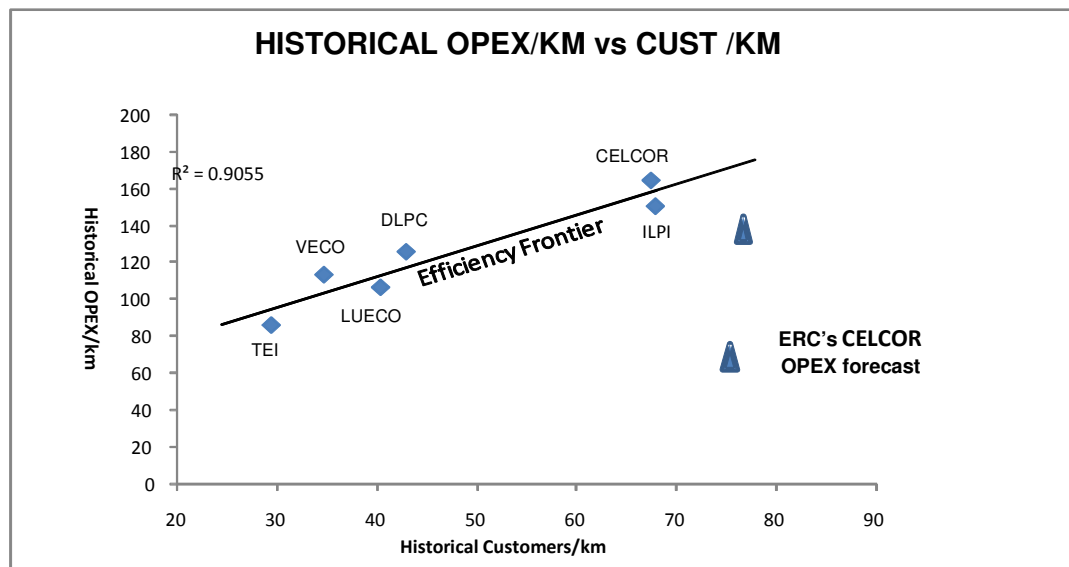
The model also took into account that over the modelling period from 2010 to 2014, CELCOR's network asset will increase by 6.39% and customer numbers by 22.28%. It also took into account the ERC's capital expenditure forecasts for CELCOR amounting to PhP199.27 million over the next regulatory period. This is a reduction of 28% from CELCOR's proposal over the four years which has a direct impact on the quantity of new assets requiring operation and maintenance expenditure over the second regulatory period.

The modelling results show CELCOR's OPEX forecasts for the second regulatory period to be on the average 16.15% lower than the applicant's.

These resulting forecasts have been benchmarked for cost efficiency using an efficiency frontier developed using the average historical performance of 5 DUs in the third entry point and ILPI, an entrant DU in the second entry point, given that it has sufficient information to be included in the analysis. (IEEC was omitted from the economic benchmarking as it was considered an outlier). MECO and CLPC were not included given insufficient information to include them in the analysis.

Figure 1 shows the efficiency frontier based on normalised OPEX/line length vs. customer /line length and the position of the ERC' forecast CELCOR OPEX relative to the efficiency frontier. It should be noted that the efficiency frontier is based on the average historical data of the six (6) DUs included in the analysis. The object of an efficiency frontier is to fall on or below the frontier to demonstrate relative efficiency. The ERC's CELCOR OPEX forecast positions below the efficiency frontier, thus indicating relative efficiency.

Figure 1 : Average Historical OPEX Per Line Length and Customer Per Line Length



In consideration of the above, the ERC made the following adjustments:

- Adjustment in CELCOR's 2008 base year costs amounting to PhP20.3 million which is equivalent to 17% reduction in the total actual 2008 audited OPEX.
- Reduction in CELCOR's forecast OPEX for the second regulatory period by PhP83.56 million, equivalent to a 16.15% reduction, shown as follows:

Table 1 : Forecast Operating and Maintenance Expenditure (PhP million, real 2009)

		RY 2011	RY 2012	RY 2013	RY 2014	Total
CELCOR Forecast Operating and Maintenance Expenditure						
	Distribution and Connection Services Operating and Maintenance	41.53	42.25	42.88	43.59	170.24
	Administrative and General	41.10	41.21	41.23	41.98	165.52
	Regulated Retail Services	44.60	44.99	45.57	46.59	181.74
TOTAL		127.22	128.45	129.67	132.15	517.50
ERC Adjustments (based on OPEX model)						
	Distribution and Connection Services Operating and Maintenance	-2.89	-2.70	-2.61	-2.61	-10.82
	Administrative and General	-13.15	-13.20	-13.17	-13.86	-53.38
	Regulated Retail Services	-6.29	-5.12	-4.19	-3.76	-19.36
Total Adjustments		-22.34	-21.02	-19.97	-20.23	-83.56
ERC OPEX Forecast		104.89	107.42	109.71	111.93	433.94

A comparison between CELCOR's actual and forecast OPEX and the ERC adjusted historical and forecast OPEX over the second regulatory period is shown in the graph below.

Figure 2 : Comparison of ERC's OPEX with CELCOR's Proposal (PhP real 2009)

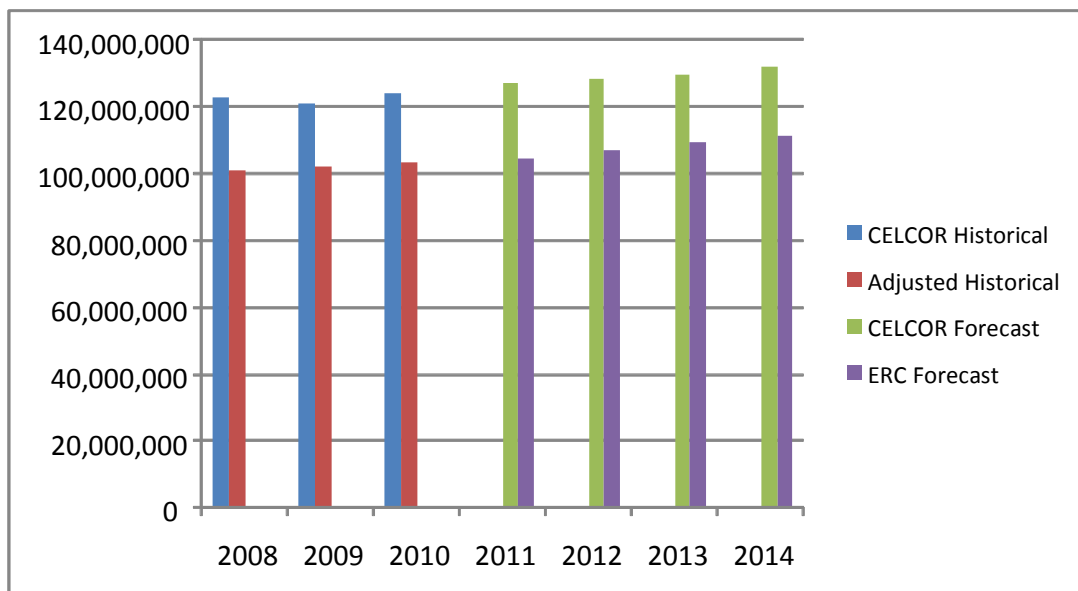
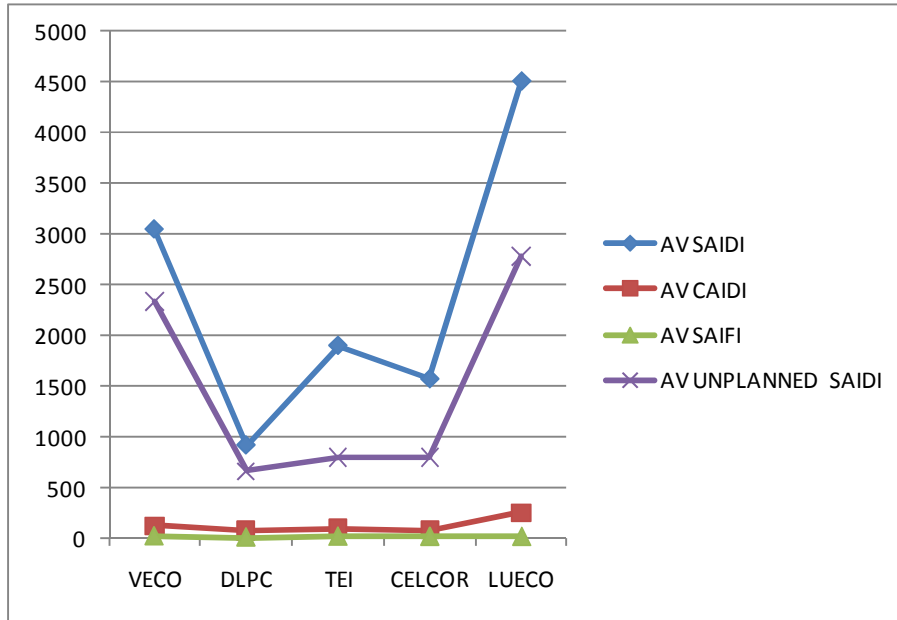


