



Regulatory Reset for Cabanatuan Electric Corporation (CELCOR)

**July 2010 to June 2014
(Second Regulatory Period)**

FINAL DETERMINATION

ERC Case No. 2009-043 RC

March 8, 2010

**Republic of the Philippines
Energy Regulatory Commission
Pacific Center, San Miguel Ave., Pasig City**

Regulatory Reset for Cabanatuan Electric Corporation (CELCOR)
July 2010 to June 2014
(Second Regulatory Period)

FINAL DETERMINATION

Pursuant to Section 43(f) of Republic Act No. 9136, otherwise known as the Electric Power Industry Reform Act of 2001 (EPIRA), and Rule 15, Section 5(a) of its Implementing Rules and Regulations (IRR), the Energy Regulatory Commission (ERC) promulgated the *Distribution Wheeling Rate Guidelines* on December 10, 2004. These were subsequently updated and re-issued on July 26, 2006 as the *Rules for Setting Distribution Wheeling Rates for Privately Owned Distribution Utilities entering Performance Based Regulation (Second Entry Point)*.

Under Section 7.1.2 of the DWRG and the subsequent RDWR, the ERC was required to publish a Regulatory Reset Issues Paper to provide its initial views on the issues to be discussed during the pending Regulatory Reset Process and to specify the information required to be delivered by each Regulated Entity for the purposes of the Regulatory Reset Process and the time by which such information should be delivered. The Regulatory Reset Issues Paper was published on September 5, 2008. Following public consultation on the Issues Paper, the ERC's final view on the Regulatory Reset Process was described in the Position Paper on the Regulatory Reset for the July 2010 to June 2014 Regulatory Period for the Third Entry Group of Privately Owned Distribution Utilities subject to Performance Based Regulation, published on December 8, 2008.

Annex B of ERC Resolution No. 12-02 Series of 2004 "Adopting a Methodology for Setting Distribution Wheeling Rates", dated December 10, 2004, defined five (5) entry points into PBR for privately owned Distribution Utilities. This was later amended to four (4) entry points by the ERC under Resolution 24, series of 2007, dated October 24, 2007.

In accordance with the RDWR and the Position Paper, the six (6) Regulated Entities entering Performance Based Regulation (PBR) at the Third Entry Point, these being Cabanatuan Electric Corporation (CELCOR), Davao Light and Power Company, Inc. (DLPC), Ibaan Electric and Engineering Corporation (IEEC), La Union Electric Company (LUECO), Tarlac Electric Incorporated (TEI) and Visayan Electric Company (VECO), filed various information and data relating to the requirements for the Regulatory Reset Process on June 15, 2009.

Pursuant to Section 7.1.7 of the RDWR, after consideration of the information provided by the Regulated Entities and the reports prepared by its Regulatory Reset Experts, the ERC is required to publish a Final Determination on the price control arrangements that will apply to the Regulated Entities for the Second Regulatory Period. This consultation document was published on November 25, 2009 seeking further submissions from interested parties. The closing date for submissions was on January 8, 2010. A public consultation to discuss the submissions on the Final Determination was held in Cabanatuan City on January 19, 2010.

Following its consideration of the submissions received, the discussion at the public consultation, and further evidence presented by CELCOR, the ERC has prepared its Final Determination of the price control arrangements that will apply to CELCOR for the Second regulatory period. These arrangements are discussed below.

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1. INTRODUCTION

1.1 Legal Basis

1.1.1 Section 43(f) of Republic Act No. 9136, otherwise known as the Electric Power Industry Reform Act of 2001 (EPIRA), and Rule 15, Section 5(a) of its Implementing Rules and Regulations (IRR), authorized the ERC to adopt alternative forms of internationally accepted rate-setting methodology. Pursuant to the aforementioned provisions of law, the ERC, after conducting public consultation, adopted on December 10, 2004 the *Distribution Wheeling Rate Guidelines* (DWRG). These were subsequently updated and after further public consultation re-issued on July 26, 2006 as the *Rules for Setting Distribution Wheeling Rates for Privately Owned Distribution Utilities entering Performance Based Regulation (First Entry Point)* (RDWR). The RDWR provides for a performance-based regulation (PBR) using a price cap to set the distribution wheeling rates to be charged by Distribution Utilities to its customers.

1.1.2 Annex B of ERC Resolution No. 12-02 Series of 2004 “Adopting a Methodology for Setting Distribution Wheeling Rates”, dated December 10, 2004, defined five (5) entry points into PBR. This was subsequently revised to four (4) entry points under ERC Resolution No. 24, Series of 2007, dated October 24, 2007. The ERC is currently publishing its Final Determinations for the Regulated Entities entering PBR at the Third Entry Point. This document relates specifically to the Final Determination for Cabanatuan Electric Corporation (CELCOR). Similar documents are being published on the same date to describe the Final Determinations for the other Regulated Entities in the Third Entry Group, these being:

- a) Davao Light and Power Company (DLPC);
- b) Ibaan Electric Engineering Corporation (IEEC);
- c) La Union Electric Company (LUECO);
- d) Tarlac Electric Incorporated (TEI); and
- e) Visayan Electric Company (VECO).

The Final Determination applies to the Second Regulatory Period for this entry group, which commences on July 1, 2010 and ends on June 30, 2014.¹

1.1.3 Under Section 7.1.2 of the RDWR, the ERC is required to publish a Regulatory Reset Issues Paper to provide its initial views on the issues to be discussed during the pending Regulatory Reset Process and to specify the information required to be delivered by each Regulated Entity for the purposes of the Regulatory Reset Process and the time by which such information should be delivered. The Regulatory Reset Issues Paper (Issues Paper) was published on September 5, 2008. Following public consultation on the Issues Paper, the ERC’s final view on the Regulatory Reset Process was described in the Position Paper on the Regulatory Reset for the July 2010 to June 2014 Regulatory Period for the Third Entry Group of Privately Owned Distribution Utilities subject to Performance Based Regulation (Position Paper), published on December 8, 2008.

1.1.4 In the Position Paper, the process to be undertaken and the timetable for the regulatory reset for the Second Regulatory Period were set forth as follows:

- a) June 15, 2009 : Regulated Entities to file rate applications.

¹ Note that there was no First Regulatory Period for this entry group.

- b) July to September 2009 : ERC to conduct expository and evidentiary hearings on the applications.
- c) November 20, 2009 : ERC to publish its Final Determination on the applications and price settings, for consultation.
- d) January 8, 2010 : Submissions on Final Determination close.
- e) January to February 2010 : ERC to conduct public consultation and evidentiary hearings.
- f) March 10, 2010 : ERC to issue the Final Determination on the Regulated Entities' applications and the price settings for the Second Regulatory Period.

1.2 Overview of the Reset Process

- 1.2.1 The Reset Process for the Third Entry Group's Second Regulatory Period (January 1, 2009 until June 30, 2010) commenced with the ERC's issuance of the Issues Paper on September 5, 2008 and the subsequent publication of the Position Paper on December 8, 2008.
- 1.2.2 In compliance with the Position Paper, the Regulated Entities filed their applications for approval of the allowed revenue and performance incentive schemes (Revenue Applications) for the Second Regulatory Period on June 15, 2009. Following the receipt of these applications, the ERC conducted the following hearing and consultation processes:
 - a) June 22, 2009 : ERC issued Order setting the venue and date of initial hearing
 - b) June 29, 2009 : First publication of the applications by the Regulated Entities
 - c) July 6, 2009 : Second publication of the applications by the Regulated Entities
 - d) July 21, 2009 : DLPC and VECO jurisdictional hearings
 - e) July 23, 2009 : CELCOR and LUECO jurisdictional hearings
 - f) July 24, 2009 : TEI jurisdictional hearing.
 - g) August 5, 2009 : DLPC clarificatory meeting
 - h) August 6, 2009 : DLPC evidentiary hearing
 - i) August 12, 2009 : VECO clarificatory meeting
 - j) August 13- 14, 2008 : VECO evidentiary hearing
 - k) August 17, 2009 : TEI clarificatory meeting
 - l) August 18, 2009 : TEI evidentiary hearing
 - m) August 19, 2009 : LUECO evidentiary hearing
 - n) August 20, 2009 : LUECO clarificatory meeting
 - o) August 24, 2009 : IEEC jurisdictional meeting
 - p) August 26, 2009 : CELCOR clarificatory meeting
 - q) August 27, 2009 : CELCOR evidentiary hearing
 - r) August 28, 2009 : IEEC clarificatory meeting
 - s) September 1, 2009 : Follow-up clarificatory meeting with DLPC
 - t) September 2, 2009 : Follow-up clarificatory meeting with VECO
 - u) September 8, 2009 : IEEC evidentiary hearing

Provision was also made for hearings during August and September where parties of record to the Revenue Application cases could present counter-evidence. However, no such evidence was filed and the hearings were therefore not required.

- 1.2.3 During these hearings, the ERC informed all interested parties of the procedures and timelines pertaining to the Regulatory Reset Process. The Regulated Entities had opportunity to present witnesses to support their revenue and performance incentive scheme applications and to answer questions in this regard from parties of record and the ERC.
- 1.2.4 As noted in Paragraph 1.2.2, additional provision was made for clarificatory meetings with each of the Regulated Entities. The purpose of these meetings was to allow the ERC's staff and Regulatory Reset Experts to present detailed questions and discuss details of their applications with technical and administrative staff of the Regulated Entities in a less formal environment (than evidentiary hearings). All parties of record were invited to observe these meetings. All information gathered during and subsequent to these meetings (as a result of requests for additional information made during the meetings) that were considered by the Reset Experts and the ERC in preparing this Final Determination were formally offered as supplementary evidences to the applications.
- 1.2.5 Following the hearings and analysis of the application and evidences presented by CELCOR and after considering the recommendations of the ERC's Regulatory Reset Experts, the ERC has concluded a final position on the price caps and price path that should apply to CELCOR for the Second Regulatory Period. This position is described in this Final Determination.
- 1.2.6 Submissions were invited from interested parties to comment on the CELCOR Draft Determination with the closing date for submissions on January 8, 2010. At the closing date, submissions were received only from CELCOR. A public consultation was held in Cabanatuan City on January 19, 2010 at which the party of record was given opportunity to present and discuss their submissions on the Final Determination. Other interested parties were also given opportunities to provide oral inputs at the public consultation.
- 1.2.7 Subsequent to the public consultation, several questions for further clarification were submitted to CELCOR on its submissions (ERC Order dated January 20). CELCOR responded on January 28, 2010 to these directives.
- 1.2.8 The ERC evaluated all the submissions received that were relevant to the Draft Determination as well as the additional information provided by CELCOR and is now issuing a Final Determination on the price-control arrangements for CELCOR for the Second Regulatory Period.

1.3 Purpose of the Final Determination

- 1.3.1 The Final Determination embodies the ERC's final position on the price control arrangements that will apply to CELCOR for the Second Regulatory Period. It describes the ERC's evaluation of CELCOR's revenue and performance incentive scheme application, as well as the evidence presented in support thereof during the clarificatory meetings and evidentiary hearings, the submissions received on the ERC's Draft Determination and subsequent further information provided.
- 1.3.2 The Final Determination is the final resolution of CELCOR's applications. It presents the ERC's final decision on the price control that will apply to CELCOR for the Second

Regulatory period and will form the basis on which CELCOR will prepare and submit its distribution rate applications for the Second Regulatory Period.

1.4 Rate Setting Process Going Forward

- 1.4.1 Each Regulated Entity is required to convert the maximum average price (MAP) set in terms of the ERC's Final Determination into a distribution rate structure. This rate structure is to be filed with the ERC by April 12, 2010.
- 1.4.2 The ERC will invite public submissions on these rate filings and will conduct public hearings on May 13-21, 2010 at which the submissions will be addressed.
- 1.4.3 Public hearings will be held at the following places on the respective dates:
 - Cebu City : May 13-14, 2010
 - Cabanatuan City : May 13-14, 2010
 - Tarlac City : May 18-19, 2010
 - San Fernando City : May 20-21, 2010
 - Davao City : May 20-21, 2010
 - Ibaan, Batangas : May 18-19, 2010
- 1.4.4 At the hearings, further information may be requested by the ERC. After consideration of the rate filings, submissions received and any further information obtained, the ERC will publish the final approved rate structures on May 31, 2010. The Regulated Entities will communicate these structures to their customers for a four-week period prior to July 30, 2010.
- 1.4.5 The new rate structures will be implemented from July 1, 2010. This is the scheduled start of the Second Regulatory Period (July 1, 2010) and any resulting under or over-recovery in revenue will be reflected in the correction factor at the next rate application, for implementation in July 2011.

2. FORECASTS OF ECONOMIC PARAMETERS

2.1 Purpose of the Economic Forecasts

- 2.1.1 The economic forecasts are important inputs into the determination of the annual revenue requirement and the resulting maximum average price-caps (MAP) for CELCOR's Second Regulatory Period. In particular, this section describes the ERC's view on the expected consumer price index (CPI) in the Philippines and the United States of America over the Second Regulatory Period, as well as the forecast Philippine Peso (PhP) and US dollar (US\$) exchange rates.²
- 2.1.2 This chapter discusses the macroeconomic forecasts available for the Philippines from a number of independent sources. The information from these sources is compared with the economic forecasts submitted by CELCOR in its Revenue Application in order to assess whether these forecasts are reasonable to apply during the Second Regulatory Period, or whether they need to be adopted.
- 2.1.3 It should be noted that as stated in Section 3.1.4 of the Position Paper, the ERC has decided to adopt a single set of economic forecasts for all the Regulated Entities making up the Third Entry Group. The economic forecasts submitted by the other Regulated Entities in their Revenue Applications are therefore also referred to in this chapter.
- 2.1.4 No further submissions were received on alternative economic parameters to those suggested in the Draft Determination. Since the Regulated Entities were not asked to resubmit economic data and this Final Determination is published well after the Revenue Applications were lodged, the originally submitted economic indices, as well as the references used in the Draft Determination are now somewhat outdated. The ERC has therefore obtained updated economic data which is compared against that originally submitted and discussed in the Draft Determination.

2.2 Consumer Price Index (Philippines) : Utility Applications

- 2.2.1 The Philippines CPI forecast is important to the regulatory reset as this is a prime driver for most operating and maintenance expenditure forecasts over the Second Regulatory Period, as well as for a large part of the forecasts in capital expenditure.
- 2.2.2 These expenditure forecasts have been included in the Regulated Entities' revenue forecasts (discussed in Sections 4, 5 and 6), which are in turn considered in determining the smoothing factor (X-factor) for each Regulated Entity (see the analysis in Section 9.1). The latter calculations also take the forecast Philippines inflation directly into account. Once the X-factor is determined, the projected Smoothed Maximum Average Price caps (SMAPs) and the opening Maximum Average Price-cap (MAP) for the Second Regulatory Period can be established, based on the opening price and the forecast inflation rate, adapted with the X-factor.
- 2.2.3 During the course of the Second Regulatory Period, the X-factor will be used with the actual CPI outcomes experienced in the Philippines during each year to determine the actual price path (as opposed to the initial projection of the MAP at the reset).

² The RDWR makes provision for local and international expenditure, using the US\$ as the proxy amount for international expenditure. All expenditure in other denominations therefore has to be converted into US dollar amounts.

- 2.2.4 In its application, CELCOR proposed forecasts for the Philippines CPI that corresponds to those published by the Economist Intelligence Unit (EIU) in April 2009³, converted to regulatory years. Since this data set only provides forecasts until 2013, it was assumed that the 2013 figures will also apply in 2014.
- 2.2.5 This approach was also adopted by the other five (5) Regulated Entities in the Third Entry Group.
- 2.2.6 The forecasts used by the Third Entry Group as provided by the Regulated Entities in the Third Entry Group are presented in Table 2.1 and Figure 2.1 below. These are also compared with the inflation forecasts of the ERC in its Final Determination on the price-control arrangements for the First and Second Entry Groups and updated figures from EIU. Since the regulatory years run from July 1 to June 30, the annual CPI figures have been converted to these periods.⁴
- 2.2.7 For the Draft Determination, indices published in October 2009 by the EIU were used. These have now been updated with the latest available (February 2010) indices which are also included in the comparison. It will be noted that the latest local inflation forecasts are substantially higher than those published by the EIU in October 2009, or most of the other information sources available at the time of the Revenue Application.⁵
- 2.2.8 The EIU figures used in Table 2.1 are more recent than those obtained from other sources and therefore better takes into account the substantial recent increases experienced in the Philippines CPI.
- 2.2.9 Since the regulatory years run from July 1 to June 30, the annual CPI figures have been converted to these periods.⁶ In addition, all inflation forecasts were restated from a common regulatory year basis.

Table 2.1 : Various Philippines CPI Movement Forecasts (Regulatory Years)

	CY2008	CY2009	RY2010	RY2011	RY2012	RY2013	RY2014
CELCOR	4.0%	2.9%	2.7%	3.9%	4.1%	4.0%	4.0%
DLPC	4.0%	2.9%	2.7%	3.9%	4.1%	4.0%	4.0%
IEEC	4.0%	2.9%	2.7%	3.9%	4.1%	4.0%	4.0%
LUECO	4.0%	2.9%	2.7%	3.9%	4.1%	4.0%	4.0%
TEI	4.0%	2.9%	2.7%	3.9%	4.1%	4.0%	4.0%
VECO	4.0%	2.9%	2.7%	3.9%	4.1%	4.0%	4.0%
Draft Det (EIU-Oct 2009)	4.0%	3.5%	3.4%	4.0%	4.1%	4.0%	4.0%
EIU (Feb 2010)	9.3%	3.3%	4.0%	4.6%	4.6%	4.7%	4.7%
Group A Final Det.	3.2%	3.4%	3.4%	3.5%	4.4%	4.4%	
Group B Final Det.	4.5%	9.0%	6.4%	4.4%	4.2%	4.0%	

Source : Economist Intelligence Unit (Feb 2010)
ERC Draft Determination for Third group Entrants (EIU-Oct 2009)
ERC Final Determination for First Group Entrants
ERC Final Determination for Second Group Entrants

Note : Data for 2008 regulatory year based on actual indices

³ These indices were communicated to CELCOR by the ERC as part of pro forma documentation for filing the Revenue Application, but there was no obligation on any Regulated Entity to apply the figures.

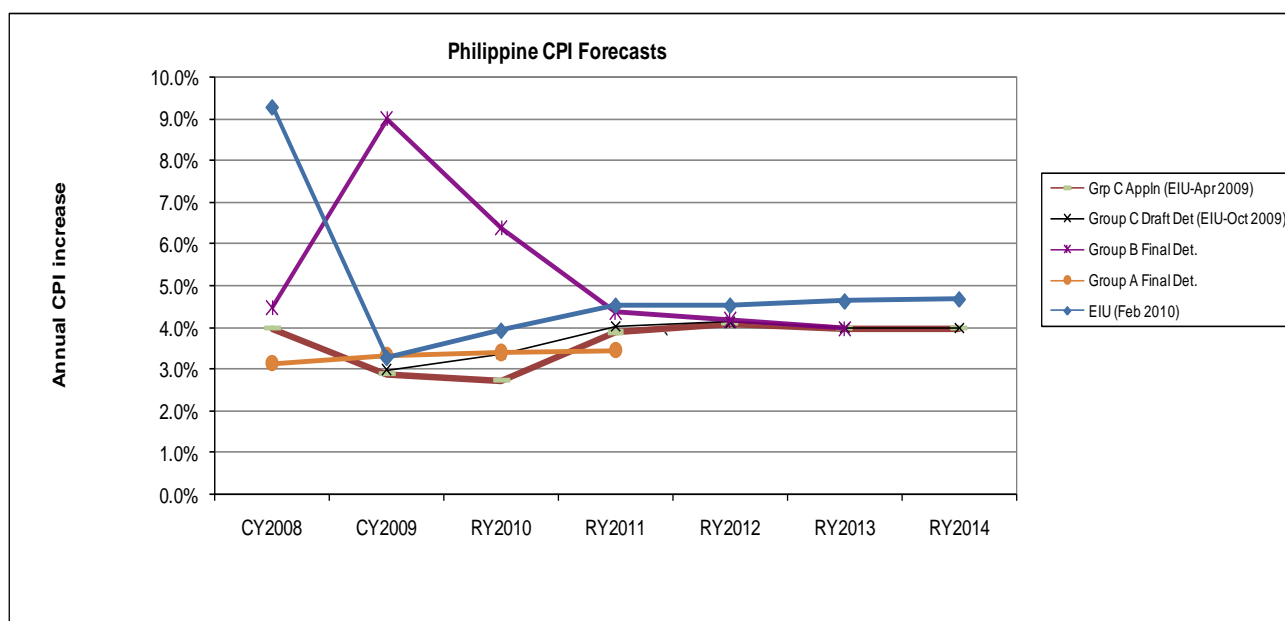
⁴ This was done by forecasting inflation on a quarterly basis, using two quarters from each calendar year making up a regulatory year. Quarterly forecasts were derived from the annual calendar year forecasts.

⁵ The 2008 figure remained unchanged in the new EIU forecast. This reflects the fact that Regulatory Year figures are reported here, for the period July 2010 to June 2011.

⁶ This was simply done by calculating a weighted average of the calendar year figures, where the weighting is in accordance to the proportion of the regulatory year that overlaps with the calendar year.

2.2.10 While the CPI forecasts range across a considerable band, reflecting the uncertainty that exists in forecasting such economic indices, this is not considered a material problem in terms of the impact on the price setting. The CPI forecast is taken into account in both sides of the equation for the calculation of the X-factor⁷ – indirectly in the case of the annual revenue requirement. The revenue requirement is calculated in nominal terms, and takes into account the same inflation forecast for future expenditure. As long as the economic indicators are consistently applied, the impact of choosing a lower or higher CPI (within the indicated range) on the calculated X-factor is therefore low.

Figure 2.1 : Comparison of Philippine CPI Forecasts (Regulatory Years)



2.2.11 In addition, the actual annual price caps will be based on the actual CPI for each regulatory year and discrepancies between the forecast and actual figures will therefore not impact on future price settings.

2.3 Consumer Price Index – USA

2.3.1 Capital investment in distribution networks generally involves substantial overseas purchases. The RDWR recognizes this and uses the United States dollar as proxy for all foreign purchases.⁸ Movements in the US CPI therefore have a significant bearing on the forecast expenditure of Regulated Entities for the Second Regulatory Period.

2.3.2 To recognize the parity relationship between international rates of inflation, interest rates and exchange rates, it is important to adopt a consistent approach (with that used for the local CPI forecast) to selecting the US CPI forecasts. As with the local CPI forecasts, if

⁷ Section 4.15.3 of the RDWR

⁸ This does not imply that all foreign purchases will be made in the US, but that foreign purchases should be converted to US dollar terms for the purpose of assessing international CPI and exchange rate movements.

this consistency is maintained, differences between forecasts for the US CPI, as long as these are within reasonable bounds, should not have a material impact on the calculation of the X-factor.

- 2.3.3 In addition, the calculation of the weighted index that is used to determine the annual MAP⁹ also takes into account movements in the US CPI – if these exceeds a certain threshold limit.
- 2.3.4 In its application, CELCOR proposed forecasts for the USA CPI that corresponds to those published by the Economist Intelligence Unit (EIU) in April 2009¹⁰, converted to regulatory years. Since this data set only provides forecasts until 2013, it was assumed that the 2013 figures will also apply in 2014.
- 2.3.5 This approach was also adopted by the other five (5) Regulated Entities in the Third Entry Group.
- 2.3.6 The forecasts proposed by the six (6) Regulated Entities in the Third Entry Group are presented in Table 2.2 and Figure 2.2 below. This is also compared with the inflation forecasts of the ERC in its Final Determination on the price-control arrangements for the First and Second Entry Group as well as updated figures from the EIU. The ERC consulted the National Economic Development Authority (NEDA), but forecasts were not available from them. Since the regulatory years run from July 1 to June 30, the annual CPI figures have been converted to these periods.¹¹ In addition, all inflation forecasts were converted from a common regulatory year basis.
- 2.3.7 The EIU forecast of the US CPI has increased somewhat since the publication of the Draft Determination, as indicated in Figure 2.2.

Table 2.2 : Various US CPI Movement Forecasts (Regulatory Years)

	CY2008	CY2009	RY2010	RY2011	RY2012	RY2013	RY2014
CELCOR	2.9%	0.8%	-0.3%	1.0%	1.4%	1.7%	1.9%
DLPC	2.9%	0.8%	-0.3%	1.0%	1.4%	1.7%	1.9%
IIEC	2.9%	0.8%	-0.3%	1.0%	1.4%	1.7%	1.9%
LUECO	2.9%	0.8%	-0.3%	1.0%	1.4%	1.7%	1.9%
TEI	2.9%	0.8%	-0.3%	1.0%	1.4%	1.7%	1.9%
VECO	2.9%	0.8%	-0.3%	1.0%	1.4%	1.7%	1.9%
EIU (Feb 2010)	3.8%	-0.3%	0.7%	1.5%	1.6%	2.2%	2.7%
Draft Det (EIU - Oct 2009)	2.1%	1.6%	0.1%	1.1%	1.4%	1.7%	1.9%
Group A Final Det.	2.4%	2.7%	2.6%	2.5%			
Group B Final Det.	3.3%	4.0%	2.4%	2.3%	2.5%	2.4%	

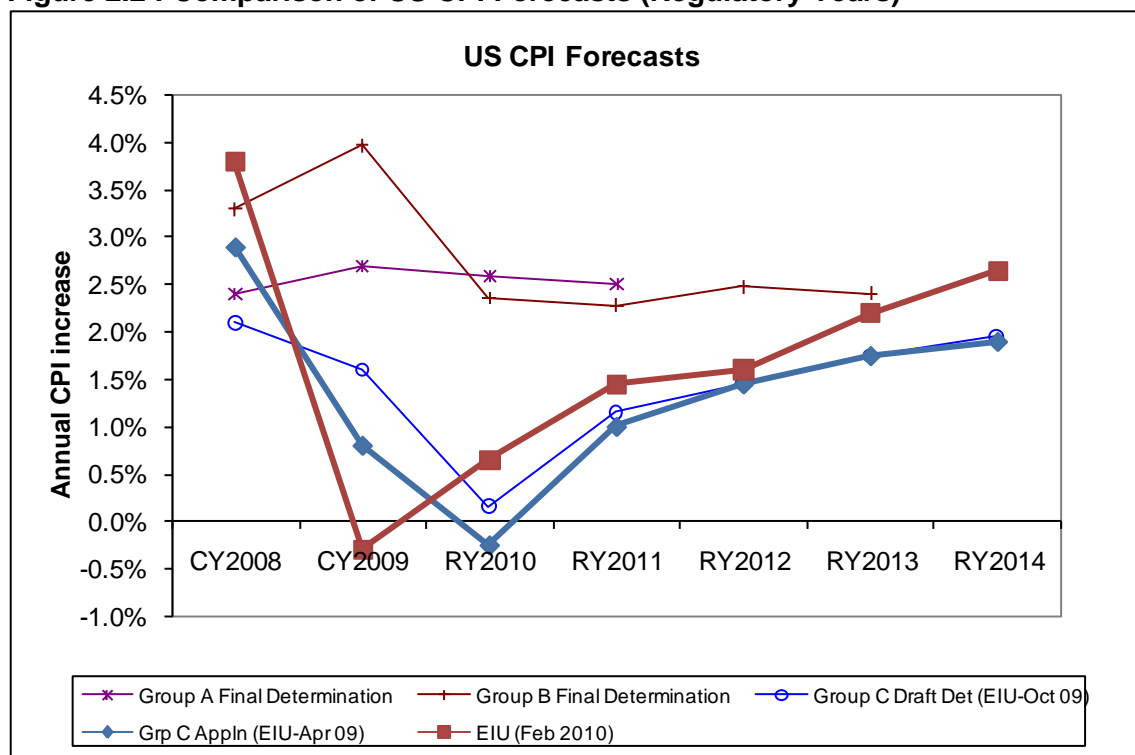
Source : Economist Intelligence Unit (Feb 2010)
ERC Draft Determination for Third Group Entrants (EIU- Oct 2009)
ERC Final Determination for First and Second Group Entrants
Note : Data for 2008 regulatory year based on actual indices

⁹ Sections 4.2.1 and 3.3 of the RDWR

¹⁰ Supra note 3

¹¹ This was simply done similarly to the conversion of the Philippines CPI forecasts (See note 4).

