



**Regulatory Reset for
Ibaan Electric and Engineering Corporation
(IEEC)**

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

FINAL DETERMINATION

ERC Case No. 2009-045 RC

March 8, 2010

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

Regulatory Reset for Ibaan Electric and Engineering Corporation

July 1, 2010 to June 30, 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 Rates 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 Co., 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 08, 2010. A public consultation to discuss the submissions on the Draft Determination was held in Ibaan, Batangas on February 02, 2010.

Even after due notice to IEEC and the public, there were no submissions received. Thus during the public consultation, finding that there were no other parties present to comment, ERC explained the result of the Draft Determination calculation. Thereafter, ERC prepared its Final Determination of the price control arrangements that will apply to IEEC during 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 Rates 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 Ibaan Electric and Engineering Corporation (IEEC). 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) Cabanatuan Electric Corporation (CELCOR);
 - b) Davao Light and Power Company (DLPC);
 - c) La Union Electric Company (LUECO);
 - d) Tarlac Electric Incorporated (TEI); and
 - e) Visayan Electric Company, Inc (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. This 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 Draft Determinations on the applications and price settings, for consultation.
- d) January 8, 2010 : Submissions on draft determination close.
- e) January to February 2010 : ERC to conduct public consultations and evidentiary hearings.
- f) March 10, 2010 : ERC to issue the Final Determinations 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 hearings 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, 2009: 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 25, 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 file 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 IEEC 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 IEEC 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 IEEC Draft Determination, with the closing date for submission on January 08, 2010. At the closing date, there were no comments and submissions received from IEEC. A public consultation was held in Ibaan, Batangas on February 2, 2010 at which the parties of record were given opportunity to present and discuss the IEEC Draft Determination. IEEC has informed this Commission that there were no other interested parties that signified their comments during the public consultation.
- 1.2.7 The ERC is now issuing a Final Determination on the Price-control arrangements for IEEC 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 IEEC for the Second Regulatory Period. It describes the ERC's evaluation of IEEC's revenue and performance incentive scheme application, as well as the evidence presented in support thereof during the clarificatory meetings and evidentiary hearings, any submissions received on the ERC's Draft Determination and any subsequent further information provided.
- 1.3.2 The Final Determination is the final resolution of IEEC's applications. It presents the ERC's final decision on the price control arrangements that will apply to IEEC for the Secondary Regulatory Period and will form the basis on which IEEC 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-cap (MAP) for IEEC'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 IEEC 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, IEEC proposed forecasts for the Philippines CPI that correspond 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

	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 Deter (EIU-Oct 2009)	4.0%	3.5%	3.4%	4.0%	4.1%	4.0%	4.0%
EIU (Feb 2010)	9.30%	3.3%	4.0%	4.6%	4.6%	4.7%	4.7%
Group A Final Det.	3.2%	3.4%	3.4%	3.5%			
Group B Final Det.	4.5%	9.0%	6.4%	4.4%	4.2%	4.0%	

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

³ These indices were communicated to IEEC 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.

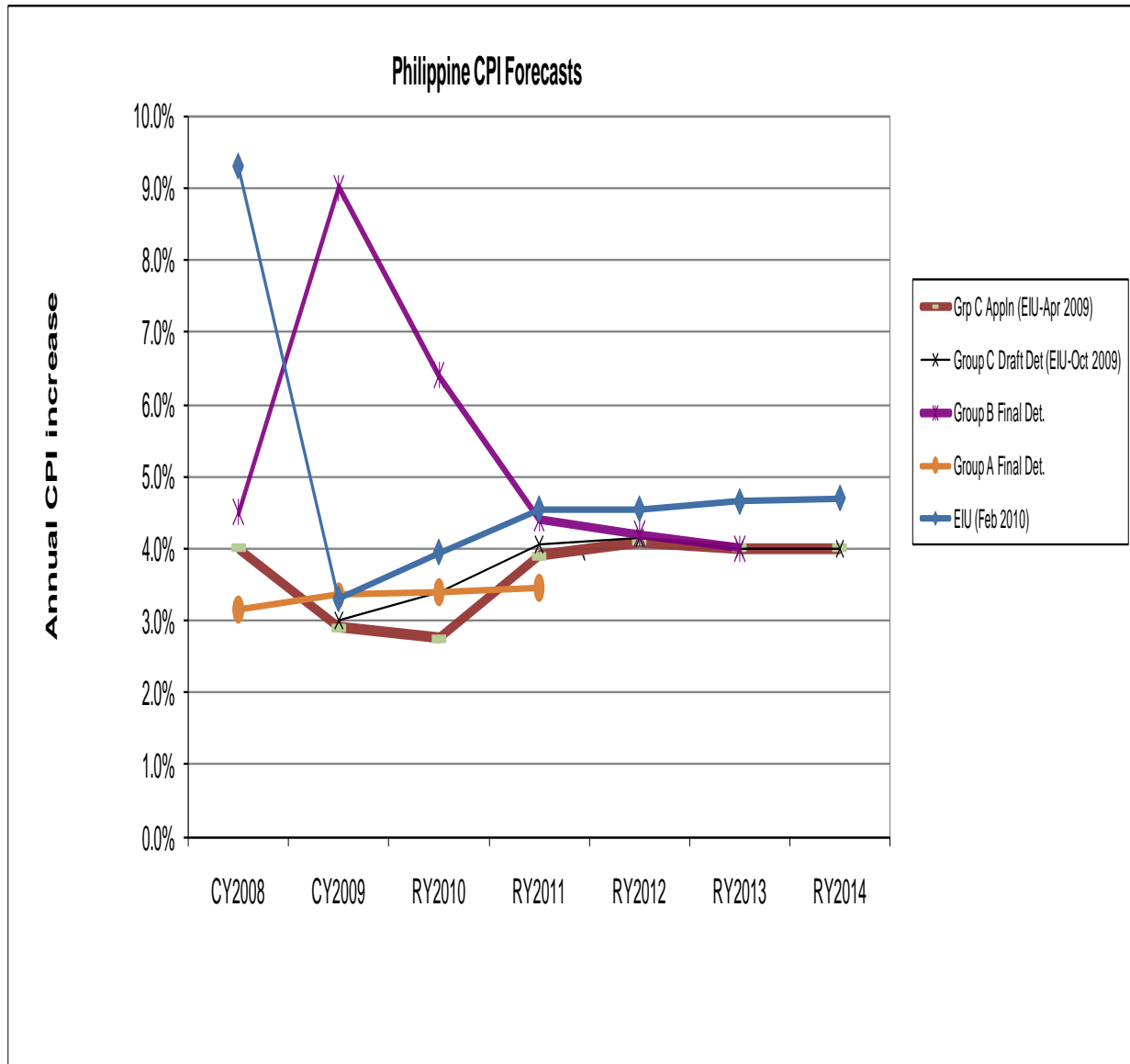
⁴ This was done by forecasting inflation on a quarterly basis, using two quarters from each calendar year making up a regulatory year. Quarterly forecasts were derived from the annual calendar year forecast.

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.

⁷ Section 4.15.3 of the RDWR

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 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 exceed a certain threshold limit.
- 2.3.4 In its application, IEEC 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 Groups and 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

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.

⁹ Sections 4.2.1 and 3.3 of the RDWR

¹⁰ Supra note 3

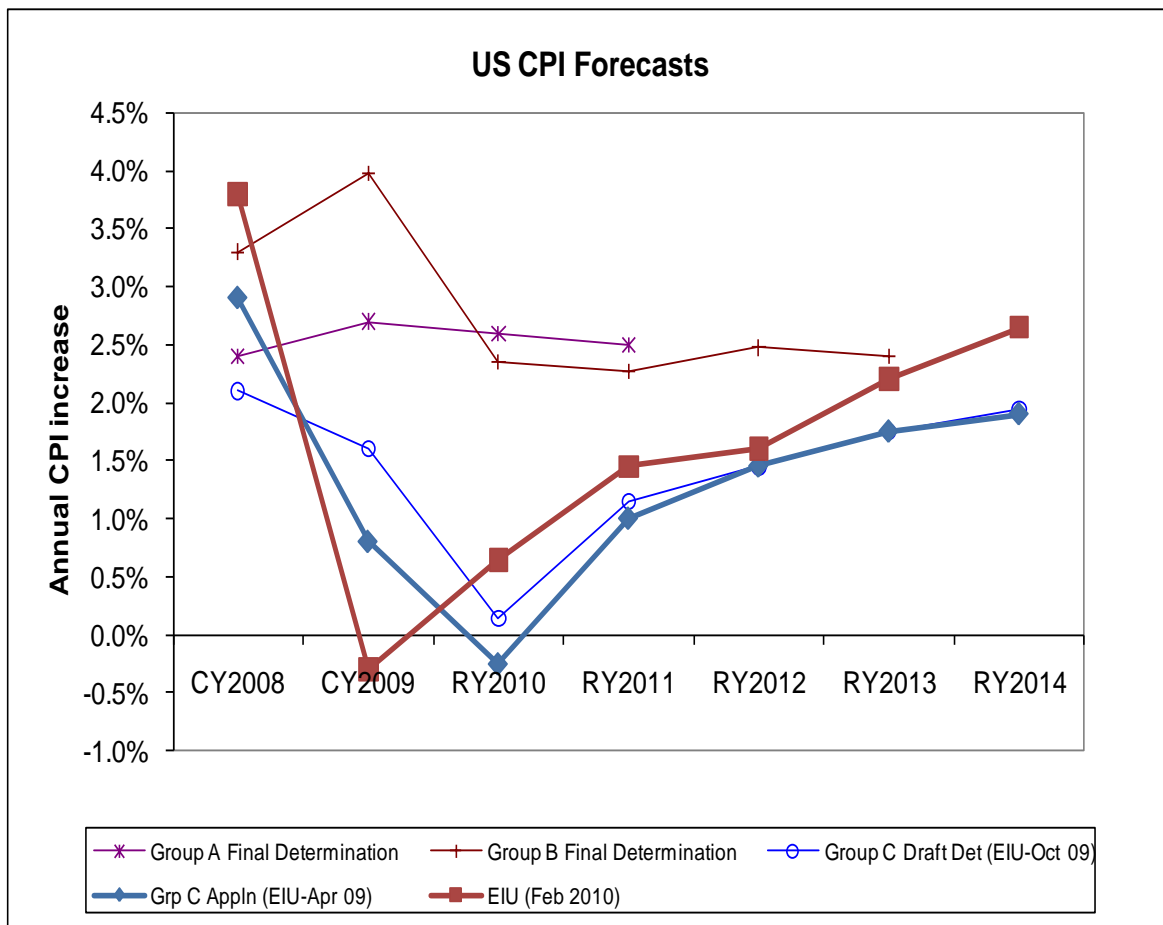
¹¹ This was done similarly to the conversion of the Philippines CPI forecasts. (See note 4).

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%
IEEC	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 Deter (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%	

Sources: 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 calendar year based on actual indices

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

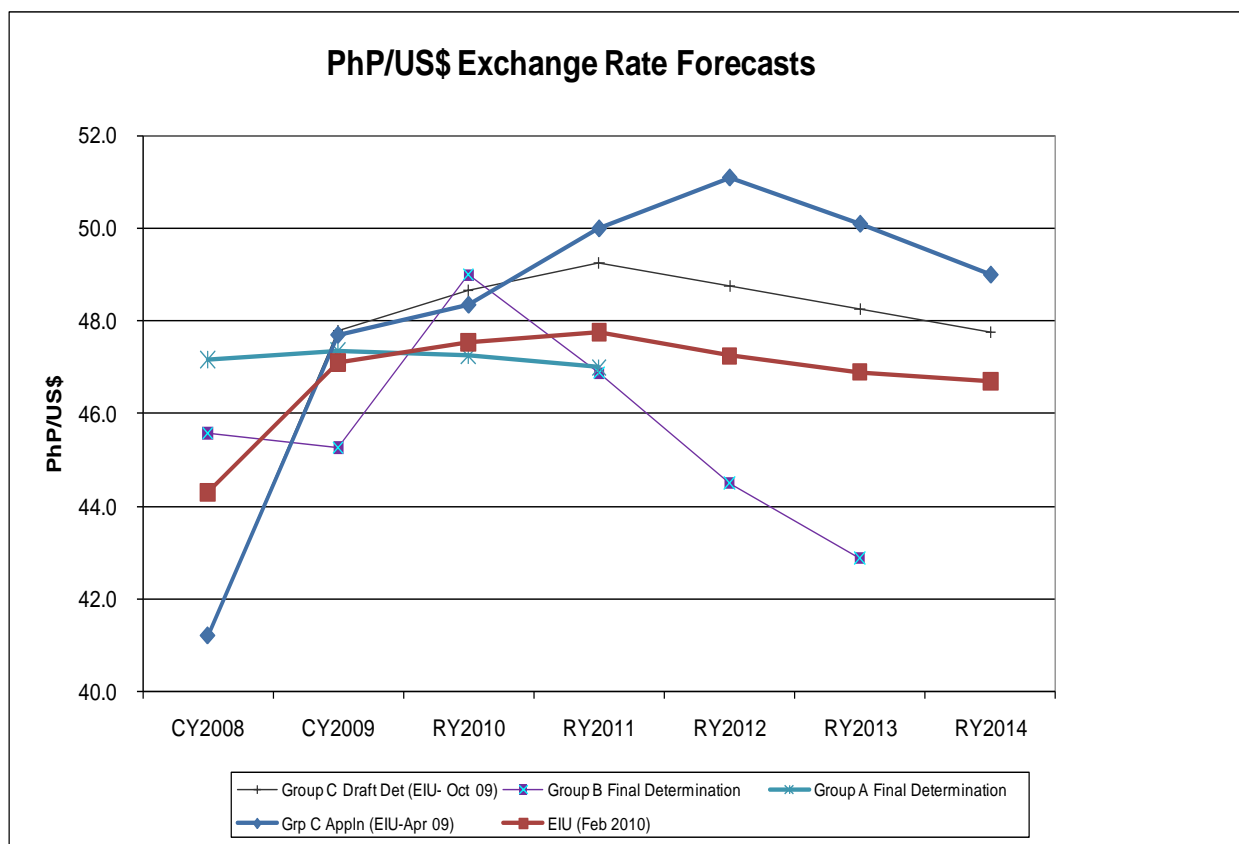
Table 2.3 : Various PhP/US\$ Rate of Exchange Forecasts (Regulatory Years)

	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
IEEC	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.	47.2	47.4	47.3	47.0			
Group B Final Det.	45.6	45.3	49.0	46.9	44.5	42.9	

Sources: Economist Intelligence Unit (February 2010)
ERC Draft Determination for Third Group Entrants (October 2009)
ERC Final Determination for First Group Entrants
ERC Final Determination for Second Group Entrants

¹² Supra note 3

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 the future differ materially from the estimated values used in the draft and final determinations.

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)

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

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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 IEEC 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. IEEC’s own consumption has been included in the figures.