Figure 3 below shows the relative network performance of CELCOR over 2006 to 2008. This may not be conclusive as there is need to have sufficient data to identify extreme events falling beyond the

control of the utilities. The ERC intends to incorporate either network performance benchmarking or performance improvements for the Third Regulatory Period in order to enhance network performance.

Figure 3 : Historical Network Performance



TAXES, LEVIES AND DUTIES

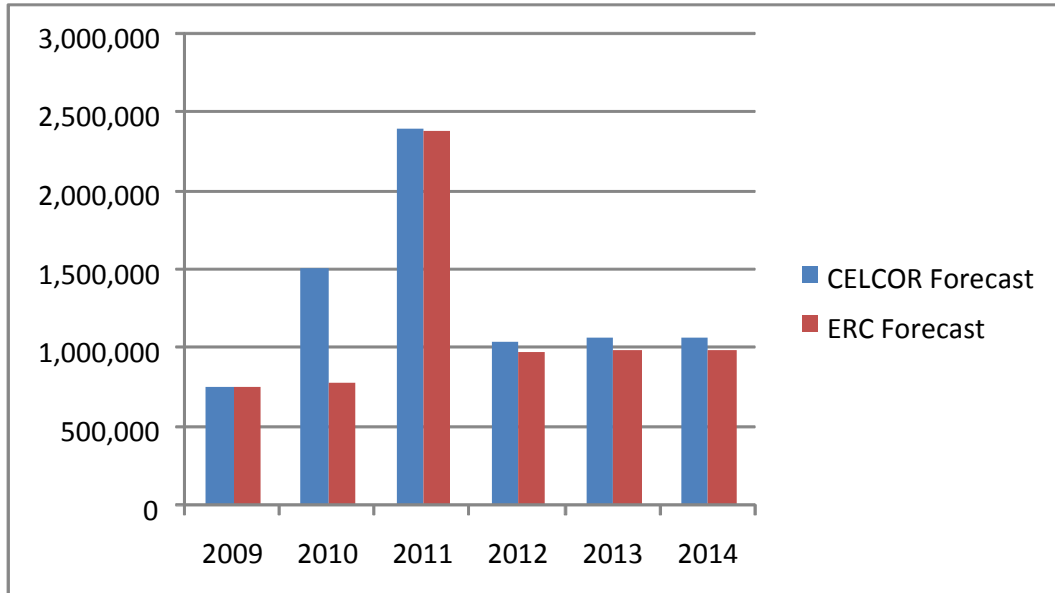
ERC has made the following reductions in CELCOR's proposed provisions for taxes, levies and duties.

Table 2 : Forecast Taxes, Levies and Duties (PhP million, real 2009)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Proposed in CELCOR's Revenue Application						
Taxes, Levies and Duties	0.76	1.51	2.40	1.04	1.07	1.06
ERC Adjustments						
Regulatory Reset Expert Fees	-	-0.73	-	-	-	-
Real Property Tax		0	-0.01	-0.06	-0.08	-0.08
Sub Total Adjustments	0	-0.73	-0.01	-0.06	-0.08	-0.08
ERC's Provision for Taxes, Levies and Duties	0.76	0.78	2.38	0.98	0.99	0.99

Source: Schedule G3 of CELCOR's Revenue Application June 2009

Figure 4 : Comparison of ERC's Taxes, Levies and Duties with CELCOR's Proposal (PhP real 2009)



The increase in RY2011 entails regulatory reset project costs for the period 2006-2010, which is yet to be recovered by CELCOR. It should be noted that on the average over the four-year regulatory period, the taxes, levies and duties forecast, is only an insignificant 1.2% of the total OPEX forecast.

CELCOR's annual provision for real property tax has been adjusted down to the CY 2008 values as the increases in real property tax has not yet been confirmed by CELCOR as a liability. Also, CELCOR has provided insufficient justification for its forecast increases.

3. OPERATING AND MAINTENANCE EXPENDITURE

3.1. CELCOR'S HISTORICAL OPERATING AND MAINTENANCE EXPENDITURE AND NETWORK PERFORMANCE

3.1.1 Historical Operating and Maintenance Expenditure

CELCOR's historical total operating and maintenance expenditure in nominal PhP is shown in Table 3.1.

Table 3.1 : Historical Operating and Maintenance Expenditure (PhP million, nominal)

Operating and Maintenance Expenditure Category	2005	2006	2007	2008	2009 ¹	2010 ²
Distribution and Connection Services Operating and Maintenance	32.54	35.21	34.89	39.70	40.11	41.20
Administrative and General	34.72	35.77	35.73	38.82	38.87	40.79
Regulated Retail Services	35.44	41.06	40.62	42.11	42.15	43.04
Total Operating & Maintenance Expenditure	102.70	112.04	111.23	120.62	121.13	125.03

Source: Schedule G of CELCOR's Revenue Application, June 2009

Note 1: Budgeted figures and for the 2009 calendar year period.

Note 2: Forecasted for the 2010 regulatory year period and beyond.

The historical expenditures reported by CELCOR shown in Table 3.1 are expressed in nominal PhP, thus include the impact of inflation. A better assessment of the relative expenditure from year to year can be obtained if historical expenditures are expressed in real 2009 PhP, using historical inflation indicators. Table 3.2 shows historical operating expenditure in real 2009 PhP.

Table 3.2 : Historical Operating and Maintenance Expenditure (PhP million, real 2009)

Operating and Maintenance Expenditure Category	2005	2006	2007	2008	2009 ¹	2010 ²
Distribution and Connection Services Operating and Maintenance	39.44	40.23	38.78	40.33	40.11	40.82
Administrative and General	42.08	40.87	39.71	39.44	38.87	40.41
Regulated Retail Services	42.95	46.91	45.15	42.78	42.15	42.64
Total Operating & Maintenance Expenditure	124.47	128.02	123.65	122.56	121.13	123.86

Source: Schedule G of CELCOR's Revenue Application, June 2009

Note 1: The information is budgeted figures and for the 2009 calendar year period.

Note 2: The information is forecasted for the 2010 regulatory year period and beyond.

This historical operating and maintenance expenditure, expressed in real 2009 PhP, is shown graphically in Figure 3.1.