Figure 2.2 : Comparison of US CPI Forecasts (Regulatory Years)



2.4 Foreign Exchange Rate – Peso/US\$

- 2.4.1 The last economic index required to be forecasted for the Second Regulatory Period is the rate of exchange of the Philippine Peso against the US dollar. As noted before, the US dollar is used as proxy for foreign expenditure by the Regulated Entities. Since the allowed revenue for each Regulated Entity will be set in Peso, it is necessary to convert foreign expenditure to Peso, and exchange rate movements therefore impact directly on the approved expenditure.
- 2.4.2 As noted above, given the parity relationship between exchange rates, interest rates and inflation rates, it is important to apply a consistent approach to these factors. This will ensure that forecasts that deviate somewhat from actual future rates will not have a material impact on the X-factor.
- 2.4.3 In its application, CELCOR used the Peso/US\$ rate published by the Economist Intelligence Unit (EIU) in April 2009¹², converted to regulatory years. Since this data set only provides forecasts until 2013, it was assumed that the 2013 figures will also apply in 2014.
- 2.4.4 This approach was also adopted by the other five (5) Regulated Entities in the Third Entry Group.
- 2.4.5 The PhP/US\$ rate of exchange forecasts proposed by the six (6) Regulated Entities in the Third Entry Group are presented in Table 2.3 and Figure 2.3 below. This is also compared with the forecasts of the ERC in its Final Determination on the price-control arrangements for the First and Second Entry Groups as well as updated figures from the EIU. Since the regulatory years run from July 1 to June 30, the average annual rate of exchange figures have been converted to these periods, assuming straight-line

¹² Supra note 3

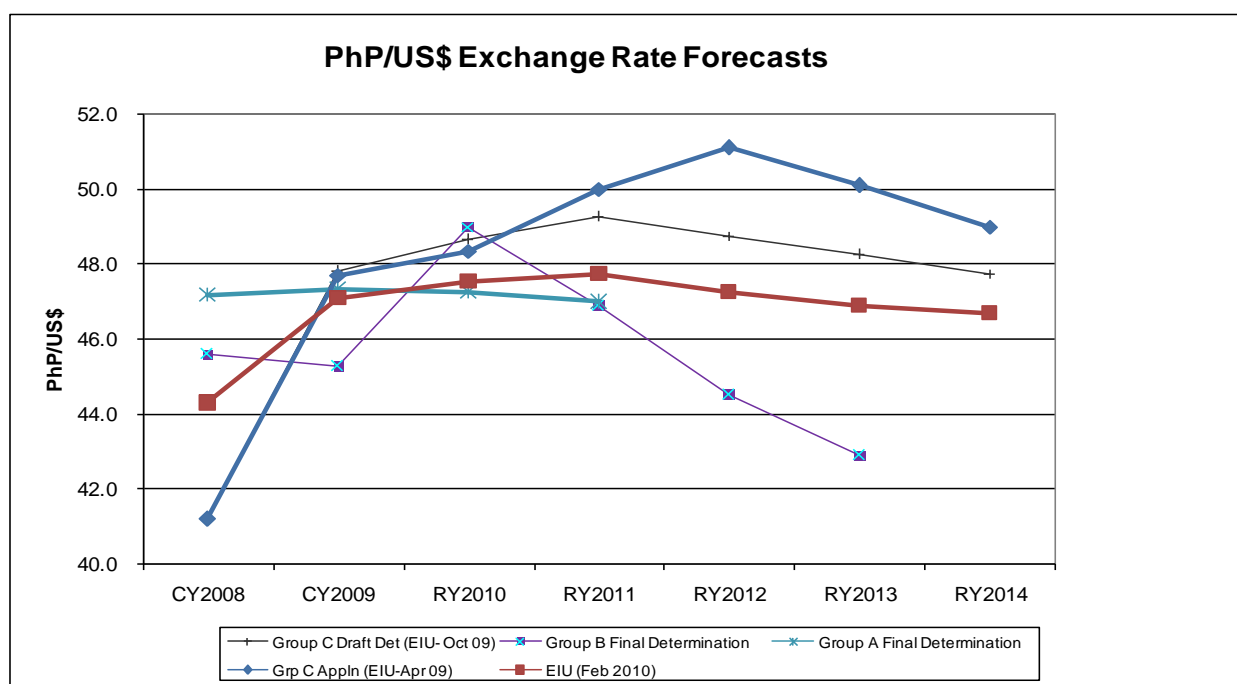
movements throughout the year. In addition, all exchange rate forecasts were converted to a common regulatory year basis.

Table 2.3 : Various PhP/US\$ Rate of Exchange Forecasts (Regulatory Years)

	CY2008	CY2009	RY2010	RY2011	RY2012	RY2013	RY2014
CELCOR	41.2	47.7	48.4	50.0	51.1	50.1	49.0
DLPC	41.2	47.7	48.4	50.0	51.1	50.1	49.0
IIEC	41.2	47.7	48.4	50.0	51.1	50.1	49.0
LUECO	41.2	47.7	48.4	50.0	51.1	50.1	49.0
TEI	41.2	47.7	48.4	50.0	51.1	50.1	49.0
VECO	41.2	47.7	48.4	50.0	51.1	50.1	49.0
EIU (Oct 09)		47.8	48.7	49.3	48.8	48.3	47.8
EIU (Feb 2010)	44.3	47.1	47.6	47.8	47.3	46.9	46.7
Group A Final Det							
Group B Final Det	45.6	45.3	49.0	46.9	44.5	42.9	

Source : Economist Intelligence Unit (Feb 2009)
ERC Draft Determination for Third Group Entrants (October 2009)
ERC Final Determination for First Group Entrants
ERC Final Determination for Second Group Entrants

Figure 2.3 : Comparison of PhP/US\$ Exchange Rate Forecasts (Regulatory Years)



2.5 ERC Final Decision – Forecast Economic Indices

2.5.1 As discussed above, it is important to apply a consistent approach to the forecasting of the economic indices. In addition, it is also important that forecasts are obtained from a reliable and independent macro-economic forecasting specialist. The ERC resolved to use the forecasts obtained from the Economist Intelligent Unit (EIU), based on February 2010 values.

2.5.2 The updated EIU figures correlate better with current economic data in the Philippines than those used for the Draft Determination. The ERC, however, notes that economic conditions are somewhat unstable and that the financial indices are still subject to high volatility. Nevertheless, the medium term projections are considered a reasonable estimate.

2.5.3 The ERC also notes that there are correction mechanisms built into the RDWR for material changes between the forecast and actual CPI or exchange rates which will largely offset the impact on consumers or Regulated Entities should the values of these indices in future differ materially from the estimated values used in the Final Determination.

2.5.4 In Table 2.4, the forecasts adopted by the ERC for the Final Determination are indicated.

Table 2.4 : Economic Indices Forecasts Accepted by the ERC

	2010	2011	2012	2013	2014
Philippine CPI (% increase per regulatory year)	4.0%	4.6%	4.6%	4.7%	4.7%
US CPI (% increase per regulatory year)	0.7%	1.5%	1.6%	2.2%	2.7%
PhP/US\$ exchange rate (average for regulatory year)	47.6	47.8	47.3	46.9	46.7

(Source : EIU, February 2010 – converted to regulatory years)

2.5.5 These figures differ from those used in the ERC's Final Determinations on the price-control arrangements for the First and Second Entry Groups. This is a reflection of the updated forecast economic parameters and not that of any change in approach by the ERC.

3. ENERGY FORECASTS

3.1 General

- 3.1.1 Energy consumption and maximum demand forecasts are key parameters for the price determination. Firstly, the forecast energy consumption levels are directly taken into account in calculating the X-factor and the smoothed price path at the start of the regulatory period.
- 3.1.2 In addition, operating and capital expenditure, especially the latter, are heavily influenced by network demand forecasts. Growth in demand therefore represents a primary justification for a Regulated Entity’s capital expenditure plans. More indirectly, growth also drives operating and maintenance expenditure - larger networks, or networks utilized closer to maximum capacity to cater for additional demand, generally require more inputs from all levels of the organization, which over time leads to higher staffing requirements and higher expenditure on maintenance consumables.
- 3.1.3 A price-capped form of regulation is applied to the Distribution Wheeling Services. Since prices are pre-determined for the regulatory period, Regulated Entities’ actual revenue will vary in proportion to energy sales (after accounting for changes in the CPI), with no opportunity to adjust prices to compensate for the fluctuations. The Regulated Entities will bear a so-called “volume risk”. If actual sales are substantially less than forecast, this may mean that they would have to curtail expenditure. On the other hand, if actual consumption levels are higher than forecast, this should allow additional expenditure to cater for the additional demand.¹³
- 3.1.4 It is therefore clearly in the Regulated Entities’ best interest to ensure that the energy and demand forecasts are accurate. Under-estimating consumption or demand may lead to reductions in the approved expenditure programs, while over-estimating may give rise to a lower than sustainable price-cap.

3.2 Energy Consumption Forecast

- 3.2.1 The CELCOR energy sales forecasts included in the Revenue Application are indicated in Table 3.1 below. A broken down value, including historical figures, is provided in Table 3.2. CELCOR’s own consumption has been included in the figures.

Table 3.1 - CELCOR MWh Energy Sales Figures (Forecast in the Revenue Application)

	2010	2011	2012	2013	2014
Energy Consumption (MWh)	150,103	153,037	156,278	159,294	162,924

- 3.2.2 CELCOR bases their consumption forecasts on linear regression and trend extrapolation methods using historical energy and consumer quantities as bases for its energy forecasts for all customer categories. In its expenditure review analysis¹⁴ the ERC found

¹³ This is as opposed to a revenue-capped form of regulation, where prices are allowed to be adjusted (within reasonable limits) to ensure approved revenue levels are maintained. However, should consumption levels rise substantially above that forecast, this may lead to network over-utilization problems, since no additional revenue would become available to cater for additional consumption.

¹⁴ ERC Operating and Maintenance Expenditure (OPEX) report titled “*REVIEW OF OPERATING AND MAINTENANCE EXPENDITURE FORECAST: SECOND REGULATORY PERIOD – Cabanatuan Electric Corporation (CELCOR)*”, dated November 9, 2009.

that the energy forecasts over the Second Regulatory Period is directly related to the growth in customer numbers (an average of 3.19% over the same period).

Table 3.2 – Broken down CELCOR MWh Energy Sales Figures

Category	Calendar Years					Regulatory Years				
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Residential	61,804	60,580	62,886	64,734	62,681	65,818	67,105	68,526	69,849	71,440
Small Commercial	14,392	14,546	15,052	15,927	15,490	14,909	15,200	15,522	15,822	16,182
Large Commercial	29,250	28,847	29,957	31,399	33,152	33,301	33,952	34,670	35,340	36,145
Very Large Commercial	17,846	17,086	17,006	17,995	19,482	19,596	19,979	20,402	20,796	21,270
Semi Industrial	4,551	4,738	4,967	4,927	5,610	5,728	5,840	5,963	6,078	6,217
Small Industrial	1,768	1,707	1,482	1,349	2,631	1,683	1,715	1,752	1,786	1,826
Large Industrial	797	654	1,177	1,333	1,476	1,068	1,089	1,112	1,134	1,159
St Lights (Metered)	357	331	361	465	1,913	170	173	177	180	184
St Lights (Unmetered)	1,931	1,931	1,911	1,891	2,177	2,189	2,232	2,279	2,323	2,376
Hospital	4,360	4,691	5,231	5,950	5,764	5,642	5,753	5,874	5,988	6,124
TOTAL	137,055	135,110	140,032	145,971	148,377	150,103	153,037	156,278	159,294	162,924
Annual Growth		-1.42%	3.64%	4.24%	1.65%	1.16%	1.95%	2.12%	1.93%	2.28%

3.2.3 The average annual compound growth in consumption between 2005 and 2009 was 2.03%, but this is a result of a considerable historical growth figure for 2008 while the forecast compound growth from 2010 to 2014 is 1.89% per year. There is a six-month overlap between the 2009 calendar year and the 2010 regulatory year and, therefore, it would result to a modest growth rate in RY2010.

3.2.4 In order to better understand the consumption trends, the ERC also analyzed CELCOR's consumer number figures, which is presented in Table 3.3. The forecast average growth rate is 3.19% from RY2010-2014. There is no significant increase between CY2009 and RY2010 considering the six month overlap.

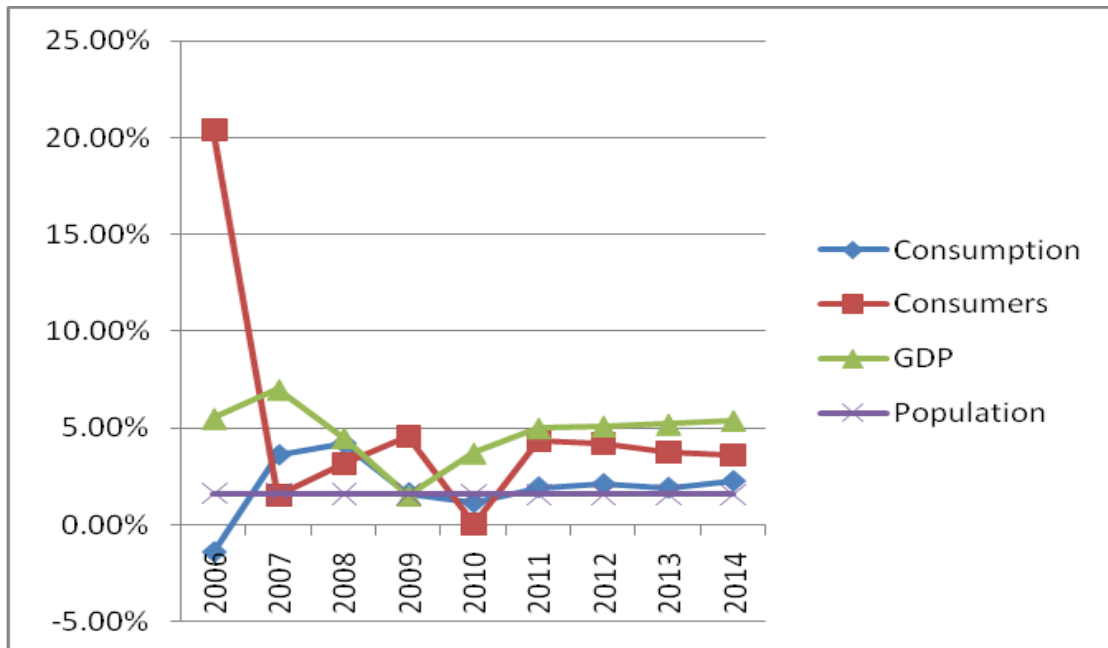
Table 3.3- CELCOR Consumer Numbers (Forecast and Historical)

	HISTORICAL FIGURES (CALENDAR YEARS)				Forecast 2009	FORECAST (REGULATORY YEARS)				
	2005	2006	2007	2008		2010	2011	2012	2013	2014
Total	41,640	50,130	50,895	52,507	54,912	54,930	57,324	59,729	61,965	64,204
Residential	35,526	42,991	43,745	45,251	47,280	47,293	49,313	51,340	53,227	55,113
Small Commercial	5,401	6,099	6,054	6,094	6,418	6,420	6,742	7,066	7,367	7,668
Large commercial	623	684	678	678	692	692	705	719	731	744
Very Large Commercial	7	7	8	9	9	9	9	9	9	9
Semi Industrial	21	24	24	25	25	26	26	27	27	28
Small industrial	23	24	22	21	21	22	22	23	23	24
Very Large Industrial	2	3	2	3	3	3	3	3	3	3
St Lights (Metered)	15	274	338	401	440	440	478	517	553	589
St Lights (Unmetered)	-	-	-	-	-	-	-	-	-	-
Hospitals	22	24	24	25	25	25	25	25	25	25
Growth	4.62%	20.39%	1.53%	3.17%	4.58%	0.03%	4.36%	4.20%	3.74%	3.61%

3.2.5 In Figure 3.1 below, the forecast growth in CELCOR's energy consumption (excluding the proposed additional direct connect customers) is compared with the estimated consumer numbers, as well as the predicted population growth in the region and the

predicted growth in the national gross domestic product. It is recognized that consumption forecasts for a Distribution Utility are not directly comparable with the these reference sources as there is not a linear relationship between growth in population, maximum electricity demand, gross domestic product and energy consumption, and that comparisons of local figures with regional or national figures give rise to further inaccuracies. However, these factors are all drivers of energy consumption and are therefore useful indicators of the environment CELCOR is likely to face over the Second Regulatory Period.¹⁵

Figure 3.1 - Comparison of Energy Growth Estimates with Consumption Drivers



Sources: Population growth for Nueva Ecija – National Statistics Office, January 2007
 GDP growth (Philippines) for 2005 and 2008 – National Statistical Coordination Board (2005 and 2006)
 GDP growth forecasts (Philippines) - EIU (2009)

3.3 ERC Final Decision on Consumption Forecast

3.3.1 The ERC is generally comfortable with CELCOR’s energy consumption forecasts for the Second Regulatory Period and notes that these figures are closely aligned with the ERC forecasts prepared for the Draft Determination. The CELCOR proposed figures are therefore accepted. The figures accepted for the Final Determination are indicated in Table 3.4.

¹⁵ In the absence of directly applicable local statistical indicators, these are the best indicators available.

Table 3.4 - ERC Final Determination on Forecast Energy Sales (MWh)

Category	Regulatory Years				
	2010	2011	2012	2013	2014
Residential	65,818	67,105	68,526	69,849	71,440
Small Commercial	14,909	15,200	15,522	15,822	16,182
Large Commercial	33,301	33,952	34,670	35,340	36,145
Very Large Commercial	19,596	19,979	20,402	20,796	21,270
Semi Industrial	5,728	5,840	5,963	6,078	6,217
Small Industrial	1,683	1,715	1,752	1,786	1,826
Large Industrial	1,068	1,089	1,112	1,134	1,159
St Lights Metered	170	173	177	180	184
St Lights Unmetered	2,189	2,232	2,279	2,323	2,376
Hospitals	5,642	5,753	5,874	5,988	6,124
TOTAL	150,103	153,037	156,278	159,294	162,924
Growth	1.16%	1.95%	2.12%	1.93%	2.28%

3.4 Demand Forecasts

3.4.1 The CELCOR maximum demand forecasts provided with the Revenue Application are indicated in Table 3.5 below, as well as historical demand figures from 2005. The estimates of the abovementioned demand are based on the following forecast, coincident, annual, sustained peak demand on the whole distribution network.

Table 3.5 : CELCOR Maximum Electricity Demand (kW) (Forecast and Historical)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Residential	13.35	12.66	13.06	12.72	12.86	13.5	13.37	14.03	14.25	14.69
Small Commercial	3.11	3.04	3.13	3.13	3.16	2.98	3.03	3.18	3.23	3.33
Large Commercial	6.32	6.03	6.22	6.17	6.24	6.66	6.77	7.10	7.21	7.43
Very Large Commercial	3.86	3.57	3.53	3.54	3.58	3.92	3.98	4.18	4.24	4.37
Semi Industrial	0.98	0.99	1.03	0.97	0.98	1.14	1.16	1.22	1.24	1.28
Small Industrial	0.38	0.36	0.31	0.27	0.27	0.34	0.34	0.36	0.36	0.38
Large Industrial	0.17	0.14	0.24	0.26	0.26	0.21	0.22	0.23	0.23	0.24
St Lights Metered	0.08	0.07	0.08	0.09	0.09	0.03	0.03	0.04	0.04	0.04
St Lights Unmetered	0.42	0.40	0.40	0.37	0.38	0.44	0.44	0.47	0.47	0.49
Hospitals	0.94	0.98	1.09	1.17	1.18	1.13	1.15	0.614	1.22	1.26
TOTAL	29.61	28.23	29.08	28.68	29.00	30.00	30.50	32.00	32.50	33.50
Growth		-1.42%	3.64%	4.24%	1.64%	1.16%	1.95%	2.12%	1.93%	2.28%

3.4.2 The annual compound growth in demand from 2005 to 2009 was -1% and the anticipated growth over the regulatory period is 2.81% per year. As with consumption, a substantial increase in demand for 2012 was foreseen by CELCOR. While this appears to be a result of new bulk consumers expected in the year, it is not clear whether this would fully account for the increase.

3.5 ERC Final Decision on Maximum Demand Forecasts

3.5.1 The demand figures are not directly taken into account in the price-control arrangements. However, demand is an important factor in considering especially, capital expenditure on distribution networks, as well as the degree of asset optimization. The GB Associates' recommendation in their Expenditure Review Report¹⁶ that the reduction in demand growth experienced between 2005 and 2008 is an anomaly that should correct itself

¹⁶ GB Associates' Capital expenditure (CAPEX) Review report titled "Review of CAPITAL EXPENDITURE FORECAST: SECOND REGULATORY PERIOD- Cabanatuan Electric Corporation (CELCOR)", dated October 17, 2009

before the end of the second regulatory period. Overall, CELCOR’s forecast demand in 2014 is found to be reasonable and acceptable.

3.5.2 In the demand forecast figures given in Table 3.5, the demand and consumption growth are already closely matched. The ERC therefore accepts the forecast demand figures as a reasonable basis for the Second Regulatory Period.

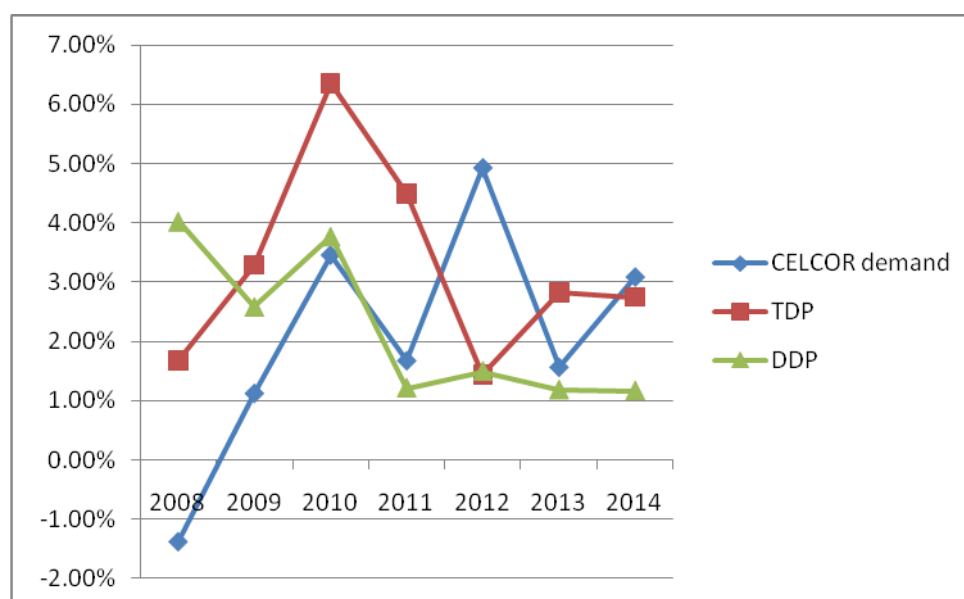
3.5.3 The ERC’s final decision on the forecast maximum demand for CELCOR is illustrated in Table 3.6.

Table 3.6 - ERC Final Determination on Forecast Maximum Demand (kW)

Forecast	Calendar Years		Regulatory Years				
	2008	2009	2010	2011	2012	2013	2014
Maximum demand (MW)	28.68	29.00	30.00	30.50	32.00	32.50	33.50
Growth in demand (%)	-1.38%	1.12%	3.45%	1.67%	4.92%	1.56%	3.08%

3.5.4 In Figure 3.2, a comparison is provided between the CELCOR demand growth forecasts adopted by the ERC, and the growth forecast by the DOE for Luzon and by NGCP for North Tagalog. It is clear that the forecasts for CELCOR, as adapted by the ERC, is generally more conservative than the NGCP and DOE published reports .

Figure 3.2 - Comparison of Demand Growth Figures



Sources: NGCP demand forecast for North Tagalog - Transmission Development Plan, 2009
Department of Energy demand forecast for CELCOR – Distribution Development Plan, 2008-2017

4. CAPITAL EXPENDITURE FORECASTS

4.1 Approach to capital expenditure forecasts

- 4.1.1 Section 4.12 of the RDWR specifies the requirements for the capital expenditure forecasts required from Regulated Entities. These forecasts are to be based on the economically efficient capital expenditure requirements to meet the forecast demand over the Second Regulatory Period. The economic efficiency of the forecasts should be assessed in particular against the general principles declared in Section 4.6.1 of the RDWR, and the declaration of policy in Section 2 of the EPIRA.
- 4.1.2 CELCOR submitted its proposed capital expenditure program for the Second Regulatory Period as part of its Revenue Application.
- 4.1.3 Also included in the Revenue Application is the proposed capital expenditure for the 2010 Regulatory Year (July 1, 2009 to June 30, 2010). Under the current regulatory arrangements, there is no provision for the ERC to review any capital expenditure subsequent to the start of 2009¹⁷. Since CELCOR will be entering PBR at the start of the Second Regulatory Period six months into the 2010 calendar year, the expenditure over the period January 2009 to June 2010 had to be reviewed as part of the Revenue Application and the ERC has therefore decided to include CELCOR's capital expenditure program for the 2010 regulatory year as part of its review of the expenditure program for the Second Regulatory Period. The Regulated Entities were therefore required to submit details of this program as part of their Revenue Applications.
- 4.1.4 In terms of Section 4.12.4, the ERC must retain a Regulatory Reset Expert (or Experts) to review the capital expenditure program for a Regulated Distribution System, as well as the supporting information, in isolation or in cooperation. The ERC appointed Geoff Brown and Associates (GB Associates) for this purpose.
- 4.1.5 The findings and recommendations of GB Associates with regard to the capital expenditure forecasts submitted by CELCOR are presented in an accompanying report (the Expenditure Review Report).¹⁸ This was analyzed by the ERC and forms the basis of the capital expenditure program approved by the ERC, as described below. Since the Expenditure Review Report is available for public review, only the main findings are replicated below.
- 4.1.6 The GB Associates was also requested to consider the submissions made on the Draft Determination. Based on their further consideration, GB Associates suggests a number of revisions to their original recommendations, as described in the Expenditure Review Addendum¹⁹. With regard to capital expenditure they concluded that further changes are required to their original recommendations as described in the Expenditure Review Report.

¹⁷ This is because no more rate cases will be filed for the Third Entry Group under the current return-on-rate-base form of regulation.

¹⁸ Supra note 14

¹⁹ GB Associates report to the ERC titled "*REVIEW OF FORECAST CAPITAL EXPENDITURE Cabanatuan Electric Corporation (CELCOR) - ADDENDUM*", dated February 4, 2010.