Table 3.1 : IEEC kWh Energy Sales Figures (Forecast in the Revenue Application)

	2010	2011	2012	2013	2014
Energy Consumption (kWh)	16,155,094	16,749,928	17,349,995	17,806,241	18,335,709

- 3.2.2 IEEC based its consumption forecasts with the forecasted energy sales submitted to the Department of Energy (DOE) for its Distribution Development Plan (DDP). The ERC’s expenditure review analysis¹⁴ finds that the energy forecasts over the Second

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) review report titled “REVIEW OF OPERATING AND MAINTENANCE EXPENDITURE FORECAST EXPENDITURE: SECOND REGULATORY PERIOD – Ibaan Electric and Engineering Corporation”, dated October 19, 2009.

Regulatory Period is directly related to the growth in customer numbers by an average of 3.3% over the same period.

Table 3.2 : Broken down IEEC kWh Energy Sales Figures

Category	Calendar Years					Regulatory Years				
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Residential	9,196	9,072	9,463	9,807	10,084	10,144	10,440	10,751	10,954	11,166
Commercial	3,295	3,124	3,247	3,392	3,594	3,551	3,661	3,801	3,890	3,967
Industrial	1,266	1,584	1,908	1,709	2,087	2,220	2,403	2,526	2,673	2,902
Street Lights	175	188	186	219	234	240	256	272	289	300
Bulk										
TOTAL	13,933	13,970	14,804	15,127	15,999	16,155	16,750	17,350	17,806	18,336
Annual Growth		0.26%	5.97%	2.18%	5.76%	0.98%	3.68%	3.58%	2.63%	2.97%

3.2.3 The average annual compound growth in consumption between 2005 and 2009 was 3.54%, but this is heavily influenced by the considerable historical growth figure for 2007 and 2009, while the forecast compound growth from 2010 to 2014 is 2.77% 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 IEEC's consumer number figures, which is presented in Table 3.3. The forecast average growth rate is 2.94% from RY2010 to 2014, which indicates a consistent growth rate over the period.

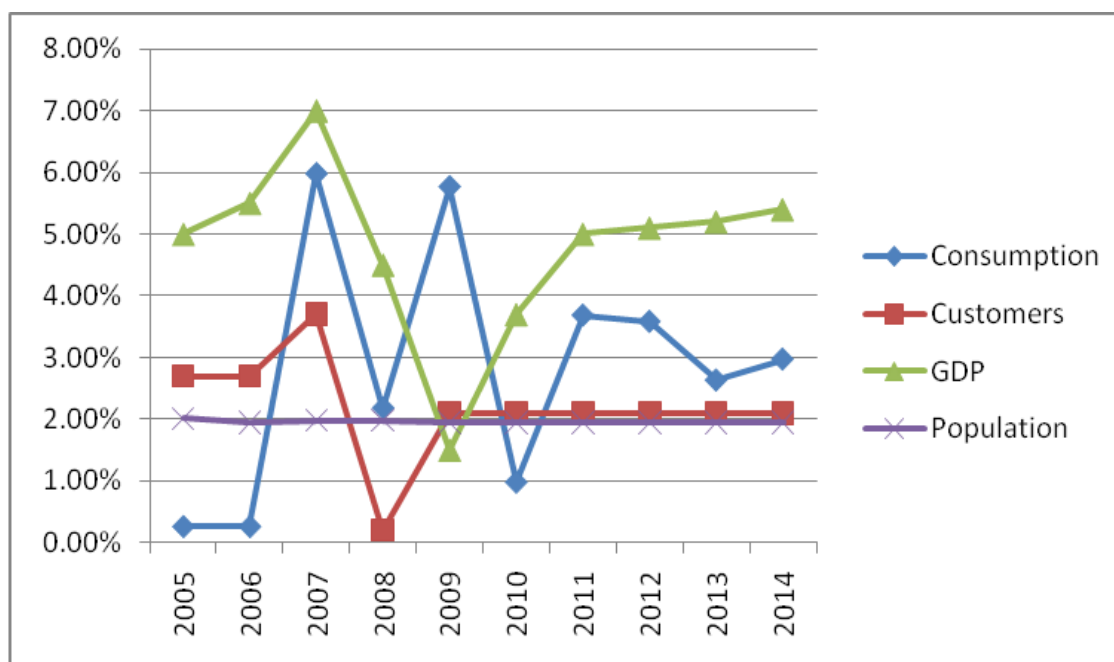
Table 3.3 : IEEC Customer Numbers (Forecast and Historical)

	HISTORICAL FIGURES (CALENDAR YEARS)				Forecast 2009	FORECAST (REGULATORY YEARS)				
	2005	2006	2007	2008		2010	2011	2012	2013	2014
Total	8,638	9,023	9,280	9,558	9,853	10,157	10,486	10,767	11,080	11,395
Residential	7,994	8,366	8,631	8,889	9,162	9,443	9,749	10,006	10,294	10,583
Commercial	560	562	556	575	596	617	639	662	686	711
Industrial	15	25	26	26	27	27	28	28	29	29
Street Lights	69	70	67	68	69	69	70	71	71	72
Growth		4.50%	2.80%	3.00%	3.10%	3.10%	3.20%	2.70%	2.90%	2.80%

3.2.5 In Figure 3.1 below, the forecast growth in IEEC's energy consumption is compared with the estimated customer 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 these reference sources as there is no 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 IEEC is likely to face over the Second Regulatory Period.¹⁵

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

Figure 3.1: Comparison of Energy Growth Estimates with Consumption Drivers



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

3.3 ERC Final Decision on Consumption Forecast

- 3.3.1 The ERC is generally comfortable with IEEC’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 IEEC proposed figures are therefore accepted. The figures accepted for the Final Determination are indicated in Table 3.4.

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

Category	Regulatory Years				
	2010	2011	2012	2013	2014
Residential	10,144	10,440	10,751	10,954	11,166
Commercial	3,551	3,651	3,801	3,890	3,967
Industrial	2,220	2,403	2,526	2,673	2,902
Street Lights	240	256	272	289	300
TOTAL	16,155	16,750	17,350	17,806	18,336
Growth		3.68%	3.58%	2.63%	2.97%

3.4 Demand Forecasts

The IEEC maximum demand forecasts, as well as historical demand figures from 2005, provided in the Revenue Application, are indicated in Table 3.5 below.

Table 3.5 : IEEC Maximum Electricity Demand (MW) (Forecast and Historical)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total	3,091	3,176	3,292	3,299	2,078	2,119	2,278	2,338	2,412	2,480
Growth		2.7%	3.7%	0.2%	-37.0%	2.0%	7.5%	2.6%	3.2%	2.8%

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. It should be noted that the demand forecast of IEEC are lower than the historical years 2005 to 2008. However, this information was inconsistent with the SKM Valuation Report, which reported a maximum demand of 3.04 MW in 2008. IEEC was requested to submit a revised demand forecast using the historical data from the NGCP metering point.
- 3.5.2 GB Associates indicated in their Capital Expenditure Review Report¹⁶ that IEEC has an average growth in energy purchases of 3.2% per annum and in demand of 2.3% per annum during the period 2005 to 2008. Over the longer term GB Associates anticipate that energy and demand will tend to grow at the same rate.
- 3.5.3 In the revised forecast figures given in Table 3.6, the demand and consumption growth are already closely matched and the growth rate does not deviate much from the anticipated demand growth rate of 2.3%. The ERC therefore accepts these revised demand figures as a reasonable basis for the Second Regulatory Period.
- 3.5.4 The ERC's final decision on the forecast maximum demand for IEEC is illustrated in Table 3.6.

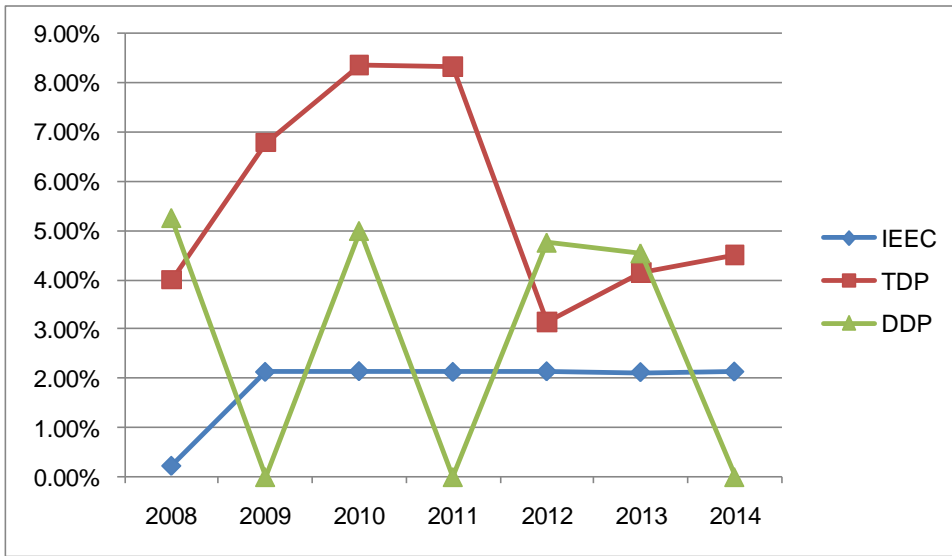
Table 3.6 : ERC Final Determination on Forecast Maximum Demand

Forecast	Calendar Years		Regulatory Years				
	2008	2009	2010	2011	2012	2013	2014
Maximum demand (MW)	3,299	3,369	3,441	3,514	3,589	3,665	3,743
Growth in demand (%)	0.21%	2.12%	2.14%	2.12%	2.13%	2.12%	2.13%

- 3.5.5 In Figure 3.2, a comparison is provided between the IEEC demand growth forecasts adopted by the ERC, and the growth forecast by the DOE for Batangas and by TransCo for Southern Luzon. It is clear that the forecasts for IEEC, as adapted by the ERC, are generally more conservative than the NGCP and DOE published reports.

¹⁶ GB Associates' Capital Expenditure (CAPEX) Review report titled "REVIEW OF CAPITAL EXPENDITURE FORECAST: SECOND REGULATORY PERIOD – Ibaan Electric and Engineering Corporation (IEEC), dated October 25, 2009.

Figure 3.2 Comparison of Demand Growth Figures



Sources : TransCo demand forecast for Batangas/Cavite - Transmission Development Plan, 2008
Department of Energy demand forecast for IEEC - Power Development Plan, 2006-2014

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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 IEEC 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 IEEC 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 IEEC'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 forecast 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 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 IEEC are presented in an accompanying report (the Capital 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 Capital Expenditure Review Report is available for public review, only the main findings are replicated below.

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 upward-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 to achieve this goal.

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

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.¹⁹ 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 IEEC

4.3.1 IEEC’s historical capital expenditure and the forecast expenditure as submitted in its Revenue Application are shown in Table 4.1. The expenditure figures are in real values for the year 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 - IEEC Application for Capital Expenditure

	Actual (PhP million, real 2009)				Budget	Forecast (PhP million, real 2009)				
	CY2005	CY2006	CY2007	CY2008	CY2009	RY2010	RY2011	RY2012	RY2013	RY2014
Distribution Plant	2.2	0.1	1.2	1.9	2.0	0.4	0.5	1.6	2.1	0.3
Non-network Plant	0.1	0.3	1.3	1.2	0.1	0.5	0.0	0.3	0.0	0.0
Connection plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retail plant	0.7	0.0	1.4	1.6	1.0	0.5	0.5	0.5	0.5	0.5
Materials & supplies	0.0	0.0	0.0	0.0	0.0	3.3	3.0	3.0	3.0	3.0
Subtransmission	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	3.1	0.4	3.9	4.7	3.0	4.7	4.1	5.4	5.6	3.8

Note: Using the ERC revised Economic Indices

4.3.2 The breakdown in Table 4.1 is based on details that IEEC provided as part of its revenue application. During the clarificatory meeting with IEEC, GB Associates noticed that the actual expenditures in CY 2008 and RY 2013 were particularly high compared to other years, IEEC then explained that these two numbers were inaccurate.

4.3.3 IEEC was advised to resubmit a corrected capex template, however only a revised forecast in the revenue application Schedule C format that corrected these errors and made other relatively minor adjustments was submitted to ERC.

4.3.4 The corrected capital expenditure forecast of IEEC are shown in Table 4.2. The forecast expenditure figures are much lower than those indicated in their application.

Table 4.2 - IEEC Revised Capital Expenditure Forecast

	Actual (PhP million, real 2009)				Budget	Forecast (PhP million, real 2009)				
	CY2005	CY2006	CY2007	CY2008	CY2009	RY2010	RY2011	RY2012	RY2013	RY2014
Distribution Plant	2.7	0.1	1.3	2.0	2.0	0.4	0.5	0.6	0.8	0.3
Non-network Plant	0.2	0.3	1.5	1.2	0.1	1.1	0.5	0.6	0.3	0.3
Connection plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retail plant	0.9	0.0	1.6	1.7	1.0	1.0	1.0	1.0	1.0	1.0
Materials & supplies	0.0	0.0	0.0	0.0	0.0	0.0	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	3.8	0.4	4.3	4.8	3.0	2.5	2.1	2.1	2.1	1.6

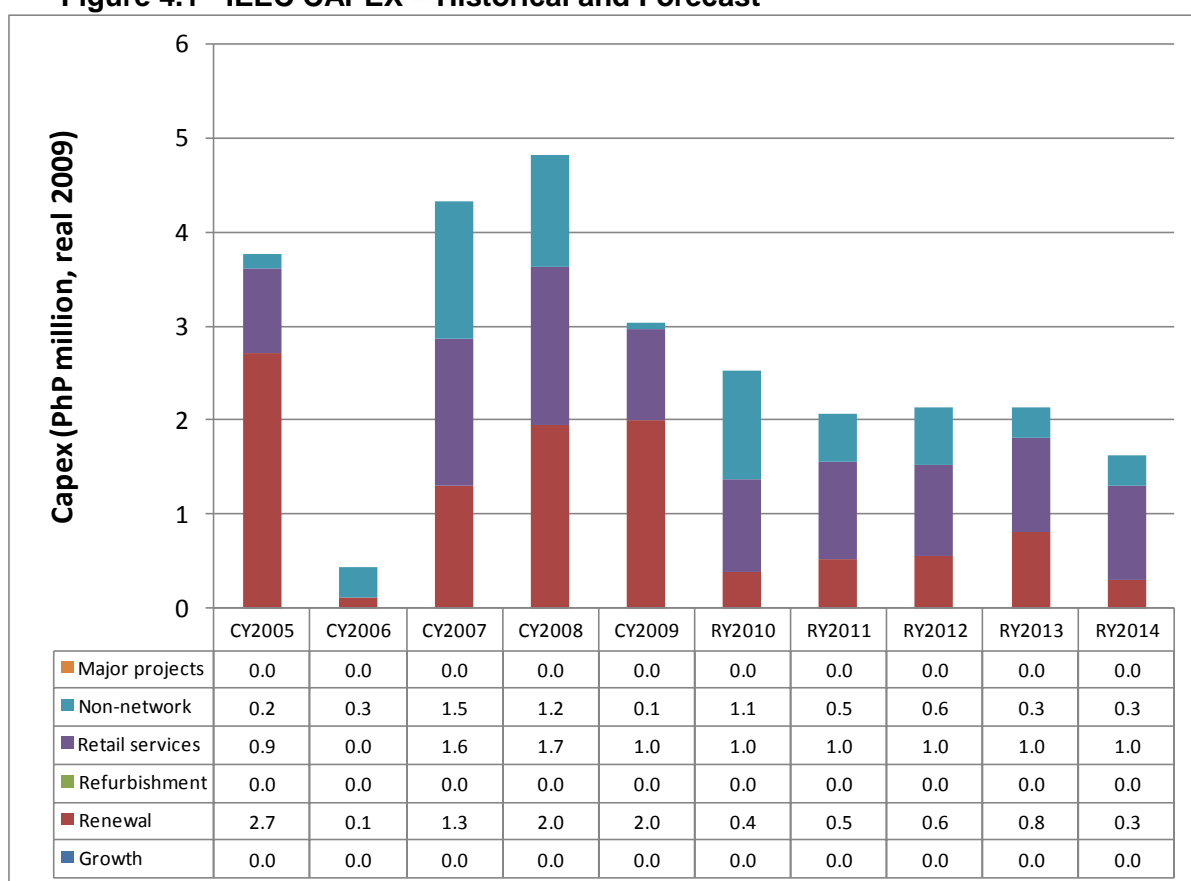
¹⁹ Plus an allowance for working capital, as discussed in Section 7.6

4.3.5 In Figure 4.1:

- (a) Growth projects are for capital projects required to accommodate increased electricity demand or new connections.
- (b) 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.
- (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.

