



**Regulatory Reset for
Davao Light and Power Co., Inc. (DLPC)**

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

DRAFT DETERMINATION

ERC Case No. 2009-041 RC

November 9, 2009

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

Regulatory Reset for Davao Light and Power Co., Inc.
July 2010 to June 2014
(Second Regulatory Period)

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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 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 Company (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 Draft Determination on the price control arrangements that will apply to the Regulated Entities for the Second Regulatory Period. This document presents the ERC's Draft Determination for DLPC, based on the outcomes of its analysis to date.

Submissions are sought on this Draft Determination. Details of the required format and time of submissions, as well as the schedule for legal processes on the Draft Determination, are provided in Section 1.4 of the document.

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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 Draft Determinations for the Regulated Entities entering PBR at the Third Entry Point. This document relates specifically to the Draft Determination for Davao Light and Power Co., Inc. (DLPC). Similar documents are being published on the same date to describe the Draft Determinations for the other Regulated Entities in the Third Entry Group, these being:

- a) Cabanatuan Electric Corporation (CELCOR);
- b) Ibaan Electric and Engineering Corporation (IEEC);
- c) La Union Electric Company (LUECO);
- d) Tarlac Electric Incorporated (TEI); and
- e) Visayan Electric Company, Inc (VECO).

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

1.1.3 Under Section 7.1.2 of the RDWR, the ERC is required to publish a Regulatory Reset Issues Paper to provide its initial views on the issues to be discussed during the pending Regulatory Reset Process and to specify the information required to be delivered by each Regulated Entity for the purposes of the Regulatory Reset Process and the time by which such information should be delivered. The Regulatory Reset Issues Paper (Issues Paper) was published on September 5, 2008. Following public consultation on the Issues Paper, the ERC’s final view on the Regulatory Reset Process was described in the Position Paper on the Regulatory Reset for the July 2010 to June 2014 Regulatory Period for 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 Determination 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 consultation and evidentiary hearings.
- f) March 10, 2010 : ERC to issue the Final Determination on the Regulated Entities' applications and the price settings for the Second Regulatory Period.

1.2 Overview of the Reset Process

1.2.1 The Reset Process for the Third Entry Group's Second Regulatory Period (January 1, 2009 until June 30, 2010) commenced with the ERC's issuance of the Issues Paper on September 5, 2008 and the subsequent publication of the Position Paper on December 8, 2008.

1.2.2 In compliance with the Position Paper, the Regulated Entities filed their applications for approval of the allowed revenue and performance incentive schemes (Revenue Applications) for the Second Regulatory Period on June 15, 2009. Following the receipt of these applications, the ERC conducted the following 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 present counter-evidence. However, no such evidence was filed and the hearings were therefore not required.

- 1.2.3 During these hearings, the ERC informed all interested parties of the procedures and timelines pertaining to the Regulatory Reset Process. The Regulated Entities had opportunity to present witnesses to support their revenue and performance incentive scheme applications and to answer questions in this regard from parties of record and the ERC.
- 1.2.4 As noted in Paragraph 1.2.2, additional provision was made for clarificatory meetings with each of the Regulated Entities. The purpose of these meetings was to allow the ERC's staff and Regulatory Reset Experts to present detailed questions and discuss details of their applications with technical and administrative staff of the Regulated Entities in a less formal environment (than evidentiary hearings). All parties of record were invited to observe these meetings. All information gathered during and subsequent to these meetings (as a result of requests for additional information made during the meetings) that were considered by the Reset Experts and the ERC in preparing this Draft 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 DLPC and after considering the recommendations of the ERC's Regulatory Reset Experts, the ERC has concluded a preliminary position on the price caps and price path that should apply to DLPC for the Second Regulatory Period. This position is described in this Draft Determination.

1.3 Purpose of the Draft Determination

- 1.3.1 The Draft Determination embodies the ERC's initial position on the price control arrangements that will apply to DLPC for the Second Regulatory Period. It describes the ERC's initial evaluation of DLPC's revenue and performance incentive scheme application, as well as the evidence presented in support thereof during the clarificatory meetings and evidentiary hearings.
- 1.3.2 The Draft Determination is not a final resolution of DLPC's applications. It is designed to present the ERC's preliminary view on the price arrangements and to offer interested parties the opportunity to comment on this view before a final determination is made. Moreover, the Draft Determination does not have any impact or bearing on DLPC's current distribution wheeling charges or will not be used to set future distribution wheeling charges.
- 1.3.3 Only after full consideration and analysis of submissions and discussions at the public hearings on the Draft Determination, and after termination of the presentation of evidence by all parties, will the ERC prepare its Final Determination on the price control arrangements that will apply to DLPC for the Second Regulatory Period.

1.4 Submissions on the Draft Determination

- 1.4.1 Submissions are invited on this Draft Determination. Any person other than the applicant and parties of record who wants to participate in the public consultation may file comments in writing to the ERC which contains among others, the name and address of such person and concise statements of the comments and the ground relied upon.