Figure 3.1 : Historical Operating and Maintenance Expenditure (PhP real 2009)

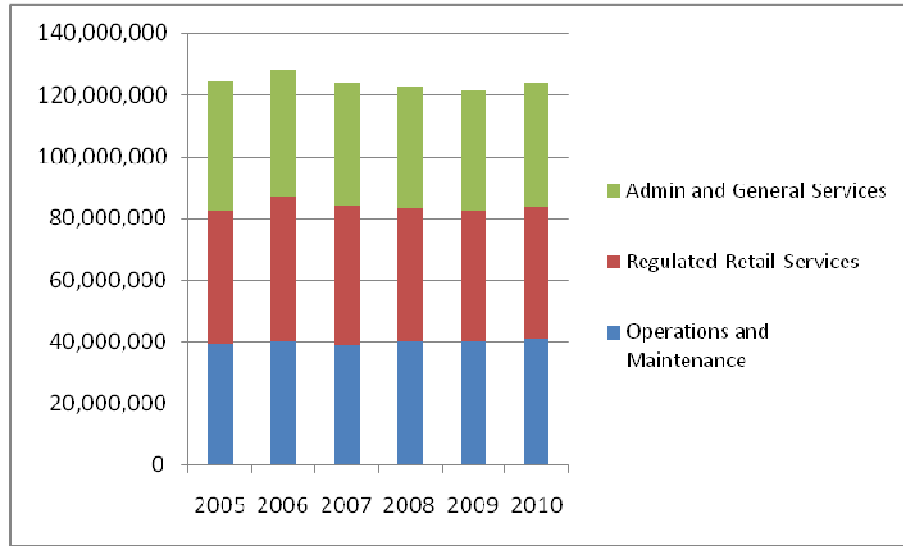


Table 3.2 and Figure 3.1 demonstrate that the annual historical operating and maintenance expenditure remained relatively constant over the period 2005 to 2008. Customer numbers increased by an average 6.5% per annum over the same period.

3.1.2 Historical network performance

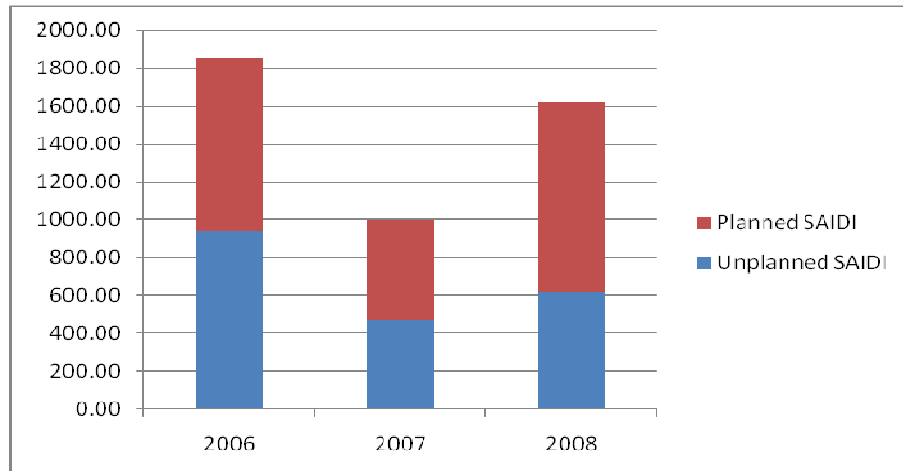
CELCOR's historical total system network performance, expressed in minutes, is shown in Table 3.3.

Table 3.3 Historical Network Performance (in minutes)

Performance Indicators	2006	2007	2008
Unplanned SAIDI	945.28	471.65	615.27
Planned SAIDI	910.26	526.05	1,008.27
TOTAL SAIDI	1,855.54	997.70	1,623.54

The historical total system network performance is shown graphically in Figure 3.2:

Figure 3.2 : Historical Network Performance System Average Interruption Duration Index (SAIDI) in minutes



The above graph, covering only a three (3) year period from 2006 to 2008 as provided by CELCOR in its application, may not be conclusive as there is need to have more sufficient data and to identify factors such as extreme events, thus, the ERC intends to monitor network performance over the next regulatory period. Furthermore, the ERC intends to incorporate either network performance benchmarking or performance improvement targets for the third regulatory period in order to enhance network performance.

3.2 CELCOR'S FORECASTING METHODOLOGY

As Per Schedule G of its Revenue Application, CELCOR stated that, "Expenditures are forecasted to increase by an average of 1.76% per year from regulatory years 2010 to 2014 in real terms due to load growth, maintenance of aging asset base (excluding capital expenditures) delivering quality services and compliance to ERC regulation." Further, CELCOR justified that the increase in the base year 2008 of 1.6% is due to the inflation forecast in order to align with the budgeted year 2009. These expenses, according to CELCOR, are required to support efficient services considering the maintenance of their service level to customers considering the customer's welfare, aging of the asset base, operation of the distribution business, compliance to regulatory issuances and other ERC regulations.

3.2.1 CELCOR's Forecast Operating and Maintenance Expenditure

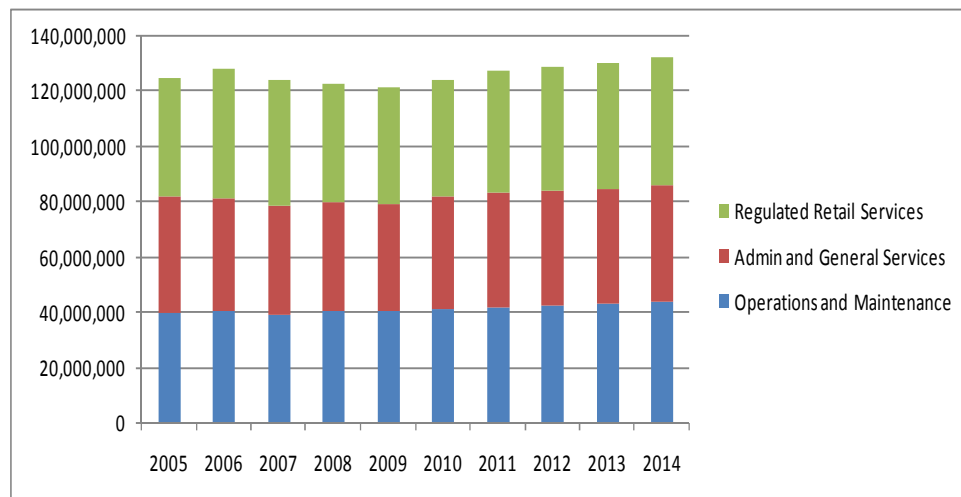
Operating and maintenance expenditure forecasts for the second regulatory period, included in CELCOR's revenue application, are shown in the Table 3.4 in real PhP. These are also shown graphically in Figure 3.3.

Table 3.4 : Forecast Operating and Maintenance Expenditure (Real PhP million, 2009)

Operating and Maintenance Expenditure Category	2011	2012	2013	2014
Distribution and Connection Services Operating and Maintenance	41.53	42.25	42.88	43.59
Administrative and General	41.10	41.21	41.23	41.98
Regulated Retail Services	44.60	44.99	45.57	46.59
Total Operating & Maintenance Expenditure	127.22	128.45	129.67	132.15

Source: CELCOR Revenue Application June, 2009

Figure 3.3 : Total Operating and Maintenance Expenditure (PhP real 2009)



3.3 REVIEW METHODOLOGY AND ASSUMPTIONS

Table 3.4 above shows that CELCOR's forecast operational expenditure for the second regulatory period is just slightly higher than the historical operational expenditure over the period 2005 to 2008 in real terms. The average annual forecast operational expenditure for the second regulatory period is PhP129.37 million, compared to an average annual expenditure of PhP124.67 million over the four year historical period. The ERC does not concur with the methodology used by CELCOR to escalate expenditures i.e. percentage increase in load growth, as ERC considers the key cost drivers for distribution operating expenses are network assets under management and customer numbers.

Hence in order to assess the reasonableness of the CELCOR forecasts, ERC has used the OPEX forecasting model³ to predict a reasonable level of operating and maintenance expenditure based on industry standards and a "business as usual" expenditure pattern. The forecasts calculated from the aforesaid model were then compared with the expenditure forecast provided by CELCOR in its revenue application.

The OPEX model forecasts specific cost categories by escalating the base year values by related cost drivers. For example operation and maintenance expenditures are correlated to the growth in assets under management, which is closely aligned to proposed capital works expenditures. Regulated retail services expenditures are closely aligned to the growth in customer numbers.

The audited OPEX in the base year is used to forecast future OPEX. The base year expenditures have to be tested for cost efficiency and any one off or non-business-as-usual expenditures have to be removed prior to modelling.