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

Figure 4.1 - IEEC CAPEX – Historical and Forecast



Note: Forecast CAPEX based on revised submission dated September 8, 2009

4.3.7 Examination of Figure 4.1 indicates that IEEC’s forecast total capital expenditure is lower than its adjusted historic expenditure except in CY2006.

4.3.8 IEEC does not have any major projects forecasted for the regulatory period, thus the forecasts are all under non-network and retail services expenditure which when compared with historic figures are lower than actual CAPEX expenditures during the historic years.

4.4 Analysis of IEEC’s capital expenditure program

4.4.1 GB Associates conducted a top-down analysis of IEEC’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:

- IEEC disaggregated its capital expenditure forecast into the different template line items but not into the standard ERC categories of major projects, renewal, growth and refurbishment.
- The existing network has sufficient capacity to accommodate forecast growth in demand over the regulatory period.
- IEEC’s revised forecast expenditure provides for an average annual CAPEX of PhP2.12 million, 37% lower than the PhP 3.34 million (real) average annual expenditure over the historic period CY 2005 – 08.
- About 73% of IEEC’s forecast expenditure is in line items *poles, towers and fixtures, overhead conductors and devices, and consumer consumption metering*, while the rest is on non-network items particularly vehicles and information technology.
- No capital expenditure is forecast for some line items where expenditure will be required over the forecast period, particularly *line transformers – distribution*.

4.4.3 Each of the capital expenditure 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 IEEC estimates. Its findings are provided in the Capital Expenditure Review Report, with more details provided on individual projects where discrepancies or unusual factors were found.

4.5 Expenditure program proposed by GB Associates

4.5.1 Based on their analysis, GB Associates recommends that IEEC’s proposed capital expenditure program for the Second Regulatory Period be accepted without further modification as summarized in Table 4.3.

Table 4.3: IEEC Forecast Capital Expenditure for the Second Regulatory Period – GB Associates Recommendation (PhP Million, real 2008)

	Historic (Calendar Year)				Jan-Jun 2009	Forecast (Regulatory Year)				
	2005	2006	2007	2008		2010	2011	2012	2013	2014
IEEC Revenue Application	3.77	0.43	4.33	14.39	1.51	2.52	2.08	1.84	4.34	1.32
Revised and recommended	3.77	0.43	4.33	4.82	1.51	2.52	2.08	2.14	2.13	1.62

4.5.2 GB Associates recommends that all of IEEC forecast expenditure be categorized as renewal for operational expenditure (OPEX) modelling. It further suggests that the forecast for individual line items be reviewed and considered by IEEC to reallocate expenditure currently forecast for metering and information technology to regulated distribution services – network asset line items.

4.6 ERC Final Determination on the Capital Expenditure Program

- 4.6.1 The ERC accepts the recommendations made by GB Associates based on its review and analysis of IEEC’s proposed capital expenditure program for the Second Regulatory Period and the 2010 regulatory year. The suggested expenditure program is considered efficient and would provide sustainable investment levels while avoiding unnecessary expenses or undue upward price pressure.
- 4.6.2 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.
- 4.6.3 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).

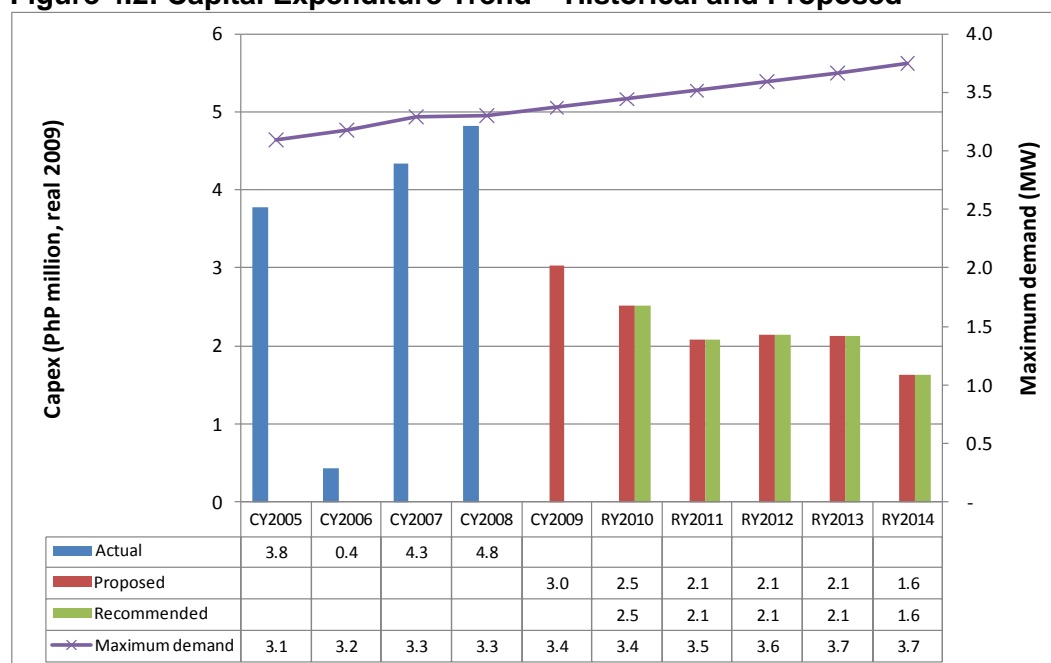
Table 4.4 : ERC Final Determination on IEEC’s Capital Expenditure Program (PhP thousand)

	RY2010	RY2011	RY2012	RY2013	RY2014	TOTAL
Nominal values	2,563	2,207	2,378	2,480	1,975	9,040
Real values (2009)	2,522	2,076	2,140	2,134	1,624	7,974
Nominal values, including CWIP factor	2,575	2,223	2,396	2,508	1,986	9,114

Note: The total is excluding Regulatory Year 2010.

- 4.6.4 In Figure 4.2, the ERC’s allowed capital expenditure is compared with IEEC’s Revenue Application. Being a key driver for expenditure, the historical and forecast maximum demand, as accepted by the ERC, is also included, illustrating the need for increased capital expenditure as demand increases. In this case, the existing IEEC network has sufficient capacity to accommodate forecast growth in demand over the regulatory period, thus, the low additional CAPEX.

Figure 4.2: Capital Expenditure Trend – Historical and Proposed



Source: GB Associates, ERC analysis

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 IEEC 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 2009²⁰. Since IEEC 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 IEEC's capital and operating 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 must 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 by the ERC staff, Geoff Brown and Associates (GB Associates) provided some further guidance to the staff for the aforesaid OPEX review.
- 5.1.5 The findings and recommendations of ERC staff with regard to the operating and maintenance expenditure forecasts submitted by IEEC are included in the Expenditure Review Report.²¹ 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.

5.2 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.

²⁰ 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.

²¹ ERC Operating and Maintenance Expenditure (OPEX) Review report titled “*REVIEW OF OPERATING AND MAINTENANCE EXPENDITURE FORECAST: SECOND REGULATORY PERIOD – Ibaan Electric and Engineering Corp.*”, dated October 19, 2009

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 forecast 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 IEEC

5.3.1 IEEC’s historical operating and maintenance expenditure and the forecast expenditure as submitted in its Revenue Application are shown in Table 5.1. The expenditure figures are in nominal values for the year indicated. It should be noted that the figures up to 2009 are for calendar years, while those from 2010 onwards are for regulatory years.

Table 5.1 : IEEC Application for Operating and Maintenance Expenditure

Operating & Maintenance Expenditure Category	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Operation and Maintenance	2.76	3.19	5.72	3.17	4.26	4.97	5.09	5.36	5.54	5.94
Administrative and General	4.55	5.30	5.68	3.47	4.32	4.63	4.81	5.10	5.36	5.62
Regulated Retail Services	2.32	2.68	3.11	1.69	2.57	2.71	2.83	3.00	3.16	3.33
Total Operational & Maintenance Expenditure	9.64	11.16	14.51	8.34	11.15	12.31	12.74	13.46	14.06	14.88

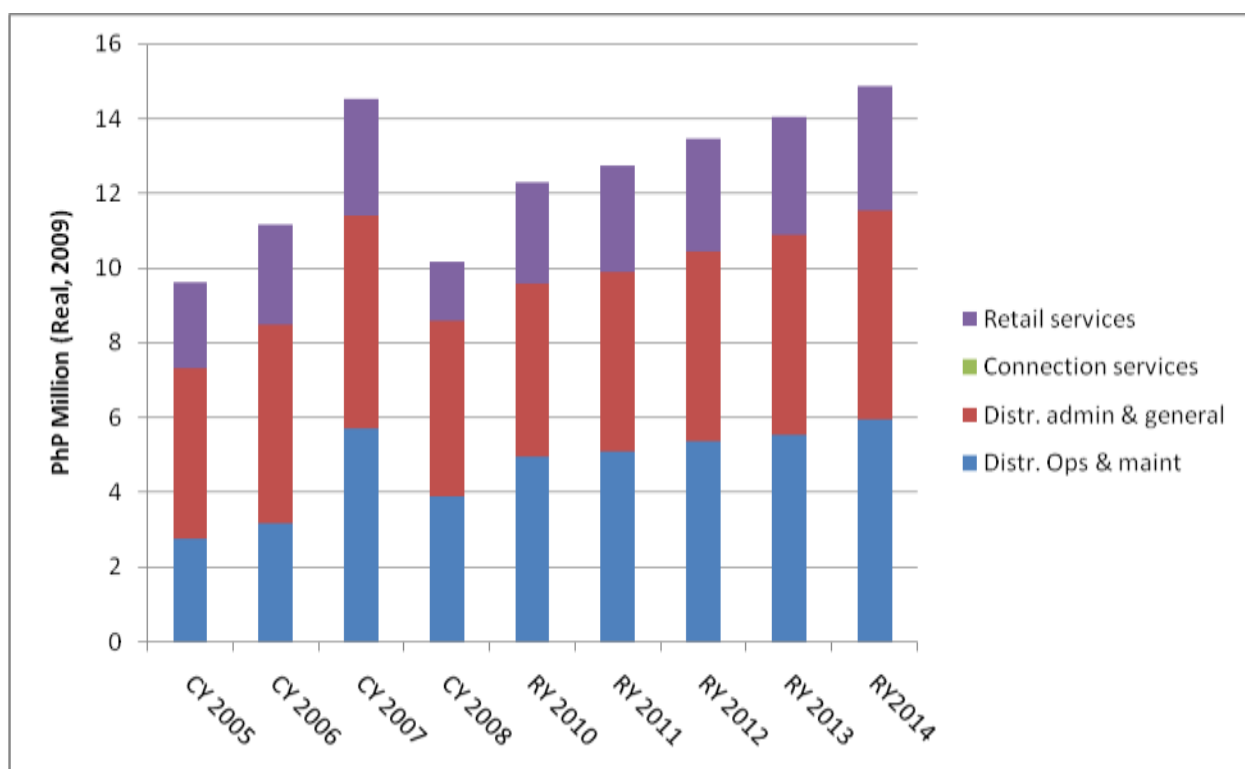
5.3.2 IEEC submitted a revised OPEX forecast in compliance to ERC Order dated July 30, 2009 directing it to submit a revised OPEX forecast to tally with the amount stated in its application as shown in Table 5.2 and graphically in Figure 5.2. It has been noted that the submitted templates for its historical and forecast OPEX now tallies with its revenue application.

Table 5.2 : IEEC Revised Operating and Maintenance Expenditure

Operating & Maintenance Expenditure Category	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Operation and Maintenance	2.76	3.19	5.72	3.88	3.61	4.84	5.09	5.36	5.64	5.94
Administrative and General	4.55	5.30	5.68	4.70	4.12	4.53	4.71	4.92	5.17	5.44
Regulated Retail Services	2.32	2.68	3.11	1.63	2.57	2.71	2.85	3.00	3.16	3.33
Total Operational & Maintenance Expenditure	9.64	11.16	14.51	10.21	10.30	12.08	12.66	13.28	13.97	14.70

5.3.3 It is noted that there is a 6-month overlap between calendar year 2009 and regulatory year 2010.

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



5.3.4 IEEC is forecasting considerable increases in its operating and maintenance expenditure over the Second Regulatory Period, resulting from increased Distribution –operation and maintenance and administrative and general expenses.

5.4 Analysis of operating and maintenance expenditure - methodology

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

- Determine the base year operating and maintenance expenditure on a cost category basis;
- Assess each component of base year for any additional or extraordinary expenditures;
- Confirm 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 IEEC's and the OPEX model's base year figures and test for relative efficiency;
- Determine total OPEX forecast and test for cost efficiency; and
- Compare OPEX forecasts to the applicant's OPEX forecasts and determine the annual adjustment.

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 represent efficient use of funds and was consistent with expected recurring expenditure levels for that line item; and
- IEEC's adjusted OPEX was benchmarked using an efficient frontier methodology based on the average historical data of five (5) of the DUs in the third entry point. This also includes the three (3) DUs in the second entry point given sufficient information to include them in the analysis. OPEX per line lengths and the average number of customers per line lengths were used.

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

5.6 Analysis of the OPEX Line items

5.6.1 It has been observed that IEEC's CY2008 figures are much lower than that of CY2007 and even lower than the earlier calendar years 2005 and 2006. Using the abnormally low CY2008 figures as the base year in an OPEX model might not be beneficial to the IEEC customers as the utility's continued under-spending particularly in operation, maintenance and customer services would lead to continued poor network performance and unreliable service. Based on the variability of the historical expenditures submitted by IEEC, the ERC staff proposed a more reasonable base year data to use for OPEX modeling purposes which is the average of calendar years 2007 and 2008 plus an allowance for an additional technical employee.