- 1.4.2 For the public consultations, the applicant and parties of record may file in writing, any comments, questions, suggested modifications to data sources, and any other issues pertaining to this Draft Determination, addressed to the Energy Regulatory Commission, 16th Floor, Pacific Center Building, San Miguel Avenue, Ortigas Center, Pasig City and through electronic mail sent to tariffs@erc.gov.ph on or before January 8, 2010. Any other interested person shall file his/her comments within the same period previously mentioned.
- 1.4.3 Parties, who do not wish to participate in the public consultations, are also welcome to make submissions. Such submissions shall be submitted in the same format as that described above and at the same date.
- 1.4.4 The ERC hereby sets this matter for initial public consultation at the following dates and times:
- January 15, 2010, 9:00 AM (VECO) - Cebu City
 - January 19, 2010, 9:00 AM (CELCOR) - Cabanatuan City
 - January 26, 2010, 9:00 AM (TEI) - Tarlac City
 - January 27, 2010, 9:00 AM (LUECO) - San Fernando City
 - January 29, 2010, 9:00 AM (DLPC) - Davao City
 - February 2, 2010, 9:00 AM (IEEC) - Ibaan, Batangas

Although this consultation is open to the public, only parties of record who have filed written comments will be allowed to participate in the discussions. Should there be time towards the end of the public consultation for verbal comments from other persons who have interest in the proceedings; this shall be allowed by the Commissioner in charge of public consultation. Parties of record are not required to have an attorney present but are strongly encouraged to have technical experts present with knowledge of accounting, finance, economics and pricing issues.

- 1.4.5 To ensure that the public consultations progress in an efficient and timely manner, the ERC intends to provide in advance to parties of record a summary of the issues raised and comments made in the submissions. Where such issues can be addressed or answered directly, this will be noted in the summary. It should be noted that the public consultation is not intended to be a forum for merely repeating issues raised or comments made in the written submissions – all interested parties have access to read the submissions. The public consultation is intended to allow parties of record the opportunity to highlight the key aspects of their submissions and to afford the ERC and parties of record the opportunity to discuss submissions.

1.5 Confidentiality of Information

In terms of Clause 7.1.4 of the RDWR, where a written submission identifies some confidential information, the ERC may only publish or otherwise disclose that information if the ERC has given written notification to this effect to the person or party who has made the submission and the party has not objected in writing to such publication or disclosure within two weeks of receiving written notification. After reviewing the objection, the ERC may decide to still publish or disclose the information, giving one week's advance notice to the affected party.

It should be noted that, given the timeframe for the consultation process, going through this process may result in a submission not being published in time for the public consultation.

2. FORECASTS OF ECONOMIC PARAMETERS

2.1 Purpose of the Economic Forecasts

- 2.1.1 The economic forecasts are important inputs into the determination of the annual revenue requirement and the resulting maximum average price-caps (MAP) for DLPC'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 DLPC 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.

2.2 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).
- 2.2.4 In its application, DLPC 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 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.

³ These indices were communicated to DLPC 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.

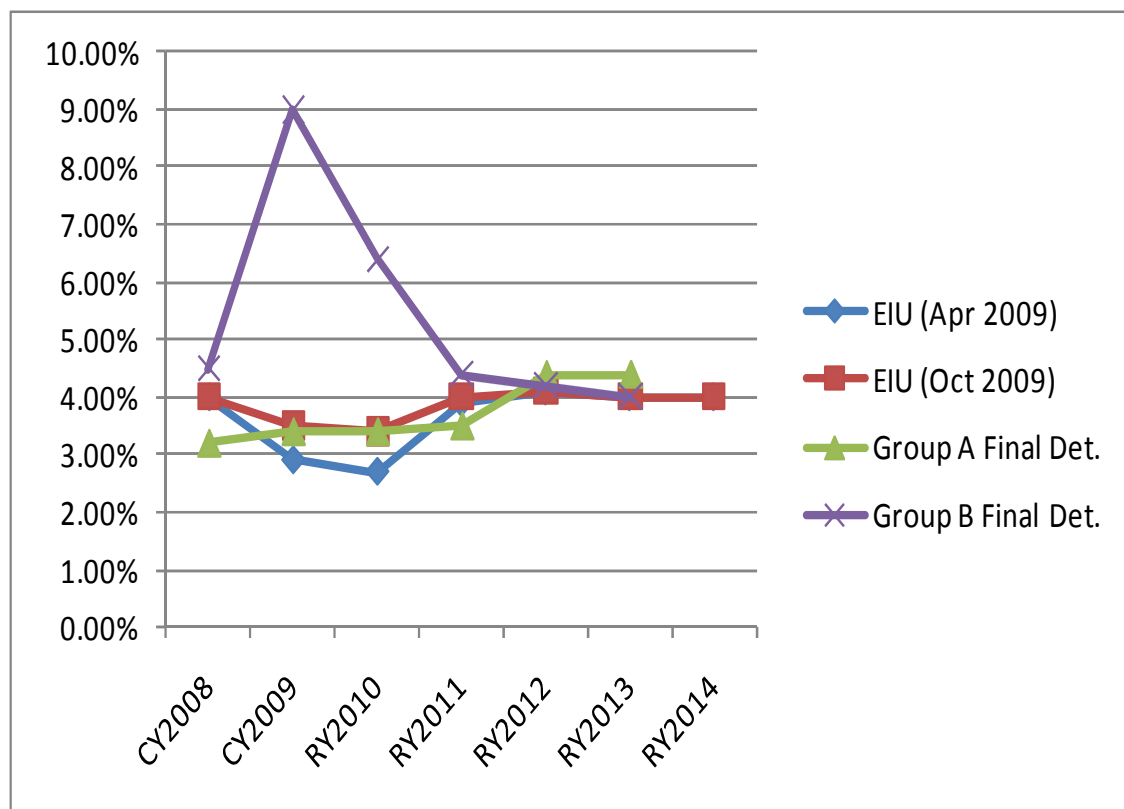
2.2.6 The forecasts used by the Third Entry Group as provided by the ERC are presented in Table 2.1 and Figure 2.1 below. These are also compared with the inflation forecasts of the ERC in its final determination on the price-control arrangements for the First and Second Entry Groups and updated figures from EIU. Since the regulatory years run from July 1 to June 30, the annual CPI figures have been converted to these periods.⁴