This modelling assumes that there is no new or significant "one off" changes to OPEX costs from the base year through to the end of the next regulatory period. Any additional expenditures, not included in the base year forecast, needs to be reviewed and modelled independently, and then added to the base case expenditures to determine the total forecast annual expenditures.

Hence the overall process ERC used to assess CELCOR's efficient and prudent annual operational expenditure forecasts included the following steps:

- Determine the base year operating and maintenance expenditures on a cost category basis;
- Assess each component of base year expenditure for any additional or extraordinary expenditures;
- Confirm that the base year operating and maintenance expenditures are efficient;
- Identify operating and maintenance expenditure cost drivers and the impact of efficiency initiatives;
- Project the base year operating and maintenance expenditure forward for each year of the regulatory period, taking into account projected changes in the cost drivers and the impact of any efficiency initiatives;
- Determine total OPEX forecasts and test for cost efficiency; and;
- Compare OPEX forecasts to the applicant's OPEX forecasts and determine the annual adjustments.

³ This was originally developed by PB Associates and provided to the ERC under Groups A and B expenditure reviews.

The specific processes performed by the aforementioned steps are discussed in more detail in the following sections.

3.3.1 Determination of Efficient Base Year Operational Expenditure

The following were done to assess the efficiency of the base year OPEX:

- Reviewed the itemized CY 2008 OPEX 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; and
- Benchmarked CELCOR's adjusted OPEX using an efficiency frontier methodology based on the average historical data of 5 of the DUs in the third entry point, IEEC was omitted as it was considered an outlier. This also includes the three (3) DUs in the second entry point given sufficient information to include it in the analysis. OPEX per line lengths and the average number of customers per line lengths were used.

This approach results in establishing the relative cost efficiency of the adjusted base year expenditures which are used in the OPEX modelling to forecast future OPEX expenditures.

3.3.1.1 Review of OPEX Line Items

CELCOR used the 2008 calendar year as its base year for determining forecast OPEX. From the application it is apparent that CELCOR used the 2008 figures as the basis for the 2009 budget. ERC also used the 2008 figures as the base year since this is the latest actual full-year expenditure data available.

Administrative and General Expenditures – Employee Pension and Benefits

During the clarificatory meeting, CELCOR was asked to provide details of its employee pension and benefits expenses for CY2008. ERC contends that additional benefits like morale booster, meal allowance, donations, employees' welfare, per diem of directors, fringe benefits, rice allowance and electric subsidy given to CELCOR employees should not be recovered through the customer rates. If CELCOR wishes to provide additional benefits to its employees, ERC believes they constitute a management prerogative, and should not be funded from the regulated revenue. The disallowances of the additional benefits, however, do not preclude CELCOR from providing them to its employees provided that the cost or associated expenses are not passed on to its customers. The impact of this adjustment on the base year OPEX is a decrease of PhP16.8 million.

Administrative and General Expenditures – Miscellaneous (Other) Expenses

CELCOR indicated that it included donations, meals, snacks and allowance of school trainees as part of its 2008 base year costs. Based on the fact that these costs are part of management prerogatives, ERC contends that they should not be included in the revenue requirement. However, this does not preclude CELCOR from including these expenses provided that these are not passed on to its customers. The impact of this adjustment on the base year OPEX is a decrease of PhP0.36 million.

Administrative and General Expenditures – Representation Expenses

As per its submissions after the clarificatory meeting, CELCOR indicated that it included representation expenses as part of its base year 2008 costs. Based on the fact that representation cost is a management prerogative, ERC contends that it should not be included in the revenue requirement. However, this does not preclude CELCOR from

spending representation costs provided that these costs are not passed on to its customers. The impact of this adjustment to the base year OPEX is a decrease of PhP1.5million.

Regulated Retail – Bad Debts Expense

CELCOR included the amount of PhP3.6 million pertaining to uncollectible accounts. The policy of the Commission for reasonable uncollectible accounts is to adopt the lowest of the actual accounts written-off for the test year; or the last 5 years’ average of accounts written-off, or 1% of outstanding trade accounts receivable for the test year.

CELCOR’s 2008 Audited Financial Statement stated the Accounts Receivable-Trade (AR) amounted to PhP204million. One percent (1%) of the outstanding trade accounts receivable is PhP2.04million and hence this is the amount that ERC has allowed for bad debt expenses in the base year. Consistent with the Commission’s Decision under ERC Case No. 2009-024RC, ERC reduced the proposed amount of bad debts by PhP1.6million.

The resulting 2008 base year operating and maintenance expenditures, after the ERC adjustments amounting to PhP20.3million are as shown in Table 2.5. This has been used in the OPEX model to forecast future expenditures:

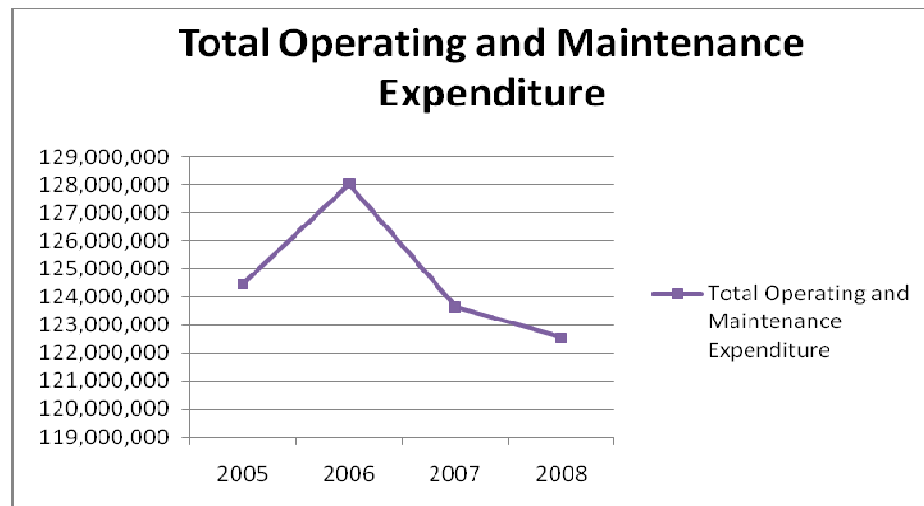
Table 3.5 : Adjusted Base Year 2008 Operating and Maintenance Expenditure (PhP million, real 2009)

Operating and Maintenance Expenditure Category	2008
Operation	20.58
Maintenance	16.42
Administration and General	27.83
Regulated Retail Services	35.95
Total Operating & Maintenance Expenditure	100.89

3.3.1.2 Confirmation that the Base Year Costs is Efficient

To better understand the historical operating expenditure pattern, the ERC has redrafted these historical expenditures in real peso such that variations in the expenditure trend are clearly visible. This is shown in Figure 3.4.

Figure 3.4 : Historical Operating and Maintenance Expenditures (Real PhP)



As shown on the above graph, the peak of the total OPEX was reached in 2006 and significantly reduced in the remaining historical years 2007-2008.

In its analysis, the ERC has determined that 35% of the total OPEX of the historical year 2008 is the regulated retail costs. Figure 3.5 below shows a comparison among the five (5) DUs in terms of its base year retail costs per number of customers.