Distribution System Maintenance – Line Transformers

IEEC projected annual budget expenditure for Distribution System Maintenance –Line Transformers in 2009 amounting to PhP353,000 which IEEC mentioned during the clarificatory meeting were actually incurred in CY 2009, thus ERC deemed it proper to include said expenditure in the base year calculation in the OPEX forecasting model. The magnitude of the resulting upward adjustment is PhP1.415 million for the RY 2011 to 2014.

Administrative and General Expenditures – Employee Pension and Benefits

During the clarificatory meeting, IEEC was asked to provide details of its employee pension and benefits expenses for CY2008. The ERC believes that additional benefits like rice subsidy given to the Regulated Entities employees should not be recovered from its consumer rates. If IEEC wishes to provide additional benefits to its employees, the ERC believes that these additional benefits constitute a management prerogative,

thus, should not be funded from the regulated revenue. The disallowances of the additional benefits, however, do not preclude IEEC from providing these 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 reduction by PhP55,282.

Regulated Retail – Bad Debts Expense

IEEC included the amount of PhP0.808 million as uncollectible accounts expense. 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.

IEEC’s 2008 Audited Financial Statement stated the accounts written-off amounted to PhP0.808 million and Accounts Receivable-Trade (AR) amounted to PhP15.541 million. 1% of outstanding trade accounts receivable is PhP0.155 million and hence this is the amount that ERC has allowed for bad debt expense in the base year, consistent with the Commission’s Decision under ERC Case No. 2009-024RC. The reduction in the proposed amount of bad debts is by PhP0.724 million.

The resulting 2008 base year operating expenditures after the ERC’s recommended total adjustments amounting to PhP11.90 million are as shown in Table 5.3. This has been used in the OPEX model to forecast future expenditures:

Table 5.3: Adjusted Base Year 2008 Operating and Maintenance Expenditure (PhP million, real 2009)

Operating & Maint. Expenditure	Normalized Base year 2008	CY 2008	Difference
Operation	2.11	1.01	1.10
Maintenance	3.12	2.16	0.96
Administration and General	4.89	3.47	1.41
Regulated Retail Services	1.79	1.69	0.09
Total Operating & Maintenance Expenditure	11.90	8.34	3.56

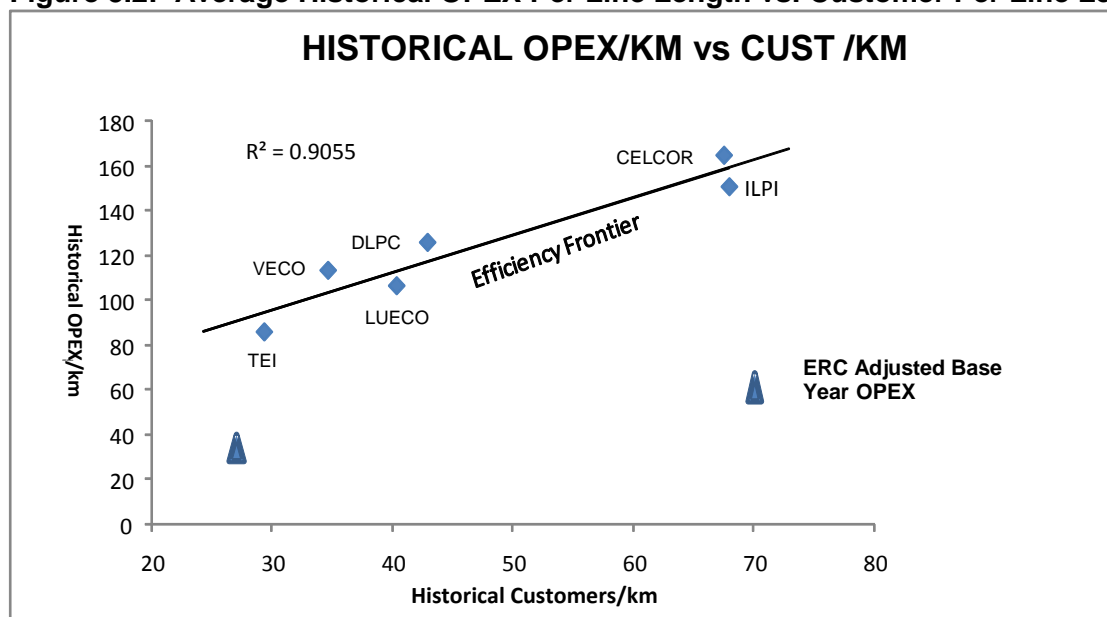
5.7 Confirmation that the Base Year Cost Data is Efficient

5.7.1 Figure 5.2 below shows a linear regression analysis showing the efficiency frontier using the average historical OPEX of the 6 DUs (DLPC, VECO, TEI, CELCOR, LUECO and ILPI²²).

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²² ILPI, an entrant DU in the second entry point, is included in the analysis given sufficient information while MECO and CLPC were not included because of insufficient information to be able to plot in the graph.

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



5.7.2 Figure 5.2 illustrates IEEC’s average historical OPEX which is significantly below the efficiency frontier, indicating that IEEC is probably under-spending on system operation and maintenance, a view further supported by the 2008 network performance. The ERC’s adjusted base year OPEX which is plotted on the graph still positions the IEEC well below the efficiency frontier.

5.7.3 Hence, the ERC concluded that the adjusted base year 2008 operating expenditure represents an efficient base expenditure but still probably below sustainable OPEX levels for forecasting future operating expenditures.

5.8 Expenditure program proposed by ERC

5.8.1 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 5.4 below:

Table 5.4: ERC’s Base OPEX Forecasts

Operating & Maint. Expenditure Category	2011	2012	2013	2014
Distribution and Connection Services Operation and Maintenance	5.189	5.171	5.153	5.137
Administrative and General	4.883	4.882	4.880	4.880
Regulated Retail Services	1.864	1.907	1.951	1.996
Total Operating & Maintenance Expenditure	11.936	11.960	11.984	12.012

5.8.2 Table 5.5 also compares, for each major operating and maintenance expenditure category, the ERC recommended annual forecast operating and maintenance expenditure with the forecast operating and maintenance expenditure which IEEC included in its revenue application.

Table 5.5: Comparison of IEEC and ERC Forecast Operating and Maintenance Expenditure (PhP million, real 2009)

Expenditure Category	2010	2011	2012	2013	2014	Total ¹
Distribution and Connection Services Operation and Maintenance						
IEEC Forecast	4.967	5.092	5.359	5.542	5.936	26.896
ERC Forecast	5.208	5.189	5.171	5.153	5.137	25.859
Difference	0.241	0.097	-0.188	-0.389	-0.799	-1.038
Administrative and General						
IEEC Forecast	4.635	4.813	5.103	5.356	5.622	25.528
ERC Forecast	4.885	4.883	4.882	4.880	4.880	24.409
Difference	0.250	0.070	-0.221	-0.476	-0.742	-1.119
Regulated Retail Services						
IEEC Forecast	2.708	2.833	3.001	3.159	3.325	15.027
ERC Forecast	1.832	1.864	1.907	1.951	1.996	9.550
Difference	-0.877	-0.969	-1.094	-1.208	-1.330	-5.477
Total Operating and Maintenance Expenditure						
IEEC Forecast	12.310	12.738	13.463	14.057	14.883	67.451
ERC Forecast	11.925	11.936	11.960	11.984	12.012	59.818
Difference	-0.385	-0.802	-1.503	-2.073	-2.871	-7.633
Recommended Adjustment	-0.385	-0.802	-1.503	-2.073	-2.871	-7.633

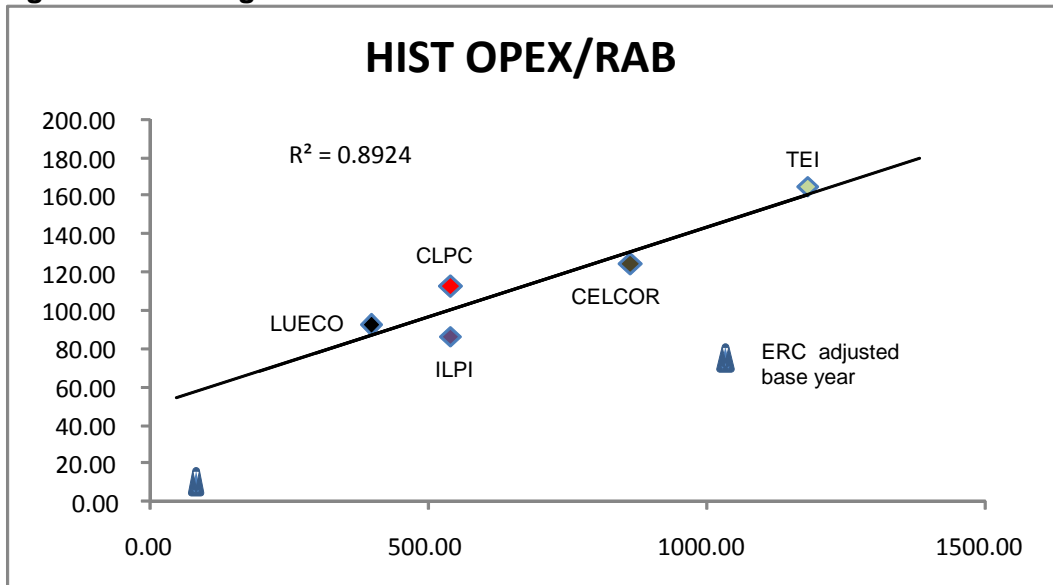
¹ This total includes RY2010 plus the Second Regulatory Period

5.9 ERC Final Determination on the operating and maintenance expenditure

5.9.1 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.

5.9.2 Figure 5.3 shows the study of OPEX vs. RAB with the average ERC adjusted forecasts plotted on the graph. This study includes two (2) DUs in the second entry point (CLPC and ILPI) given available data used in the analysis. The average ERC OPEX forecasts are within the periphery of 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.

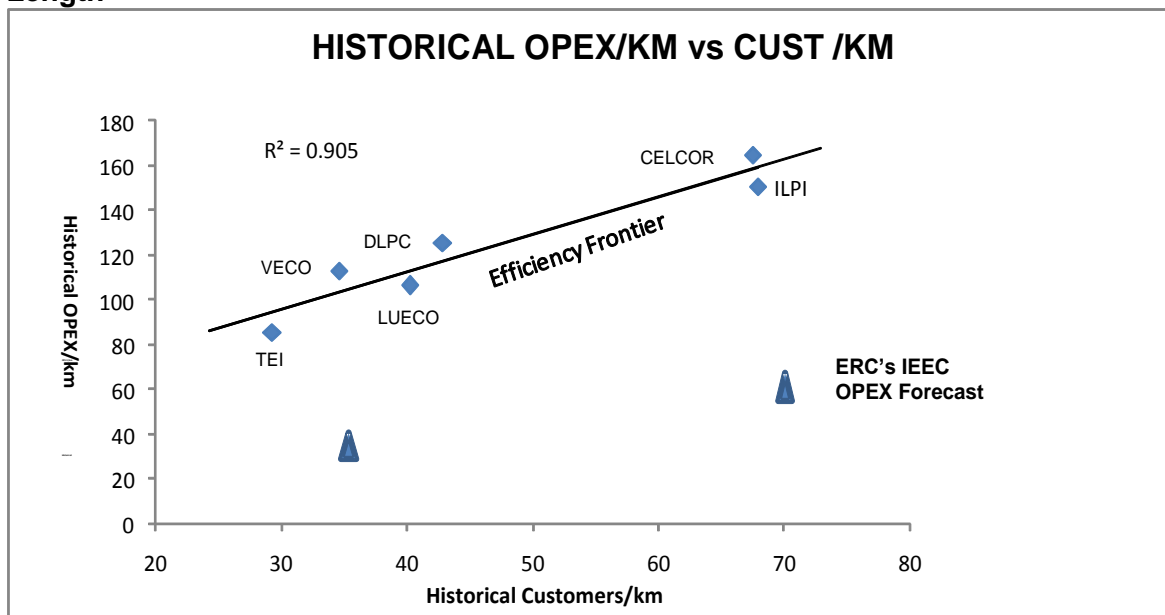
Figure 5.3: Average Historical OPEX / RAB



5.9.3 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. The ERC adjusted IEEC OPEX forecast lies below the efficiency frontier and hence ERC considers these forecasts to be relatively efficient.

5.9.4 It should be noted that the coefficient of determination (R squared) for this study is 0.9055 indicating a strong correlation between the dependent and independent variables.

Figure 5.4: Average Historical OPEX Per Line Length and Customer Per Line Length



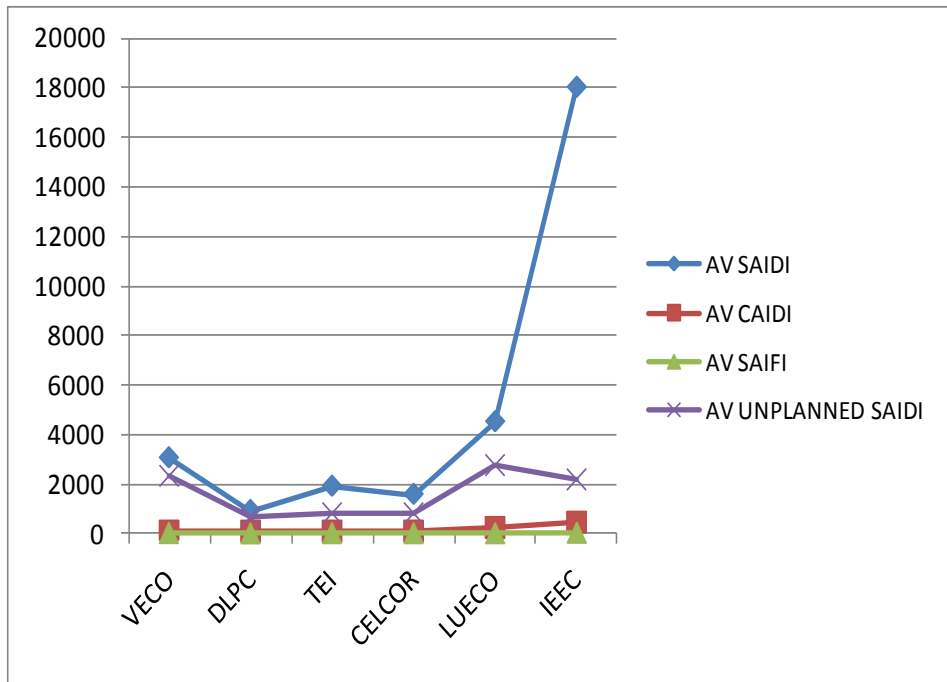
5.9.5 Based on these two benchmarking studies, ERC believes that its adjusted OPEX forecasts are relatively efficient. The adjusted OPEX forecasts for IEEC is way below the

efficiency frontier indicating that the IEEC had been under-spending on the operation and maintenance of its distribution system.