4.2 Purpose of the capital expenditure program

- 4.2.1 Capital expenditure is critical to the reliable operation of a distribution network and to provide for growing electricity demand. If capital expenditure is at levels lower than that required to maintain acceptable network performance standards or to ensure sufficient capacity for growth, this could compromise the longer term sustainability of an effective distribution service and the ability to provide customers' needs. On the other hand, excessive network investments cause upwards price-pressure which is not balanced by commensurate service improvements or value to consumers. It is the goal of the ERC to allow an efficient balance in capital expenditure – to ensure the long-term sustainability of distribution networks while keeping investment at the minimum levels required in achieving this goal.
- 4.2.2 From a regulatory perspective, the approved capital expenditure forecasts are included in the value of the rolled forward regulatory asset base, in nominal terms for every year of the Second Regulatory Period. Return on capital, one of the building blocks for determining the allowed revenue requirement for Regulated Entities, is in turn based on the value of the rolled forward asset base.²⁰ In addition, depreciation of newly acquired capital assets is also taken into account in the return of capital, or regulatory depreciation, building block. The approved capital expenditure program therefore has a direct influence on the allowed price-cap for distribution services.

4.3 Capital expenditure program proposed by CELCOR

- 4.3.1 CELCOR's historical capital expenditure and the forecast expenditure as submitted in its Revenue Application are shown in Table 4.1. The expenditure figures are real 2009 values for the years indicated. It should be noted that the figures up to 2009 are for calendar years, while those from 2010 onwards are for regulatory years. There is therefore a 6-month overlap between the 2009 and 2010 figures.

Table 4.1 - CELCOR Application for Capital Expenditure

	Actual (PhP million, real 2009)				Budget CY2009	Forecast (PhP million, real 2009)				
	CY2005	CY2006	CY2007	CY2008		RY2010	RY2011	RY2012	RY2013	RY2014
Distribution Plant	49.9	40.8	32.4	24.6	0.0	37.7	40.2	43.1	37.2	39.6
Non-network Plant	1.2	5.4	3.3	5.2	0.0	5.6	14.4	4.4	15.9	1.5
Connection plant	3.3	5.9	3.0	4.2	0.0	1.9	1.9	1.9	1.9	1.9
Retail plant	11.1	8.8	8.2	21.4	0.0	13.0	12.4	17.1	8.1	8.1
Materials & supplies	0.0	0.0	0.0	0.0	0.0	11.1	0.0	0.0	0.0	0.0
Subtransmission	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	65.5	60.9	46.8	55.4	0.0	69.2	68.9	66.5	63.1	51.1

Note: Using the ERC revised economic indices

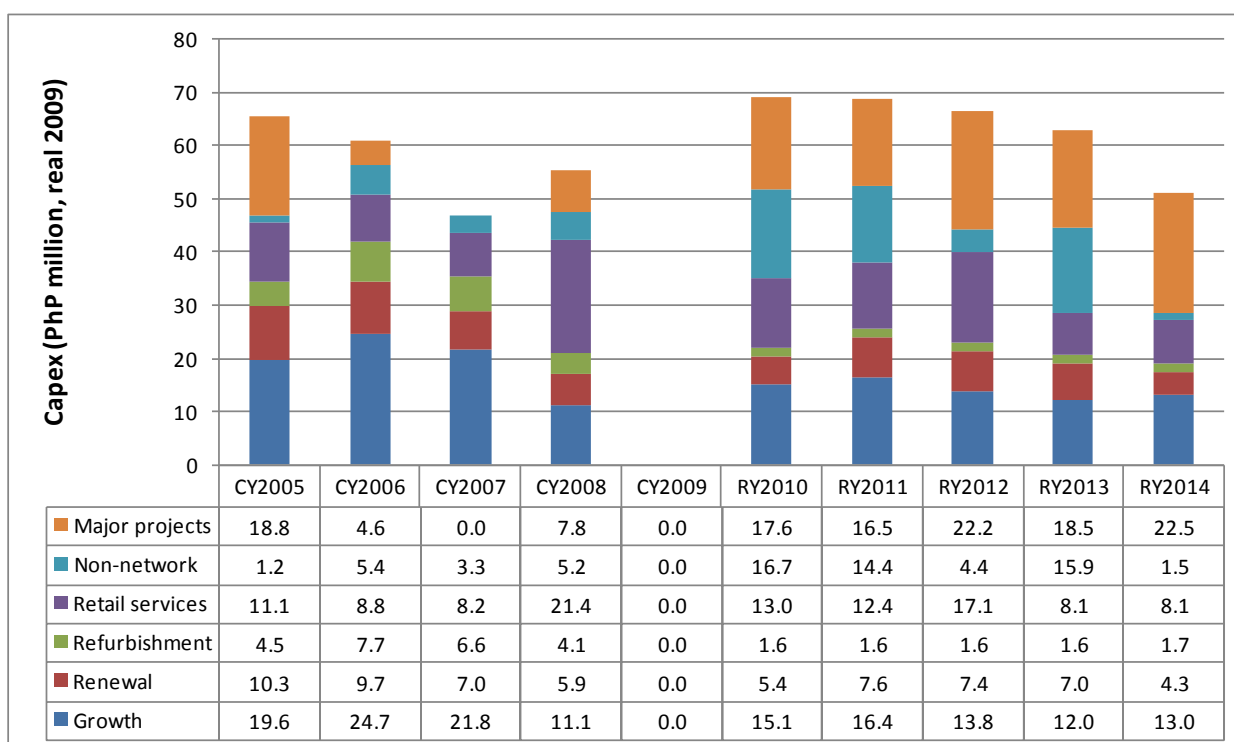
- 4.3.2 The breakdown in Table 4.1 is based on details that CELCOR submitted as part of its revenue application.
- 4.3.3 In Figure 4.1:
- Growth projects are for capital projects required to accommodate increased electricity demand or new connections.
 - Renewal projects are those to replace existing assets where it is no longer economically feasible to maintain the assets, or where technological obsolescence forces their replacement.

²⁰ Plus an allowance for working capital, as discussed in Section 7.6.

- (c) Refurbishment projects are to extend asset serviceability to beyond standard lives.
- (d) Non-network capital expenditure relates to expenditure on non-network assets.
- (e) Major projects are those for which expenditure will exceed the lesser of 20% of the total capital expenditure forecast for a Regulatory Year, or PhP30Million.

4.3.4 In Figure 4.1, the CELCOR capital expenditure submission is graphically represented in real 2009 values.

Figure 4.1 - CELCOR CAPEX – Historical and Forecast



4.3.5 Examination of Figure 4.1 indicates that CELCOR’s forecast total capital expenditure for the Second Regulatory Period now includes major projects in the forecast period. There were no major projects included in the broken down historic capital expenditure figures.

4.4 Analysis of CELCOR’s Capital Expenditure program – General

4.4.1 GB Associates conducted a top-down analysis of CELCOR’s capital expenditure forecast, including an analysis of the expenditure trends and a review against growth-driven expenditure ratios. This is discussed in the Capital Expenditure Review Report.

4.4.2 The main findings were as follows:

- As noted above, the capital expenditure trends show significant increases planned for the Second Regulatory Period, mainly as a result of the substantial portion of major projects included.
- CELCOR’s proposed major projects are mainly focused on network assets.
- GB Associates indicated in their report that due to the fact that CELCOR did not provide adequate supporting information for the proposed major capital expenditure

for the year 2010, the proposed value will be removed from the recommended expenditure to the amount of PhP17.58 million.

- 4.4.3 It can also be seen that, in real terms, budgeted and forecast capital expenditure is generally higher over the period RY 2010-14 compared to historic years CY 2005-08. At the clarificatory meeting, CELCOR indicated historical constraints in acquiring capital for capital expenditure purposes which may be part of the reason why there is a general increase in capital expenditure for the forecast period.

4.5 Analysis of CELCOR's capital expenditure program – Significant projects

- 4.5.1 CELCOR submitted details of three (3) significant projects in their Revenue Application. A summary of the projects is as follows.

- Upgrading of distribution network feeder backbone;
- Upgrading of distribution network lateral lines; and
- Upgrading and rehabilitation of distribution network secondary lines.

- 4.5.2 Each of the major projects was separately reviewed by GB Associates, in order to provide an assessment whether the project is required, efficient and the proposed project timing is appropriate. Independent cost estimates were also prepared to verify the reasonableness of the CELCOR estimates. Their findings are provided in the Expenditure Review Report, with more details provided on individual projects where discrepancies or unusual factors were found.

- 4.5.3 GB Associates' recommendations with regard to the significant projects can be summarized as follows:

- CELCOR proposed to upgrade its distribution feeder backbone which includes the replacement of old wooden pole structures and upgrading of conductors on 13.8 kV feeder backbones at a total cost of PhP 31.33 million. The project has six sub-projects which will be commissioned progressively over the period RY 2011 to RY 2014. As per the information in CELCOR's revenue application, the feeder backbone sections to be upgraded use smaller, lower capacity conductor and therefore limit CELCOR's ability to transfer loads from other feeders or substations during faults or maintenance. GB Associates recommends that CELCOR should proceed with all of the above sub-projects, except for sub-project BB002 (Sanciangco Extension to Jollibee Circumferential) which is normally an open interconnection between main feeders 25BR4 and 22BR4.
- CELCOR is proposing the replacement of old wooden pole structures, reducing sags, line extensions, conversion from 1 phase to 3 phase and upgrading of conductors on 13.8 kV lateral lines. The total cost for this project is PhP 22.39 million which is broken up into 19 sub-projects. The commissioning of these sub-projects is spread over the period RY 2011-14. CELCOR's single line diagrams indicate that the line sections, identified to be upgraded, are used to distribute electricity from primary feeders. The view of GB Associates is that CELCOR should be allowed to upgrade its main lateral lines primarily due to the fact that it will help reduce its technical losses. The technical losses in CELCOR's distribution network in CY 2008 were 10.96%, which appears to be high compared to the loss cap allowed by the ERC. GB Associates however recommends the exclusion of a few sub-projects, based on the fact that they are either used as normally open points or that the forecast load on these feeders are projected to be very low. The remaining 16 proposed line upgrades are each relatively small and to some extent discretionary. That is, it will be possible

for CELCOR to slow down the rate at which it implements this program without having an immediate and material impact on either its quality of supply to customers or its total network losses. GB Associates indicated their awareness of the possible impact of discretionary capital expenditure on the price paid by customers and they therefore recommended that the remaining capital expenditure in this program be reduced by 25%.

- CELCOR proposes to rehabilitate low voltage secondary lines of its distribution network due to customer growth and the replacement of damaged structures. CELCOR has estimated a total project cost of PhP 29.53 million in the revenue application for this project which includes 14 sub-projects. The sub-projects will be commissioned over the period RY 2011-14. GB Associates is of the view that CELCOR should proceed with this rehabilitation work except for sub-projects identified as SL001(San Josef Norte to Sumacab Sur), SL003 (Ibabao Bana to Polilo), SL005 (Accfa Imelda and MS Gracia), SL010 (Lagare) and SL014 (Valle Cruz).

4.6 Analysis of CELCOR's Residual Capital Expenditure Program

4.6.1 GB Associates reviewed the proposed residual network and general plant expenditure, including the minor projects listed by CELCOR. In general, GB Associates agree with CELCOR's proposal, but made the following comments:

- CELCOR has forecasted PhP 58.52 million for expenditure on meters, instruments and metering transformers over the forecast period RY 2010-14. This represents an average annual spend of PhP 11.70 million compared to the average annual historic CAPEX of PhP 12.37 million over the historic period CY 2005-08. CELCOR has provided no explanation as to why the forecast average annual refurbishment CAPEX should be higher than over the historic period and therefore, it is recommended that this expenditure be adjusted to maintain the refurbishment related forecast expenditure at the same level as the historic average expenditure.
- CELCOR's residual CAPEX forecast includes one-off CAPEX of PhP 11.08 million in RY 2010 for residual expenditure on renewal and growth related materials and supplies including spares. There is no other CAPEX in this line item either for the historic period or for the remainder of the forecast period. No explanation for this one-off expenditure has been provided in the revenue application. It is considered that this expenditure to be sufficiently material to have been justified in the revenue application. Since no such justification has been provided the GB Associates recommend that this expenditure not be allowed.

4.6.2 On this basis, GB Associates recommends that the residual capital expenditure forecast by CELCOR for January to June 2009 be approved at PhP11.56 Million and that the residual capital expenditure for RY2010 be reduced by PhP32.73 Million.

4.7 Review of materials provided in CELCOR's submission on the Draft Determination

4.7.1 In the CAPEX Report, GB Associates recommended that the forecast major projects CAPEX of PhP 17.58 million for RY 2010 be disallowed because CELCOR provided no information to support this expenditure. In its submission on the Draft Determination, CELCOR submitted that as it would be entering PBR, it understood that major projects for RY 2010 would automatically be included in the regulatory asset base (RAB) and

hence no supporting documentation was needed in the revenue application. Thus, it submitted comprehensive additional information to support this expenditure.

4.7.2 GBA notes in the Expenditure Review Addendum that CELCOR disputed its expenditure analysis and provided additional information to justify the need to reinstate recommended reductions in CELCOR’s proposed capital expenditure. The capital expenditure levels recommended in the Draft Determination are therefore revised to reflect further analysis on the additional information provided by CELCOR.

4.7.3 The recommended adjustments allow for a partial reinstatement of major project CAPEX for RY 2010, the purchase of electronic meters for the metering of large commercial customers and also the purchase of substation spares.

4.8 Expenditure program proposed by GB Associates

4.8.1 Based on their analysis, GB Associates recommends that CELCOR proposed capital expenditure program for the Second Regulatory Period should be amended as summarized in Table 4.2.

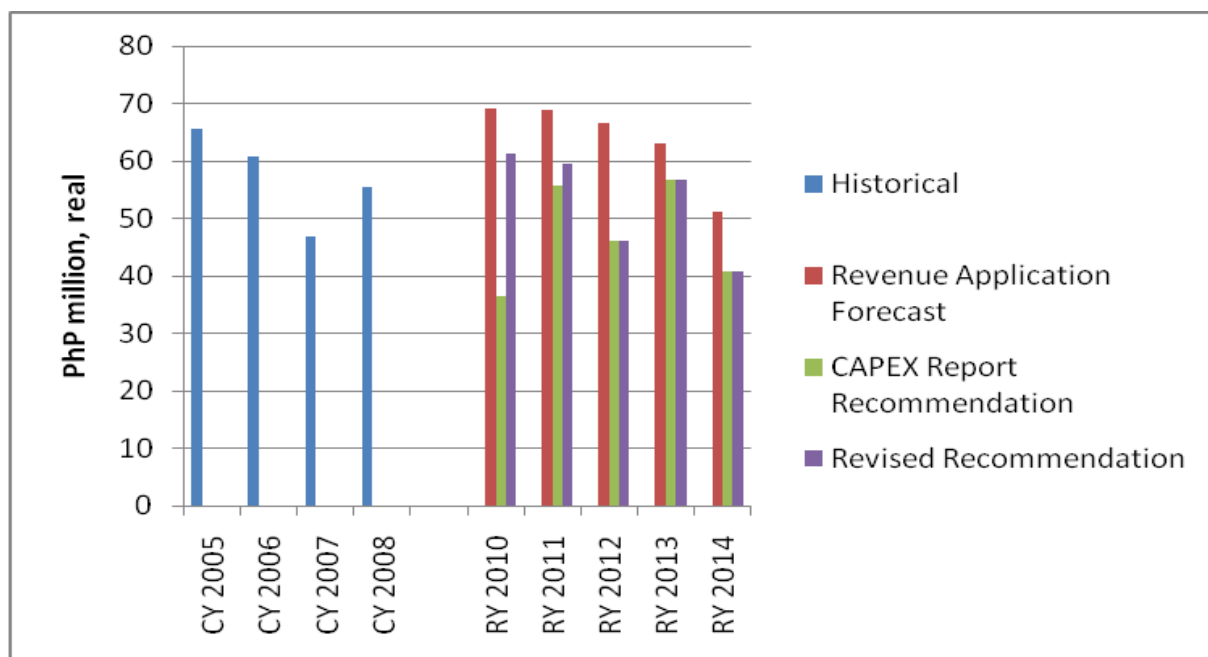
Table 4.2 – Adjustment in CELCOR’s Forecast Capital Expenditure for the Second Regulatory Period – GB Associates Recommendation (PhP Million, real 2009)

	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014	Total (RY 2011-14)
Revenue application	69.25	68.88	66.53	63.11	51.11	249.63
Recommended forecast ¹	36.52	55.73	46.04	56.79	40.71	199.27
Recommended adjustments						
Major projects						
Partial reinstatement of major project expenditure	9.96					
Residual growth						
Adjustments to line item <i>meters, instruments and metering transformers</i>	3.72	3.72				
Adjustment to line item <i>materials and supplies (including spares)</i>	9.58					
Residual renewal						
Adjustment to line item <i>meters, instruments and metering transformers</i>	1.50					
GBA Revised recommendation	61.28	59.45	46.04	56.79	40.71	202.99

Note 1: CAPEX Report, Table 6.1; Draft Determination Table 4.2.

4.8.2 Figure 4.2 shows a graphical comparison of the capital expenditure program proposed by CELCOR in their Revenue Application, and GB Associates’ recommended figures. A substantial reduction in the overall expenditure level submitted by CELCOR is recommended – mainly as a result of the adjustments made to its proposed major projects.

Figure 4.3 - Comparison of Capital Expenditure Forecasts



Source: GB Associates

4.9 ERC Final Determination on the Capital Expenditure Program

- 4.9.1 The ERC accepts the recommendations made by GB Associates based on their review and analysis of CELCOR’s proposed capital expenditure program for the Second Regulatory Period and the 2010 regulatory year²¹. The rationale provided for the expenditure allowance is sound, as are the reasons for the suggested reductions from the CELCOR proposal. The suggested expenditure program is considered efficient and would provide sustainable investment levels while avoiding unnecessary expenses or undue upward price pressure.
- 4.9.2 GBA’s recommendation following their review of CELCOR’s submissions on the Draft Determination, is also accepted.
- 4.9.3 The ERC’s Final Determination on the capital expenditure program for the Second Regulatory Period and the 2010 regulatory year is provided in Table 4.3. A more detailed breakdown is provided in Appendix A.
- 4.9.4 It will be noted that the recommended figures vary somewhat from that proposed in the Draft Determination. This is as a result of changes in the economic indices particularly the forecast Philippines CPI and in the recommended CWIP factor – which changes as a result of the changes in the recommended regulatory weighted average cost of capital (see Section 8 for the discussion).

²¹ Note that in the GB Associates report there was a small discrepancy in the total recommended figures for RY2012 and 2013. These are corrected below.

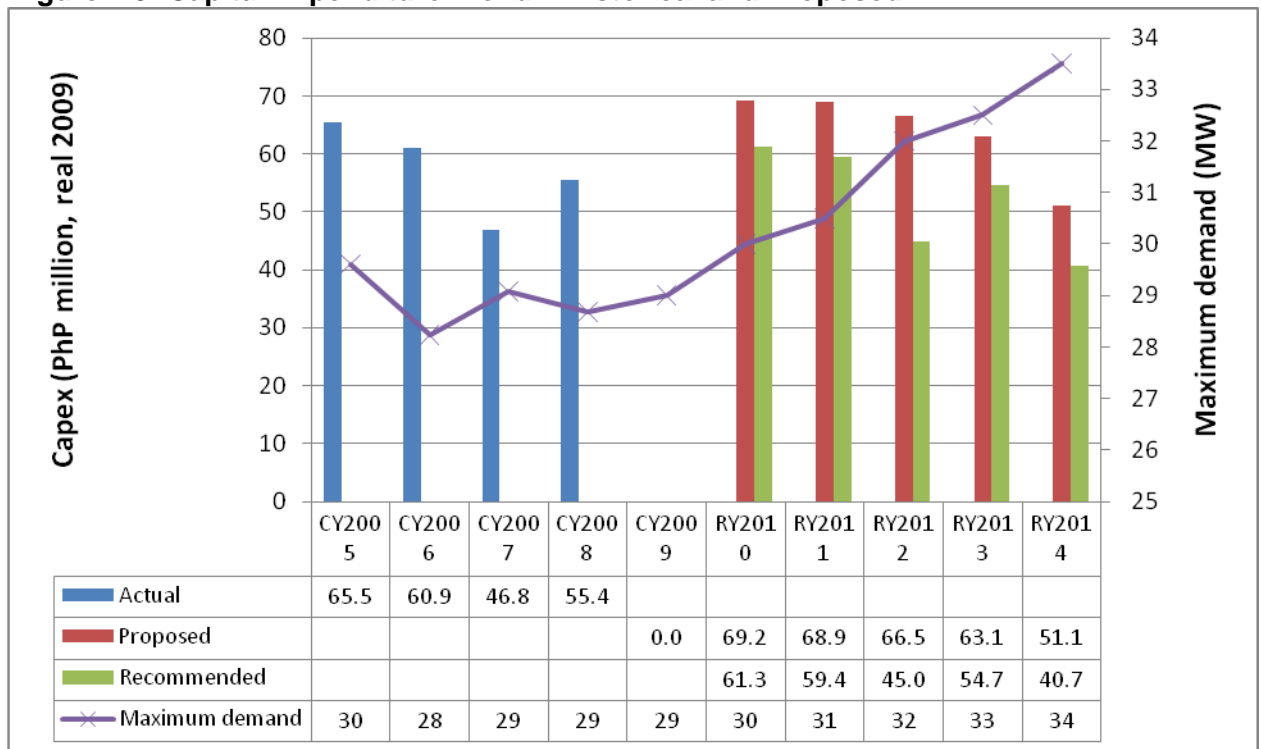
Table 4.3 - ERC Final Determination on CELCOR’s Capital Expenditure Program (PhP thousand)

	R <y>2010</y>	R <y>2011</y>	R <y>2012</y>	R <y>2013</y>	R <y>2014</y>	TOTAL
Nominal values	62,282	63,198	49,957	63,568	49,521	226,244
Real values (2009)	61,279	59,445	44,968	54,703	40,702	199,818
Nominal values, including CWIP factor	63,289	64,406	51,091	64,644	50,710	230,851

Note: The total excludes Regulatory Year 2010

4.9.5 In Figure 4.3, the ERC’s allowed capital expenditure is compared with CELCOR’s Revenue Application. Being a key driver for expenditure, the historical and forecast maximum demand as accepted by ERC²² is also included, illustrating the need for increased capital expenditure as demand increases.

Figure 4.3: Capital Expenditure Trend – Historical and Proposed



Source: GB Associates, ERC analysis

²² See discussion in Section 3.5

5. OPERATING AND MAINTENANCE EXPENDITURE FORECASTS

5.1 Approach to operating & maintenance expenditure forecasts

- 5.1.1 Section 4.13 of the RDWR specifies the requirements for the operating and maintenance expenditure forecasts required from Regulated Entities. These forecasts are to be justified in terms of why they are necessary and of reasonable magnitude.
- 5.1.2 CELCOR submitted its proposed operating and maintenance expenditure for the Second Regulatory Period as part of its Revenue Application.
- 5.1.3 Also included in the Revenue Application is the proposed operating and maintenance expenditure for the 2010 Regulatory Year (July 1, 2009 to June 30, 2010). Under the current regulatory arrangements, there is no provision for the ERC to review any operating and maintenance expenditure subsequent to the start of 2009²³. Since CELCOR will be entering PBR at the start of the Second Regulatory Period six months into the 2010 calendar year, the expenditure over the period January 2009 to June 2010 had to be reviewed as part of the Revenue Application and the ERC has therefore decided to include CELCOR's capital expenditure program for the 2010 regulatory year as part of its review of the expenditure program for the Second Regulatory Period. The Regulated Entities were therefore required to submit details of this program as part of their Revenue Applications.
- 5.1.4 In terms of Section 4.13.4, the ERC may retain a Regulatory Reset Expert (or Experts) to review the operating and maintenance expenditure forecasts for a Regulated Distribution System, as well as the supporting information, in isolation or in cooperation with ERC staff, or the ERC may decide to conduct the review internally. While the review of the operating and maintenance expenditure was carried out internally by the ERC (ROS) staff, Geoff Brown and Associates (GB Associates) was appointed to provide some further guidance to the staff for the aforesaid OPEX review.
- 5.1.5 The findings and recommendations of the ERC, regarding the operating and maintenance expenditure forecasts submitted by CELCOR, are included in the Operating and Maintenance Expenditure Review Report.²⁴ This report forms the basis of the operating and maintenance expenditure forecasts approved by the ERC, as described below. Since the Operating and Maintenance Expenditure Review Report is available for public review, only the main findings are replicated below.
- 5.1.6 ERC was also requested to consider the submissions on the Draft Determination. In this regard, a number of revisions to ERC's original recommendations on operating and maintenance expenditure were suggested as described in the Expenditure Review Addendum.²⁵ These are also discussed below.

²³ This is because no more rate cases will be filed for the Third Entry Group under the current return-on-rate-base form of regulation.

²⁴ ERC Operating and Maintenance Expenditure (OPEX) Review Report titled "*REVIEW OF OPERATING AND MAINTENANCE EXPENDITURE FORECAST: SECOND REGULATORY PERIOD – Cabanatuan Electric Corporation (CELCOR)*", dated November 9, 2009

²⁵ ERC Operating and Maintenance Expenditure (OPEX) Review Report titled "*REVIEW OF OPERATING AND MAINTENANCE EXPENDITURE FORECAST: SECOND REGULATORY PERIOD – Cabanatuan Electric Corporation (CELCOR) ADDENDUM*", dated February 26, 2010.

5.2 Purpose of the operating and maintenance expenditure program

- 5.2.1 Operating and maintenance expenditure is critical to the sustained reliable and safe operation of a distribution network. Insufficient operating and maintenance expenditure levels lead to deterioration of operating standards and of the condition of network assets – affecting the reliability of service to consumers. Under-expenditure also affects the ability of distribution utilities to plan in advance to cater for load growth or changing consumer requirements and will, in the long run, also increase the required capital expenditure on network assets, to replace assets that have not been well maintained.
- 5.2.2 On the other hand, excessive operating and maintenance expenditure cause upwards price-pressure which is not balanced by commensurate service improvements or value to consumers. It is the goal of the ERC to allow an efficient balance in operating and maintenance expenditure – to ensure that acceptable service standards are maintained, while keeping expenditure at the minimum levels required to achieve this goal.
- 5.2.3 From a regulatory perspective, the approved operating and maintenance expenditure forecasts is one of the building blocks for determining the allowed revenue requirement for Regulated Entities. The approved operating and maintenance expenditure is therefore directly recovered from customers as part of their distribution wheeling rates.

5.3 Operating and maintenance expenditure proposed by CELCOR

- 5.3.1 CELCOR’s historical operating and maintenance expenditure and the forecast expenditure as submitted in its Revenue Application are shown in Table 5.1. It should be noted that the figures up to 2008 are for calendar years, while those from 2010 onwards are for regulatory years.