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%
IIEC	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%
EIU (Oct 2009)	4.0%	3.5%	3.4%	4.0%	4.1%	4.0%	4.0%
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%	

Source : Economist Intelligence Unit (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

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



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.

- 2.2.7 The October 2009 EIU figures used in Table 2.1 are more recent than those obtained from other sources and therefore better reflects the most recent economic movements in the Philippines.
- 2.2.8 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-factor⁵ – 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 when calculating 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.
- 2.2.9 In addition, the actual annual price caps will be based on the actual CPI for each regulatory year and discrepancies between the forecast and actual figures will therefore not impact on future price settings.

2.3 Consumer Price Index – USA

- 2.3.1 Capital investment in distribution networks generally involves substantial overseas purchases. The RDWR recognizes this and uses the United States dollar as proxy for all foreign purchases.⁶ 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 MAP⁷ also takes into account movements in the US CPI – if these exceed a certain threshold limit.
- 2.3.4 In its application, DLPC proposed forecasts for the USA CPI that corresponds to those published by the Economist Intelligence Unit (EIU) in April 2009⁸, 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 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

⁵ Section 4.15.3 of the RDWR

⁶ 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.

⁷ Sections 4.2.1 and 3.3 of the RDWR

⁸ Supra note 3

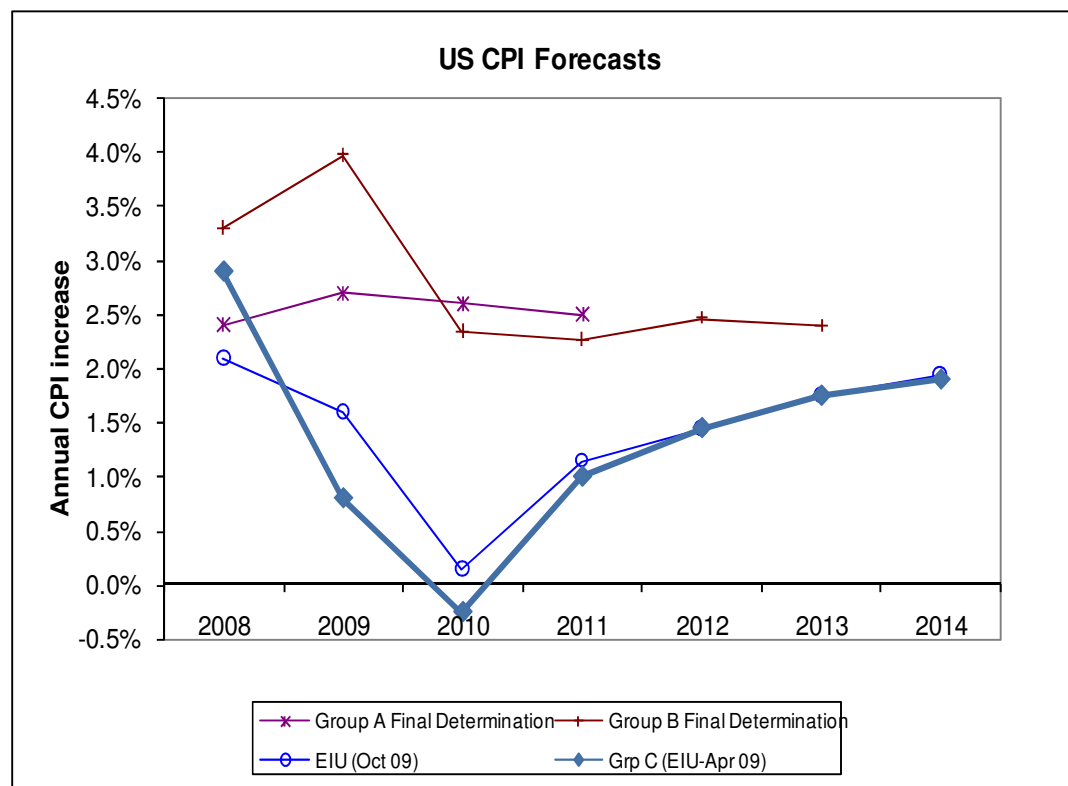
Development Authority (NEDA), but forecasts were not available from them. Since the regulatory years run from July 1 to June 30, the annual CPI figures have been converted to these periods.⁹ In addition, all inflation forecasts were converted from a common regulatory year basis.

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

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

Source : Economist Intelligence Unit (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

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



⁹ This was done similarly to the conversion of the Philippines CPI forecasts. (See note 4).

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, DLPC used the Peso/US\$ rate 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.
- 2.4.4 This approach was also adopted by the other five (5) Regulated Entities in the Third Entry Group.
- 2.4.5 The rate of exchange forecasts proposed by the six (6) Regulated Entities 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.