5.10 OPEX vs. Performance/Efficiency Benchmarking

5.10.1 The ERC has benchmarked the historical network performance of six (6) DUs entering PBR at the third entry point. The results of this analysis are shown graphically in Figure 5.5.

Figure 5.5: Group C DUs (except IEEC) Average Historical Network Performance



5.10.2 The above graph uses CY2006 to CY2008 data submitted by the utilities except for IEEC where only 2008 data is available. The results are indicative only, formal benchmarking study using sufficient data-points as would be required to draw accurate conclusions, could not be conducted.

5.11 ERC Final Determination on the Operating and Maintenance Expenditure

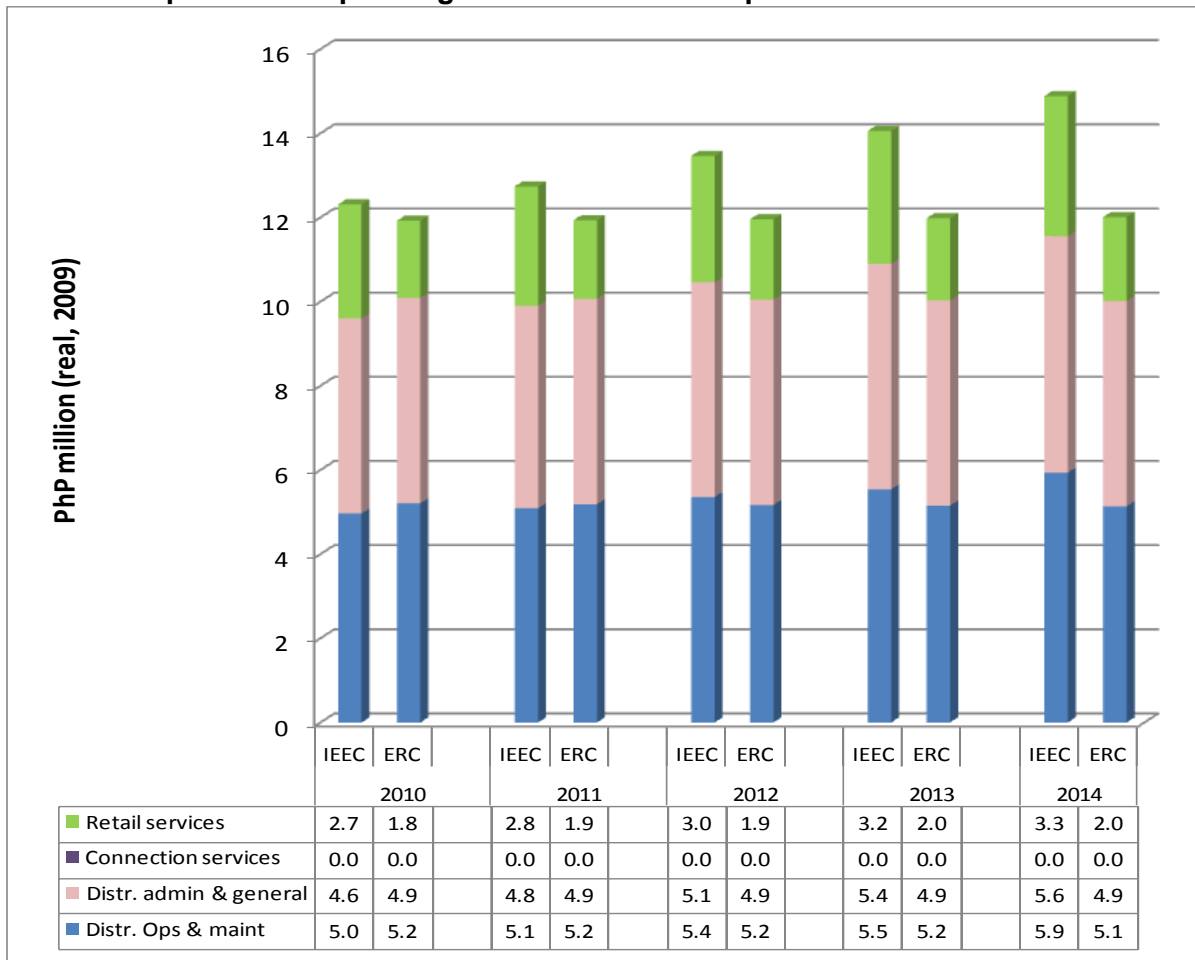
5.11.1 In the initial review process, the ERC noted that IEEC's historical OPEX increased in 2007 and then abruptly decreased in 2008. During the clarificatory meeting, IEEC stated that the decrease in 2008 was due to a decrease in the number of personnel and cost cutting measures. In order to calculate the forecast OPEX for RY 2011 up to 2014, ERC assessed a reasonable annual OPEX that would represent regular operation of IEEC taking into consideration the hiring of new personnel and the maintenance of its Distribution System. The ERC assessment of a reasonable CY 2009 base year OPEX included the removal of any abnormal and non-recurring expenditures and this base year expenditure was tested for cost efficiency. The resulting normalized CY 2008 served as the base year input to an OPEX model which generated OPEX forecasts believed to be prudent and efficient for Distribution Utilities.

5.11.2 The model took into account that over the modeling period from 2010 to 2014, IEEC's network asset (as recommended in Section 4) and customer numbers will increase by 19.2%. It also took into account the capital expenditure forecasts recommended by GB

Associates for IEEC, amounting to PhP7.97 million over the next regulatory period. Likewise, the CPI was updated to the current value of February 2010, however the resulting impact to the total OPEX amount allowed is minimal. This is a recommended reduction of 17% compared with IEEC’s application for the four years, which has a direct impact on the quantity of new assets requiring operation and maintenance expenditure over the second regulatory period.

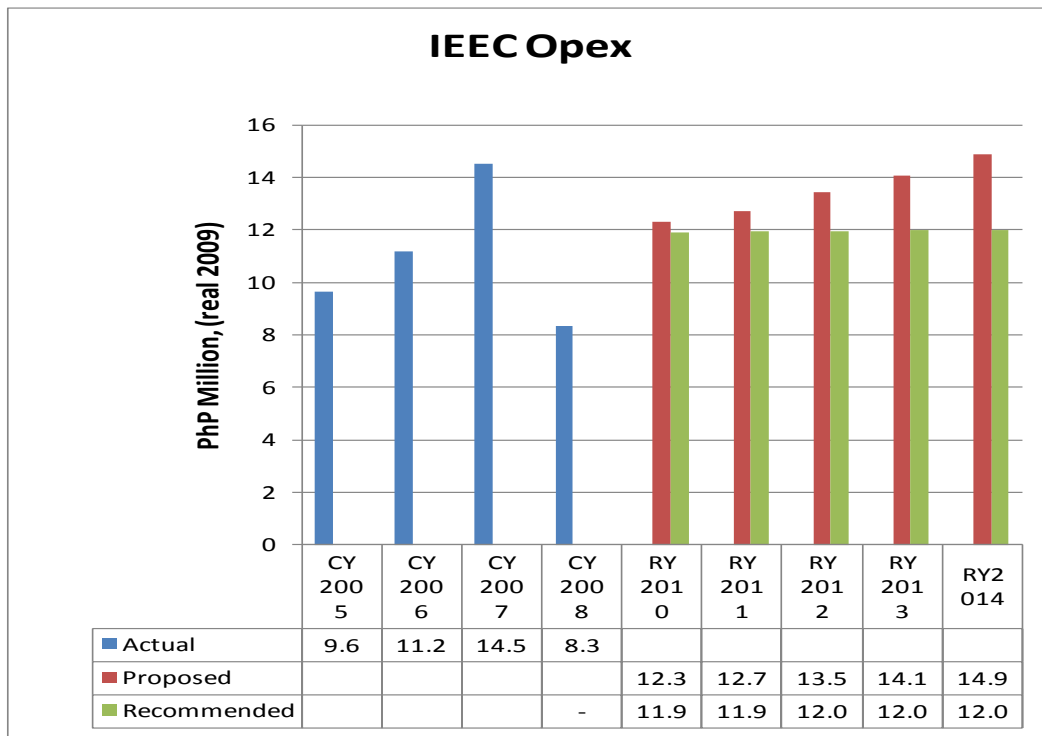
5.11.3 The modeling results show the ERC’s OPEX forecasts for the second regulatory period which are on the average, 13.14% lower than IEEC’s.

Figure 5.6: Comparison of Operating and Maintenance Expenditure Forecast



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Figure 5.7: Historical and Forecast Trends – Operating and Maintenance Expenditure



5.11.4 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 5.6: Final Determination on Operating and Maintenance Expenditure

PhP (Thousand)	2010	2011	2012	2013	2014	TOTAL
Nominal values	12,120	12,689	13,287	13,926	14,615	54,518
Real values (2009)	11,925	11,936	11,960	11,984	12,012	47,893

Note: The total is excluding Regulatory Year 2010

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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). IEEC 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 2009²³. Since IEEC 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 IEEC'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 of the RDWR, the ERC must 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. 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 IEEC are included in the OPEX Review Report.²⁴ This forms the basis of the taxes, levies and duties (other than corporate income tax) expenditure forecasts analyzed and approved by the ERC, as described below. Since the OPEX Review Report is available for public review, only the main findings are replicated below.
- 6.1.5 No other adjustments were deemed necessary except those considering the updates on the CPI and Foreign exchange Rates.

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

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 – Ibaan Electric & Engineering Corporation.*", dated October 19, 2009

determined under PBR. The approved license fees, levies, duties and other taxes (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 IEEC

6.3.1 IEEC’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: IEEC 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
Levies						
Regulatory Reset Expert Fee	0.02	0.00	0.14	0.02	0.02	0.02
Other Taxes						
Business operation permits	0.01	0.01	0.01	0.01	0.01	0.01
Community tax	0.02	0.03	0.03	0.03	0.03	0.03
Real property tax	0.21	0.19	0.20	0.21	0.22	0.23
Total Other taxes	0.24	0.23	0.24	0.25	0.26	0.27
Total Levies & Taxes	0.26	0.23	0.38	0.27	0.28	0.29

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

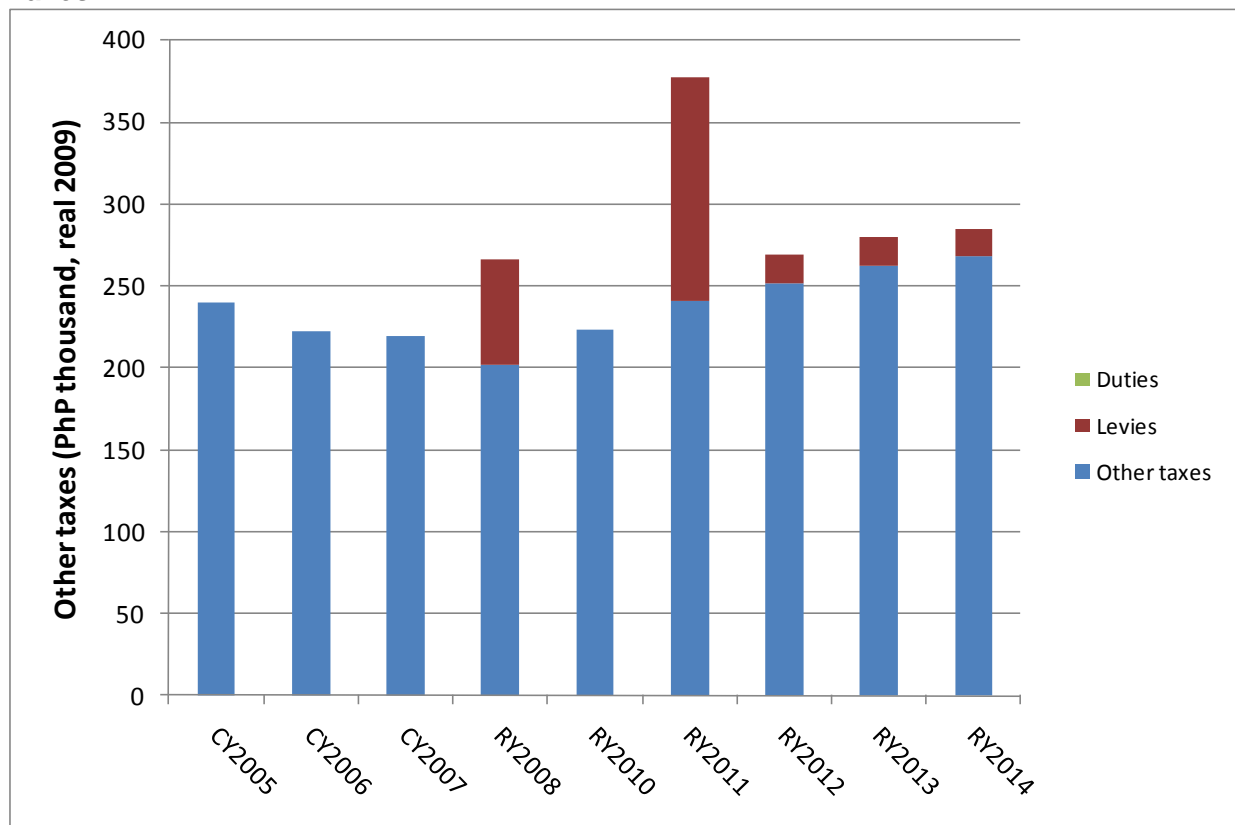
Table 6.2: IEEC’s Application for License Fees, Levies, Duties and Other Taxes Expenditure (Figures revised by using the ERC financial indices forecasts)

Category	Actual (real, 2009) PhP thousand				Forecast (Real, 2009) PhP thousand				
	CY2005	CY2006	CY2007	RY2008	RY2010	RY2011	RY2012	RY2013	RY2014
Other taxes	240	223	219	202	224	241	251	263	268
Levies	0	0	0	64	0	137	17	17	17
Duties	0	0	0	0	0	0	0	0	0
Total	240	223	219	266	224	378	269	280	285

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

6.3.3 In Figure 6.1, the IEEC forecast expenditure on license fees, levies, duties and other taxes is graphically represented, in real (2009) values. From Figure 6.1, IEEC 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: IEEC 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 IEEC's forecasts for levies, duties and other taxes during the Second Regulatory Period is discussed in detail in the OPEX Review Report. The ERC did not have any adjustments in IEEC's forecast considering the following factors:

- IEEC's forecast for regulatory reset expert fees is consistent with the requirements of the Position Paper and the amounts advised by ERC.
- IEEC forecasted an annual provision for real property tax that is imposed by the local government on all of IEEC's real properties. IEEC submitted copies of the real property tax payment receipts and Local Government Tax Ordinances on the real property of previous year 2007.
- IEEC forecasted figures on the real property tax, IEEC assumed an increase of 25% average increase for the four year regulatory period.