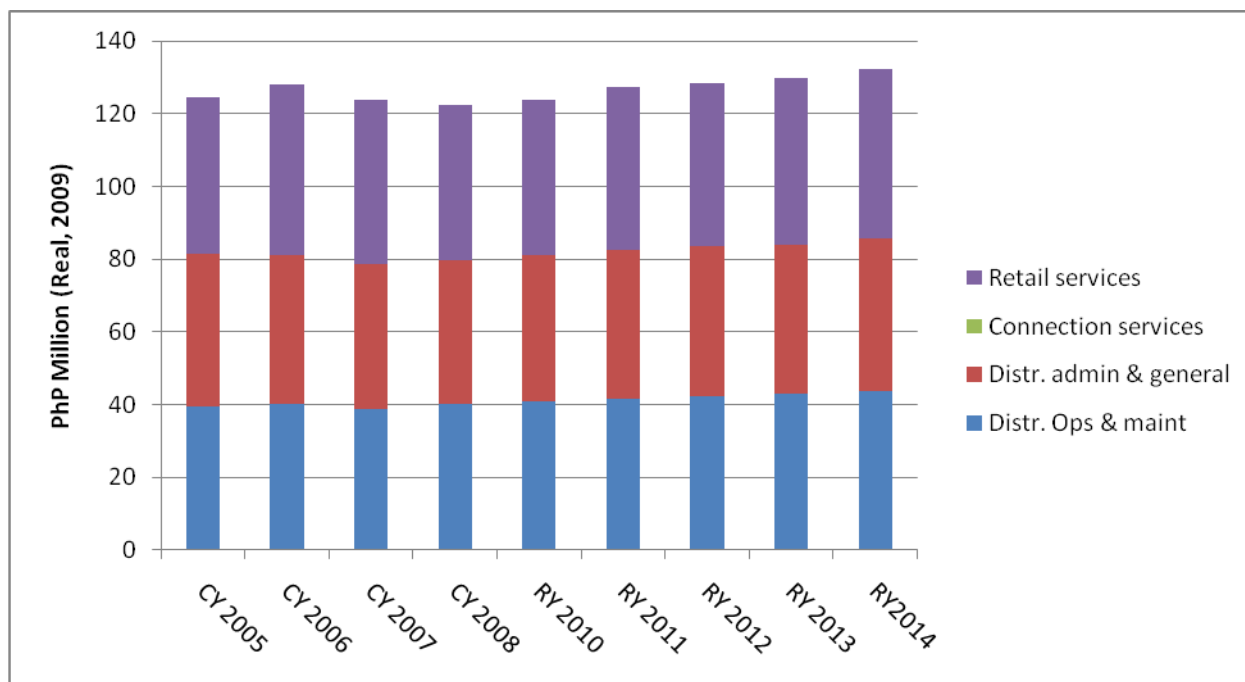
Table 5.1 : CELCOR Application for Operating and Maintenance Expenditure (real)

OPEX Category	Actual (PhP Million, real 2009)				Forecast (Real, in PhP Million)				
	CY 2005	CY 2006	CY 2007	CY 2008	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Distr. OPEX	39.4	40.2	38.8	40.3	40.8	41.5	42.3	42.9	43.6
Distr. Admin & General	42.1	40.9	39.7	39.4	40.4	41.1	41.2	41.2	42.0
Connection services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retail services	43.0	46.9	45.2	42.8	42.6	44.6	45.0	45.6	46.6
Total Opex	124.5	128.0	123.6	122.6	123.9	127.2	128.4	129.7	132.2

Note: Using the ERC revised Economic Indices

- 5.3.2 In Figure 5.1, the CELCOR operating & maintenance expenditure application is graphically represented, in real (2009) values. It is noted that there is a 6-month overlap between calendar year 2009 and regulatory year 2010.

Figure 5.1 : CELCOR Proposed Operating & Maintenance Expenditure (real)



5.3.3 CELCOR is forecasting moderate increases in its operating and maintenance expenditure over the Second Regulatory Period.

5.4 Analysis of operating and maintenance expenditure - methodology

5.4.1 ERC's review of CELCOR's operating and maintenance expenditure forecasts is discussed in detail in the OPEX Review Report. The ERC staff assessed CELCOR's proposals for prudence and cost efficiency using the following approach:

- Determine the base year operational expenditure on a cost category basis;
- Assess each component of base year 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;
- Compare CELCOR's and the OPEX model's base year figures and test for relative efficiency;
- Determine total OPEX forecasts and test for cost efficiency; and
- Compare OPEX forecasts to the applicant's OPEX forecasts and determine the annual adjustments.

5.5 Analysis of the base operating and maintenance expenditure

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

- The itemized CY 2008 OPEX was reviewed 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 each line item represented efficient use of funds and was consistent with expected recurring expenditure levels for that line item; and

- CELCOR's adjusted OPEX was benchmarked using an efficiency frontier methodology based on the average historical data of five (5) of the DUs in the third entry point (IEEC was omitted as it was considered an outlier). The analysis also included the three (3) DUs from the second entry point due to the fact that sufficient benchmark information was available for them and that additional utility information will assist in the benchmark process. The variables used in the benchmark process included the OPEX per line lengths as well as the average number of customers per line lengths.

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

5.6 Analysis of the OPEX Line items

5.6.1 CELCOR advised that it used the calendar year 2008 as its base year for determining forecast OPEX. From the application, CELCOR indicated that it used the 2008 figures as the basis for the increase in CY2009 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, electric subsidy given to CELCOR employees should not be recovered through the rates. Even though it remains the prerogative of CELCOR management to provide the abovementioned additional benefits to its employees, the ERC believes that these should not be funded from the regulated revenue. The disallowances of the additional benefits, therefore, 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 PhP17.9 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 a management prerogative, ERC contends they should not be included in the revenue requirement. However, this does not preclude CELCOR from including miscellaneous costs provided that these costs 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 costs are 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 therefore PhP2.04million and hence this is the amount that ROS has allowed for bad debt expenses in the base year. Consistent with the Commission's Decision under ERC Case No. 2009-024RC, ROS reduced the proposed amount of bad debts by PhP1.6million.

The resulting 2008 base year operating and maintenance expenditures, after the ROS recommended 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 5.2: Adjusted Base Year 2008 Operating and Maintenance Expenditure (PhP million, real 2009)

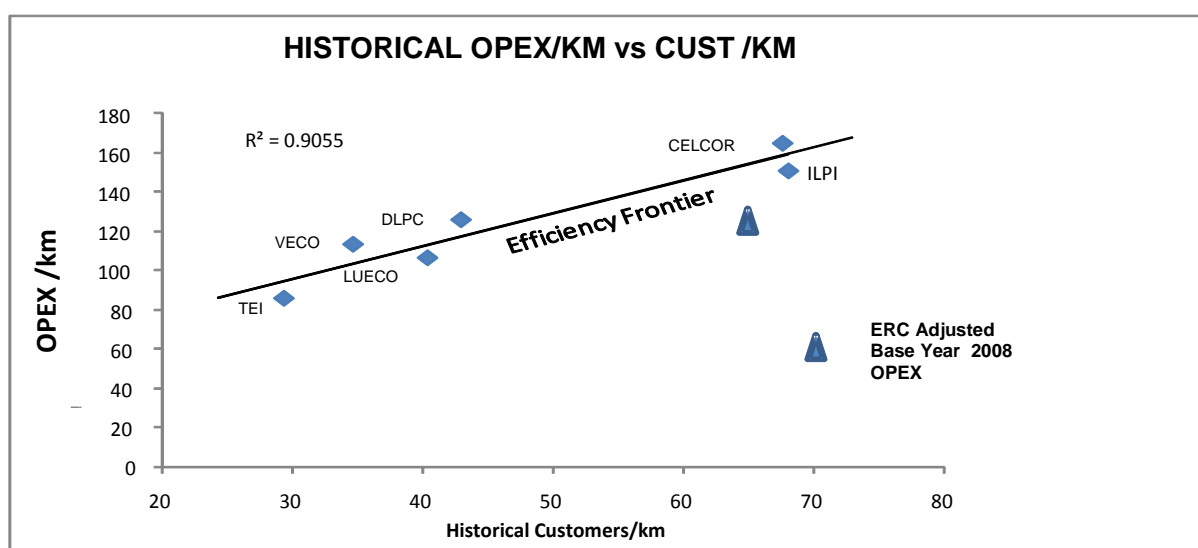
Operating and Maintenance Expenditure Category	2008
Operation	20.69
Maintenance	16.42
Administration and General	31.28
Regulated Retail Services	35.96
Total Operating & Maintenance Expenditure	104.35

5.7 Confirmation that the Base Year cost Data is Efficient

5.7.1 Figure 5.2 below shows a linear regression analysis showing the efficiency frontier using the average historical OPEX of 6 DUs (VECO, DLPC, TEI, CELCOR, LUECO and ILPI²⁶)

²⁶ 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 for this particular graphical output.

Figure 5.2: Average Historical OPEX Per Line Length vs Customer Per Line Length



5.7.2 Figure 5.2 illustrates CELCOR’s average historical OPEX which is above the efficiency frontier. The ERC’s adjusted base year OPEX, which has also been plotted on the graph, positions below the efficiency frontier.

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

5.8 Review of materials provided by CELCOR in the Draft Determination

5.8.1 In its comments on the Draft Determination, CELCOR suggests that additional benefits like morale booster, meal allowance, employees’ welfare, fringe benefits, and electric subsidy given to employees be allowed to be included in the revenue requirement.

5.8.2 CELCOR indicated that the Department of Labor and Employment (DOLE) issued a Resolution No. 02 series of 2008 entitled “Encouraging Employers to Grant Non-Wage Benefits to Workers”.

5.8.3 According to CELCOR, other companies are offering high salaries so most of CELCOR’s well-trained and competent personnel are transferring to other companies. In order to remain viable in a highly competitive labor market, the management decided to give the aforementioned non-wage benefits to the employees.

5.8.4 CELCOR also noted that per diem is the only remuneration that some of the directors are receiving in performing their duties.

5.8.5 The ERC staff reviewed these costs and concluded that except for the rice allowance which has been allowed, the aforesaid costs are inconsistent with the Commission’s policy on the allowable benefits and should therefore be excluded as recommended in the Draft Determination.

5.8.6 In relation to the recommended changes to the capital expenditure forecast, the ERC staff recommends an increase in the OPEX forecasts from that allowed in the Draft Determination. Increases in the major projects and residual growth projects correspondingly increased the OPEX forecasts while increases in the residual renewal

correspondingly decreased the OPEX forecasts. The CPI used in the ERC OPEX model was also updated to reflect the February 2010 data as published by the EIU. The result is a net increase in the OPEX forecasts.

5.8.7 Further increase in the operating and maintenance expenditure is recommended.

5.9 Expenditure program proposed by ERC

5.9.1 The ERC used the OPEX Model to forecast future base operating expenditures with both the real labor and real material inflators set at 0%. With these inputs, the model produced the forecast base operating expenditures shown in Table 5.3 below:

Table 5.3: ERC's Base OPEX Forecasts

Operating Expenditure Category	2011	2012	2013	2014
Distribution and Connection Services Operation and Maintenance	39.58	40.53	41.25	41.96
Administrative and General	31.49	31.57	31.63	31.69
Regulated Retail Services	38.31	39.87	41.38	42.84
Total Operating & Maintenance Expenditure	109.38	111.98	114.26	116.49

5.9.2 Table 5.4 also compares, for each major operating and maintenance expenditure category, the ERC annual forecast operating and maintenance expenditure with the forecast operating and maintenance expenditure which CELCOR included in its revenue application.

Table 5.4: 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
ROS Revised Forecast	38.41	39.58	40.53	41.25	41.96	201.73
Difference	-2.41	-1.95	-1.72	-1.63	-1.63	-9.33
Administrative and General						
CELCOR Forecast	40.41	41.10	41.21	41.23	41.98	205.93
ROS Revised Forecast	31.39	31.49	31.57	31.63	31.69	157.76
Difference	-9.02	-9.61	-9.65	-9.60	-10.29	-48.17
Regulated Retail Services						
CELCOR Forecast	42.64	44.60	44.99	45.57	46.59	224.38
ROS Revised Forecast	37.53	38.31	39.87	41.38	42.84	199.95
Difference	-5.10	-6.29	-5.11	-4.18	-3.75	-24.43
Total Operating and Maintenance Expenditure						
CELCOR Forecast	123.86	127.22	128.45	129.67	132.15	641.36
ROS Revised Forecast	107.34	109.38	111.98	114.26	116.49	559.44
Difference	-16.53	-17.85	-16.47	-15.41	-15.67	-81.93
Recommended Adjustment	-16.53	-17.85	-16.47	-15.41	-15.67	-81.93

¹ This total includes RY2010 plus the Second Regulatory Period

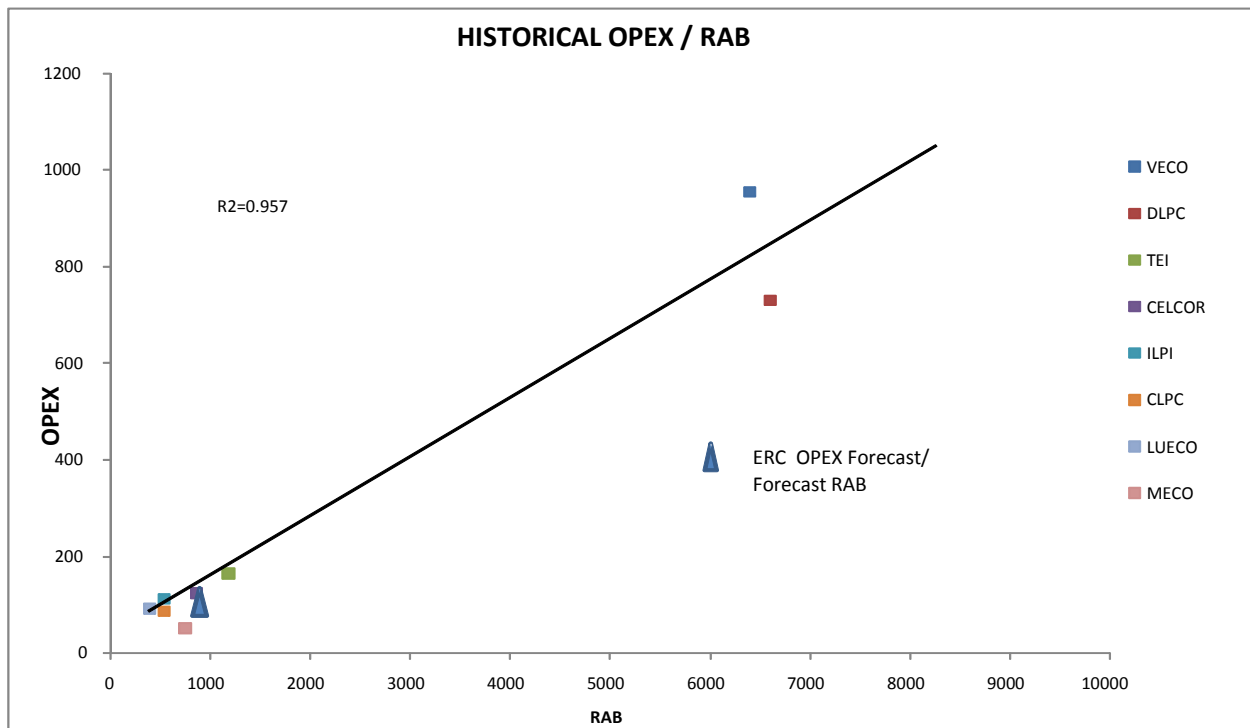
5.10 Inter Business Benchmarking

5.10.1 In order to determine if the recommended 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 normalized 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.

5.10.2 Figure 5.3 shows the study of OPEX vs RAB with the average ERC adjusted forecasts plotted on the graph. The analysis also included the three (3) DUs from the second entry point due to the fact that sufficient benchmark information was available for them and that additional utility information will assist in the benchmark process.. The average ERC adjusted OPEX forecasts are marginally better than 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.

5.10.3 Additionally, Figure 5.3 also shows the relative size of VECO and DLPC in comparison to the size of TEI, CELCOR, ILPI, CLPC, LUECO and MECO. The relatively smaller utilities are all lumped in the lower left side of the graph indicating low magnitudes of their asset base.

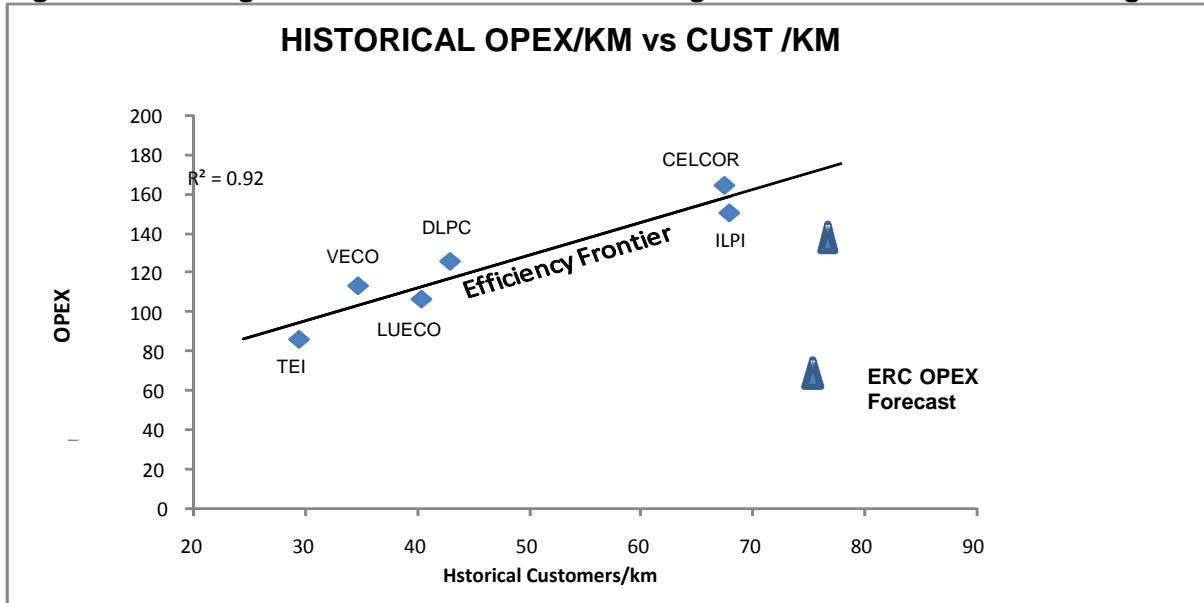
Figure 5.3 : Average Historical OPEX Per RAB



5.10.4 Figure 5.4 shows the normalized 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 for this analysis. The ERC adjusted OPEX forecasts are practically on the efficiency frontier and hence ERC considers these forecasts to be relatively efficient.

5.10.5 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 5.4 Average Historical OPEX Per Line Length and Customer Per Line Length

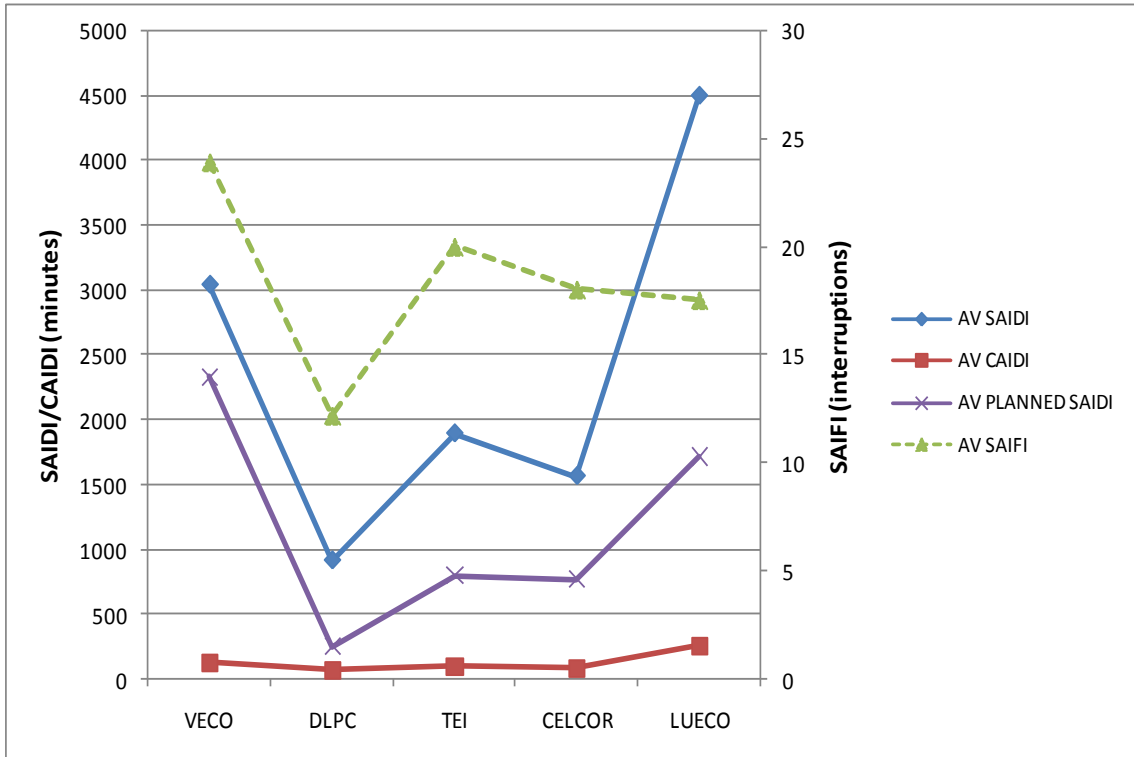


5.10.6 Based on these two benchmarking studies, ERC believes that its adjusted OPEX forecasts are relatively efficient.

5.11 OPEX vs. Performance/Efficiency Benchmarking

5.11.1 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 only limited data being available. The results of this analysis are shown graphically in Figure 5.5.

Figure 5.5 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

5.11.2 The above graph uses CY2006 to CY2008 data submitted by the utilities. The results are indicative only, since a formal benchmarking study using sufficient data-points, as would be required to draw accurate conclusions, could not be conducted.

5.12 ERC Final Determination on the Operating and Maintenance Expenditure

5.12.1 The recommended adjustments to the distribution operating and maintenance and administrative and general covers additional capital expenditure on the line items for the reinstatement of major project CAPEX for RY 2010, the purchase of electronic meters for the metering of large commercial customers and also the purchase of substation spares. This results to increases in the OPEX forecasts considering that the increases in the capital expenditures over the second regulatory period relate to major and residual growth projects which correspondingly increase the OPEX forecasts.

5.12.2 The recommended reductions to the operating and maintenance forecasts as recommended by the ERC staff following their review of CELCOR's submission to the Draft Determination are also accepted.

5.12.3 The modeling results show the ERC's OPEX forecasts for the second regulatory period to be on the average 12.64% lower than CELCOR's.

Figure 5.6 Comparison of Operating and Maintenance Expenditure Forecasts

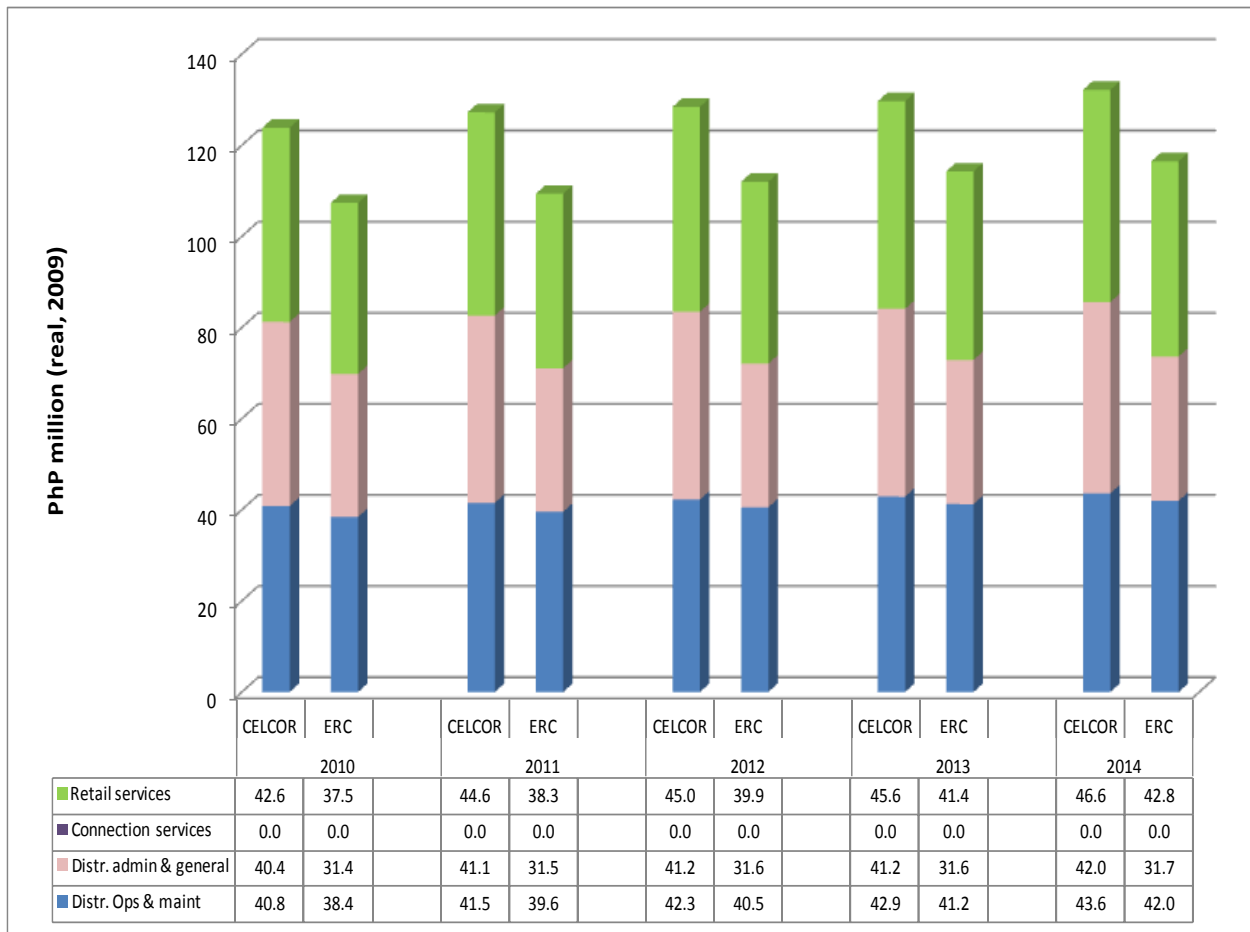
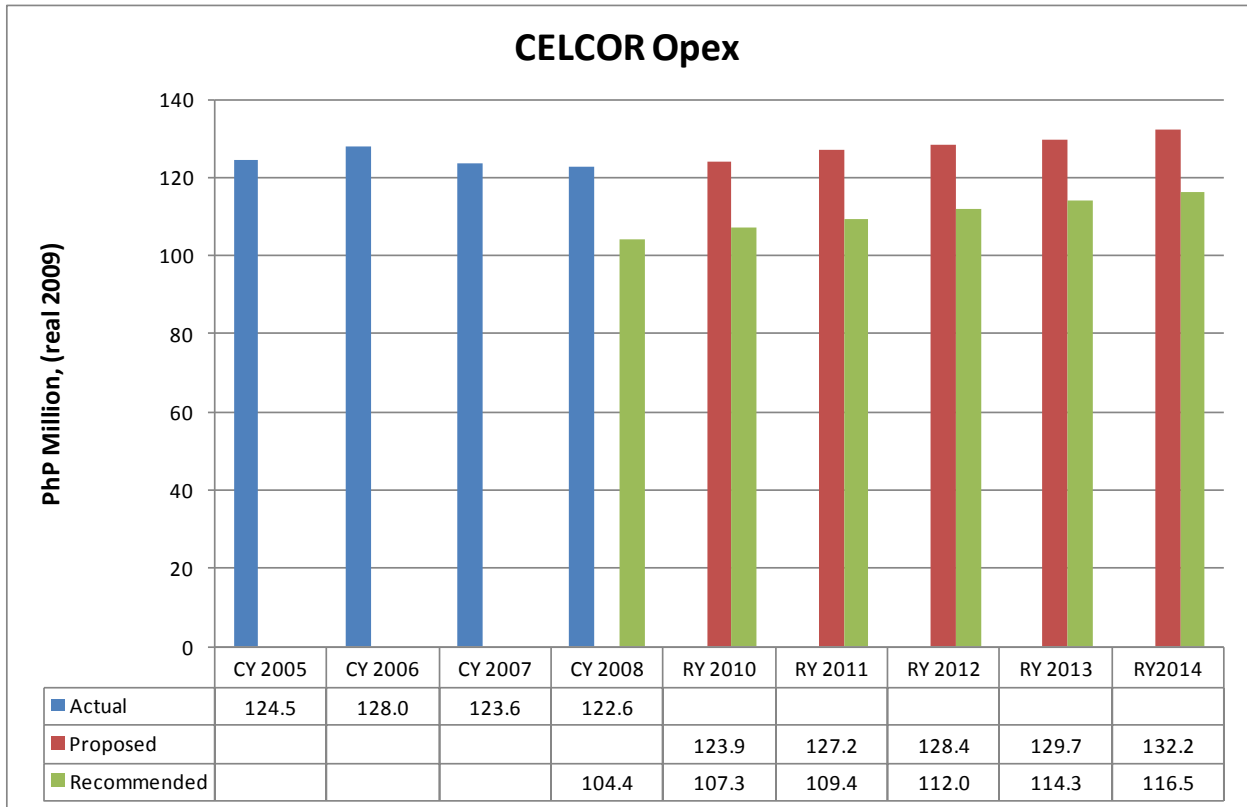


Figure 5.7 Historical and Forecast Trends – Operating and Maintenance Expenditure



5.12.4 The ERC’s Final Determination for the allowed operating and maintenance expenditure forecasts for the Second Regulatory Period and for the 2010 regulatory year is indicated in Table 5.5. A more detailed breakdown of the approved operating and maintenance expenditure is provided in Appendix B.