Figure 3.5 : Base Year Regulated Retail Costs Per Customer

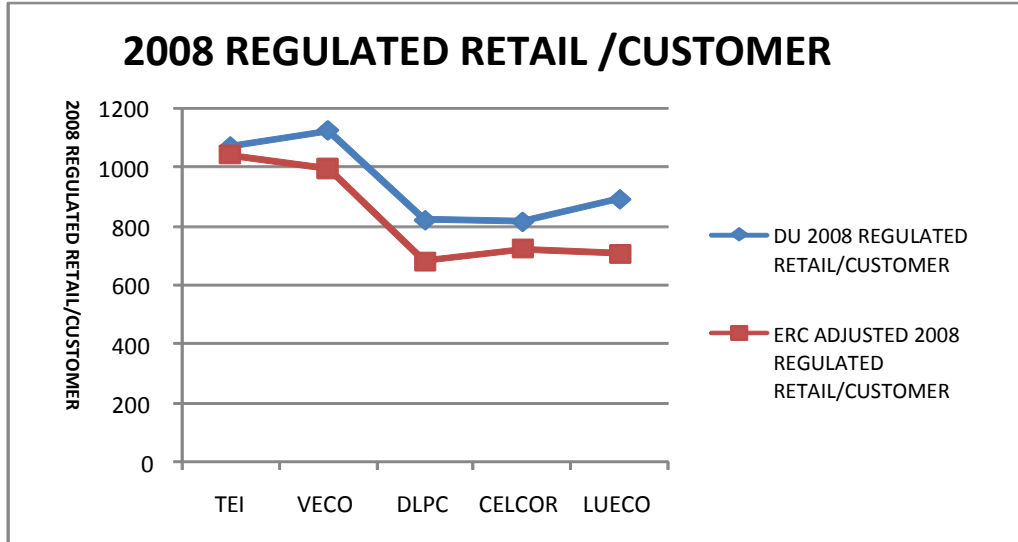


Figure 3.5 above illustrates that CELCOR is one of the lowest among the five (5) DUs in terms of its 2008 base year retail costs per customer. In its analysis, the ERC noted that the regulated retail costs includes a “one-off” base year costs and thus, the ERC made adjustment from its 2008 regulated retail costs amounting to PhP20.3million, equivalent to a 17% reduction. This adjustment is included in the base year figure shown in Table 3.5 above.

Figure 3.6 below shows a linear regression analysis showing the efficiency frontier using the average historical OPEX costs of the 6 DUs (VECO, DLPC, TEI, CELCOR, LUECO and ILPI⁴).

⁴ ILPI, an entrant DU in the second entry point, is included in the analysis given sufficient information while MECO and CLPC were not included because of insufficient information to be able to plot in the graph.

Figure 3.6 : Average Historical OPEX Per Line Lengths vs Customer Per Line Length

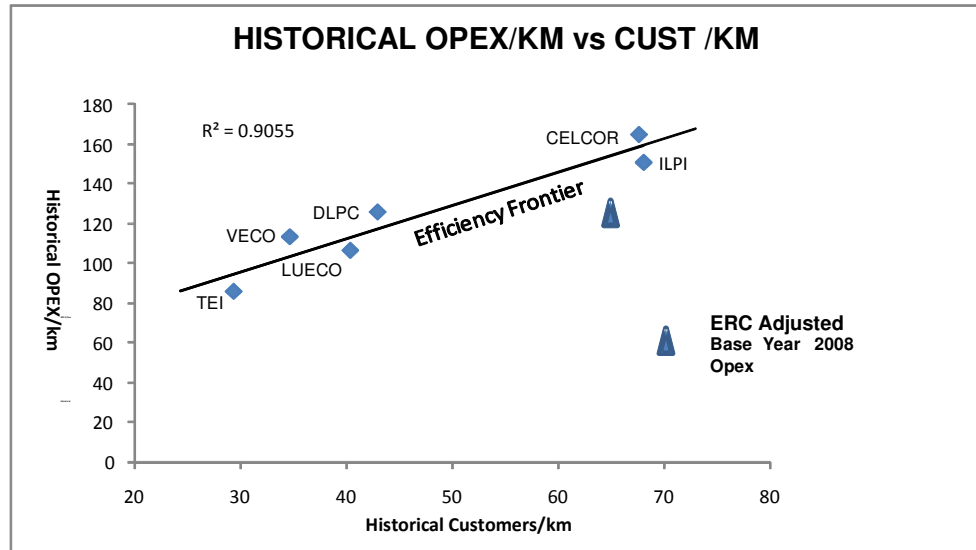


Figure 3.6 illustrates that CELCOR's average historical OPEX is above the efficiency frontier indicating relative inefficiency. ERC's adjusted base year cost has also been plotted on the graph and as it now lies below the efficiency frontier, ERC contends it represents efficient costs.

Hence, ERC concluded that the adjusted base year 2008 operational expenditure represents an efficient base expenditure for forecasting future operational expenditures.

3.3.2 Identification of Cost Drivers and Impact of Efficiency Initiatives

ERC used the following cost drivers in its OPEX model:

- *Size of the Asset Base*

The replacement cost of the RAB as of December 31, 2008 as detailed in the CELCOR Valuation Report is used as a surrogate for asset size and is adjusted going forward to compensate for the impact of refurbishment and renewal CAPEX on future OPEX. The replacement cost of the RAB is increased to compensate for the growth in assets under management; renewal and refurbishment capital expenditure are considered to replace existing assets at or near the end of their service lives and therefore reduces the OPEX required to maintain these assets.

Also, efficiency factors are incorporated in forecasting distribution and connection services, operation and maintenance, and administrative & general expenditures. These efficiency factors arise from the ability of an established business to manage and operate additional assets more efficiently.

These efficiencies of scale and scope are derived from experience gained from performing similar expenditure reviews for a significant number of distribution utilities. Experience indicates that the efficiencies of scale and scope are remarkably similar for both rural and city based distribution businesses as well as for businesses of various sizes. Any differences usually relate to the methods used within each business to achieve these efficiencies. Larger businesses tend to rely heavily on technological innovation whilst smaller businesses tend to concentrate on resource innovation such as cross skilling and flexibility. The efficiency factors also reflect the efficiencies that a DU is required to demonstrate under clause 4.13.3 of the RDWR.

It is believed that the commissioning of new assets results in lower forecast OPEX as these new assets generally require minimal defect rectification based maintenance during the regulatory period in which they are commissioned. Consistent with the previous expenditure reviews, 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 the ERC operating expenditure model.

In addition, numerous studies undertaken by experts, including in the Philippines, indicate that, on the average, the variable component of the administrative & general expenditure is 10%. Only this variable component of administrative and general has been escalated in the ERC operating expenditure model.

In determining the replacement cost of the RAB for 2008 and each year of the second regulatory period the ERC's reductions in CAPEX described in the CAPEX report undertaken by GB Associates has been taken into account.

- *Customer Numbers*

The OPEX model accounts for the impact of increasing customer numbers on the regulated retail services expenditures as there is a well accepted correlation between regulated retail service expenditures and customer numbers.

Based on the customer numbers forecast by the evaluated utilities, the ERC has modelled a 5% efficiency gain in regulated retail services to compensate for the economies of scale.

- *Prices of Materials*

The OPEX model allows real growth inflators input for both material and labor costs.

Copper and aluminium prices influence the cost of distribution maintenance materials. Referring to Figures 3.7 and 3.8, it is clear that copper and aluminium prices have not changed significantly over the past three years. Other major cost drivers that may influence cost of materials include exchange rates as well as the market conditions for electrical equipment. It is difficult to predict exchange rate changes and market conditions for electrical equipment; thus, it has been assumed that these factors will remain relatively constant over the regulatory period. Consequently, equipment costs are assumed to remain constant in real terms. This means that nominal material costs will increase over the regulatory period in line with the forecast CPI.

Furthermore, OPEX materials generally consist of lower-cost, high-quantity items that are generally purchased on term contracts, where the prices are linked to CPI. Historically the cost of materials rises in line with inflation, that is, it remains constant in real terms.

Figure 3.7 : Aluminium Prices over a Three-Year Period (Philippine Peso/Pound)



Source: www.infomine.com

Figure 3.8 : Copper Prices over a Three-Year Period (Philippine Peso/Pound)



Source: www.infomine.com

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

- o *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 increase in labor costs. It is recognised that it is always difficult to select an appropriate real escalator for future labour rates and our modelling was carried out with the real labor escalator set to zero. This assumes labor costs to increase at the rate of inflation. We believe this to be reasonable 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 escalate at a rate that is materially different from labor costs in other sectors of the economy.