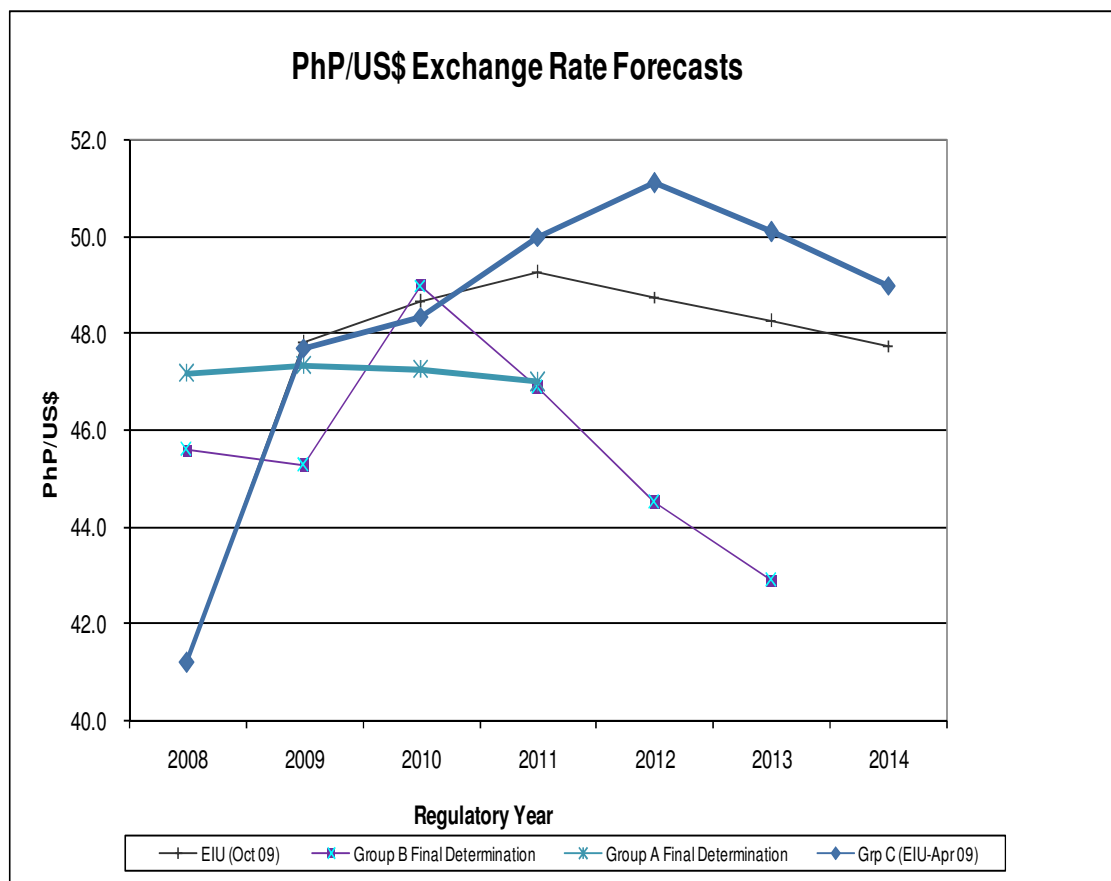
Table 2.3 : Various PhP/US\$ Rate of Exchange Forecasts (Regulatory Years)

	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
IIEC	41.2	47.7	48.4	50.0	51.1	50.1	49.0
LUECO	41.2	47.7	48.4	50.0	51.1	50.1	49.0
TEI	41.2	47.7	48.4	50.0	51.1	50.1	49.0
VECO	41.2	47.7	48.4	50.0	51.1	50.1	49.0
EIU (Oct 09)		47.8	48.7	49.3	48.8	48.3	47.8
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	

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

¹⁰ Supra note 3

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



2.5 ERC Draft 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 October 2009 values.

2.5.2 The ERC will further pursue obtaining long-term forecasts of the required financial indices with NEDA. However, in the absence of other reliable forecast information, the ERC has no basis on which to accept different forecast figures to that published by the EIU.

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 if the values of these indices should 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 Draft Determination are indicated.

Table 2.4 : Economic Indices Forecasts Accepted by the ERC

	2009	2010	2011	2012	2013	2014
Philippine CPI (% increase per regulatory year)	3.0%	3.4%	4.0%	4.1%	4.0%	4.0%
US CPI (% increase per regulatory year)	1.6%	0.1%	1.1%	1.4%	1.7%	1.9%
PhP/US\$ exchange rate (average for regulatory year)	47.8	48.7	49.3	48.8	48.3	47.8

(Source : EIU, October 2009 – converted to regulatory years)

2.5.5 These figures differ from those used in the ERC’s final determinations on the price-control arrangements for the First and Second Entry 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.¹¹
- 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 DLPC 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. DLPC’s own consumption has been included in the figures.

Table 3.1 : DLPC MWh Energy Sales Figures (Forecast in the Revenue Application)

	2010	2011	2012	2013	2014
Energy Consumption (MWh)	1,453,981	1,519,909	1,573,017	1,626,125	1,679,232

- 3.2.2 DLPC bases its consumption forecasts on a double exponential smoothing analysis, historical patterns, and annual addition as basis for its energy forecasts. The ERC’s expenditure review analysis¹² finds that the energy forecasts over the Second Regulatory Period is directly related to the growth in customer numbers by an average of 3.3% over the same period.