Table 5.5 : Final Determination on Operating and Maintenance Expenditure

PhP (Thousand)	2009	2010	2011	2012	2013	TOTAL
Nominal values	109,094	116,282	124,401	132,779	141,725	515,188
Real values (2009)	107,337	109,378	111,976	114,262	116,485	452,101

Note: The total is excluding Regulatory Year 2010

6. OTHER TAXES, LEVIES AND DUTIES

6.1 Approach to other taxes, levies and duties expenditure forecasts

- 6.1.1 Section 4.13.2 of the RDWR specifies the requirements for the forecasts required from Regulated Entities with respect to taxes, levies and duties (other than corporate income tax). CELCOR submitted its estimates for the taxes, levies and duties (other than corporate income tax) expenditure for the Second Regulatory Period as part of its Revenue Application.
- 6.1.2 Also included in the Revenue Application is the proposed expenditure on taxes, levies and duties (other than corporate income tax) for the 2010 Regulatory Year (July 1, 2009 to June 30, 2010). Under the current regulatory arrangements, there is no provision for the ERC to review any expenditure subsequent to the start of 2009²⁷. Since CELCOR will be entering PBR at the start of the Second Regulatory Period six months into the 2010 calendar year, the expenditure over the period January 2009 to June 2010 had to be reviewed as part of the Revenue Application and the ERC has therefore decided to include CELCOR's expenditure program for the 2010 regulatory year as part of its review of the expenditure program for the Second Regulatory Period. The Regulated Entities were therefore required to submit details of this program as part of their Revenue Applications.
- 6.1.3 In terms of Section 4.13.4, the ERC must retain a Regulatory Reset Expert (or Experts) to review the other taxes, levies and duties expenditure forecasts for a Regulated Distribution System, as well as the supporting information, in isolation or in cooperation with ERC staff, or the ERC may decide to conduct the review internally. The ERC has decided to conduct the review internally.
- 6.1.4 The findings and recommendations of ERC with regard to the forecast expenditure on taxes, levies and duties (other than corporate income tax) as submitted by CELCOR are included in the Expenditure Review Report.²⁸ This was analyzed by the ERC and forms the basis of the taxes, levies and duties (other than corporate income tax) expenditure forecasts approved by the ERC, as described below. Since the OPEX Review Report is available for public review, only the main findings are repeated below.
- 6.1.5 Considering the submissions on the Draft Determination, ERC deems that no adjustment to the originally recommended expenditure on other taxes, levies and duties is necessary.

6.2 Purpose of the taxes, levies and duties expenditure

- 6.2.1 As part of its normal operations, a distribution utility has certain obligations to pay various license fees, levies, duties and other taxes (excluding corporate income tax) to various authorities and/or industry bodies. Failure to incur these expenses would lead to severe penalties and possible suspension of operations.
- 6.2.2 Expenditure on taxes, levies and duties (other than corporate income tax) constitutes one of the building blocks on which the calculation of the annual revenue requirement for Regulated Entities is based and therefore has a direct impact on the price cap determined under PBR. The approved license fees, levies, duties and other taxes

²⁷ This is because no more rate cases will be filed for the Third Entry Group under the current return-on-rate-base form of regulation.

²⁸ Supra note 16

(excluding corporate income tax) expenditure is therefore directly recovered from customers as part of their distribution tariffs.

6.3 License fees, levies, duties and other taxes expenditure proposed by CELCOR

6.3.1 CELCOR's historical expenditure on license fees, levies, duties and other taxes (excluding corporate income tax) and the forecast expenditure as submitted in its Revenue Application are shown in Table 6.1.

Table 6.1 : CELCOR Application for License Fees, Levies, Duties and Other Taxes Expenditure (Figures in the original Revenue Application)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Taxes						
Business Operation Tax	0.5492	0.5670	0.5761	0.5853	0.5946	0.6042
Community Tax	0.0029	0.0030	0.0030	0.0030	0.0030	0.0030
Real Property Tax	0.2099	0.2099	0.2216	0.2699	0.2924	0.2924
Business Registration Fee	0.0005	0.0005	0.0005	0.0005	0.0004	0.0004
Sub-Total Taxes	0.7625	0.7804	0.8011	0.8587	0.8904	0.8999
Levies						
Regulatory Reset Expert Fees	0	0.7201	1.5224	0.1698	0.1685	0.1678
Duties	0	0	0	0	0	0
Taxes, Levies and Duties	0.7625	1.5005	2.3235	1.0284	1.0589	1.0677

Note: Using the ERC Revised Economic Indices

6.3.2 The CELCOR application, in real figures, is indicated in Table 6.2, together with historical expenditure on license fees, levies, duties and other taxes.

Table 6.2 : CELCOR Application for License Fees, Levies, Duties and Other Taxes Expenditure (Figures revised by using the ERC financial indices forecasts)

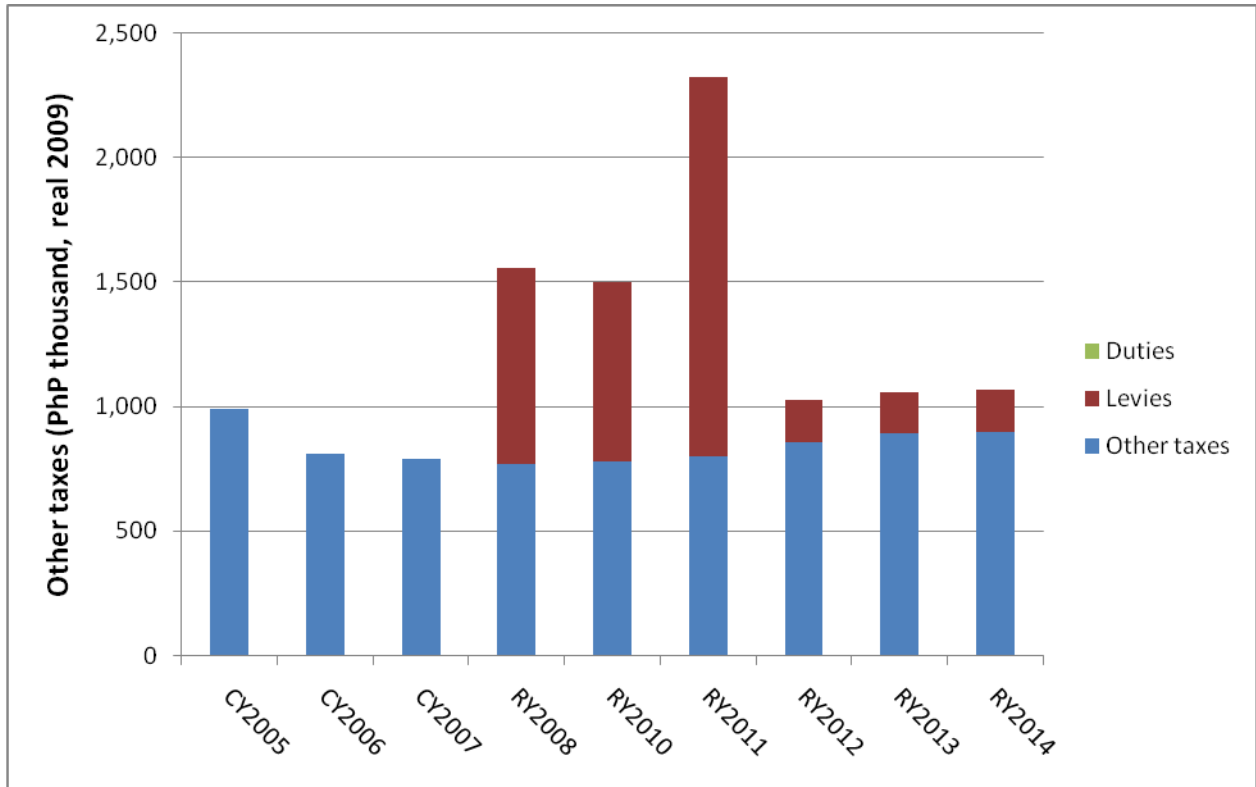
	CY2005	CY2006	CY2007	CY2008	RY2010	RY2011	RY2012	RY2013	RY2014
Other taxes	992	810	789	771	780	801	859	890	900
Levies	0	0	0	786	720	1,522	170	169	168
Duties	0	0	0	0	0	0	0	0	0
TOTAL	992	810	789	1,558	1,501	2,323	1,028	1,059	1,068

Note: Given the 6-month overlap between the 2009 calendar year and the 2010 regulatory year, to avoid distorting the trend, no 2009 was included in the table

6.3.3 In Figure 6.1 the CELCOR forecast expenditure on license fees, levies, duties and other taxes is graphically represented, in real (2009) values. From Figure 6.1, CELCOR is

clearly anticipating very substantial increases in license fees, levies, duties and other taxes expenses during the Second Regulatory Period. The high increase in Taxes for 2011 is attributable to the forecast payment of the regulatory reset expert fees, as provided in the RDWR.

Figure 6.1 : CELCOR proposed Expenditure on License Fees, Levies, Duties and Other Taxes



6.4 Analysis of license fees, levies, duties and other taxes expenditure

6.4.1 ERC's review of CELCOR's forecasts for license fees, levies, duties and other taxes during the Second Regulatory Period is discussed in detail in the OPEX Review Report. The ERC suggests that the annual provision for real property tax be adjusted down to the CY 2008 values as CELCOR provided insufficient justification for its forecast increases.

6.4.2 The summary of the adjustments and the provision for taxes, levies and duties after adjustments are shown in Table 6.3 below.

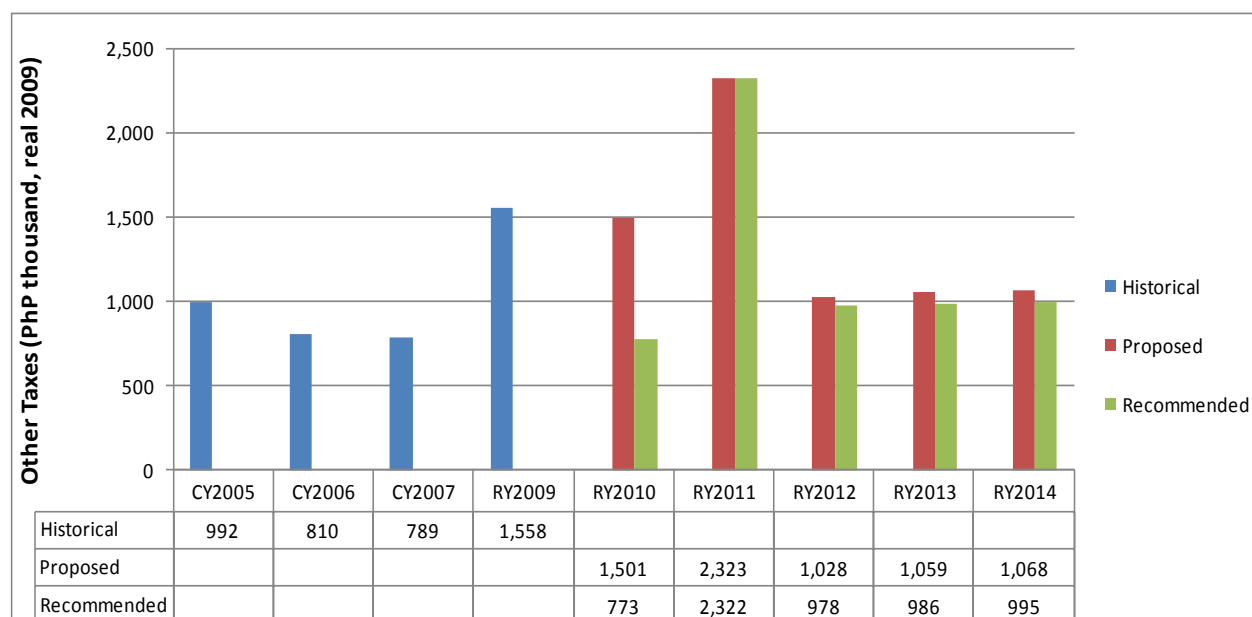
Table 6.3: ERC’s Provision for Taxes, Levies and Duties (PhP million, real 2009)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Proposed in CELCOR's Revenue Application						
Taxes, Levies and Duties	0.7600	1.5005	2.3235	1.0284	1.0589	1.0677
Adjustments						
Real Property Tax	0	0.0000	-0.0117	-0.0600	-0.0825	-0.0825
Regulatory Reset Expert Fees	0	-0.7368	0.0000	0.0000	0.0000	0.0000
Real Property Tax - Bitas Coll Ofc	0	0.0097	0.0097	0.0097	0.0097	0.0097
Total Adjustments	0	-0.7271	-0.0019	-0.0503	-0.0727	-0.0727
Recommended Provision for Taxes, Levies and Duties	0.7600	0.7734	2.3215	0.9781	0.9862	0.9950

6.5 Final Determination on license fees, levies, duties and other taxes

- 6.5.1 The ERC has made adjustments to CELCOR’s forecasts for license fees, levies, duties and other taxes as described above.
- 6.5.2 According to CELCOR, the construction of the Bitas Collection Office was completed last September 2009, thus, additional Real Property Tax (RPT) will be paid by CELCOR to the local government starting CY 2010 or RY 2011. CELCOR has included an amount of PhP9,725.80 real property tax for the Bitas Collection Office and a contingency assessment of the historical value of PhP1,945.20.
- 6.5.3 The market value for the Bitas Collection Office is PhP955 thousand. Real property taxes on this would be 2.035% of the assessed value, which is computed at 50% of the acquisition cost. Since the Bitas Collection Office has already been completed in September 2009, additional real property taxes will be paid by CELCOR to the local government commencing year 2010. In this regard, ROS recommends additional real property taxes amounting to PhP9,725.80 from RY2010-2014.
- 6.5.4 Based on the comment submitted by CELCOR, additional RPT will be paid for the construction of the Del Pilar Collection Office in RY2011 and the Board Room in RY2012. CELCOR has computed an RPT of PhP48,362.94 for the Del Pilar Collection Office and an RPT of PhP26,174.08 for the Bitas Board Room.
- 6.5.5 It has been the Commission’s policy that uncertain tax liabilities should not form part of the forecast. In the event of the future imposition of additional 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”. Considering that these structures are yet to be constructed, there is uncertainty on the additional real property taxes, thus, ROS recommends disallowance of the real property tax for Del Pilar Collection office and Bitas Board Room consistent with that approved in the Draft Determination.
- 6.5.6 In Figure 6.2, the historical and forecast trend is illustrated, based on the ERC’s allowance for license fees, levies and other taxes expenditure during 2008 and the Second Regulatory Period.

Figure 6.2 : Comparison of License Fees, Levies, Duties and Other Taxes trends



6.5.7 In Table 6.4, the ERC’s Final Determination for the forecast license fees, levies, duties and other taxes (other than corporate income tax) for the Second Regulatory Period and the 2010 Regulatory Year is presented. A more detailed breakdown of the allowed expenditure is provided in Appendix C.

Table 6.4 : Final Determination on License Fees, Levies, Duties and Other Taxes Expenditure (PhP thousand)

	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014	TOTAL
Nominal values	786	2,468	1,087	1,146	1,211	5,911
Real values (2009)	773	2,322	978	986	995	5,281

Note : The total is excluding Regulatory Year 2010.

7. REGULATORY ASSET BASE

7.1 Approach to the RAB

- 7.1.1 The regulatory asset base (RAB) represents the assets used by a Regulated Entity to provide Regulated Distribution Services and covers the Regulated Distribution System assets as well as the Non-system Assets.
- 7.1.2 While it is the intent to separate Distribution Connection Assets from the RAB in the future once Distribution Connection Services are applied in a competitive environment, these assets are presently still included in the RAB.
- 7.1.3 Under PBR, Regulated Entities are entitled to earn a return on the value of their rolled-forward RAB, as part of the annual allowed revenue requirement. The value of the RAB therefore has a direct bearing on the price consumers pay for electricity distribution.

7.2 Opening valuation of the RAB

- 7.2.1 Section 4.8 of the RDWR describes the approach to the opening valuation of the RAB. An optimized depreciated replacement cost (ODRC) valuation methodology is adopted. This method is used to ensure that only those assets that are required to provide efficient distribution services and allows efficient planning and investment in distribution assets are included in the RAB. Assets not meeting these criteria are optimized out.²⁹
- 7.2.2 The ERC opted to appoint a regulatory reset expert to assist it to establish the initial revaluation of the Regulated Entities' RAB, rather than to require them to conduct their own valuation and present this to the ERC. This was in accordance with Clause 4.8.2(b) of the RDWR.
- 7.2.3 Sinclair Knight Merz and Cuervo Appraisers (hereafter jointly referred to as SKM) were appointed as the regulatory reset experts to conduct the initial revaluation for CELCOR. The results from their valuation are described in the Initial Revaluation Report³⁰ and were accepted by the ERC. These reports were also presented to CELCOR, who likewise indicated their acceptance of SKM's recommended valuation of the RAB at the Initial Revaluation Date. Since the Initial Revaluation Report has been separately published and is publicly available, only the key points from this report, as it pertains to the Final Determination, will be replicated here.
- 7.2.4 The value of the RAB at the Initial Re-valuation Date (December 31, 2008) is presented in Table 7.1. There were some asset optimizations performed for CELCOR.
- 7.2.5 For this asset valuation process the standard asset lives used in the previous two entry groups were assessed by SKM and adopted as per a report done by PB Associates. These asset lives were used as basis for the depreciation of the assets in the RAB, using a straight-line depreciation method.

²⁹ The optimization approach is described in Clause 4.8.6 and Appendix D of the RDWR

³⁰ SKM report titled "*Cabanatuan Electric Corporation Regulatory Asset Valuation: Valuation Date: 31 December, 2008*", dated April 24, 2009

Table 7.1 : Value of the CELCOR RAB at December 31, 2008 (Initial Revaluation Date)

Asset Category	Replacement cost (PhP)	Optimized Replacement Cost (PhP)	Optimized Depreciated Replacement Cost (PhP)
Distribution assets	719,770,650	673,936,677	463,682,331
Non-system assets	262,600,161	247,943,820	192,476,310
Connection assets	54,762,030	52,364,556	38,456,526
Retail services assets	148,061,436	148,061,436	112,287,948
TOTAL	1,185,194,276	1,122,306,488	806,903,115

Source : SKM and Cuervo Appraisers, Inc.

7.2.6 The calculation of the opening value of the RAB for the Second Regulatory Period (July 1, 2010) is derived as follows:

$$\begin{aligned}
 \text{Opening value of the RAB} &= \text{Value of the RAB at the Initial Revaluation Date} \\
 &\quad \text{minus} \\
 &\quad \text{Depreciation of the initial RAB to June 1, 2010} \\
 &\quad \text{plus} \\
 &\quad \text{Inflation of the initial value to a June 2010 basis} \\
 &\quad \text{plus} \\
 &\quad \text{Approved CAPEX for the 2010 regulatory year (RY)} \\
 &\quad \text{minus} \\
 &\quad \text{Depreciation of assets acquired during 2010 (RY)} \\
 &\quad \text{minus} \\
 &\quad \text{Disposal of assets during 2010 (RY)} \\
 &\quad \text{plus} \\
 &\quad \text{CWIP allowance}
 \end{aligned}$$

7.2.7 The depreciation of the initial asset base as well as the assets acquired during 2010 is discussed in Section 7.4. The approved capital expenditure program for 2010 is discussed in Section 4.9. Disposal of assets is as reported by CELCOR in the Revenue Application.

7.2.8 The construction work in progress factor (CWIP factor) is described in Section 4.8.9 of the RDWR. This is to compensate Regulated Entities for the investment cost of capital tied up during construction of major projects. During the reset period for the First Entry Group, the ERC conducted a study on the appropriate CWIP factor for typical distribution projects, based on information provided by and consulted with Regulated Entities. Based on this study, a CWIP factor was determined by the ERC and was communicated to the First Entry Regulated Entities prior to the filing of their Revenue Applications.³¹ This was further updated for the Final Determination for the Second Entry Group and the Regulated Entities in the Third Entry Group were advised to use the same CWIP figures for their Revenue Applications.

Updated information had subsequently been received from the Third Entry Group and was analyzed. Overall, the project construction periods did not vary significantly from that submitted by the First Entry Group. The ERC has therefore decided to adopt the same CWIP factor computed using the new WACC used for this Final Determination. This is

³¹ The findings are described in the ERC report titled "Performance Based Regulation of Privately Owned Electricity Distribution Utilities (First Entry Point) : Preliminary Calculation of the Construction Work in Progress Factor that will apply during the Second Regulatory Period", dated August 28, 2006

indicated in Table 7.3. The CWIP factor only applies to Regulated Distribution Assets and Distribution Connection Assets, and to Non-network structures and improvements.

Table 7.2 : CWIP Factors Adopted for the Final Determination

Project category	CWIP factor
Substations	4.20%
All other capital projects	2.98%

Source : ERC analysis

7.2.9 Inflation of the initial asset value (Dec 31, 2008) to the opening value (July 1, 2010) is done using the Philippines inflation rate forecast for the calendar year 2009 and regulatory year 2010 adopted by the ERC.

7.3 Final Determination on the opening value of the RAB

7.3.1 The ERC's Final Determination of the CELCOR opening RAB value is indicated in Table 7.3.

Table 7.3 : Opening Value of the CELCOR RAB at June 30, 2010 (Php Million)

Asset Category	Initial value	Depreciation original base up to June 2010	Inflation of asset base to June '10	Approved Jan '08 to Jun '10 capex	Depreciation of additions	Disposals	CWIP allowance	Opening RAB for 2nd Regulatory Period
Distribution Assets								
Land and structures	8.9	0.3	0.5	0.0	0.0	0.0	0.2	9.3
Substation Equipment	57.3	4.8	2.9	0.7	0.0	0.0	2.4	58.5
Distribution Lines - network	262.6	16.5	13.8	16.5	0.4	0.5	8.2	283.8
Underground distribution network	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Line Transformers - Distribution	133.4	8.8	7.0	18.5	0.4	1.1	4.5	153.1
Other	1.4	0.1	0.1	0.3	0.0	0.0	0.0	1.7
Non-network assets								0.0
Land and structures	144.0	0.7	8.0	1.0	0.0	0.0	0.3	152.5
Furniture, transportation, tools	15.1	4.2	0.6	4.6	0.1	0.0		15.9
Materials, supplies and spares	29.3	0.0	1.6	11.3	0.0	0.0		42.3
Other	4.1	1.8	0.1	1.3	0.2	0.0		3.5
Connection assets								0.0
Overhead connections	27.3	1.7	1.4	2.9	0.1	0.0	0.9	30.8
Underground connections	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-network assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	11.1	0.8	0.6	0.0	0.0	0.0	0.3	11.2
Retail service assets								0.0
Metering	112.3	8.3	5.8	16.7	0.5	0.5	0.0	125.5
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transferred subtrans. assets	0.0	0.0	0.0	0.0	0.0	0.0		0.0
TOTAL	806.9	48.0	42.5	73.8	1.6	2.2	16.8	888.2

Source : CELCOR application, SKM Valuation, ERC analysis

7.4 Regulatory depreciation

7.4.1 The ERC reviewed CELCOR's calculations of regulatory depreciation (Schedules A6, E1 and E2 of the Revenue Application) and made some adjustments to consider standard asset lives.

7.4.2 For the calculation of the historical cost depreciation of the original assets base at the Initial Re-valuation Date, CELCOR's submitted figures were accepted. The purpose of including the historic cost depreciation is to align the depreciation amount used in calculating the corporate income tax building block with the actual depreciation figure used in CELCOR's financial statements. It is therefore important to maintain this consistency.

- 7.4.3 The historical cost depreciation of assets acquired during the 2010 regulatory year and the Second Regulatory Period, is assumed to be identical to the regulatory depreciation. This requires CELCOR to modify the standard lives used in its financial statements for new assets (acquired after December 2008) to ensure consistency with the regulatory asset lives. Failing this, a divergence between the historical cost depreciation used to calculate the corporate income building block and CELCOR's asset depreciation used to determine its actual corporate income tax payments is likely to occur.
- 7.4.4 In Table 7.4, a summary is provided of the regulatory depreciation (ODRC basis) of the CELCOR asset base, as calculated by the ERC. In terms of the RDWR (Clause 4.10), disposals are included in the depreciation amounts. The forecasts provided by CELCOR in their Revenue Application are included below. Forecast income from disposals was reduced from the value of the disposed assets.

Table 7.4 : Summary of ODRC Depreciation of the CELCOR RAB (calculated by the ERC) (PhP Millions)

	RY2010	RY2011	RY2012	RY2013	RY2014
Opening asset base	32.0	32.6	31.3	31.3	31.3
Interim assets before regulatory period	1.5	2.5	2.5	2.5	2.5
Assets acquired during regulatory period	0.0	2.0	5.0	8.2	11.4
Subtotal	33.5	37.1	38.9	42.1	45.3
plus Disposals	2.4	2.5	2.1	2.1	1.3
minus Income from Disposals	-0.2	-0.2	-0.1	-0.1	-0.1
TOTAL	35.7	39.5	40.8	44.1	46.5

Source : ERC analysis

7.5 Final Determination - Rolled forward asset base

- 7.5.1 The ERC's Final Determination on the value of the rolled-forward asset base for the Second Regulatory Period, as determined through the ERC modeling, is presented in Table 7.5.