It is also noted 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 very reluctant to include real increases in labor costs, unless there is a compelling reason to do so. It is also noted that controlling labor costs is not simply a matter of limiting wage rates. Other tools that are potentially available include improving labour efficiency and productivity, business process improvement, rebalancing staffing requirements, and increasing the level of outsourcing and multi-tasking.

3.3.3 Forecast Future Expenditures using the OPEX Model

As noted above, the OPEX model is based on the assumption of “business as usual” in forecasting future OPEX and any known changes in future expenditure patterns need to be modelled independently. In addition any “one off or non business as usual” expenditures included in the base year costs need to be identified and backed out of the base year costs prior to modelling. Hence CELCOR has been 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 do not represent “business as usual” expenditures. During the clarificatory meeting, CELCOR indicated that there was no “one off” expenditures included in its base year costs.

3.4 BASE OPEX FORECASTS GENERATED BY THE MODEL

Based on the analysis discussed in this section, the OPEX modelling has produced the OPEX forecast as shown in Table 3.6.

Table 3.6: ERC’s Base OPEX Forecasts

Operating Expenditure Category	2011	2012	2013	2014
Distribution and Connection Services Operation and Maintenance	38.63	39.55	40.26	40.98
Administrative and General	27.95	28.01	28.06	28.12
Regulated Retail Services	38.31	39.87	41.38	42.83
Total Operating & Maintenance Expenditure	104.89	107.42	109.71	111.93

3.4.1 Additional Operating and Maintenance Expenditure

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 included in the OPEX model.

During the clarificatory meeting, CELCOR was required to submit any non-recurring items that were reflected in its OPEX forecast. However, CELCOR failed to submit the required document and hence no additional non recurring OPEX expenditures have been included in the ERC OPEX forecasts.

3.5 ERC’S OPERATING AND MAINTENANCE EXPENDITURES

As discussed above, the ERC used the OPEX model to forecast future base operating expenditures with the real labour and real material inflators set at 0%. With these inputs the model produced the forecast base operational expenditures shown in Table 3.6.

Table 3.7 also compares, for each major operational expenditure category, ERC's annual forecast operational expenditure with the forecast operational expenditure CELCOR included in its revenue application.

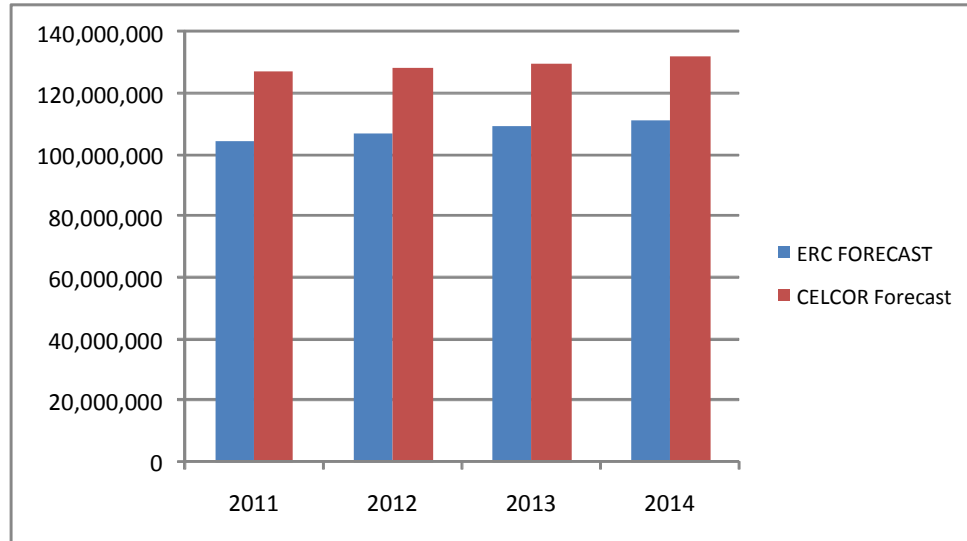
Table 3.7 : Comparison of CELCOR and ERC' Forecast Operating and Maintenance Expenditure (PhP million, real 2009)

Operating and Maintenance Expenditure Category	2010	2011	2012	2013	2014	Total ¹
Distribution and Connection Services Operating and Maintenance						
CELCOR Forecast	40.82	41.53	42.25	42.88	43.59	211.06
ERC Forecast	37.81	38.63	39.55	40.26	40.98	197.23
Difference	-3.01	-2.89	-2.70	-2.61	-2.61	-13.83
Administrative and General						
CELCOR Forecast	40.41	41.10	41.21	41.23	41.98	205.93
ERC Forecast	27.89	27.95	28.01	28.06	28.12	140.03
Difference	-12.52	-13.15	-13.20	-13.17	-13.86	-65.90
Regulated Retail Services						
CELCOR Forecast	42.64	44.60	44.99	45.57	46.59	224.38
ERC Forecast	37.53	38.31	39.87	41.38	42.83	199.91
Difference	-5.11	-6.29	-5.12	-4.19	-3.76	-24.47
Total Operating and Maintenance Expenditure						
CELCOR Forecast	123.86	127.22	128.45	129.67	132.15	641.36
ERC Forecast	103.22	104.89	107.42	109.71	111.93	537.17
Difference	-20.64	-22.34	-21.02	-19.97	-20.23	-104.20
ERC Adjustment	-20.64	-22.34	-21.02	-19.97	-20.23	-104.20

¹ It includes RY2010 plus the Second Regulatory Period which comprises a four-year regulatory period

A graphical comparison between CELCOR's and ERC's OPEX forecast is shown in Figure 3.9. The ERC forecast entails a reduction of 16.15% of the operating expenditures applied for by CELCOR amounting to PhP83.56 million over the 4 year regulatory period.

Figure 3.9 : Comparison between CELCOR and ERC Operating and Maintenance Expenditure Forecast (PhP real 2009)



3.6 BENCHMARKING WITH OTHER GROUP C UTILITIES

3.6.1 Inter Business benchmarking

In order to determine if the ERC adjusted OPEX forecasts were efficient, the ERC relied on two (2) inter business benchmarking studies. The first is a simple OPEX vs. RAB study and the second is a study normalised by line length of OPEX/km vs. customers/ km. In both studies, ERC used the historical data of five (5) of the DUs in the third entry point to develop an efficiency frontier; the IEEC data has not been included as it is considered an outlier, which would distort the results of the studies. The ERC adjusted forecasts have been compared to these frontiers to test for relative efficiency

Figure 3.10 shows the study of OPEX vs. RAB with the average ERC adjusted forecasts plotted on the graph. This study includes three (3) DUs in the second entry point (MECO, CLPC and ILPI) given available data used in the analysis. The average ERC OPEX forecasts are just below the efficiency frontier indicating relative efficiency. It should be noted that the coefficient of determination (R squared) for this study is 0.95 indicating a strong correlation between the dependent and independent variables.

Additionally, Figure 3.10 also shows the relative size of VECO and DLPC compared to TEI, CELCOR, ILPI, CLPC, LUECO and MECO. The utilities in the latter group are all grouped in the lower left side of the graph indicating low magnitudes of their asset base.