¹¹ 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.

¹² ERC Operating and Maintenance Expenditure (OPEX) review report titled “*REVIEW OF OPERATING AND MAINTENANCE EXPENDITURE FORECAST EXPENDITURE: SECOND REGULATORY PERIOD – Davao Light and Power Co., Inc.*”, dated November 9, 2009.

Table 3.2 : Broken down DLPC MWh Energy Sales Figures

Category	Calendar Years					Regulatory Years				
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Residential 1.1	425,725	429,049	442,083	455,450	465,543	483,995	503,456	518,646	533,834	549,020
Secondary Retail 2.1	163,350	166,666	174,611	181,901	187,936	187,421	196,197	203,321	210,446	217,570
Secondary Retail 3.1	298,129	298,610	314,906	322,968	336,407	345,349	361,631	374,869	388,108	401,347
Primary Retail 4.1	334,201	351,939	373,248	382,845	396,445	408,991	429,745	446,895	464,047	481,201
Flat Lighting 5.1	38,411	27,354	27,274	27,787,278	28,598	28,226	28,880	29,286	29,690	30,094
TOTAL	1,259,815	1,273,618	1,332,121	1,370,951	1,414,928	1,453,981	1,519,909	1,573,017	1,626,125	1,679,232
Annual Growth		1.10%	4.59%	2.91%	3.21%	2.80%	4.53%	3.49%	3.38%	3.27%

3.2.3 The average annual compound growth in consumption between 2005 and 2009 was 2.95%, but this is heavily influenced by the considerable historical growth figure for 2007 while the forecast compound growth from 2010 to 2014 is 3.49% 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 DLPC's consumer number figures, which is presented in Table 3.3. The forecast average growth rate is 3.15% from RY2010 to 2014, which indicates a consistent growth rate over the period.

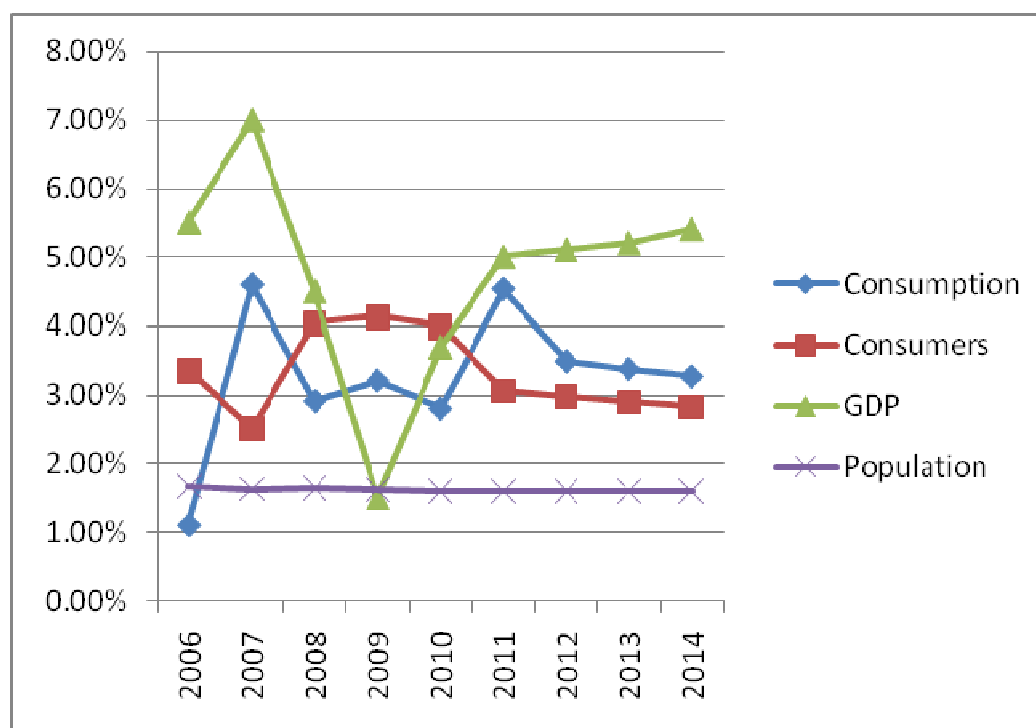
Table 3.3 : DLPC Consumer Numbers (Forecast and Historical)

	HISTORICAL FIGURES (CALENDAR YEARS)				Forecast	FORECAST (REGULATORY YEARS)				
	2005	2006	2007	2008		2009	2010	2011	2012	2013
Total	228,731	236,418	242,359	252,150	262,589	273,068	281,451	289,847	298,258	306,686
Residential 1.1	197,159	204,632	210,450	218,937	227,900	237,052	244,091	251,129	258,168	265,207
Secondary Retail 2.1	28,753	28,900	28,956	30,139	31,403	32,580	33,757	34,935	36,112	37,289
Secondary Retail 3.1	2,627	2,690	2,765	2,883	3,086	3,231	3,393	3,567	3,757	3,962
Primary Retail 4.1	81	91	97	104	110	112	114	117	119	123
Flat Lighting 5.1	111	105	91	87	90	93	96	99	102	105
Growth		3.36%	2.51%	4.04%	4.14%	3.99%	3.07%	2.98%	2.90%	2.83%