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

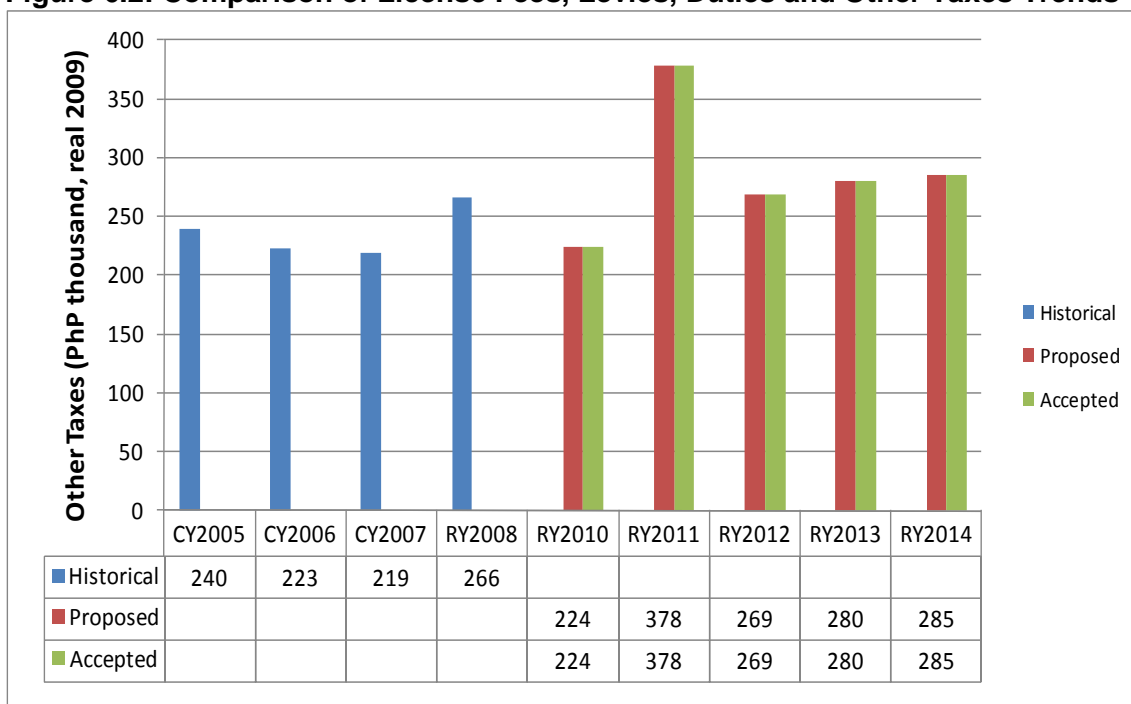
Table 6.3: ERC Provision for Taxes, Levies and Duties (PhP million, real 2009)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Levies						
Regulatory Reset Expert Fee	0.02	0.00	0.14	0.02	0.02	0.02
Other Taxes						
Business operation permits	0.01	0.01	0.01	0.01	0.01	0.01
Community tax	0.02	0.03	0.03	0.03	0.03	0.03
Real property tax	0.21	0.19	0.20	0.21	0.22	0.23
Total Other taxes	0.24	0.23	0.24	0.25	0.26	0.27
Total Levies & Taxes	0.26	0.23	0.38	0.27	0.28	0.29

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

- 6.5.1 The ERC accepts the original application updated to the change in the economic indices with regard to IEEC’s forecasts for the license fees, levies and other taxes.
- 6.5.2 In Figure 6.2 below, the historical and forecast trend is illustrated, based on the ERC’s allowance for license fees, duties and other taxes expenditure during 2008 and the Regulatory period.

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



- 6.5.3 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)	RY2010	RY2011	RY2012	RY2013	RY2014	TOTAL
Nominal values	227	402	299	325	347	1,373
Real values (2009)	224	378	269	280	285	1,212

Note: The total is excluding Regulatory Year 2010

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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.²⁵
- 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 (SKM) and Cuervo Appraisers, Inc. (hereafter jointly referred to as SKM) were appointed as the regulatory reset experts to conduct the initial revaluation for IEEC. The results of their valuation are described in the Initial Revaluation Report²⁶ and were accepted by the ERC. These reports were also presented to IEEC, 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 Draft Determination, will be replicated here.
- 7.2.4 The value of the RAB at the Initial Revaluation Date (December 31, 2008) is presented in Table 7.1. There were assets optimized for IEEC.
- 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.

²⁵ The optimization approach is described in Clause 4.8.6 and Appendix D of the RDWR

²⁶ SKM report titled "*Ibaan Electric and Engineering Corporation: Regulatory Asset: Valuation Date: 31 December, 2008*", dated April 24, 2009

Table 7.1 : Value of RAB at initial revaluation date (December 31, 2008)

Asset Category	Replacement cost (PhP)	Optimized Replacement Cost (PhP)	Optimized Depreciated Replacement Cost (PhP)
Distribution assets	75,360,022	74,415,415	56,071,261
Non-system assets	17,601,572	12,013,234	11,113,197
Connection assets	8,631,532	8,631,532	5,590,596
Retail services assets	20,327,591	20,327,591	13,424,431
TOTAL	121,920,716	115,387,772	86,199,485

Source: SKM and CAI

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

$$\begin{aligned}
 \text{Opening value of the RAB} &= \text{Value of the RAB at the Initial Revaluation Date} \\
 &\quad \text{minus} \\
 &\quad \text{Depreciation of the initial RAB to June 30, 2010} \\
 &\quad \text{plus} \\
 &\quad \text{Inflation of the initial value to a June 2010 basis} \\
 &\quad \text{plus} \\
 &\quad \text{Approved CAPEX for the 2010 regulatory year (RY)} \\
 &\quad \text{minus} \\
 &\quad \text{Depreciation of assets acquired during 2010 (RY)} \\
 &\quad \text{minus} \\
 &\quad \text{Disposal of assets during 2010 (RY)} \\
 &\quad \text{plus} \\
 &\quad \text{CWIP allowance}
 \end{aligned}$$

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 4.6.

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 Regulated Entities and consulted with the Regulated Entities on this. 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.²⁷ This was further updated for the Final Determination for

²⁷ 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

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 resulting CWIP factor computed using the new WACC used for this Final Determination. This is indicated in Table 7.2. 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 IEEC RAB opening value is indicated in Table 7.3.

Table 7.3 : Opening Value of the IEEC 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	1.6	0.0	0.1	0.0	0.0	0.0	0.0	1.7
Substation Equipment	13.1	0.8	0.7	0.1	0.0	0.0	0.5	13.6
Distribution Lines - network	18.5	1.5	1.0	1.3	0.0	0.0	0.6	19.8
Underground distribution network	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Line Transformers - Distribution	22.9	1.4	1.2	0.0	0.0	0.0	0.7	23.4
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-network assets								0.0
Land and structures	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Furniture, transportation, tools	2.3	0.5	0.1	0.5	0.0	0.0		2.4
Materials, supplies and spares	8.6	0.0	0.5	0.0	0.0	0.0		9.0
Other	0.0	0.0	0.0	0.7	0.1	0.0		0.6
Connection assets								0.0
Overhead connections	5.6	0.4	0.3	0.0	0.0	0.0	0.2	5.7
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retail service assets								0.0
Metering	13.4	1.1	0.7	1.5	0.0	0.0	0.0	14.5
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	86.2	5.7	4.5	4.1	0.2	0.0	2.0	90.9

Source : IEEC application, SKM Valuation, ERC analysis

7.4 Regulatory depreciation

7.4.1 The ERC reviewed IEEC’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 asset base at the Initial Re-valuation Date, IEEC’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 IEEC’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 IEEC 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 IEEC’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 IEEC 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 IEEC 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 IEEC RAB (calculated by the ERC) (PhP Millions)

	RY2010	RY2011	RY2012	RY2013	RY2014
Opening asset base	3.8	4.1	4.1	4.1	3.9
Interim assets before regulatory period	0.2	0.3	0.3	0.3	0.3
Assets acquired during regulatory period	0.0	0.0	0.2	0.4	0.5
Subtotal	4.0	4.4	4.6	4.8	4.7
plus Disposals	0.0	0.0	0.0	0.0	0.0
minus Income from Disposals	0.0	0.0	0.0	0.0	0.0
TOTAL	4.0	4.4	4.6	4.8	4.7

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 RAB		90,917	88,696	86,510	84,266
Depreciation on RAB		4,443	4,583	4,752	4,708
Capital Expenditure		2,223	2,396	2,508	1,986
Change in asset used over regulatory lives		0	0		
Closing Value of RAB	90,917	88,696	86,510	84,266	81,545
Average RAB for the Year.	90,917	89,806	87,603	85,388	82,905

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, a lead/lag information was provided by the Second Entry Group Regulated Entities. Based on an analysis of this information, it transpired that the average lag time until payment of electricity accounts 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 still 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 operating and maintenance expenditure allowed (compared with the 3% allowed for the First Entry Group).
- 7.6.4 In 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.

7.6.4 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).

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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 7.2.7). 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 report²⁸ (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%).

²⁸ 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.

- The point value at which the WACC will be set from the range of likely values determined by the ERC²⁹, 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 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 55% 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 45% 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 reset for the distribution utilities, it was thoroughly tested and challenged

²⁹ A range of values is determined to reflect the uncertainty in the value of many of the parameters used to determine the WACC.

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 observations³⁰. 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 1.15. This was compared against research data published by Prof. Anwath Damodaran of the Stern University³¹ which resulted in the same value (1.15). 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.).

³⁰ 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.

³¹ <http://pages.stern.nyu.edu/~adamodar/>

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

		<i>Mid Range Regulatory WACC Estimate by ERC</i>			
Parameters		Low	Mid	High	
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		Formula	Low	Mid	High
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 IEEC. 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, 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 IEEC for its Revenue Application.

9.2 Annual Revenue Requirement – IEEC application

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

- a) The capital expenditure proposed in IEEC's Revenue Application.
- b) The operating and maintenance expenditure proposed in IEEC's Revenue Application.
- c) The levies, duties and other taxes proposed in IEEC's Revenue Application.
- d) The energy consumption forecasts included in IEEC's Revenue Application.
- e) The financial indices proposed in IEEC's Revenue Application.
- f) IEEC's calculation of the value of the opening RAB.
- g) The depreciation calculations proposed in IEEC's Revenue Application.
- h) A Regulatory WACC of 15.01%.
- i) A working-capital allowance of 6.85% of OPEX.
- j) A corporate income tax rate set to zero for the Second Regulatory Period.

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

Building Blocks	2011	2012	2013	2014
Return on capital	14.27	14.36	14.59	14.80
Opex	12.66	13.28	13.97	14.58
Depreciation	4.20	4.20	4.20	4.20
Corporate income tax	0.00	0.00	0.00	0.00
Other taxes	0.38	0.27	0.27	0.27
Total	31.51	32.12	33.03	33.85

Source : IEEC Revenue Application

9.3 Annual Revenue Requirement – ERC analysis

9.3.1 The ERC modeled the annual revenue requirement for IEEC based on its energy forecasts described in Section 3.3, expenditure allowances discussed in Sections 4.6, 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 (see Table 7.6)	89,806	87,603	85,388	82,905
OPEX approved (see Table 5.6)	12,689	13,287	13,926	14,615
Working capital allowed (6.85% of OPEX)	869	910	954	1,001
Subtotal - capital invested	90,676	88,513	86,342	83,907
RETURN ON CAPITAL	13,610	13,286	12,960	12,594
Regulatory WACC (see Section 8)	15.01%			
Working capital factor (see Section 7.6)	6.85%			

Source: ERC Analysis

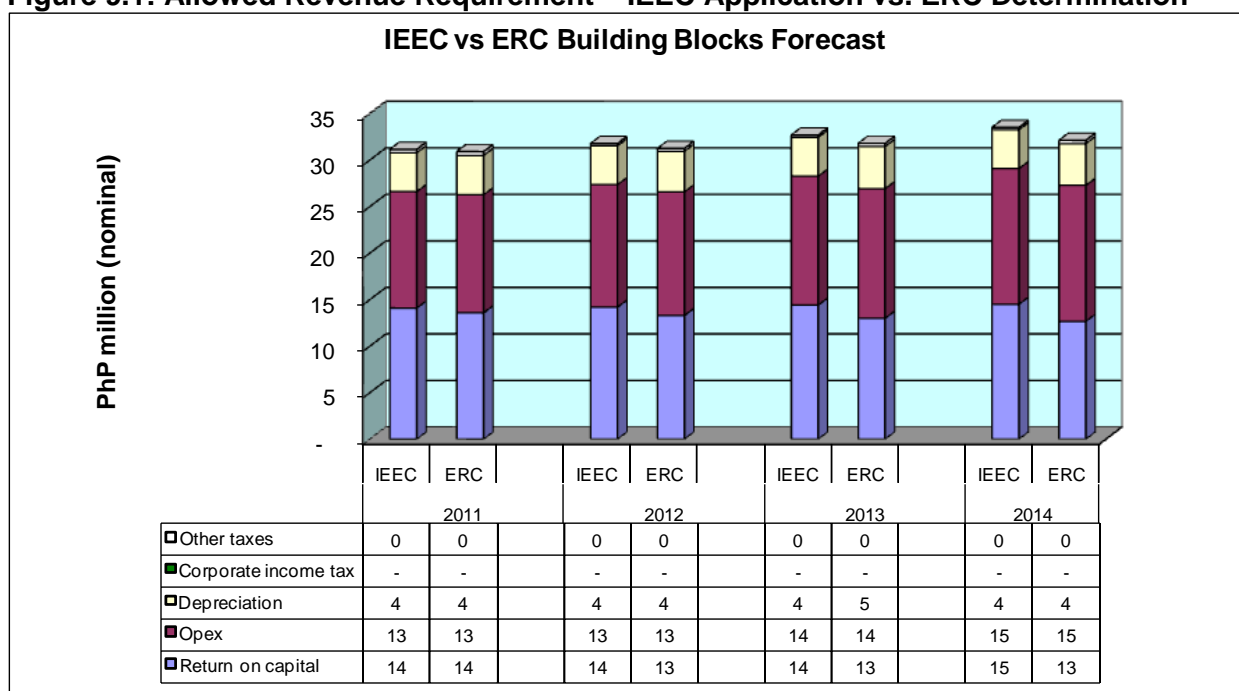
9.3.3 Based on its modeling, the ERC's determination of IEEC's annual revenue requirement for the Second Regulatory Period is indicated in Table 9.3. This is also graphically represented in Figure 9.1.