Figure 3.10: Average Historical OPEX Per RAB

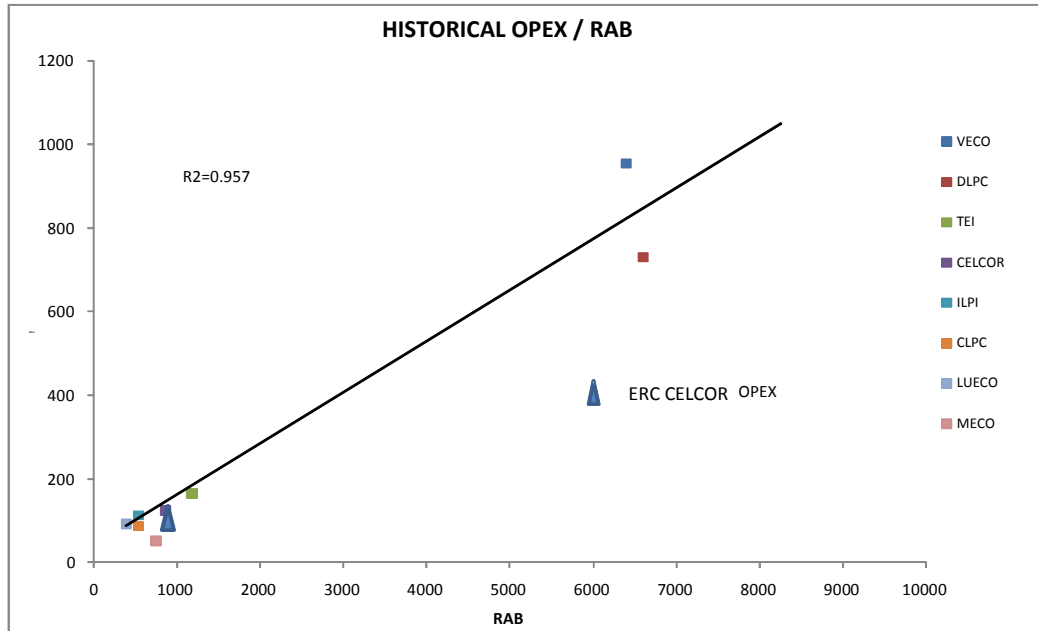
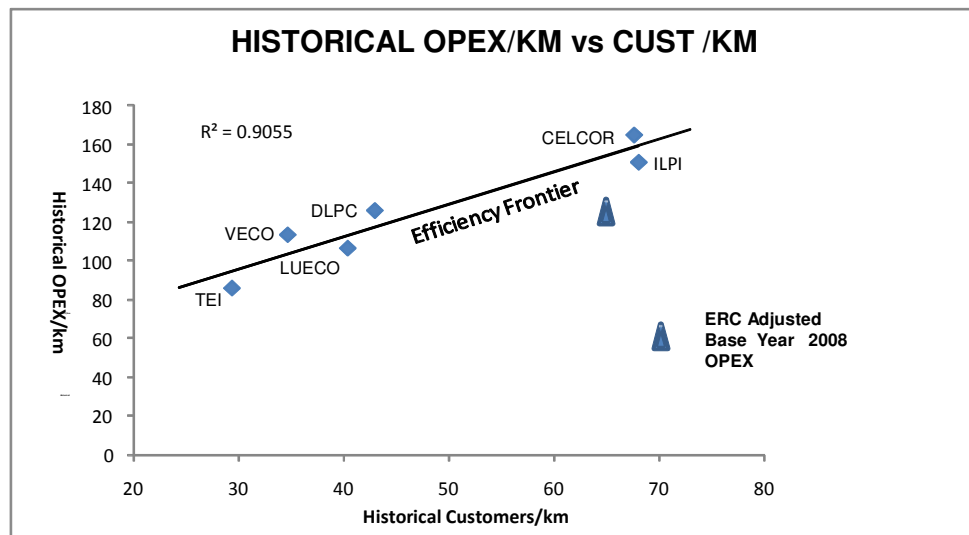


Figure 3.10.1 shows the normalised benchmarking study of OPEX/km vs. customers/km with the average ERC adjusted OPEX forecasts plotted on the graph. In this study, ERC included Iligan Light and Power, Inc. (ILPI), an entrant DU in the second entry point, given sufficient information to include it in this analysis. MECO and CLPC were not included given insufficient information to be included. The ERC adjusted OPEX forecasts are below the efficiency frontier and hence ERC considers these forecasts to be relatively efficient.

It should be noted that the coefficient of determination (R squared) for this study is 0.92 indicating a strong correlation between the dependent and independent variables.

Figure 3.10.1: Average Historical OPEX Per Line Length and Customer Per Line Length

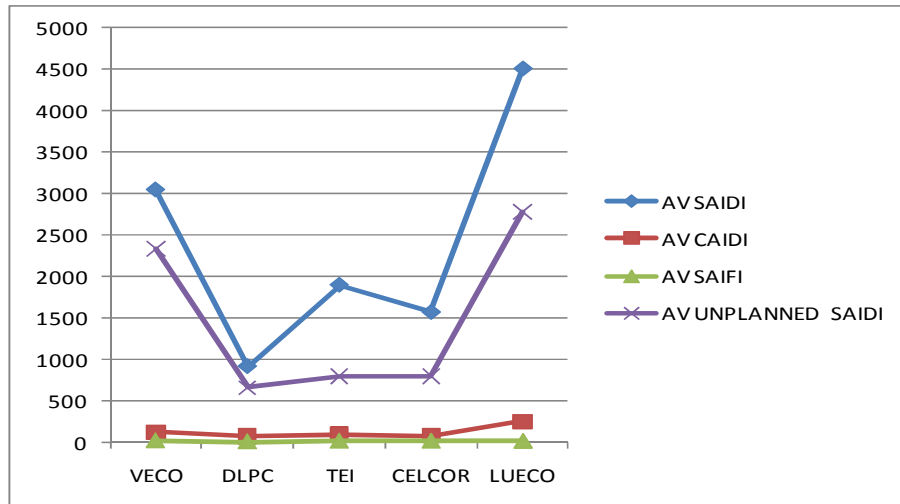


Based on these two benchmarking studies ERC contends that its adjusted forecast OPEX forecasts are relatively efficient.

3.6.2 OPEX vs. Performance / Efficiency Benchmarking

The ERC has benchmarked the historical network performance of five (5) of the six DU entering PBR at the third entry point, IEEC was excluded due to limited data available. The results of this analysis are shown graphically in Figure 3.10.2.

Figure 3.10.2 : Group C DUs (except IEEC) Average Historical Network Performance



Note: IEEC data has not been included as only one year's data is available and it is considered an outlier.

The above graph uses CY2006 to CY2008 data submitted by the utilities. This may not be conclusive as there is need to have sufficient data to identify extreme events falling beyond the control of the utilities. The ERC intends to incorporate either network performance benchmarking or performance improvements for the Third Regulatory Period in order to enhance network performance.

4. TAXES, LEVIES AND DUTIES

4.1 HISTORICAL AND FORECAST TAXES, LEVIES AND DUTIES

4.1.1 Historical Taxes, Levies and Duties Expenditure

CELCOR's historical expenditure on taxes levies and duties over the 2005-2008 calendar years is shown in Table 4.1. The average annual expenditure over this period is approximately PhP0.94 million in nominal terms including the comparatively higher spend in CY 2005⁵.

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

Year	CY 2005	CY 2006	CY 2007	CY 2008
Taxes, Levies and Duties	0.82	0.71	0.71	1.53

Source: Schedule G3 of CELCOR's Revenue Application, June 2009

To obtain a better assessment of the relative expenditure, the actual historical expenditures were inflated to real 2009 PhP using actual historical inflation indicators. The table below shows the actual historical taxes, levies and duties expenditure in real 2009 PhP.

Table 4.2: Historical Taxes, Levies and Duties (PhP million, real 2009)

Year	CY 2005	CY 2006	CY 2007	CY 2008
Taxes, Levies and Duties	0.99	0.81	0.79	1.56

Source: Schedule G3 of CELCOR's Revenue Application, June 2009

The average annual expenditure over this period in real terms is approximately PhP1.04 million.

4.1.2 Forecast Taxes, Levies and Duties Expenditure

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

Table 4.3: Forecast Taxes, Levies and Duties (PhP million, real 2009)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Taxes, Levies and Duties	0.76	1.51	2.40	1.04	1.07	1.08

Source: Schedule G3 of CELCOR's Revenue Application, June 2009

The average annual taxes, levies and duties expenditure forecast for the second regulatory period, which excludes CY 2009 and RY 2010, is approximately PhP1.3 million. The main components contributing to the significant differences for each year of the second regulatory period when compared to the 2009 budget calendar year and 2010 forecast regulatory year are the regulatory reset expert fees, real property taxes and the business operations tax permits. The explanation for these costs is provided in Section 34.3 below.