Table 7.5: Value of the Rolled Forward Regulatory Asset Base (PhP Thousand)

	RY2010	RY2011	RY2012	RY2013	RY2014
Opening Value of the RAB		888,227	913,310	924,215	944,147
Depreciation on RAB		39,502	40,839	44,072	46,478
Capital Expenditure		64,406	51,091	64,644	50,710
Change in assets used over regulatory lives		180	653	-640	409
Closing Value of the RAB	888,227	913,310	924,215	944,147	948,788
Average RAB for the Year	888,227	900,769	918,763	934,181	946,468

Source : ERC analysis and financial model

7.6 Final Determination on Working capital

- 7.6.1 The RDWR allows Regulated Entities to recover a return on the working capital tied up in the operation of their Regulated Distribution Systems. The ERC conducted a lead-lag study to ascertain the allowance that should be made for such working capital and determined that this is relatively minor.
- 7.6.2 During consultation by the ERC prior to the filing of the Revenue Applications on the appropriate working capital allowance, the Regulated Entities indicated that they have a greater concern about the significant amounts of working capital tied up in their energy purchases, for which they have no recourse to recover. The ERC pointed out that energy purchases is not a Regulated Distribution Service and as such should not be

included in the maximum average price-cap for such services. Likewise, working capital on energy purchases should not be recovered in the allowed annual revenue requirement. However, since the ERC recognizes that the current unbundled rate structure does not allow for the recovery of working capital on energy purchases and for the Second Regulatory Period, has therefore approved to include an allowance for capital tied up in energy purchases as part of the working capital for Regulated Distribution Services.

- 7.6.3 In the Final Determination for the Second Entry Group, lead-lag information was provided by Regulated Entities in the Second Entry Group. Based on an analysis of this information, it transpired that the average lag time until payment of electricity accounts by consumers is 40 days – well in excess of the standard payment terms, which varies between 10 and 20 days. For the First Entry Group, the ERC assumed an efficient payment period of 15 days. On considering this additional information, it appears that this period may be too low and it has now been set at 25 days which is similar to that used for the Second Entry Group. (Since the ERC wishes to ensure that a strong incentive remains on Regulated Entities to pursue electricity account payments, this period is substantially less than the actual average payment period experienced by the Regulated Entities.) As a result, the working capital factor is set at 4.9% of the allowed operating and maintenance expenditure (compared with the 3% allowed for the First Entry Group).
- 7.6.4 In its previous determinations, the ERC concluded that it is not appropriate to allow any working capital for energy purchases. It accepts that the Regulated Entities do have a longer debtor settlement period than that contracted and that they therefore would have working capital tied up in energy purchases. However, the ERC believes that late payments should be made subject to penalties to recover this lost working capital, rather than recover this from the distribution (or energy) rates, which would penalize those customers who are paying their accounts within the prescribed time.
- 7.6.5 Further lead/lag information was provided by the Third Entry Group Regulated Entities. Based on an analysis of this information, it appeared that the average lag time until payment of electricity accounts is 45 days – well in excess of the standard payment terms, which varies between 10 and 25 days. For the Second Entry Group the ERC assumed an efficient payment period of 20 days. Considering this additional information, it appears that this period may be too low and it has now been set at 25 days. Since the ERC wishes to ensure that a strong incentive remains on Regulated Entities to pursue electricity account payments, this period is still substantially less than the actual average payment period experienced by the Regulated Entities. As a result, the working capital factor is increased to 6.85% of the operating and maintenance expenditure allowed (from the 4.9% allowed for the Second Entry Group).

8. WEIGHTED AVERAGE COST OF CAPITAL

8.1 Purpose of the regulatory WACC

8.1.1 The Regulatory Weighted Average Cost of Capital (WACC) is the rate at which the return on capital (the RAB and working capital) is calculated for inclusion in the allowed revenue requirement. In addition, it is also used in the calculation of the CWIP factor (see paragraph 7.2.8). It is therefore one of the key parameters to be determined for the Second Regulatory Period.

8.2 Approach to the WACC

8.2.1 During the regulatory reset period for the First Entry Group, the ERC prepared a report³² (the WACC Report) and conducted public consultation on the manner in which the Regulatory WACC for the Second Regulatory Period should be determined. After the consultation, the recommended methodology described in the WACC Report was accepted.

8.2.2 The preliminary WACC figures used in the WACC report was updated by the ERC for the Final Determination of the First Entry Group, based on the economic indices and other parameters at the time of the decision. This resulted in a “vanilla” WACC figure of 12.80%.

8.2.3 For the Second Entry Group, the ERC decided to use the same approach in determining the WACC that it had applied for the Final Determination of the First Entry Group. It however adopted some modifications to reduce the impact of volatility in some of the base parameters used, to avoid undue volatility in the WACC itself. In particular, given the major variability in the local consumer price index and hence the inflation differential with the US CPI, a parameter that is used to determine the risk-free rate, the ERC adopted a 12-month average CPI figure to determine the inflation differential, rather than the spot-rates applied for previous decisions. The ERC also used the Philippines average country risk premium of the last two years rather than the longer term average applied before.

8.2.4 In addition, following industry consultation on the RDWR on December 8, 2008, further changes in the manner of calculating the regulatory WACC were introduced, which were accepted for the Final Determination of the Second Entry Group. In particular, the changes reflecting the higher risks faced by investors in Philippines electricity distribution infrastructure compared with investors in developed overseas markets were addressed:

- Due to the developing nature of the local economy and the utility infrastructure business, the systemic risk faced by investors in Philippines utilities are higher than that faced by investors in comparable utilities in developed countries. It is therefore not appropriate to directly compare the observed asset beta of international utilities with the local environment, and these observed values will therefore be adapted (increased) by a factor of a quarter (25%).
- The point value at which the WACC will be set from the range of likely values determined by the ERC³³, will now be at the 75th percentile of the range, as opposed to the 50th percentile (mean) used in the past. This is to reflect the developing

³² ERC report titled “PRELIMINARY CALCULATION OF THE REGULATORY WEIGHTED AVERAGE COST OF CAPITAL THAT WOULD APPLY DURING THE SECOND REGULATORY PERIOD” dated July 26, 2006.

³³ A range of values is determined to reflect the uncertainty in the value of many of the parameters used to determine the WACC.

nature of PBR in the Philippines and the regular challenges and delays associated with the process, which add considerably to the regulatory risk faced by Regulated Entities.

8.2.5 The ERC proposes to use the same methodology to determine the WACC for the Third Entry Group to that applied for the Final Determination of the Second Entry Group. The underlying parameters were updated to reflect October 2009 values. The main discussion points relating to the calculation of the regulatory WACC are provided below.

8.3 WACC Methodology

8.3.1 The WACC formula adopted by the ERC, as described in Section 4.11 of the RDWR, is for the so-called “Vanilla WACC” :

$$\text{WACC} = [r_e \times E / V] + [r_d \times D / V]$$

Where:

r_e = the cost of equity;

with $r_e = r_f + \beta_e \times \text{MRP}$

where r_f = the risk-free rate;

β_e = the equity Beta; and

MRP = market risk premium, set at 6% for the Second Regulatory Period

r_d = the cost of debt;

with $r_d = r_f + \text{DM}$

where r_f = the risk-free rate; and

DM = the debt margin in the Philippines

E = the amount of equity funding assumed for regulatory purposes in the capital structure of the Regulated Entity, being 60% of V for the Second Regulatory Period;

D = the amount of debt funding assumed for regulatory purposes in the capital structure of the Regulated Entity, being 40% of V for the Second Regulatory Period; and

V = E + D.

8.3.2 The calculation of the WACC is straightforward, but considerable uncertainty surrounds the determination of the underlying parameters. Setting these parameters, which are subject to various manners of interpretation, is often contentious. While the approach to the WACC adopted by the ERC has been largely unchallenged for the regulatory resets for the distribution utilities, it was thoroughly tested and challenged during the regulatory reset for TransCo before being finalized. The adopted methodology is therefore considered sound and robust.

8.3.3 The risk-free rate was estimated using two approaches – a direct measure using the yields on long dated Philippines Treasury bonds (in Peso); and an indirect measure using yields on long dated USA Treasury bonds (US\$), adjusted for the inflation differential between the Philippines and the USA, and the Philippines country risk. Since the indirect method appears more robust given the very low trading volumes in long dated Philippine bonds, the ERC used this and determined a value of between 8.40% to 10.35% for the risk-free rate.

- 8.3.4 In the absence of sufficient local evidence on the appropriate equity Beta (β_e) for electricity distribution businesses, this figure is derived from international observations³⁴. Since these observations generally reflect the financing structure of the observed companies, it is necessary to de-lever the observed β_e figures and re-lever these using the gearing ratio adopted by the ERC (60:40 debt equity ratio). The ERC sourced data from Bloomberg on various overseas electricity companies, resulting in a β_e estimate of 1.25. This was compared against research data published by Prof. Anwath Damodaran of the Stern University³⁵ which resulted in the same value (1.25). Finally, international regulatory decisions of recent years were considered, resulting in an indicative β_e range of 1.06 to 1.25. However, the ERC concluded that the regulatory decisions were made in more developed, stable environments where the risk faced by Regulated Entities would be less than in the Philippines, under a new and developing regulatory regime. In conclusion, the ERC therefore accepted a β_e figure of 1.15.
- 8.3.5 Based on its investigation of the debt margin, the ERC concluded that a figure of 2.5% is appropriate. This is somewhat higher than its similar decision for TransCo (2.3%), but reflects the smaller size and somewhat higher risk proposition of distribution companies.
- 8.3.6 Taking into account the values above, the calculation of the indicative range for the regulatory WACC for the Third Entry Group of Philippine electricity distribution utilities for the Second Regulatory Period is indicated in Table 8.1.
- 8.3.7 The ERC notes that this calculated range is substantially lower than that indicated in its WACC calculation for the Second Entry Group – this is a reflection of the impact of the changes in the economic situation in the Philippines over the last 12 months and the recent changes made to the RDWR to provide a fair return on investment.

8.4 Final Determination – Regulatory WACC

- 8.4.1 The ERC's Final Determination on the Regulatory WACC that will apply for the Third Entry Group's Second Regulatory Period is to accept a figure at the 75th percentile of the indicated WACC range as calculated in Table 8.1. This is a "vanilla" WACC and is set at 15.01% (p.a.).

³⁴ It is noted that Meralco is the only electricity distribution company traded in the Philippine stock exchange. However, given its energy trading and supply activities, it has the characteristics of a vertically integrated company rather than a stand-alone distribution business. Its risk profile is therefore not considered an appropriate benchmark for setting the β_e for local electricity distribution companies.

³⁵ <http://pages.stern.nyu.edu/~adamodar/>

Table 8.1 : Calculation of the Regulatory WACC – Third Entry Group

		Mid Range Regulatory WACC Estimate by ERC		
		Low	Mid	High
Parameters				
Gearing (Debt) ratio	$D/(D+E)$	45%	40%	35%
Equity ratio	$E/(D+E)$	55%	60%	65%
Debt to Equity	D/E	0.82	0.67	0.54
Asset beta (degeared empirical beta)	β_a	0.688	0.688	0.688
Debt beta	β_d	0.080	0.180	0.280
Risk free rate (nominal - US\$ 10 Year Bond Yields in USA)		3.62%	3.71%	3.79%
Country Risk Margin (excluding FX Risk)	CRP	1.56%	1.94%	2.32%
Risk free rate used in WACC	R_f	8.40%	9.38%	10.35%
Debt Margin	DM	2.00%	2.50%	3.00%
Cost of debt (pre-tax nominal peso terms)	K_d	10.40%	11.88%	13.35%
Market Risk Premium (Developed Country)	$R_m - R_f$	6.00%	6.00%	6.00%
Corporate tax rate	t_c	30.0%	30.0%	30.0%
Inflation rate (Philippines)	i	1.93%	3.12%	4.30%
Inflation Rate (USA)		(1.05%)	(0.34%)	0.37%
Calculated Equity (Regeared) Betas				
	<i>Formula</i>	<i>Low</i>	<i>Mid</i>	<i>High</i>
Equity Beta (1) Simple No Tax Adjustment - RDWR	1	1.25	1.15	1.06
Equity Beta (2) Simple Tax Adjustment	2	1.08	1.01	0.95
Other Parameters				
Equity beta (geared beta)	β_e	1.25	1.15	1.06
Cost of Equity (post-tax nominal)	K_e	15.91%	16.26%	16.70%
WACC Matrix - Commercial Practice & RTWR				
Post-tax nominal		12.03%	13.08%	14.13%
Post-tax real		9.91%	9.66%	9.42%
Pre-tax nominal		17.18%	18.69%	20.18%
Pre-tax real		14.96%	15.10%	15.22%
Vanilla WACC (nominal)		13.43%	14.51%	15.53%
WACC set at 75th Percentile of the suggested range			15.01%	

9. ANALYSIS OF REVENUE REQUIREMENTS AND PRICE CAPS

9.1 Approach to calculating the Maximum Average Price (MAP)

9.1.1 The ERC has adopted the approach outlined in Article IV of the RDWR for the calculation of the Smoothed Maximum Average Price (SMAP) for CELCOR. The steps in this calculation are as follows.

- a) Decision on the energy forecasts and the allowed capital, operating & maintenance and levies, duties and other taxes expenditure for the Second Regulatory Period (see Sections 3, 4, 5 and 6);
- b) Identification of the rolled-forward asset base (see Section 7.5);
- c) Calculating the annual allowed revenue requirement (ARR), using the building blocks; and
- d) Setting of the P_0 -factor and calculation of the X-factor as per Section 4.15.

9.1.2 A regulatory financial model has been developed for the ERC and Regulated Entities to assist with the analysis and calculation of the X-factor and the SMAP. This model relies on forecast expenditure data, economic indices and consumption figures, as well as the opening value of the RAB.

9.1.3 The results presented below have been calculated by applying this regulatory financial model. The model was also applied by CELCOR for its Revenue Application.

9.2 Annual Revenue Requirement – CELCOR application

9.2.1 The annual revenue requirement proposed by CELCOR in their Revenue Application is indicated in Table 9.1. This was based on the following key assumptions:

- a) The capital expenditure proposed in CELCOR's Revenue Application.
- b) The operating and maintenance expenditure proposed in CELCOR's Revenue Application.
- c) The levies, duties and other taxes proposed in CELCOR's Revenue Application.
- d) The energy consumption forecasts included in CELCOR's Revenue Application.
- e) The financial indices proposed in CELCOR's Revenue Application.
- f) CELCOR's calculation of the value of the opening RAB.
- g) The depreciation calculations proposed in CELCOR's Revenue Application.
- h) A Regulatory WACC of 16.27%.
- i) A working-capital allowance of 4.85% of OPEX.
- j) A corporate income tax rate set to zero, for the Second Regulatory Period.

Table 9.1 : CELCOR Application - Allowed Revenue Requirement (PhP Million, nominal)

Building block	2011	2012	2013	2014
Return on capital	144.3	149.6	154.5	158.2
OPEX	133.1	140.0	147.0	155.8
Regulatory depreciation	40.1	40.8	43.6	43.5
Corporate income tax	0.0	0.0	0.0	0.0
Other taxes	2.5	1.1	1.2	1.3
TOTAL	319.9	331.5	346.3	358.8

Source : CELCOR Revenue Application

9.3 Annual Revenue Requirement – ERC analysis

9.3.1 The ERC modeled the annual revenue requirement for CELCOR based on its energy forecasts described in Section 3.3, expenditure allowances discussed in Sections 4.9, 5.9 and 6.5, the opening value of the RAB discussed in Section 7.3.1 and the rolled-forward value of the RAB discussed in Section 7.5.

9.3.2 The calculation of the return on capital building block is indicated in Table 9.2.

Table 9.2 : Calculation of the Return on Capital (PhP Thousand, nominal)

	2011	2012	2013	2014
Average RAB for the Year	900,769	918,763	934,181	946,468
OPEX approved	116,282	124,401	132,779	141,725
Working capital allowed (6.85% of the OPEX)	7,965	8,521	9,095	9,708
Subtotal - capital invested	908,734	927,284	943,277	956,176
RETURN ON CAPITAL	136,401	139,185	141,586	143,522
Regulatory WACC	15.01%			
Working capital factor	6.85%			

Source : ERC Analysis

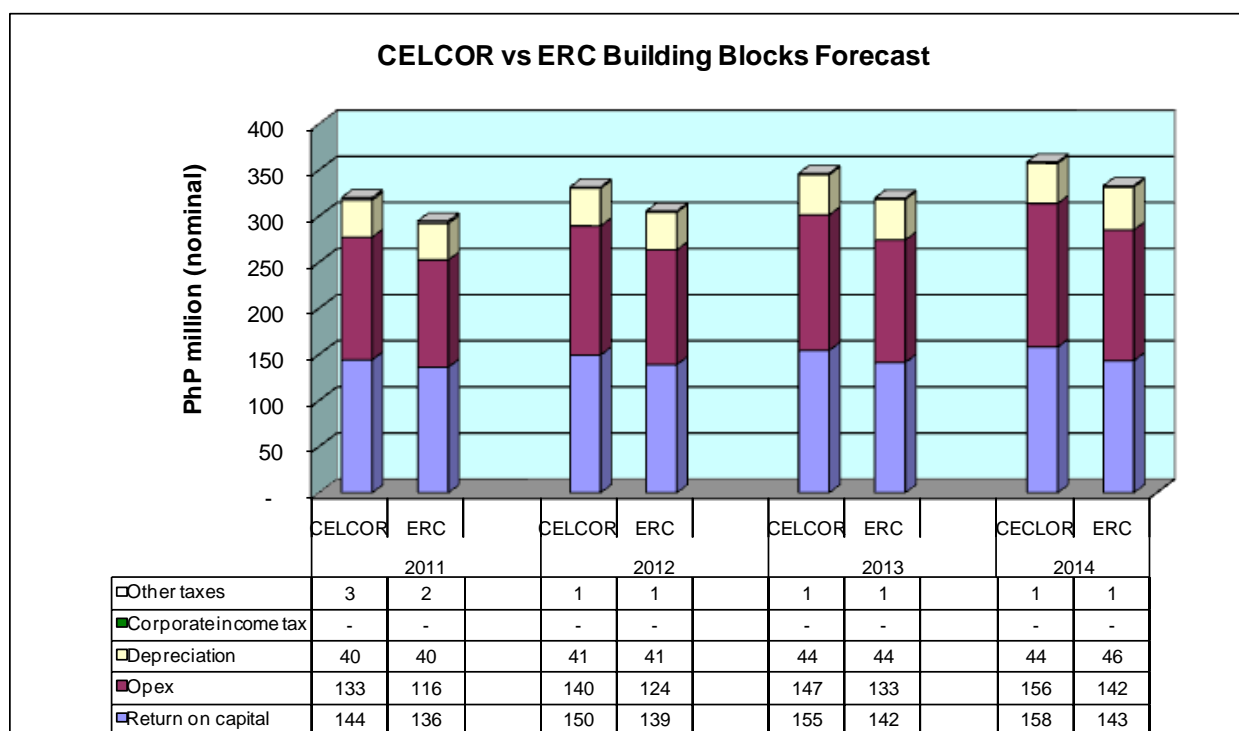
9.3.3 Based on its modeling, the ERC's determination of CELCOR's annual revenue requirement for the Second Regulatory Period is indicated in Table 9.3. This is also graphically represented in Figure 9.1.

Table 9.3 : ERC Calculation – CELCOR Revenue Requirement (PhP Million, nominal)

Building block	2011	2012	2013	2014
Return on capital (see Table 9.2)	136.4	139.1	141.5	143.5
OPEX (see Table 5.5)	116.3	124.4	132.8	141.7
Regulatory depreciation (see Table 7.3)	39.5	40.8	44.1	46.5
Corporate income tax set to zero	0.0	0.0	0.0	0.0
Other taxes (see Table 6.3)	2.5	1.1	1.1	1.2
TOTAL	294.6	305.5	319.5	332.9

Note : These figures do not include the required GSL provision

Figure 9.1 : Allowed Revenue Requirement – CELCOR Application vs. ERC Determination



9.3.4 The ERC has calculated the annual revenue requirement adjusted down to 2009 real values as shown in Table 9.4 below:

Table 9.4: ERC Calculation – CELCOR Revenue requirement (PhP Million, real 2009)

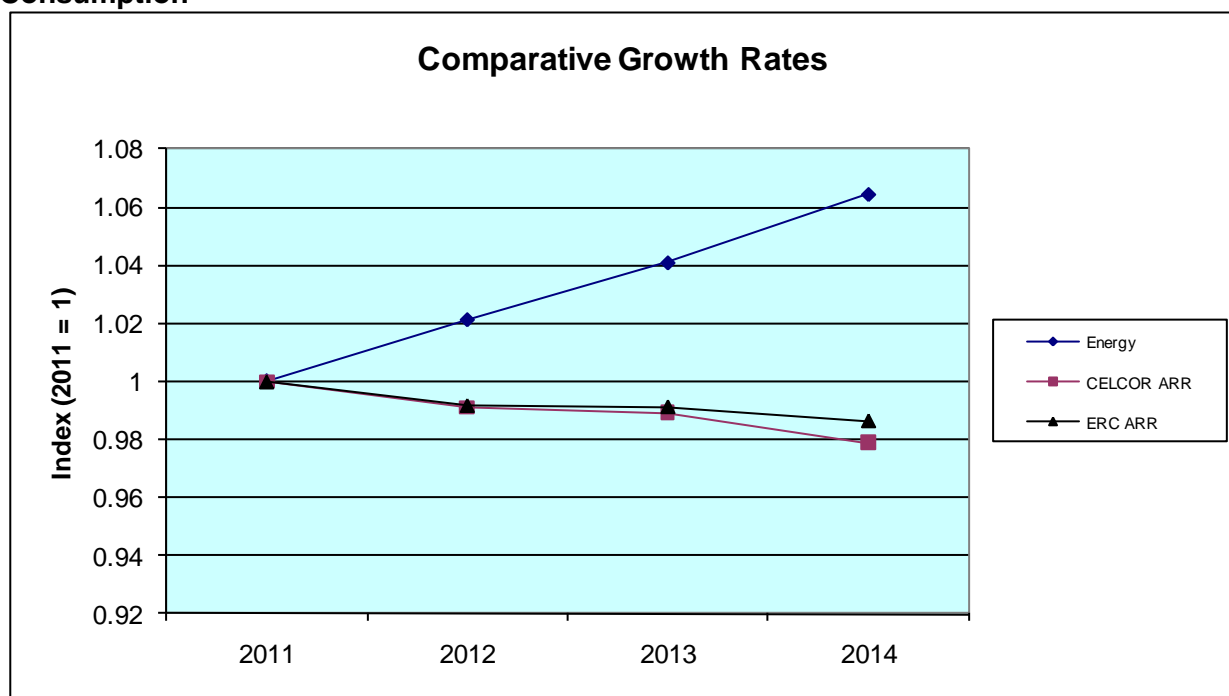
Building block	2011	2012	2013	2014
Return on capital (see Table 9.2)	125.5	122.5	119.0	115.2
OPEX (see Table 5.5)	107.0	109.5	111.7	113.8
Regulatory depreciation (see Table 7.3)	36.3	35.9	37.1	37.3
Corporate income tax set to zero	0.0	0.0	0.0	0.0
Other taxes (see Table 6.3)	2.3	1.0	1.0	1.0
TOTAL	271.1	268.8	268.7	267.4

Note: These figures do not include the required GSL provision

9.3.5 In Figure 9.2 the ERC's approved annual revenue requirement is compared with that of CELCOR and the forecast energy consumption for the CELCOR network, on a normalized basis (using the 2011 values as basis and working with the real values for expenditure).

From this it is clear that the trend of the CELCOR application and ERC allowed revenue requirement over the Second Regulatory Period falls somewhat below the anticipated energy consumption growth trend. This suggest that there will be substantial network efficiency gains, as asset utilization and operating efficiencies improve over the 2nd regulatory period.

Figure 9.2 : Comparison of Growth Rates – Revenue Requirements (real 2009) and Energy Consumption



Source : ERC analysis

9.4 Final Determination – Allowed Revenue Requirement

9.4.1 For the Guaranteed Service Level (GSL) component of the performance incentive scheme approved for the Second Regulatory Period, an additional allowance of 0.5% of the annual revenue requirement should be made (see discussion in Section 10.3). This is to ensure the revenue-neutrality of the Regulated Entities in applying this scheme.

9.4.2 After allowing for this addition, the ERC’s Final Determination with regards to CELCOR’s allowed revenue requirement for the Second regulatory Period is indicated in Table 9.5.

Table 9.5 : Final Determination - CELCOR Annual Revenue Requirement (PhP, real)

	2011	2012	2013	2014
ARR without GSL allowance	294,608,180	305,466,242	319,535,968	332,887,584
GSL allowance	1,473,041	1,527,331	1,597,680	1,664,438
TOTAL ARR	296,081,221	306,993,573	321,133,648	334,552,022

9.5 Final Determination - Smoothed Maximum Average Price

9.5.1 The MAP for Regulated Distribution Services in 2010, as indicated by CELCOR in its submission as directed in an Order dated January 20, 2010, based on its January 2009 to December 2009 energy consumption, is calculated in Table 9.6. In terms of the RDWR (Clause 4.5), this value is used as the basis from which the X-factor is determined.

Table 9.6 : Average Price during 2010

CELCOR revenue from Regulated Distribution Services from January 2009 to December 2009 ³⁶ (PhP)	205,789,247
Energy sales for January 2009 to December 2009 (kWh)	162,191,206
Average price (PhP/kWh)	1.2688

9.5.2 Based on this 2011 average price and the allowed annual revenue requirement described above, the ERC calculates the X-factor and the opening Maximum Average Price (MAP) for CELCOR for the Second Regulatory Period as follows (with a P₀-factor of zero):

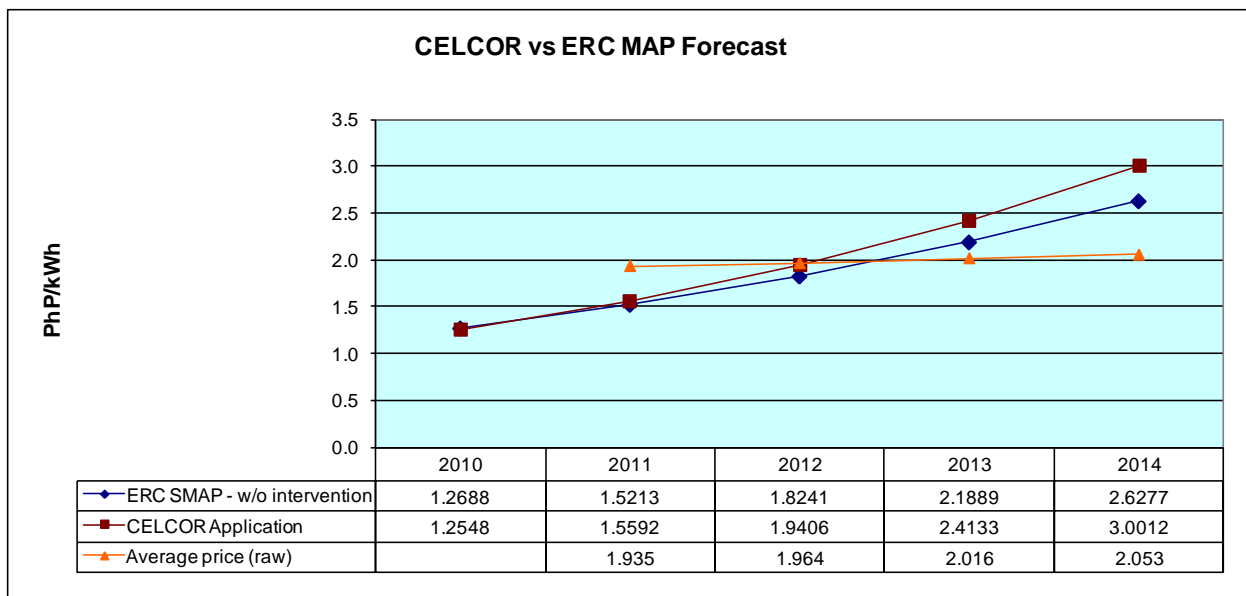
X-factor : -15.35%
MAP₂₀₁₁ : PhP1.5213 (PhP/kWh)

Based on these values, the anticipated average annual price increases during the Second Regulatory Period will be at the rate of inflation plus 15.35%. Taking the ERC forecasts for the Philippine inflation rate into account, it results in the anticipated smoothed price path indicated in Figure 9.3.