3.2.5 In Figure 3.1 below, the forecast growth in DLPC's energy consumption (excluding the proposed additional directly connected customers) is compared with the estimated consumer numbers, as well as the predicted population growth in the region and the predicted growth in the national gross domestic product. It is recognized that consumption forecasts for a Distribution Utility are not directly comparable with 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 DLPC is likely to face over the Second Regulatory Period.¹³

¹³ 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 Davao del Sur – National Statistics Office, January 2007
GDP growth (Philippines) for 2005 to 2008 – National Statistical Coordination Board (2005 and 2006)
GDP growth forecasts (Philippines) - EIU (2009)

3.3 ERC Draft Decision on Consumption Forecast

3.3.1 The ERC is generally comfortable with DLPC’s energy consumption forecasts for the Second Regulatory Period and has therefore used this methodology as the basis for its Draft Determination. The figures accepted for the Draft Determination are indicated in Table 3.4.

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

Category	Regulatory Years				
	2010	2011	2012	2013	2014
Residential 1.1	483,995	503,456	518,646	533,834	549,020
Secondary Retail 2.1	187,421	196,197	203,321	210,446	217,570
Secondary Retail 3.1	345,349	361,631	374,869	388,108	401,347
Primary Retail 4.1	408,991	429,745	446,895	464,047	481,201
Flat Lighting 5.1	28,226	28,880	29,286	29,690	30,094
TOTAL	1,453,981	1,519,909	1,573,017	1,626,125	1,679,232
Growth		4.53%	3.49%	3.38%	3.27%

3.4 Demand Forecasts

The DLPC 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 : DLPC Maximum Electricity Demand (KW) (Forecast and Historical)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
TOTAL	230,140	237,801	245,136	248,105	264,310	271,605	283,920	293,038	303,762	313,682
Growth		3.33%	3.08%	1.21%	6.53%	2.76%	4.53%	3.21%	3.66%	3.27%

3.5 ERC Draft 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. GB Associates recommended in their Expenditure Review Report¹⁴ that DLPC's demand forecasts should be amended to ensure a better match between the forecast energy and demand growth. This was high compared to other utility forecasts, indicating that additional scrutiny was required as part of this review. The GB Associates analysis indicates that while the actual average annual growth rate over the three year period CY 2005-08 was under 2.6% the forecast growth rate over the period CY 2008-RY 2014 is 4%. DLPC has not provided a satisfactory explanation for the use of higher growth rates than experienced in the recent past. This was contrasted with the growth rates in the VECO application which showed an actual growth rate of 4.5% over the four year period CY 2004-08 and a forecast growth rate of 2.8%.

3.5.2 In the revised forecast figures given in Table 3.6, the demand and consumption growth are already closely matched. The ERC therefore accepts these revised demand figures as a reasonable basis for the Second Regulatory Period.

3.5.3 The ERC's draft decision on the forecast maximum demand for DLPC is illustrated in Table 3.6.

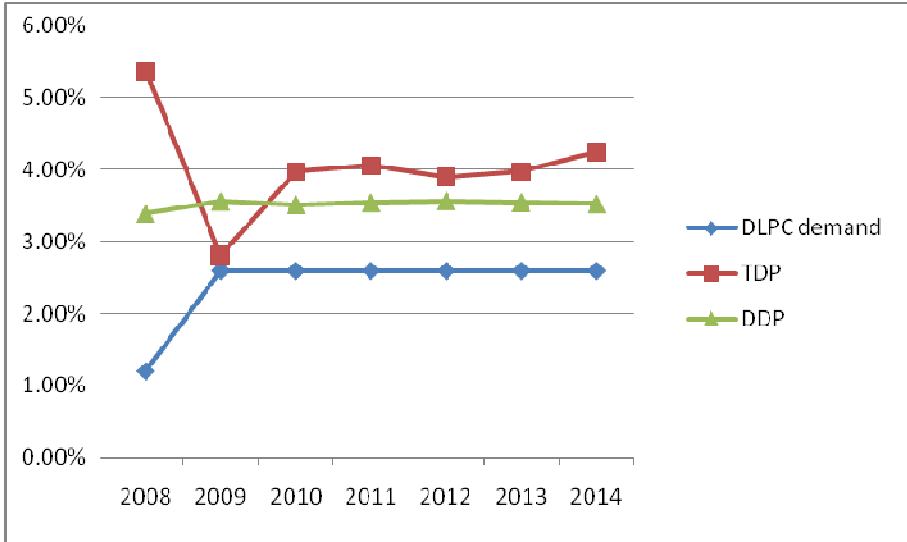
Table 3.6 : ERC Draft Determination on Forecast Maximum Demand

Forecast	Calendar Years		Regulatory Years				
	2008	2009	2010	2011	2012	2013	2014
Maximum demand (MW)	248.1	254.6	261.2	268.0	274.9	282.1	289.4
Growth in demand (%)	1.2%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%

3.5.4 In Figure 3.2, a comparison is provided between the DLPC demand growth forecasts adopted by the ERC, and the growth forecast by the DOE for Mindanao and by TransCo for Mindanao South Eastern. It is clear that the forecasts for DLPC, as adapted by the ERC, is generally more conservative than the NGCP and DOE published reports.