⁵ The high 2005 amounts can be attributed to the high expenditure on deficiency and amnesty taxes and other taxes.

4.2 TAXES, LEVIES AND DUTIES BREAKDOWN

4.2.1 Historical Taxes, Levies and Duties Expenditure Breakdown

A breakdown of CELCOR's taxes, levies and duties over the 2005-2008 calendar years is presented in Table 4.4 below. Real property tax and business operations permits comprise, on average, 74% of the total annual taxes, levies and duties expenditure across the period.

Table 4.4 : Disaggregated Historical Taxes, Levies and Duties (PhP million, real 2009)
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Year	CY 2005	CY 2006	CY 2007	CY 2008
Taxes				
Business Operations Tax	0.61	0.57	0.55	0.56
Community Tax	0.003	0.003	0.003	0.003
Real Property Tax	0.10	0.24	0.23	0.21
Franchise Tax	0.29	-	-	-
Business Registration Fee	0.001	0.001	0.001	0.001
Sub Total Taxes	0.99	0.81	0.79	0.77
Levies				
Regulatory reset Expert Fees	-	-	-	0.79
Duties	-	-	-	-
Taxes, Levies and Duties	0.99	0.81	0.79	1.56

Source: Schedule G3 of CELCOR's Revenue Application June 2009

4.2.2 Forecast Taxes, Levies and Duties Expenditure Breakdown

CELCOR's forecast expenditure on taxes, levies and duties can be disaggregated into the components shown in Table 4.5 below.

Table 4.5 : Disaggregated Forecast Taxes, Levies and Duties (PhP million, real 2009)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Taxes						
Business Operation Tax	0.55	0.57	0.58	0.59	0.59	0.60
Community Tax	0.003	0.003	0.003	0.003	0.003	0.003
Real Property Tax	0.21	0.21	0.22	0.27	0.29	0.29
Franchise Tax	-	-	-	-	-	-
Business Registration Fee	0.001	0.0005	0.0005	0.0005	0.0004	0.0004
Sub-Total Taxes	0.76	0.78	0.80	0.86	0.89	0.90
Levies						
Regulatory Reset Expert Fees	-	0.73	1.59	0.18	0.18	0.18
Duties	-	-	-	-	-	-
Taxes, Levies and Duties	0.76	1.51	2.40	1.04	1.07	1.08

Source: Schedule G3 of CELCORs Revenue Application June 2009

4.3 COMMENTARY

The main difference in the forecast levels of taxes, levies and duties compared to historical payments arise from expenditures for regulatory reset expert fees, real property taxes and business operations permit. These are discussed further in the sections below.

The taxes, levies and duties in CELCOR's application cover expenditure relating to the distribution business.

4.3.1 Regulatory Reset Expert Fees

As stated in Section 2.3.3 of the ERC Position Paper dated December 8, 2008 for the third entry point into PBR, the costs for the Regulatory Reset Experts during the Second Regulatory Period are considered to be a levy and will therefore be 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, CELCOR 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 assist the ERC with financial modelling and project management:

Table 4.6: Forecast Regulatory Reset Expert Fees (PhP million, real 2009)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Regulatory Reset Expert Fees	-	0.73	1.59	0.18	0.18	0.18

Source: Schedule G3 of CELCOR's Revenue Application June 2009

In its application, CELCOR included regulatory reset costs for RY2010. ERC determined that CELCOR should only be allowed to recover these costs starting RY2011, as advised by ERC. In this regard, ERC excluded these costs in CY2010.

It should be noted that the increase in RY2011 amount entails regulatory reset project costs for the period 2006-2010 which CELCOR can only recover in the first regulatory year.

4.3.2 Real Property Taxes

Table 4.8 below provides the Real Property Taxes that CELCOR has included in its application:

Table 4.8: Forecast Real Property Tax (PhP million, real 2009)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Real Property Tax	0.21	0.21	0.22	0.27	0.29	0.29

Source: Schedule G3 of CELCOR's Revenue Application

This component pertains to taxes which are based on the assessed value of properties. Increase in assessment value and additional assets such as buildings will increase the amount of real property tax. It should be noted however that CELCOR did not provide sufficient information to clearly explain its liability for the payment of real property taxes nor how the provision for real property tax was determined.

4.4 ERC PROVISION FOR TAXES, LEVIES AND DUTIES

Upon the detailed review of each line item of the taxes, levies and duties expenditure application of CELCOR, ERC made the following adjustments:

- The annual provision for real property tax should be adjusted down to the CY 2008 value. Taxes for which CELCOR's liability has not been confirmed should not be included. In the event of the future imposition of additional real property taxes or should CELCOR 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 by means of a "Tax Event Pass Through";
- CELCOR included regulatory reset costs for RY2010. ERC determined that CELCOR should only be allowed to recover these costs starting RY2011, as advised by ERC. In this regard, ERC excluded these costs in CY2010.

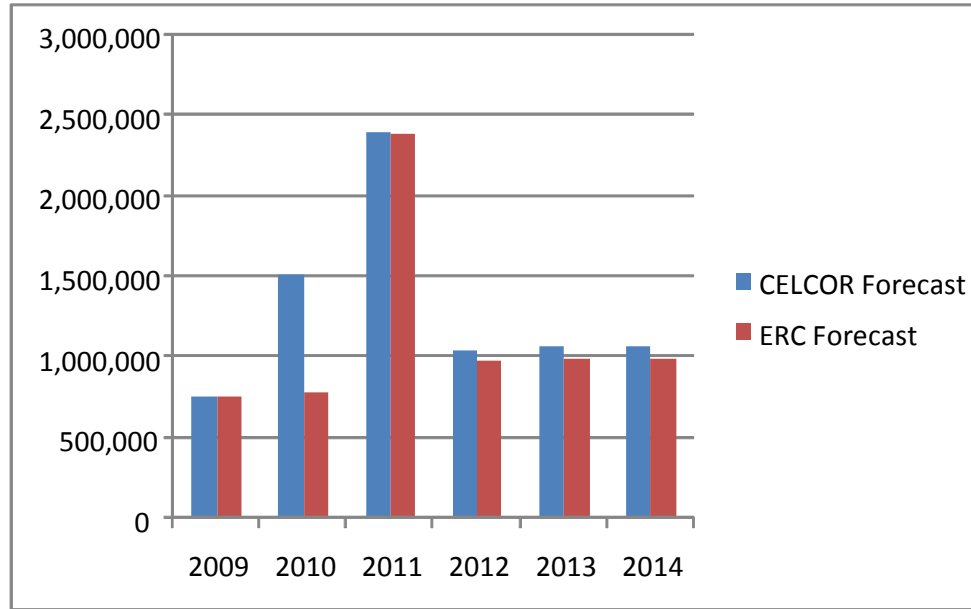
Consequently, ERC's provision for taxes, levies and duties is provided in Table 4.9 below:

Table 4.9: ERC's Provision for Taxes, Levies and Duties (PhP million, real 2008)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Proposed in CELCOR's revenue Application						
Taxes, Levies and Duties	0.76	1.51	2.40	1.04	1.07	1.06
ERC Adjustments						
Regulatory Reset Expert Fees	-	-0.73	-	-	-	-
Real Property Tax	-	-	-0.01	-0.06	-0.08	-0.08
Sub Total Taxes	-	-0.73	-0.01	-0.06	-0.08	-0.08
Levies						
ERC's Provision for Taxes, Levies and Duties	0.76	0.78	2.38	0.98	0.99	0.99

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

Figure 4.1 : Comparison between CELCOR's Forecast and ERC's Forecast (PhP real 2009)



The increase in RY2011 entails regulatory reset project costs for the period 2006-2010 which can only be recovered by CELCOR in the first regulatory year. It should be noted that, on the average, over the four-year regulatory period, the taxes, levies and duties forecast is only an insignificant 1.2% of the total OPEX forecast.

The graph shows an average difference of 4% between CELCOR's forecast and ERC's forecast for the regulatory year 2011 to 2014.