In Figure 9.3 the CELCOR proposed price path is also indicated. In addition, the raw (non-smoothed) price based on the ERC's calculated annual revenue requirement is shown.

9.5.3 In Figure 9.3, it will be noted that the CELCOR modeled price path trends higher than the ERC path. This is a result of the adjustments made from CELCOR's annual revenue requirement as discussed above.

Figure 9.3 : Comparison of Anticipated Price Paths (Without Intervention)

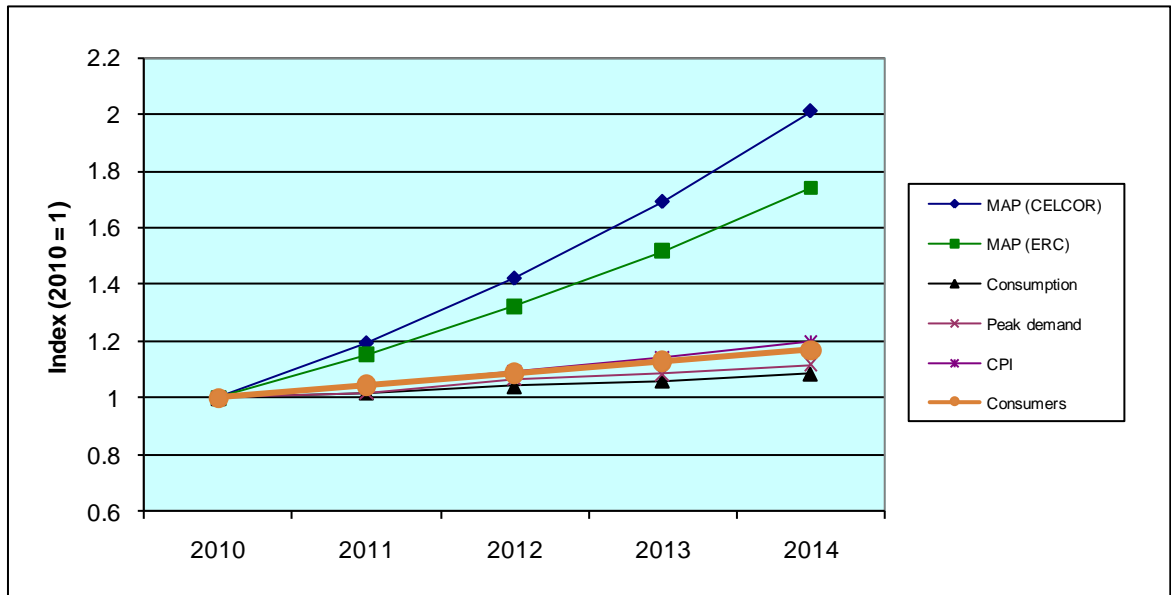


Source : ERC analysis

³⁶ This revenue is calculated after deducting 50% of related business revenue (RBR) earned from the distribution network.

9.5.4 In Figure 9.4, a further analysis of the smoothed price path is presented. By normalizing values to a common 2010 basis, it is possible to compare the relative movement of the smoothed MAP with the movements in the CPI, energy consumption and the system peak demand.

Figure 9.4 : Comparison of the Smoothed MAP to Other Indices

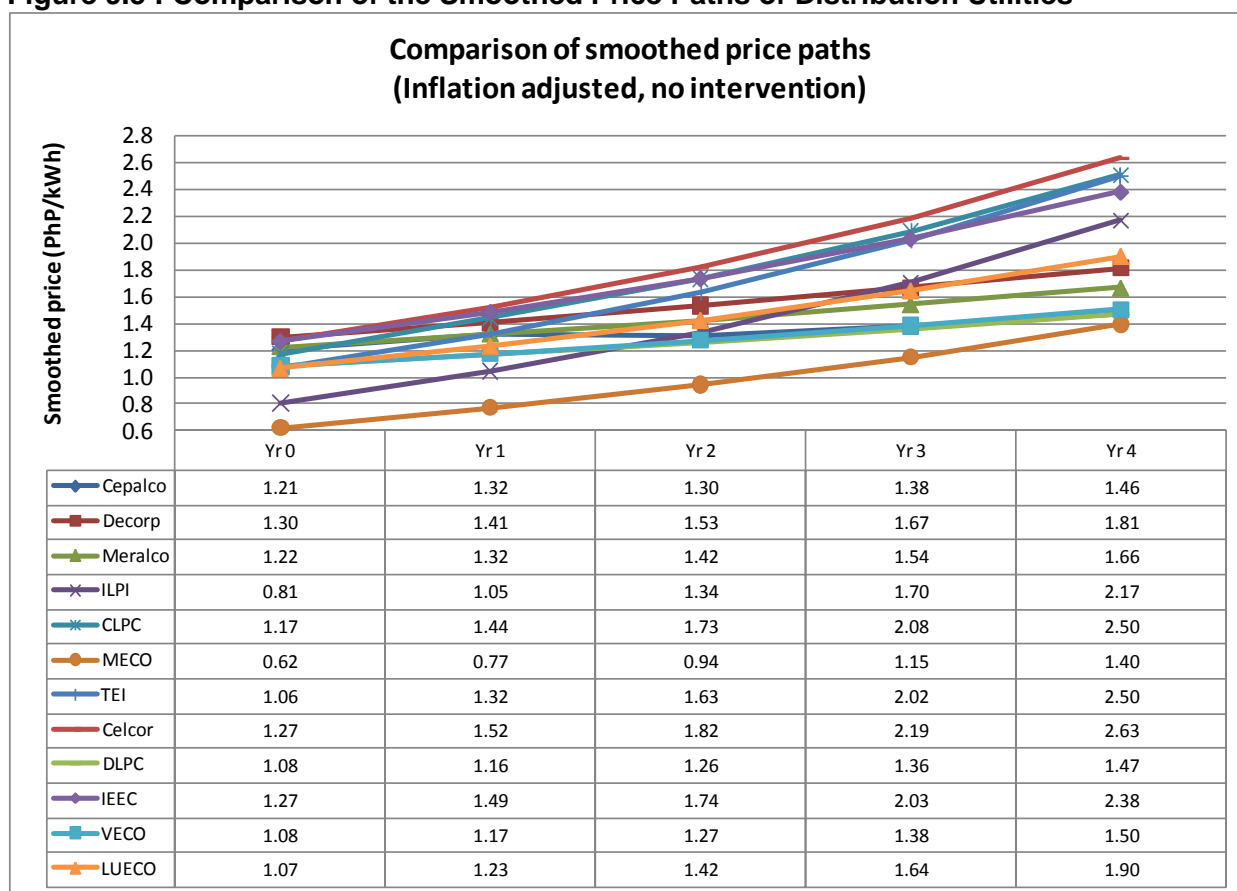


Source: ERC analysis

9.5.5 It will be noted that the CELCOR price path growth is substantially higher than the other indicated indices. This is of some concern to the ERC, since the price increases for distribution services would therefore clearly outstrip the factors that would normally be considered to underlie it. Furthermore, a comparison of the indicated CELCOR price path for the Second Regulatory Period, when compared against that of the first and Second entry group utilities and that of the others in the Third Entry Group, indicates that the CELCOR distribution rates would increase at the highest rate and at the end of the Second Regulatory Period would be the highest among the other PBR entrants. This is indicated in Figure 9.5.

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Figure 9.5 : Comparison of the Smoothed Price Paths of Distribution Utilities



Source : ERC analysis

9.5.6 The ERC is concerned about the substantial rises in the cost of electricity distribution as indicated in the above figures, if CELCOR is allowed the revenue requirement as calculated in Section 9.4. It accepts that in terms of the RDWR this outcome is reasonable and would provide CELCOR with a reasonable return on their efficient expenditure. The ERC also accepts that the indicated increases are partly due to catching up with deferred past expenditure. However, it does not believe that the indicated price increase for the 2010 regulatory year, or the indicated increases for the rest of the 2nd Regulatory Period, are reasonable or realistically sustainable by the majority of CELCOR's customers.

9.5.7 In the best interest of the CELCOR consumers and to avoid a huge price-shock, the ERC has therefore decided to intervene in the rate-setting process. It proposes to introduce a reduction on the revenue allowance for CELCOR during the Second Regulatory Period. In the latest revision of the RDWR, prepared for the First Entry Group for the Third Regulatory Period, it is indicated that this regulatory intervention will be recoverable during the Third Regulatory Period, at which time CELCOR will be allowed to earn the full annual revenue requirement as calculated in terms of the RDWR methodology at that time.

9.5.8 The proposed intervention will reduce the effective return on the RAB that CELCOR can earn during the Second Regulatory Period. The recommended expenditure levels however do not need to be reduced. The intervention will therefore not inhibit CELCOR's ability to invest in or to effectively maintain and operate its electricity distribution network.

9.5.9 The ERC will not prescribe in which of the building blocks the proposed reduction would have to be achieved and will leave the value of these building blocks as indicated in Table 9.3 unchanged. This implies that CELCOR will be entitled to reduce any (or all) of these as it best fits with its operations.

9.5.10 In addition, any efficiency adjustments³⁷ achieved by CELCOR to be carried over to the Third Regulatory Period, will be measured against the building block values as calculated without the regulatory intervention.

9.5.11 The annual revenue requirement approved by the ERC for the Final Determination is presented in Table 9.7. The extent of the ERC's intervention to reduce the amount indicated through the calculations above is also demonstrated in this table.

9.5.12 The reduction in the allowed annual revenue and the resulting lower Smoothed Maximum Annual Price (SMAP) caps will result in lower corporate taxes payable on units sold. This implies that the actual reduction in the ARR is expected to be somewhat larger than the regulatory intervention on its own. However, the net impact of the reduction in the corporate tax building block will be largely neutral to CELCOR.³⁸

Table 9.7 : Final Determination - CELCOR Annual Revenue Requirement (PhP, nominal)

	2011	2012	2013	2014
ARR as calculated	294,608,180	305,466,242	319,535,968	332,887,584
GSL allowance	1,473,041	1,527,331	1,597,680	1,664,438
Resulting ARR before intervention	296,081,221	306,993,573	321,133,648	334,552,022
Regulatory Intervention	-40,000,000	-45,000,000	-50,000,000	-55,000,000
Resulting ARR after intervention	256,081,221	261,993,573	271,133,648	279,552,022

9.5.13 For the Guaranteed Service Level (GSL) component of the Performance Incentive Scheme (PIS) approved for the Second Regulatory Period, an additional allowance of 0.5% of the annual revenue requirement should be made (see discussion in Section 10.3). This is to ensure the revenue-neutrality of the Regulated Entities in applying this scheme. The impact of this addition is also indicated in Table 9.7. This calculation is based on the ARR without the regulatory intervention.

9.5.14 The result of this intervention is to increase the X-factor to -7.95% and a reduction of the smoothed price-path as demonstrated below in Figure 9.6.

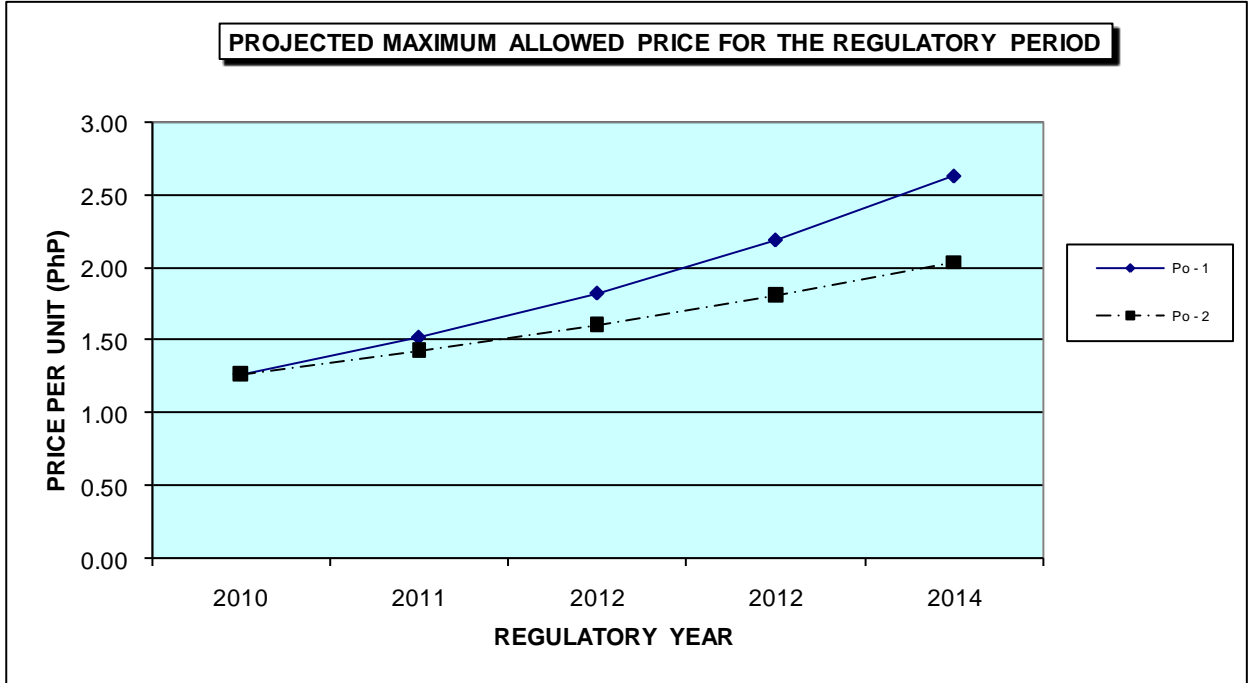
Table 9.7: Comparison of X-factor and the Opening MAP (with intervention)

	CELCOR's Application	Final Determination
X – factor	-20.36%	-7.95%
Opening MAP	PhP1.5592/kWh	PhP1.4275/kWh

³⁷ As described in Article IX of the RDWR.

³⁸ The reduced ARR is offset against lower corporate taxes. There may be a minor difference arising due to timing differences in when the tax is actually paid and when it is recovered from consumers.

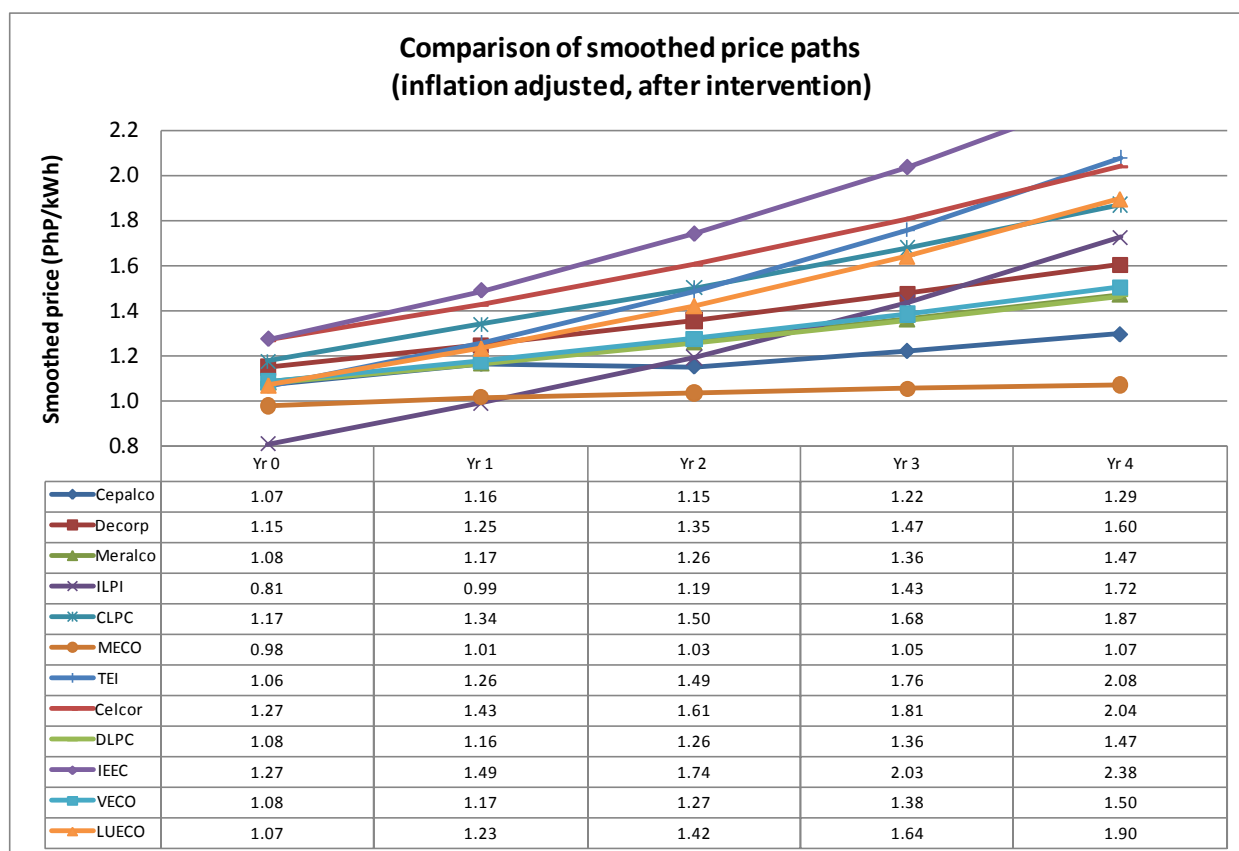
Figure 9.6: Impact of the Regulatory Intervention



P₀-1 : CELCOR Submission Price Path
P₀-2 : Final Determination Price Path

- 9.5.15 The recommended price path, even after the intervention, still indicates substantial increases in the distribution rates over the Second Regulatory Period. However, it is not recommended that this intervention be increased, since that could compromise the efficient operations of CELCOR.
- 9.5.16 The same price-path comparison with other Regulated Entities as that indicated in Figure 9.7, is provided after incorporating the proposed regulatory intervention for CELCOR (and for TEI, CLPC and ILPI). This indicates a more reasonable cluster of distribution prices across all the utilities so far entering PBR.

Figure 9.7: Comparison of smoothed price paths (after the regulatory intervention) to other PBR entrants



9.5.17 As shown above, CELCOR is still at the highest end of the price spectrum, but this is not unexpected, given that it is a smaller utility and does not enjoy the scale benefits of the larger companies. As a general trend when assuming roughly similar performance levels, given the lack of economy of scale benefits electricity distribution prices at smaller utilities will be higher than at larger utilities.

9.6 Setting the P_0 -factor

9.6.1 In terms of Clause 4.15.3 of the RDWR, the ERC can set the P_0 -factor to reduce price shocks during the transition to the Second Regulatory Period. The impact of the P_0 -factor is to shift the opening MAP during the Second Regulatory Period up or down, depending on its setting, and to create an opposite movement in the annual price increments during the Second Regulatory Period. Overall, the impact of the P_0 -factor is revenue neutral to the Regulated Entities.

9.6.2 The ERC is reluctant to further increase the initial incremental price rise indicated by the current revenue allowance even if subsequent increases will be reduced. It has therefore decided to set the P_0 -factor at zero.

9.7 Side constraints

9.7.1 In terms of Clause 6.4 of the RDWR, side constraints can be set by the ERC, having regards to the plight of end-consumers. In the Position Paper (Clause 10.3), the ERC

indicated that these constraints will not be set at less than 2%. The side constraints inhibit the maximum average price rise for a particular customer segment (or segments).

- 9.7.2 Following the publication of this Final Determination, CELCOR will be applying for a formal distribution rate structure that will convert the MAP into tariffs for various customer categories. To avoid normal annual shifts in the revenue collected per customer group from breaching the side constraint³⁹ and also to allow some movement in the manner in which costs are allocated to customer groups, to reduce existing cross-subsidies and to implement a tariff structure that provides a fairer reflection of the cost to provide distribution services, it will be necessary to allow a side-constraint that is higher than the X-factor determined for the Second Regulatory Period.
- 9.7.3 In light of the ERC's decision on the X-factor that would apply to CELCOR's price setting for the Second Regulatory Period, the side constraint for the Second Regulatory Period will be set at 10.95% over the CPI. This allows for a 3% additional relative movement in the tariff per customer category over the expected mean.
- 9.7.4 In terms of the recent changes to the RDWR⁴⁰, the ERC is entitled to relax the side constraint during a distribution rate setting. This is to avoid a situation where earlier under-recovery and subsequent correction cannot be adequately implemented, due to the side constraint.

9.8 Final Determination on the opening price and smoothing factor

- 9.8.1 The ERC's Final Determination on the opening MAP and the smoothing factor (X-factor) that will apply to CELCOR at the start of the Second Regulatory Period, is as follows:

X-factor	:	-7.95%
MAP ₂₀₁₁	:	PhP 1.4275 (PhP/kWh)

³⁹ Changes in annual consumption of various customer groupings demonstrate some degree of randomness and will under normal circumstances be expected to exceed the forecast for at least 50% of the time (or fall below the forecast for at least 50% of the time). A side constraint that does not provide for some uncertainty around the anticipated consumption and associated revenue levels, will therefore be breached for an estimated 50% of the time.

⁴⁰ Resolution No. 20, Series of 2008 on "Modifying the Rules for Setting the Distribution Wheeling Rates for Privately Owned Distribution Utilities Under Performance Based Regulation."

10. PERFORMANCE INCENTIVE SCHEME (PIS)

10.1 Background to the Performance Incentive Scheme

10.1.1 The Performance Incentive Scheme (PIS) is one of the key features of Performance Based Regulation. The service delivery performance of the Regulated Entities will be monitored and, depending on performance against pre-set benchmarks, the Regulated Entity will be rewarded or penalized. The penalty or reward is capped at a maximum of 3% of the annual revenue requirement for each Regulated Entity.

10.1.2 As part of the preparation of the Issues Paper, the ERC developed a PIS to meet the requirements of the RDWR (Clause 8.2). The PIS consists of three parts:

- a) Price-linked Incentive scheme;
- b) Guaranteed Service Level scheme; and
- c) Information disclosure.

10.1.3 However, during consultation on the Issues Paper, it became apparent to the ERC that the Regulated Entities did not have a sufficiently developed measurement capacity or historical data records to fully implement the PIS as envisaged by the ERC. For the Second Regulatory Period each Regulated Entity was therefore given the opportunity to design a PIS based on its own ability and available performance records. This PIS was submitted for the ERC's consideration as part of the Revenue Application.⁴¹

10.1.4 The ERC published a framework for the PIS that would apply from the Third Regulatory Period onwards to guide the Regulated Entities in the preparation of their PIS for the Second Regulatory Period.⁴² In this framework, the performance indices that will apply from the Third Regulatory Period are described. In addition, the mechanisms for calculating the performance incentives or penalties are discussed, as well as events for which the impact can be excluded from the yearly performance statistics.

10.1.5 The ERC's Final Determination on the PIS that will apply to CELCOR during the Second Regulatory Period is discussed below.

10.2 Overview of the Price-linked Incentive Scheme

10.2.1 The price-linked component of the PIS allows for the introduction of a performance incentive factor, or S-factor, in the annual calculation of the price-caps, as follows (Clause 4.2.1 of the RDWR) :

$$MAP_t = [MAP_{t-1} \times \{1 + CWI_t - X\}] + S_t - K_t + ITA_t$$

The S-factor can be zero, positive or negative, depending on whether actual performance against the (weighted) majority of the performance indices measured has exceeded the predetermined performance targets, or has fallen below these.

10.2.2 The maximum value of the price-linked incentive is capped at 2.5% of the annual revenue requirement (ARR) for each Regulated Entity.

⁴¹ It is the intention that Regulated Entities will develop their performance measurement capacity and build up performance statistics during the Second Regulatory Period, so that the full version of the ERC's intended PIS can be implemented from the Third Regulatory Period onwards.

⁴² ERC report titled "Framework for the Performance Incentive Scheme to apply from the Third Regulatory Period", dated March 1, 2006.

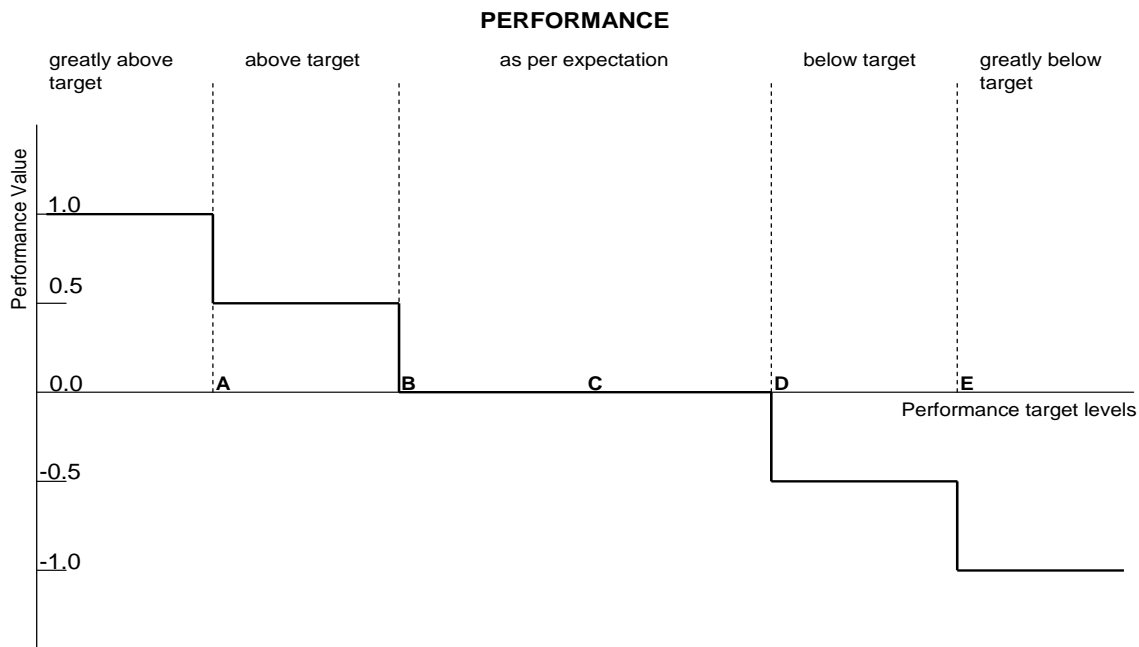
10.2.3 Performance will be assessed against a number of targets and, depending on the actual result, each index will be awarded a performance value, as described in Table 10.1 and illustrated in Figure 10.1 below.