¹⁴ GB Associates' Capital Expenditure (CAPEX) Review report titled "REVIEW OF CAPITAL EXPENDITURE FORECAST: SECOND REGULATORY PERIOD – Davao Light and Power Co., Inc. (DLPC), dated November 3, 2009

Figure 3.2 Comparison of Demand Growth Figures



Sources : TransCo demand forecast for Mindanao South Eastern - Transmission Development Plan, 2008
Department of Energy demand forecast for Mindanao - Power Development Plan, 2007-2017

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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 DLPC 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 2009¹⁵. Since DLPC 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 DLPC'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 DLPC are presented in an accompanying report (the Capital Expenditure Review Report).¹⁶ 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.

¹⁵ 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.

¹⁶ 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.¹⁷ 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 DLPC

4.3.1 DLPC'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 - DLPC Application for Capital Expenditure

	Actual (PhP million, real 2009)				Budget	Forecast (PhP million, real 2009)				
	CY 2005	CY 2006	CY 2007	CY 2008	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Distribution Plant	398.5	267.6	598.4	392.4	334.6	354.0	359.8	381.4	376.7	628.8
Non-network Plant	77.9	133.4	89.3	97.1	91.6	99.3	119.6	68.3	142.4	63.8
Connection plant	22.3	22.9	26.8	21.2	13.7	14.0	14.4	14.9	15.4	15.9
Retail plant	68.8	82.6	95.7	107.6	72.1	138.1	85.5	87.8	90.1	92.5
Materials & supplies	0.0	0.0	0.0	157.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtransmission	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0
TOTAL	567.5	506.4	810.2	775.2	512.0	635.4	579.4	552.5	624.6	801.0

Note: Using the ERC revised Economic Indices

4.3.2 The breakdown in Table 4.1 is based on details that DLPC provided as part of its revenue application.

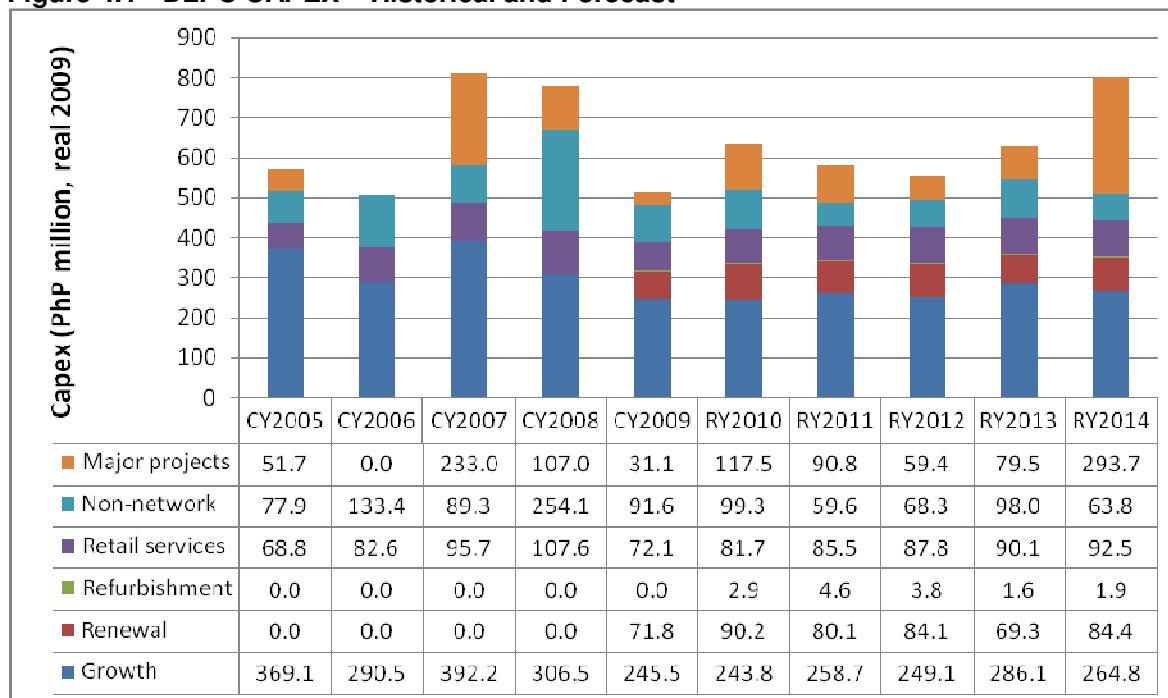
4.3.3 In Figure 4.1:

- (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.

¹⁷ Plus an allowance for working capital, as discussed in Section 7.6

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

Figure 4.1 - DLPC CAPEX – Historical and Forecast



4.3.5 Examination of Figure 4.1 indicates that DLPC’s forecast total capital expenditure is slightly lower than its adjusted historic expenditure, with the exception of RY2014 due primarily to the cost of the PhP 247.5 million Magtuod switching station.

4.3.6 As a result of large projects not being separately indicated in the historical figures, the forecast residual growth capital expenditure appears slightly lower than expected when compared with historic figures.

4.4 Analysis of DLPC’s capital expenditure program – General

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

- It can also be seen that, in real terms, budgeted and forecast CAPEX is particularly high in RY 2014 due primarily to the cost of the PhP 247.5 million Magtuod switching station, due for commissioning in June 2014
- DLPC’s historic and forecast expenditure is broken down into the ERC major capital expenditure categories. While DLPC has provided its historic major project expenditure, it was unable to provide a breakdown of its residual expenditure over the historic reporting years CY 2005-08 and historic residual expenditure is not shown.