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

Building block	2011	2012	2013	2014
Return on capital (see Table 9.2)	13.569	13.243	12.915	12.547
OPEX (see Table 5.5)	12.689	13.287	13.926	14.615
Regulatory depreciation (see Table 7.4)	4.443	4.583	4.752	4.708
Corporate income tax (set to zero)	0.000	0.000	0.000	0.000
Other taxes (see Table 6.4)	0.402	0.299	0.325	0.347
TOTAL	31.104	31.411	31.918	32.218

Note: These figures do not include the required GSL provision

Figure 9.1: Allowed Revenue Requirement – IEEC 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 – IEEC Revenue Requirement (PhP Million, real 2009)

Building block	2011	2012	2013	2014
Return on capital (see Table 9.2)	12.485	11.655	10.861	10.078
OPEX (see Table 5.5)	11.676	11.694	11.712	11.739
Regulatory depreciation (see Table 7.3)	4.089	4.033	3.996	3.782
Corporate income tax (set to zero)	0.000	0.000	0.000	0.000
Other taxes (see Table 6.4)	0.370	0.263	0.274	0.279
TOTAL	28.619	27.644	26.843	25.878

Note: These figures do not include the required GSL provision

The ERC should normally adopt the ARR as calculated from the ERC financial model shown in Table 9.4 above, which shall be used in computing for the X – Factor and subsequently the MAP. However, the ERC can only approve the ARR and MAP up to a limit of what IEEC prayed for and published. In the Draft Determination, the ARR was computed at a total of PhP133.74 Million, on the other hand, IEEC prayed for and published a revenue requirement of PhP129 Million (see Table 9.5 below). However, based on the ERC final calculation the resulting ARR amounted to PhP 126.65 Million (see Table 9.3).

Table 9.5: IEEC Revenue Requirement (published PhP Million, nominal)

Building block	2011	2012	2013	2014
Return on capital				
Opex	12.66	13.28	13.97	14.58
Regulatory depreciation	4.20	4.20	4.20	4.20
Corporate income tax				
Other Taxes	0.38	0.27	0.27	0.27
TOTAL	31.51	32.12	33.03	33.85

Note: The return on capital as published reflected no value. IEEC indicated that there was a typographical error of not putting values as indicated in its model.

Table 9.6 : IEEC Proposed ARR based on Price CAP model(PhP million, nominal)

Building block	2011	2012	2013	2014
Return on capital	14.10	14.19	14.41	14.51
Opex	12.51	13.16	13.85	14.58
Regulatory depreciation	4.17	4.17	4.17	4.17
Corporate income tax	0.00	0.00	0.00	0.00
Other Taxes	0.36	0.24	0.24	0.24
TOTAL	31.14	31.77	32.68	33.50

Note : These figures do not include the required GSL provision

9.3.6 It is noted that the IEEC application for its revenue requirement over the Second Regulatory Period is now higher than ERC's calculated annual revenue requirement. This is different from the situation in the Draft Determination. This is explained by the following:

- The recommended regulatory WACC is now 15.01% as the parameters were already updated values, instead of the figure of 16.27% used for the Final Determination for Group B, using the same assumptions consistent with the changes made to the RDWR;
- There has been a significant strengthening of the PhP/US\$ exchange rate over the last 12 months, which is forecast to persist; and
- There has been a significant reduction in the Philippines inflation rate (measured as the consumer price index), which is forecast to persist.

9.3.7 More significantly contributing to the aforesaid computation disparity are the errors in IEEC's submitted price cap model application as shown in Tables 9.5 and 9.6 above.

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 Allowing for this addition, the ERC's Final Determination with regard to IEEC's allowed annual revenue requirement for the Second Regulatory Period is indicated in Table 9.4.

Table 9.4 : Final Determination - IEEC Annual Revenue Requirement (PhP, nominal)

	2011	2012	2013	2014
ARR without GSL allowance	31,508,625	32,116,209	33,027,490	33,848,357
GSL allowance	157,543	160,581	165,137	169,242
TOTAL ARR	31,666,168	32,276,790	33,192,627	34,017,599

9.5 Final Determination – Smoothed Maximum Average Price

9.5.1 The MAP for Regulated Distribution Services in 2010, as indicated by IEEC 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 9.5. In terms of the RDWR (Clause 4.5), this value is used as the basis from which the X-factor is determined.

Table 9.5 : Average Price during 2010

IEEC revenue from Regulated Distribution Services from January 2009 to December 2009 ³² (PhP)	20,552,304
Energy sales for January 2009 to December 2009 (kWh)	16,166,259
Average price (PhP/kWh)	1.2713

9.5.2 Based on this 2010 average price and the allowed annual revenue requirement described above, the ERC calculates the X-factor and the opening MAP for IEEC for the Second Regulatory Period as follows (with a P_0 -factor of zero) :

X-factor	:	-12.37%
MAP ₂₀₁₁	:	PhP1.4864 (PhP/kWh)

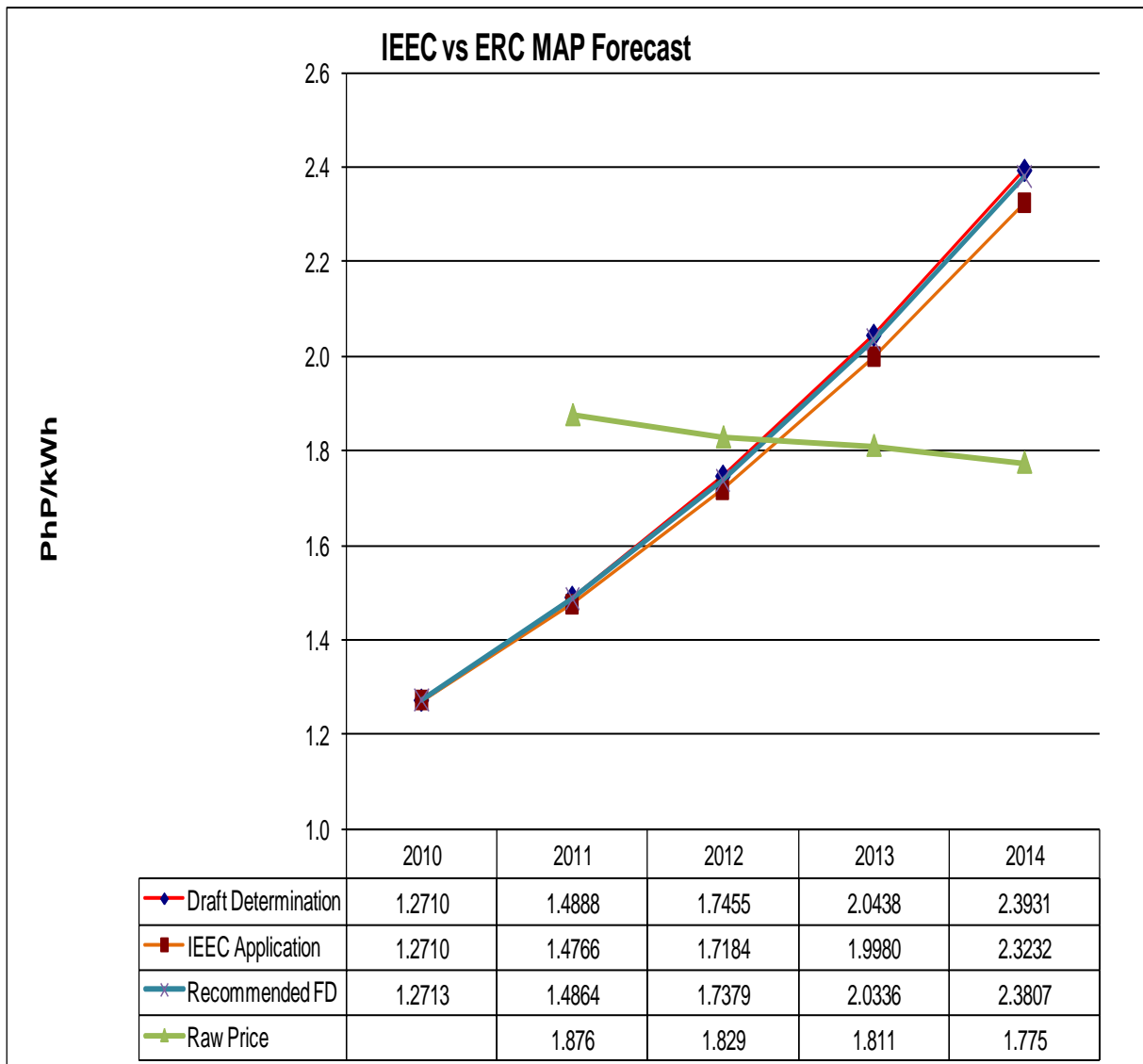
Based on these values, the anticipated average annual price increases during the Second Regulatory Period will be at the rate of inflation plus 12.37%. Taking the ERC forecasts for the Philippine inflation rate into account, it results in the anticipated smoothed price path indicated in Figure 9.3.

In Figure 9.3, the IEEC 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 IEEC modeled price path trends higher than the ERC. This is a result of the adjustment made from IEEC's annual revenue requirement as discussed above.

³² This revenue is calculated after deducting 50% of related business revenue (RBR) earned from the distribution network.

Figure 9.3: Comparison of Anticipated Price Paths

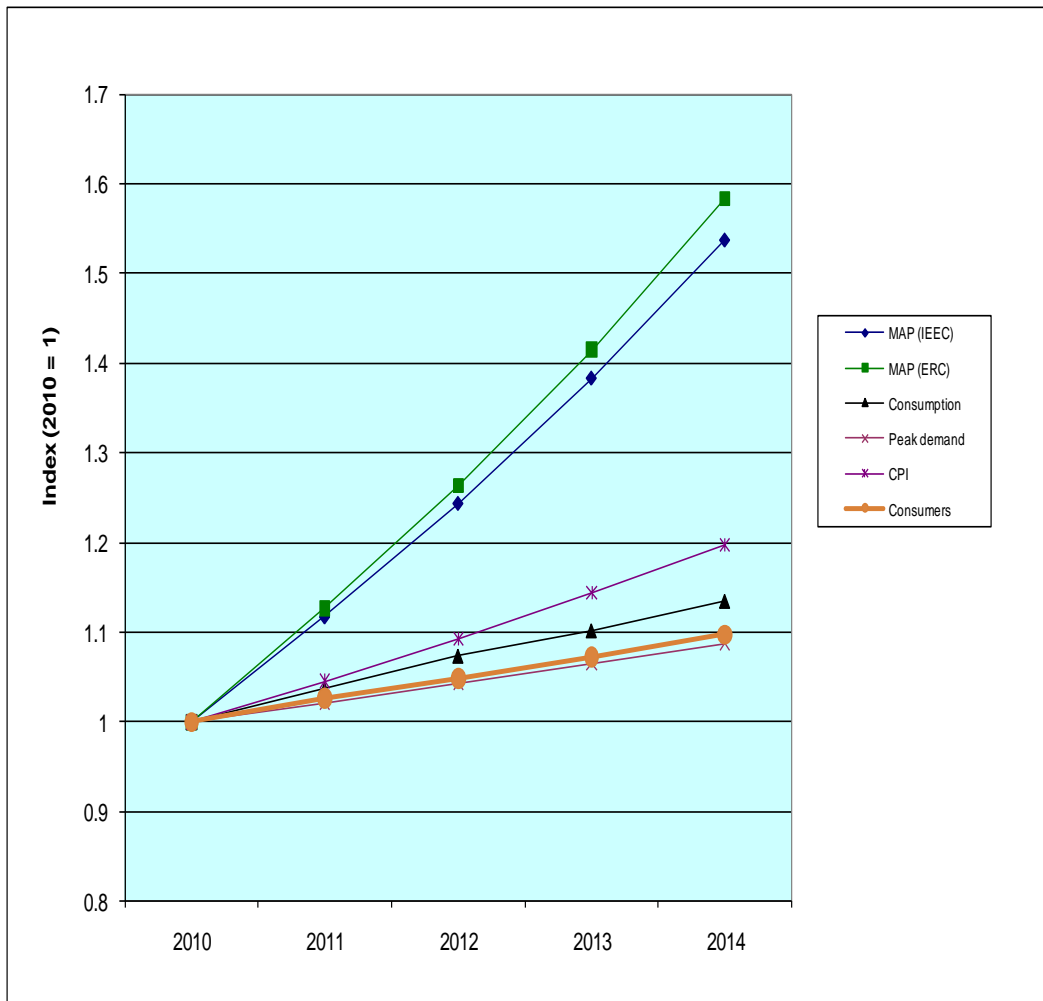


Source: ERC analysis

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.

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Figure 9.4: Comparison of the Smoothed MAP to Other Indices



Source: ERC analysis

9.5.5 A further comparison of the proposed price-path is presented in Figure 9.5. In the said figure, the IEEC SMAP is compared with that of the First and Second Entry Group utilities, as well as the Draft Determination values for the other five utilities in the Third Entry Group. It is clear that the proposed IEEC price path is higher than the average for the larger group. (Note that in this comparison the price-path of some of the smaller utilities have been adapted through a regulatory intervention to avoid excessive price shocks)

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Figure 9.5: Comparison of smoothed price paths (after the regulatory intervention) to other PBR entrants



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, IEEC 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 constraint³³ 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 IEEC's price setting for the Second Regulatory Period, the side constraint for the Second Regulatory Period will be set at 15.37% 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 RDWR³⁴, 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 IEEC at the start of the Second Regulatory Period, is as follows:

X-factor	:	-12.37%
MAP ₂₀₁₁	:	PhP1.4864 (PhP/kWh)

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³³ 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.

³⁴ 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

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.³⁵

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.³⁶ 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 of 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 IEEC 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.

³⁵ It is the intent 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.

³⁶ ERC report titled "*Framework for the Performance Incentive Scheme to apply from the Third Regulatory Period*", dated March 1, 2006.

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.