Table 10.1 : Determining Performance Values

Description	Performance level	Performance value
Target greatly exceeded	$\leq A$	1.0
Target exceeded	$\leq B$, but $> A$	0.5
Performance as per expectation	$> B$ but $< D$	0
Target not achieved	$\geq D$ but $< E$	-0.5
Performance greatly below target	$\geq E$	-1.0

Note : Symbols A to E refer to figure 9.1 below

Figure 10.1 : Depiction of the Price-Linked Incentive Scheme



10.2.4 The target levels for each performance index (depicted as A to E in Figure 10.1) vary for each index and are determined by each Regulated Entity for their particular PIS. These targets are based on historical performance for each index, with point C typically representing the average performance over recent years⁴³. This implies that for the Second Regulatory Period, the Regulated Entities have an incentive to maintain service levels at, or improve from current performance levels. The ERC may in future regulatory periods introduce targets that require performance at higher than current levels to, over time, encourage higher service delivery standards to consumers. For the Second Regulatory Period, it was however decided that since a) regulatory performance management is new to the Regulated Entities; b) there are recognized imperfections in the existing performance management and measurement capability of Regulated Entities; and c) that there is as yet insufficient historical performance data to allow accurate targets to be set, it would be unreasonable to introduce such stretch targets at present.

⁴³ The actual details are as per the design of the PIS by each Regulated Entity.

10.2.5 The S-factor is the sum of the weighted performance values for each of the indices included in the price-linked incentive scheme, where the actual indices and the weightings allocated are as per the design of each Regulated Entity's PIS and the final value is converted to a value per kWh.

$$S = \frac{\sum(\text{Performance value per index}) \times (\text{Weighting per index})}{\text{Total energy distributed}} \times 0.025(\text{ARR})$$

10.2.6 The S-factor for each regulatory year will be calculated during the annual rate reset before the start of the regulatory year. It is based on the service performance during the previous calendar year and the forecast energy that will be distributed through the Regulated Distribution System for the regulatory year. No S-factor will apply during the first regulatory year of the Second Regulatory Period.

10.3 Overview of the Guaranteed Service Level Scheme

10.3.1 In terms of the Guaranteed Service Levels (GSL) scheme, Regulated Entities will compensate a consumer directly if certain service delivery performance standards are not met. The measures for which such compensation will become payable and the thresholds to be breached before it is paid, are based on the design of the PIS for each Regulated Entity.

10.3.2 There will be an allocation of 0.5% of the annual revenue requirement to the GSL scheme. To ensure revenue-neutrality to Regulated Entities, this amount will be added to the allowed annual revenue from the start of the Second Regulatory Period. Regulated Entities have the option of using this additional allocation to pay out penalty amounts, or to effect network and service improvements to avoid penalty pay-outs.

10.3.3 In terms of the RDWR (Clause 8.2.3) the total value of the PIS cannot exceed 3% of the annual revenue requirement. Since 2.5% is allocated to the price-linked incentive scheme, this implies that the maximum penalties a Regulated Entity would face under the GSL scheme is 1% of its annual revenue requirement, this being the sum of the 0.5% residual balance for the total PIS and the 0.5% additional allowance described above. The ERC recognizes that setting this cap could lead to potential problems, as it will only be apparent at the end of each regulatory year exactly how much has been paid out in terms of the GSL scheme, which could therefore theoretically exceed the cap.⁴⁴ However, it is the ERC's view that if the situation arises where total pay-outs under the GSL scheme reaches this 1% level, it would be indicative of very serious performance issues⁴⁵, which would by itself warrant further investigation and possible intervention by the ERC.

10.4 Information Disclosure Scheme

10.4.1 The third component of the PIS is the measurement and disclosure of further performance data. Regulated Entities will be required to measure the performance of each Regulated Distribution System, or to develop their capability during the Second Regulatory Period to measure performance against the following indices:

Network performance indices:

- a) Momentary Average Interruption Frequency Index (MAIFI);
- b) Frequency of tripping events per 100 circuit-km;

⁴⁴ To ensure that the scheme is equitable to all customers, Regulated Entities will not be allowed to discontinue payments to affected customers if the cap is reached.

⁴⁵ Or a very poorly designed GSL scheme.

Service performance indices:

- c) Average time to respond to queries and complaints;
- d) Average time to reconnect a service after payment of all dues.

The information has to be collected and supplied to the ERC on a monthly basis (as soon as the measurement capability has been established).

10.4.2 The ERC will publish the information disclosure data for all Regulated Entities on an annual basis.

10.4.3 Since the format of the information disclosure scheme has been set by the ERC, the Regulated Entities were not required to address this in their Revenue Applications.

10.5 Price-linked Incentive Scheme proposed by CELCOR

10.5.1 CELCOR’s proposed price-linked performance scheme for the Second Regulatory Period largely conforms with the PIS framework designed by the ERC for the Third Regulatory Period, with the exception of call center performance, which is not included.⁴⁶ The method by which the S-factor will be calculated and the actual performance factors determined are as per the ERC framework, as well as the definition of the indices.

10.5.2 In Table 10.2 below, the price-linked performance scheme proposed by CELCOR as part of its Revenue Application is indicated. This identifies the performance indices proposed, the weighting to be allocated to each index and the proposed performance target levels.

Table 10.2 : Price-linked Incentive Scheme Submitted by CELCOR

Performance index	Units	Weight	Reward		Target	Penalty	
			Level A	Level B	Level C	Level D	Level E
System average interruption frequency index (SAIFI)	Number	0.20	13.22	15.66	18.10	20.54	22.98
Customer average interruption duration index (CAIDI)	Minutes	0.20	64.66	75.33	86.01	96.68	107.35
Planned system average interruption duration index (SAIDI)	Minutes	0.15	321.02	544	766.98	989.96	1212.95
Probability of voltage levels falling within prescribed limits	%	0.10	3.3%	4.9%	4.1%	4.9%	5.7%
System losses	%	0.05	5.7%	7.1%	8.5%		
Average time to process applications for Regulated Distribution Services	Days	0.15	2.84	5.45	8.06	10.67	13.28
Average time to connect premises to the Regulated Distribution System	Days	0.15	3.42	4.16	4.9	5.64	6.38

10.5.3 It is the ERC’s understanding that CELCOR’s capability to measure power outages and hence calculate the SAIFI, CAIDI and SAIDI indices is limited to outages on the major medium voltage feeders (one or more phases) and distribution transformers. This capability will be further developed during the Second Regulatory Period, to allow the impact of outages to be measured more accurately, a more localized basis.

10.5.4 Based on CELCOR’s calculations, the average historical system performance against the proposed network performance indices is presented in Table 10.3.

⁴⁶ CELCOR does not at this stage operate a call center.

Table 10.3 : Historical Network Performance

Performance Indices	Unit	2004	2005	2006	2007	2008	Average	Standard Deviation
SAIFI	No.	16.86	20.30	19.26	14.41	19.67	18.10	2.44
CAIDI	min	89.21	92.71	96.34	69.22	82.56	86.01	10.67
PLANNED SAIDI	min.	534.30	855.96	910.26	526.05	1008.34	766.98	222.98
VOLTAGE REGULATION	%	3.27	4.68	5.07	3.30	3.96	4.06	0.81
SYSTEM LOSSES	%	14.15	14.21	13.98	13.78	10.96	13.42	1.38
Average Time to connect	days	6.00	5.00	5.00	4.50	4.00	4.90	0.74

10.5.5 With regard to the probability of voltage levels violating the limits prescribed in the Philippines Distribution Code, CELCOR proposes a target of 4.1% for the average value (point C in Figure 10.1) based on measurements taken at various points on the distribution network. No further information was provided on how the threshold points for the performance bands were determined.

10.5.6 The targets for the average time to process applications for regulatory services, or to connect premises, are based on historical average times recorded by CELCOR to perform these services.

10.6 Guaranteed Service Level Scheme proposed by CELCOR

10.6.1 CELCOR's proposed GSL scheme for the Second Regulatory Period largely conforms with the PIS framework designed by the ERC for the Third Regulatory Period. This includes the method used to determine the applicable penalty levels, as well as the approach to events which should be excluded when determining the service performance. In Table 10.4 below, the proposed GSL scheme is summarized.

Table 10.4 : GSL Scheme Proposed by CELCOR in the Revenue Application

Performance Measure	Unit	Threshold	Penalty level (PhP)
GSL1: Duration of Sustained Interruptions	minutes	4,910	61.44
GSL2: No. of Sustained Interruptions	numbers	58	61.44
GSL3a: Restoration Time (Broken Service Wire)	hours	2	61.44
GSL3b: Restoration Time (Broken Secondary Line)	hours	4	61.44
GSL3c: Restoration Time (Distribution Transformer Outage)	hours	6	61.44
GSL4: Time to Connect	days	4	61.44

10.6.2 CELCOR noted that the proposed threshold values for the GSL1 and GSL2 components are based on historical figures from 2004 to 2008.

10.6.3 The threshold values for the GSL3 components are based on the 2006 and 2007 observed values.

10.6.4 CELCOR interprets the GSL4 component as the length of time that a customer has to wait for a connection to be made after the service contract has been signed and the service fees paid. The performance levels for each indices being measured are based on sample periods from 2004 to 2006. The target performance values for the indices were set at the average based on the said sample period.

10.6.5 The calculation of the penalty levels are based on the estimated value of the scheme⁴⁷, the number of customers likely to be affected if the proposed threshold values are adopted and a weighting allocated by CELCOR to ensure consistent penalty amounts.

10.7 Excluded events proposed by CELCOR

10.7.1 CELCOR proposes that the following events should be treated as excluded in as far as they may impact on annual performance statistics:

- a. Failure of an applicant to appear on a pre-arranged schedule in relation to service performance measure.
- b. Preference of an applicant for a particular date for service beyond the target accomplishment period as indicated in the scheme.
- c. Time loss due to factors beyond the control of CELCOR.

10.8 ERC Final Decision on the Price-linked Incentive Scheme

10.8.1 For the Final Determination, the ERC accepts the performance indices proposed by CELCOR for the price-linked incentive scheme, the proposed weightings for each index and the manner in which performance against these indices are converted to the S-factor.

10.8.2 CELCOR's proposal for the calculation of the performance bands by adopting multiples of the standard deviation of each index, is accepted. The ERC is concerned that the available sample size of annual performance figures is too small for accurate statistical manipulation, but recognizes that using any other method to set the bands would be arbitrary and not provide any additional accuracy. It is also satisfied that if these bands had been applied to the historical performance figures, it would have provided acceptable outcomes.⁴⁸

10.8.3 In respect of the voltage regulation index, the ERC recognizes that insufficient historical data exists to determine an accurate, reasonable target. In the absence of sufficient data, the ERC accepts the targets proposed by CELCOR.

10.8.4 The ERC notes that CELCOR's proposed targets for the system losses index is based on the actual historic average figures. This was the original intention for this index in the incentive scheme. However, following recent focus on system losses and to avoid possible wrong perceptions, the ERC believes that it would be more appropriate to set the minimum value over which performance bonuses will be paid at the system loss cap. This would provide a further incentive for Regulated Entities to reduce losses to this value. For Regulated Entities with historical losses below the system loss cap, the target (average) value for losses will still be based at the historical level. In accordance with the ERC policy set out in the Position Paper, index should not have a penalty component.

⁴⁷ 0.5% of the annual revenue requirement for each year, as discussed in paragraph 10.3.2.

⁴⁸ Based on its calculation, the great majority of the historical performance values from 2000 to 2007 for the proposed indices involved would have resulted in neutral outcomes, i.e. no penalty or bonus. In no instance would performance have been assessed to greatly exceed expectations.

10.8.5 The ERC’s Final Determination on the price-linked incentive scheme is presented in Table 10.5.

Table 10.5 : ERC Final Determination on the Price-Linked Incentive Scheme for CELCOR

Performance index	Units	Weight	Reward		Target	Penalty	
			Level A	Level B	Level C	Level D	Level E
System average interruption frequency index (SAIFI)	Number	0.20	13.22	15.66	18.10	20.54	22.98
Customer average interruption duration index (CAIDI)	Minutes	0.20	64.66	75.33	86.01	96.68	107.35
Planned system average interruption duration index (SAIDI)	Minutes	0.15	321.02	544	766.98	989.96	1212.95
Probability of voltage levels falling within prescribed limits	%	0.10	3.3%	4.9%	4.1%	4.9%	5.7%
System losses	%	0.05	5.7%	7.1%	8.5%		
Average time to process applications for Regulated Distribution Services	Days	0.15	2.84	5.45	8.06	10.67	13.28
Average time to connect premises to the Regulated Distribution System	Days	0.15	3.42	4.16	4.9	5.64	6.38

10.9 ERC Final Decision on the GSL Scheme

10.9.1 The ERC accepts the broad GSL categories proposed by CELCOR. The penalty levels are acceptable and conforms with the PIS framework designed by the Commission for the Third Regulatory Period. This includes the method used to determine the applicable penalty levels, as well as the approach to events which should be excluded when determining the service performance.

10.9.2 The final penalty levels for the GSL scheme has been adjusted in accordance with the revenue allowance made by the ERC (as per Table 9.4). The average GSL allowance over the regulatory period was used as basis. In Table 10.6 the ERC’s Final Determination on the GSL scheme for CELCOR is described.

Table 10.6 : ERC Final Determination on the GSL Scheme for CELCOR

Performance Measure	Unit	Threshold	Penalty level (PhP)
GSL1: Duration of Sustained Interruptions	minutes	4,910	96.46
GSL2: No. of Sustained Interruptions	numbers	58	96.46
GSL3a: Restoration Time (Broken Service Wire)	hours	2	96.46
GSL3b: Restoration Time (Broken Secondary Line)	hours	4	96.46
GSL3c: Restoration Time (Distribution Transformer Outage)	hours	6	96.46
GSL4: Time to Connect	days	4	96.46

10.10 ERC Final Determination on Excluded Events

10.10.1 The ERC will adopt the approach described in its PIS framework⁴⁹ to exclude the impact of certain events on CELCOR’s annual reliability statistics. This approach allows for any type of external event to be excluded, if such an event is rare and the impact of such an event is so severe that it overwhelms the capacity of a Regulated Entities to respond effectively.

⁴⁹ Supra note 42

10.10.2 However, the ERC does not accept that specific causes for supply interruptions should be separately identified for exclusion. It for example does not distinguish between outages caused by fires and vehicle accidents – both of which are outside the control of a utility, but which would be relatively common occurrences and should be manageable by an effective business.

10.10.3 CELCOR's proposed exclusions for the service provision measures are acceptable.

Pasig City, March 8, 2010.


ZENAIDA G. CRUZ-DUCUT
Chairperson *gnats*


ALEJANDRO Z. BARIN
Commissioner


RAUF A. TAN
Commissioner


MARIA TERESA A.R. CASTAÑEDA
Commissioner


JOSE C. REYES
Commissioner

APPENDIX A : APPROVED CAPITAL EXPENDITURE PROGRAM

Category	Budget (Jan 09 to Jun 09)	Forecast, nominal (regulatory year)	Forecast (peso, nominal) (Regulatory Year)			
	2010	2010	2011	2012	2013	2014
Regulated Distribution Services Assets						
Network						
Land and Land Rights (Distribution Purposes)	0	0	0	0	0	0
Structures and Improvements	0	0	0	0	40,672	0
Station Equipment	0	0	0	0	0	0
Power transformers	0	0	0	0	0	0
Switchgear	0	726,702	0	0	0	3,561,734
Protective equipment	0	0	3,452,718	731,812	0	0
Metering & control equipment	0	0	0	0	0	0
Communications equipment	0	0	0	0	0	0
Other station equipment	0	0	0	0	0	164,218
Poles, Towers and Fixtures - Distribution	2,608,797	14,417,513	18,536,760	18,660,217	17,038,737	12,912,215
Overhead Conductors and Devices - Distribution	330,283	-947,618	-7,142,517	-2,366,597	-913,068	8,510,398
Underground Cables and Devices - Distribution	0	0	0	0	0	0
Underground Conduits - Distribution	0	0	0	0	0	0
Line Transformers - Distribution	2,579,000	15,961,817	17,655,588	16,040,713	17,238,385	10,736,366
Power Conditioning Equipment	0	93,051	97,332	203,423	106,390	111,391
Meters, Instruments and Metering Transformers - Distribution	0	0	0	0	0	0
Information Systems Equipment (distribution)	0	0	0	0	0	0
Regulated Entity Property on Consumer's Premises	0	0	0	0	0	0
Street Lights and Signal Systems	0	297,795	446,510	466,603	340,485	0
Submarine Cables	0	0	0	0	0	0
Non-network						
Land and Land Rights (non-network)	0	0	0	0	0	0
Structures and Improvements (non-network)	0	962,396	4,026,540	1,873,236	0	0
Office Furniture and Equipment	385,411	1,244,070	506,067	51,766	135,032	20,744
Transportation Equipment	0	0	0	0	15,697,152	0
Stores Equipment	0	0	0	0	0	0
Tools, Shop and Garage Equipment	419,439	2,550,240	250,949	1,091,570	296,672	246,253
Laboratory Equipment	0	0	0	0	0	0
Information Systems Equipment (non-network)	263,000	844,478	10,194,753	1,776,557	2,262,805	1,383,061
Power-operated Equipment	48,080	66,572	185,759	75,023	121,755	130,148
Communication Plant and Equipment	62,500	0	159,468	13,887	0	15,209
Miscellaneous Equipment	0	0	0	0	0	0
Materials						
Materials and supplies (including spares)	0	11,266,341	0	0	0	0
Subtrans						
Transferred subtransmission assets	0	0	0	0	0	0
Sub-total Regulated Distribution Services	6,696,510	47,483,357	48,369,926	38,618,210	52,365,017	37,791,737
Distribution Connection Services Assets						
Network						
Poles, Towers and Fixtures (Customer)	0	0	0	0	0	0
Overhead Conductors and Devices (Customer)	967,500	1,966,668	2,057,135	2,149,706	2,248,593	2,354,277
Underground Conductors and Devices (Customer)	0	0	0	0	0	0
Line Transformers (Customer)	0	0	0	0	0	0
Information Systems Equipment (Connection)	0	0	0	0	0	0
Non-network						
Land and Land Rights (non-network)	0	0	0	0	0	0
Structures and Improvements (non-network)	0	0	0	0	0	0
Office Furniture and Equipment	0	0	0	0	0	0
Transportation Equipment	0	0	0	0	0	0
Stores Equipment	0	0	0	0	0	0
Tools, Shop and Garage Equipment	0	0	0	0	0	0
Laboratory Equipment	0	0	0	0	0	0
Information Systems Equipment (non-network)	0	0	0	0	0	0
Power-operated Equipment	0	0	0	0	0	0
Communication Plant and Equipment	0	0	0	0	0	0
Miscellaneous Equipment	0	0	0	0	0	0
Materials						
Materials and supplies (including spares)	0	0	0	0	0	0
Sub-total Distribution Connection Assets	967,500	1,966,668	2,057,135	2,149,706	2,248,593	2,354,277
Regulated Retail Services Assets						
Meters, Instruments & Metering Transformers (Consumer Consumption Metering)	3,893,950	12,832,232	12,770,557	9,189,300	8,954,454	9,375,313
Land and land rights	0	0	0	0	0	0
Structures and improvements	0	0	0	0	0	0
Office Furniture and Equipment	0	0	0	0	0	0
Transportation Equipment	0	0	0	0	0	0
Stores Equipment	0	0	0	0	0	0
Tools, Shop and Garage Equipment	0	0	0	0	0	0
Laboratory Equipment	0	0	0	0	0	0
Information Systems Equipment	0	0	0	0	0	0
Communication Plant and Equipment	0	0	0	0	0	0
Miscellaneous Equipment	0	0	0	0	0	0
Sub-total Regulated Retail Services Assets	3,893,950	12,832,232	12,770,557	9,189,300	8,954,454	9,375,313
TOTAL CAPEX	11,557,960	62,282,257	63,197,617	49,957,216	63,568,063	49,521,327

Note that in some cases negative amounts are indicated. This is as a result of allocation of proposed reductions, where it was not clear to exactly which line items these should have been made. The allocation per line is indicative only and Regulated Entities are not required to adhere strictly to these. Control and verification will occur based on total expenditure.

APPENDIX B : APPROVED OPERATING & MAINTENANCE EXPENDITURE

Category and Sub-category	Forecast, nominal (regulatory year)	Forecast (peso, nominal) (Regulatory Year)				
	2010	2011	2012	2013	2014	
Operation supervision & engineering	8,863,892	9,552,954	10,224,308	10,883,466	11,590,812	
Load dispatching	0	0	0	0	0	
Substations	5,448,305	5,871,845	6,284,502	6,689,662	7,124,441	
Overhead conductors & devices	6,991,328	7,534,820	8,064,345	8,584,252	9,142,165	
Underground cables & devices	0	0	0	0	0	
Streetlighting and signal systems	384,253	414,124	443,228	471,802	502,466	
Metering (distribution network)	0	0	0	0	0	
Rents	0	0	0	0	0	
Information technology (distribution network)	0	0	0	0	0	
Miscellaneous	74,920	80,744	86,419	91,990	97,969	
Maintenance supervision & engineering	0	0	0	0	0	
Substations	4,402,623	4,744,875	5,078,331	5,405,729	5,757,062	
Overhead lines	11,860,184	12,782,171	13,680,465	14,562,441	15,508,893	
Underground cables & devices	0	0	0	0	0	
Streetlighting and signal systems	662,901	714,434	764,642	813,938	866,838	
Line transformers	351,288	378,597	405,203	431,327	459,360	
Information technology (distribution network)	0	0	0	0	0	
Metering (distribution network)	0	0	0	0	0	
Miscellaneous	0	0	0	0	0	
Admin & general salaries	13,351,559	14,009,435	14,677,373	15,381,869	16,135,239	
Office supplies & expenses	641,453	673,059	705,149	738,995	775,190	
Information technology (admin & general)	0	0	0	0	0	
Outside services employed	3,834,544	4,023,485	4,215,315	4,417,645	4,634,012	
Property insurance	1,890,873	1,984,043	2,078,637	2,178,409	2,285,103	
Injuries & damages	0	0	0	0	0	
Employee pension & benefits	5,805,299	6,091,345	6,381,767	6,688,084	7,015,651	
Rents	0	0	0	0	0	
Maintenance of office & general plant	1,829,700	1,919,855	2,011,389	2,107,934	2,211,176	
Officers allowance & benefits	0	0	0	0	0	
Travel	1,351,148	1,417,724	1,485,318	1,556,611	1,632,851	
Training	250,482	262,824	275,355	288,572	302,706	
Regulatory liaison & compliance	1,221,681	1,281,878	1,342,995	1,407,457	1,476,391	
Water and Electricity	707,319	740,555	774,611	811,008	849,927	
Other	1,021,122	1,071,437	1,122,520	1,176,400	1,234,017	
Registration fees	0	0	0	0	0	
Metering fees	0	0	0	0	0	
Billing & settlement fees	0	0	0	0	0	
Administration fees	0	0	0	0	0	
Costs for the PEM board, committees & working groups	0	0	0	0	0	
Market management software & upgrades	0	0	0	0	0	
Provision of security	0	0	0	0	0	
Other	0	0	0	0	0	
Sub-total Regulated Distribution Services	70,944,875	75,550,203	80,101,870	84,687,591	89,602,267	
Connection Services						
Operation supervision & engineering	0	0	0	0	0	
Load dispatching	0	0	0	0	0	
Overhead connections & devices	0	0	0	0	0	
Underground cables & devices	0	0	0	0	0	
Consumer installations	0	0	0	0	0	
Distribution transformers	0	0	0	0	0	
Information technology (connection assets)	0	0	0	0	0	
Miscellaneous	0	0	0	0	0	
Maintenance supervision & engineering	0	0	0	0	0	
Load dispatching	0	0	0	0	0	
Overhead connections & devices	0	0	0	0	0	
Underground cables & devices	0	0	0	0	0	
Consumer installations	0	0	0	0	0	
Distribution transformers	0	0	0	0	0	
Information technology (connection assets)	0	0	0	0	0	
Miscellaneous	0	0	0	0	0	
Admin & general salaries	0	0	0	0	0	
Office supplies & expenses	0	0	0	0	0	
Information technology (admin & general)	0	0	0	0	0	
Outside services employed	0	0	0	0	0	
Property insurance	0	0	0	0	0	
Injuries & damages	0	0	0	0	0	
Employee pension & benefits	0	0	0	0	0	
Rents	0	0	0	0	0	
Maintenance of office & general plant	0	0	0	0	0	
Officers allowance & benefits	0	0	0	0	0	
Travel	0	0	0	0	0	
Training	0	0	0	0	0	
Water and Electricity	0	0	0	0	0	
Miscellaneous	0	0	0	0	0	
Sub-total Distribution Connection Services	0	0	0	0	0	
Retail Services						
Administration & management	0	0	0	0	0	
Consumer meter installations (planning, supply, install, maintain)	9,966,726	10,643,084	11,575,201	12,566,139	13,619,495	
Meter reading expenses	4,632,872	4,947,267	5,380,546	5,841,168	6,330,804	
Information technology (consumer related)	1,206,853	1,288,752	1,401,621	1,521,612	1,649,161	
Consumer records, billing and collection	17,497,729	18,685,154	20,321,591	22,061,297	23,910,585	
Bad debts	2,205,642	2,355,321	2,561,599	2,780,894	3,014,003	
Informational and instructional advertising	329,452	351,809	382,620	415,376	450,195	
Energy trading expenses	0	0	0	0	0	
Water and Electricity	2,046,622	2,185,509	2,376,915	2,580,399	2,796,701	
Miscellaneous consumer services expenses	263,179	275,054	299,143	324,752	351,974	
Sub-total Regulated Retail Services	38,149,075	40,731,950	44,299,236	48,091,637	52,122,918	
Operating & Maintenance Expenditure	109,093,950	116,282,153	124,401,106	132,779,229	141,725,184	

Note that in some cases negative amounts are indicated. This is as a result of allocation of proposed reductions, where it was not clear to exactly which line items these should have been made. The allocation per line is indicative only and Regulated Entities are not required to adhere strictly to these. Control and verification will occur based on total expenditure.

APPENDIX C : APPROVED LEVIES, DUTIES AND OTHER TAXES (OTHER THAN CORPORATE INCOME TAX) EXPENDITURE

Opex Category and Sub-category		Forecast, nominal (regulatory)	Forecast (peso, nominal) (Regulatory Year)			
		2010	2011	2012	2013	2014
Levies						
	Regulatory reset expert fees	-16,932	1,618,456	188,607	195,821	204,151
		0	0	0	0	0
	Others (specify)	0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
	Sub-total Levies	-16,932	1,618,456	188,607	195,821	204,151
Duties						
		0	0	0	0	0
		0	0	0	0	0
	Others (specify)	0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
	Sub-total Duties	0	0	0	0	0
Other taxes						
	Community Tax	576,269	612,420	650,222	691,009	735,057
	Deficiency & Amnesty Taxes	3,046	3,186	3,330	3,483	3,646
	Documentary Stamp Tax	223,206	233,474	243,980	255,203	267,198
	Fringe Benefit Tax	0	0	0	0	0
	Registration & Filing Fees	503	508	510	513	516
	Taxes & Licenses - Misc	0	0	0	0	0
	VAT Expense	0	0	0	0	0
	Real Estate Tax	0	0	0	0	0
	Sub-total Other Taxes	803,025	849,589	898,042	950,208	1,006,418
Total Other Taxes, Levies & Duties		786,093	2,468,044	1,086,648	1,146,029	1,210,568