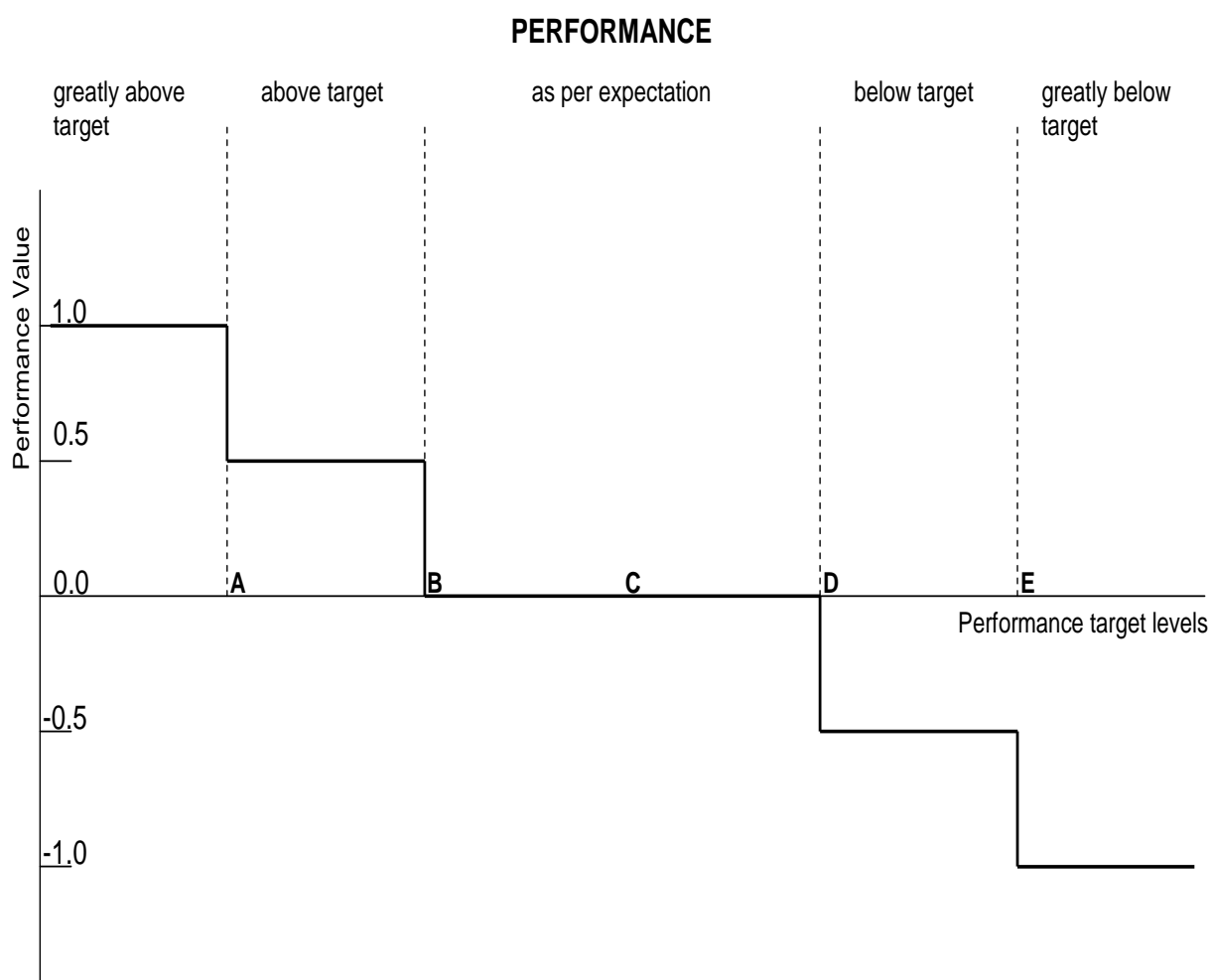
10.2.3 Performance will be assessed against a number of targets and, depending on the actual result, each index will be awarded a performance value, as described in Table 10.1 and illustrated in Figure 10.1 below.

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 10.1 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 years³⁷. 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.

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.³⁸ 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

³⁷ The actual details are as per the design of the PIS by each Regulated Entity.

³⁸ 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.

issues³⁹, 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;

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 IEEC

10.5.1 IEEC's proposed price-linked performance scheme for the Second Regulatory Period largely conforms to the PIS framework designed by the ERC for the Third Regulatory Period. 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 IEEC 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.

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³⁹ Or a very poorly designed GSL scheme.

Table 10.2: Price-linked Incentive Scheme Submitted by IEEC

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	19.96	29.93	39.91	49.89	59.87
Customer average interruption duration index (CAIDI)	Minutes	0.20	248.86	373.29	497.72	622.15	746.58
Planned system average interruption duration index (SAIDI)	Minutes	0.15	1204.41	1806.61	2408.82	3011.02	3613.22
Probability of voltage levels falling within prescribed limits	%	0.10		2.5	12.5	25	40
System losses	%	0.05	9.5	10	11.5		
Average time to process applications for Regulated Distribution Services	Days	0.10	1.75	3.5	5	6.5	8.4
Average time to connect premises to the Regulated Distribution System	Days	0.10	1.5	4	5.5	6.8	9
Average time to answer calls at call centre	Seconds	0.10					

10.5.3 It is the ERC's understanding that IEEC'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 IEEC only provided its 2008 average system performance against the proposed network performance indices as presented in Table 10.3.

Table 10.3: 2008 Network Performance

Performance Indicators	2008
Unplanned SAIDI	15,827.63
Planned SAIDI	2,189.83
TOTAL SAIDI	18,017.46
SAIFI	38.01
CAIDI	474.02

10.5.5 With regard to the probability of voltage levels violating the limits prescribed in the Philippines Distribution Code, IEEC proposes a target of 12.5% for the average value (Point C in Figure 10.1), however IEEC did not provide a justification nor documents to support their target.

10.5.6 The targets for the average time to process applications for regulatory services, or to connect premises, are based on 2008 historical average times recorded by IEEC to perform these services. The proposed performance threshold bands were based on the same calculation method described in Paragraph 10.5.1.

10.6 Guaranteed Service Level Scheme proposed by IEEC

10.6.1 IEEC’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 IEEC in the Revenue Application

PERFORMANCE MEASURE	Threshold	Penalty Level (PhP)
Customer experiencing a total duration of sustained service interruptions in a Regulatory Year that exceeds the threshold	65 hours	23.69
Customer experiencing a number of sustained service interruptions in a Regulatory Year that exceeds the threshold	60 times	23.69
Restoration of supply to a customer after a fault on the secondary distribution network taking longer than the threshold time	5.5 days	23.69
Customer connection not provided on the day agreed with the customer	5 days	23.69

10.6.2 IEEC noted that the proposed threshold values for the GSL1 and GSL2 components are based on year 2008.

10.6.3 The threshold values for the GSL3 components are based on actual figures for year 2008.

10.6.4 IEEC 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. IEEC submitted tabulated actual values for year 2008 to support how the threshold was determined.

10.6.5 The calculation of the penalty levels are based on the estimated value of the scheme⁴⁰, the number of customers likely to be affected if the proposed threshold values are adopted and a weighting allocated by IEEC to ensure consistent penalty amounts.

⁴⁰ 0.5% of the annual revenue requirement for each year, as discussed in Paragraph 10.3.2.

10.7 Excluded events proposed by IEEC

10.7.1 IEEC did not propose any excluded events that may have impact on their annual performance statistics; nevertheless, ERC suggests that IEEC should consider this option.

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 IEEC 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 The ERC accepts IEEC's original application. IEEC'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.⁴¹

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 IEEC. It also accepts that IEEC is still collecting information in this regard and that it will be able to provide a better indication of the realistic voltage regulation targets in time for the publication of the Final Determination. This additional evidence will be taken into account by the ERC in its Final Determination.

10.8.4 The ERC notes that IEEC'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.

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

⁴¹ 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.

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

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	19.96	29.93	39.91	49.89	59.87
Customer average interruption duration index (CAIDI)	Minutes	0.20	248.86	373.29	497.72	622.15	746.58
Planned system average interruption duration index (SAIDI)	Minutes	0.15	1204.41	1806.61	2408.82	3011.02	3613.22
Probability of voltage levels falling within prescribed limits	%	0.10		2.5	12.5	25	40
System losses	%	0.05	9.5	10	11.5		
Average time to process applications for Regulated Distribution Services	Days	0.10	1.75	3.5	5	6.5	8.4
Average time to connect premises to the Regulated Distribution System	Days	0.10	1.5	4	5.5	6.8	9
Average time to answer calls at call centre	Seconds	0.10					

10.9 ERC Final Decision on the GSL Scheme

10.9.1 The ERC accepts the broad GSL categories proposed by IEEC. The penalty levels are considered

10.9.2 The ERC will accept the targets and penalty levels proposed by IEEC for the Draft Determination but requests IEEC to review these calculations prior to its submission on the determination and confirm that they are indeed correct.

10.9.3 During the evidentiary hearing, IEEC was directed to submit additional simulations on the GSL scheme to reflect an increase in different levels of the GSL payments up to PhP100. IEEC complied with the Commission's directive. In its compliance, IEEC calculated its GSL payment level based on its proposed ARR. In this regard, ERC adjusted the GSL allowance as calculated using the recommended ARR of the Draft Determination.

10.9.4 The final penalty levels for the GSL scheme has been adjusted in accordance with the 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 Draft Determination on the GSL scheme for IEEC is described.

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

PERFORMANCE MEASURE	Threshold	Penalty Level (PhP)
Customer experiencing a total duration of sustained service interruptions in a Regulatory Year that exceeds the threshold	65 hours	100.80
Customer experiencing a number of sustained service interruptions in a Regulatory Year that exceeds the threshold	60 times	100.80
Restoration of supply to a customer after a fault on the secondary distribution network taking longer than the threshold time	5.5 days	100.80
Customer connection not provided on the day agreed with the customer	5 days	100.80

10.10 ERC Final Determination on Excluded Events

10.10.1 The ERC will adopt the approach described in its PIS framework⁴³ to exclude the impact of certain events on IEEC'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 Regulated Entities to respond effectively.

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

Pasig City, March 8, 2010.



ZENAIDA G. CRUZ-DUCUT
Chairperson


ALEJANDRO Z. BARIN
Commissioner


RAUF A. TAN
Commissioner


MARIA TERESA A.R. CASTAÑEDA
Commissioner


JOSE C. REYES
Commissioner


⁴³ Supra note 37

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	0	0
Station Equipment	0	0	0	0	0	0
Power transformers	0	0	0	0	0	0
Switchgear	0	0	0	0	0	0
Protective equipment	143,796	0	0	0	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	0
Poles, Towers and Fixtures - Distribution	1,190,358	243,421	289,205	279,463	410,701	136,540
Overhead Conductors and Devices - Distribution	326,908	156,269	285,813	355,588	561,360	239,404
Underground Cables and Devices - Distribution	0	0	0	0	0	0
Underground Conduits - Distribution	0	0	0	0	0	0
Line Transformers - Distribution	0	0	0	0	0	0
Power Conditioning Equipment	0	0	0	0	0	0
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	0	0	0	0	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	0	0	0	0	0
Office Furniture and Equipment	-700	10,367	12,757	16,664	17,431	18,250
Transportation Equipment	-450,000	457,365	0	333,288	0	0
Stores Equipment	0	0	0	0	0	0
Tools, Shop and Garage Equipment	10,000	35,573	0	0	0	0
Laboratory Equipment	0	0	531,559	0	0	0
Information Systems Equipment (non-network)	-650,000	660,638	0	333,288	348,619	365,004
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 and supplies (including spares)	0	0	0	0	0	0
Subtrans						
Transferred subtransmission assets	0	0	0	0	0	0
Sub-total Regulated Distribution Services	570,361	1,563,632	1,119,334	1,318,291	1,338,112	759,198
Distribution Connection Services Assets						
Network						
Poles, Towers and Fixtures (Customer)	0	0	0	0	0	0
Overhead Conductors and Devices (Customer)	0	0	0	0	0	0
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 and supplies (including spares)	0	0	0	0	0	0
Sub-total Distribution Connection Assets	0	0	0	0	0	0
Regulated Retail Services Assets						
Meters, Instruments & Metering Transformers (Consumer Consumption Metering)	-13,960	1,010,929	1,103,810	1,077,875	1,170,041	1,227,156
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	-13,960	1,010,929	1,103,810	1,077,875	1,170,041	1,227,156
TOTAL CAPEX	556,401	2,574,561	2,223,144	2,396,166	2,508,153	1,986,354

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

		Forecast, nominal (regulatory year)	Forecast (peso, nominal) (Regulatory Year)			
Opex Category and Sub-category		2010	2011	2012	2013	2014
Distribution						
Operation	Operation supervision & engineering	1,365,027	1,422,493	1,481,401	1,544,143	1,611,750
	Load dispatching	0	0	0	0	0
	Substations	408,847	426,059	443,702	462,495	482,744
	Overhead conductors & devices	359,431	374,563	390,074	406,595	424,397
	Underground cables & devices	0	0	0	0	0
	Streetlighting and signal systems	0	0	0	0	0
	Metering (distribution network)	0	0	0	0	0
	Rents	0	0	0	0	0
	Information technology (distribution network)	0	0	0	0	0
	Miscellaneous	0	0	0	0	0
Maintenance	Maintenance supervision & engineering	1,687,301	1,758,335	1,831,150	1,908,705	1,992,274
	Substations	0	0	0	0	0
	Overhead lines	995,988	1,037,918	1,080,900	1,126,679	1,176,009
	Underground cables & devices	0	0	0	0	0
	Streetlighting and signal systems	0	0	0	0	0
	Line transformers	362,995	378,277	393,942	410,627	428,605
	Information technology (distribution network)	0	0	0	0	0
	Metering (distribution network)	0	0	0	0	0
	Miscellaneous	113,987	118,786	123,705	128,944	134,590
Admin & Gen	Admin & general salaries	1,707,446	1,785,325	1,865,028	1,950,147	2,041,185
	Office supplies & expenses	190,734	199,434	208,337	217,846	228,015
	Information technology (admin & general)	0	0	0	0	0
	Outside services employed	167,214	174,841	182,647	190,983	199,898
	Property insurance	0	0	0	0	0
	Injuries & damages	104,658	109,432	114,317	119,534	125,115
	Employee pension & benefits	361,966	378,476	395,372	413,417	432,716
	Rents	166,000	173,571	181,320	189,596	198,446
	Maintenance of office & general plant	288,025	301,162	314,607	328,965	344,322
	Officers allowance & benefits	1,095,318	1,145,277	1,196,407	1,251,010	1,309,410
	Travel	57,636	60,265	62,955	65,828	68,901
	Training	32,762	34,256	35,785	37,419	39,165
	Regulatory liaison & compliance	26,161	27,354	28,575	29,879	31,274
	Water and Electricity	667,490	697,936	729,094	762,369	799,305
	Other	99,637	104,182	108,833	113,800	119,113
WESM	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		10,258,621	10,707,940	11,168,153	11,658,980	12,187,235
Distribution Connection Services						
Operation	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	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 & Gen	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
Regulated Retail Services						
	Administration & management	256,508	273,035	291,970	312,441	334,557
	Consumer meter installations (planning, supply, install, maintain)	288,111	306,673	327,942	350,935	375,775
	Meter reading expenses	154,328	164,271	175,664	187,980	201,286
	Information technology (consumer related)	0	0	0	0	0
	Consumer records, billing and collection	905,585	963,931	1,030,782	1,103,053	1,181,131
	Bad debts	164,617	175,223	187,375	200,512	214,705
	Informational and instructional advertising	57,492	61,196	65,440	70,028	74,985
	Energy trading expenses	0	0	0	0	0
	Water and Electricity	0	0	0	0	0
	Miscellaneous consumer services expenses	34,913	37,163	39,740	42,526	45,536
Sub-total Regulated Retail Services		1,861,555	1,981,491	2,118,913	2,267,477	2,427,976
Total Operating & Maintenance Expenditure		12,120,175	12,689,431	13,287,066	13,926,457	14,615,211

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

		Forecast, nominal (Regulatory Year)	Forecast (peso, nominal) (Regulatory Year)				
Opex Category and Sub-category			2010	2011	2012	2013	2014
Levies							
	Regulatory reset expert fees	0	146,149	19,212	19,947	20,796	
		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 Levies	0	146,149	19,212	19,947	20,796	
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							
	Business operation permits	10,187	11,253	12,433	13,265	14,166	
	Community tax	26,996	30,382	33,192	35,413	37,820	
	Real property tax	190,099	214,107	233,771	256,751	274,195	
		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	
	Sub-total Other Taxes	227,283	255,742	279,397	305,429	326,181	
Total Other Taxes, Levies & Duties		227,283	401,891	298,609	325,376	346,976	