- DLPC's forecast CAPEX is largely driven by the residual growth expenditure and by the major project CAPEX on RY 2014.
- DLPC was able to report its annual historic residual CAPEX but was not able to segregate it into the ERC's three (3) standard expenditure categories. Its forecast residual CAPEX is relatively constant throughout the forecast period and at a similar level to its historical spend, when measured in real peso. It is dominated by growth related expenditure but its renewal expenditure is still significant.

4.4.3 The Bajada B substation rehabilitation project is classified as network replacement and the new administration building and the customer care and billing systems are classified as non network replacement. The Sta Ana project is classified as network growth.

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

4.5.1 DLPC submitted details of eleven (11) significant projects in their Revenue Application. A summary of the projects is as follows:

- Acquisition of Digos Substation Subtransmission Line;
- Bajada B Substation Rehabilitation;
- Customer Care & Billing Project;
- New Administration Building;
- Upgrade of Sta. Ana Substation;
- New Maa Substation;
- SCADA – EMS software;
- Additional Lot at MAA – Midland;
- New Mintal Substation;
- Magtuod 138 kV Switching Station; and
- New Buhangin Substation.

4.5.2 Each of the major projects was separately reviewed by GB Associates, in order to provide an assessment whether the project is required, efficient and the proposed project timing is appropriate. Independent cost estimates were also prepared to verify the reasonableness of the DLPC 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.

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

- No provision should be made in the CAPEX forecast for the purchase of the Digos line from NGCP as ERC still has to rule on DASURECO's opposition to the sale proceeding. Should this transaction proceed before the end of the second regulatory period, then the cost should be recovered through a retrospective adjustment to DLPC's approved CAPEX for the third regulatory period. The provision for the new administration building in the CAPEX forecast should be reduced from

PhP 60 million to PhP 25.00 million because a significant portion of the existing building does not require replacement. The recommended CAPEX should be sufficient for DLPC to replace the wooden portions of the existing building with a new concrete structure with a size of up to 1000 square meters. DLPC has included a forecast CAPEX of PhP 31.05 million to upgrade the Sta Ana substation from 12 MVA to 33 MVA. GB Associates recommends that the funding for the project be allowed but that the project be deferred from RY 2011 to RY 2013.

- DLPC has included a forecast CAPEX of PhP60.06 million to install a new 33 MVA substation at Maa. GB Associates recommends that the forecast CAPEX for this project be disallowed as its analysis indicates that the utilization of existing power transformer capacity across the DLPC network is low.
- Likewise, DLPC's forecast CAPEX of PhP 35.71 million to install a new 12 MVA substation at Mintal utilising the power transformer to be removed from Sta Ana should be disallowed.
- Similarly, DLPC's forecast CAPEX of PhP 46.60 million to install a new 20 MVA substation at Buhangin using the transformer removed from Panacan substation should be disallowed.
- The project to install a new 138 KV substation at Magtud wherein DLPC has included a forecast CAPEX of PhP 247.50 million should not be approved for completion before the end of the second regulatory period. GB Associates also thinks that DLPC should not be submitting projects that impact the design or operation of the transmission grid without the explicit written support of NGCP.

4.6 Analysis of DLPC's Residual Capital Expenditure Program

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

- DLPC is proposing to increase the capacity of the Pampanga substation from 20 MVA to 33 MVA. The forecast cost is PhP 27.09 million and commissioning is planned for December 2012. Given the very low transformer utilization on the DLPC network, GB Associates considers that this upgrade will not be required before the end of the second regulatory period. It also considers that the forecast growth in peak demand on which the substation requirement was based, is high. A lower rate of growth will also defer the requirement for growth augmentations. It therefore recommends that the expenditure for the upgrade of Pampanga substation should be removed from the CAPEX forecast.
- DLPC's residual growth CAPEX forecast includes an average annual provision of PhP21.30 million over the forecast period RY 2010-14 for additional substation equipment, excluding the cost of the Pampanga substation upgrade. GB Associates recommends that residual growth CAPEX, after removing the provision for the Pampanga substation upgrade, be reduced by 80% of the amount forecast in the revenue application.
- DLPC has included expenditure of PhP5 million for laboratory equipment in RY 2014 but no information has been provided on what the expenditure is for. Given the amount of expenditure involved, GBA Associates is unable to recommend that it be allowed. Such expenditure in RY 2014 could easily be deferred until the third regulatory period.

- DLPC has included a provision of PhP19.5 million for a new customer services centre in the SM mall. The cost estimate is based on a fit out cost of PhP30,000 per m². Asian Appraisal advised that the expected range of costs for such a fit out was PhP 8,000 to PhP 10,000 per m². GB Associates therefore recommends that DLPC's forecast be adjusted downwards to reflect a fit out cost of PhP 9,000 per m².
- There is a further category of residual CAPEX involving expenditure driven by incremental network growth and by growth in customer numbers. DLPC's forecast CAPEX on these line items is substantial. DLPC expects demand to grow from 248.1 MW to 313.7 MW, an increase of 65.6 MW. However the GB Associates analysis indicates that demand is expected to grow by only 41.3 MW over the same period which is approximately 37% less than that forecasted by DLPC.

4.6.2 On the basis of the above, GB Associates recommends that the residual capital expenditure forecast by DLPC for the residual capital expenditure in years RY 2010-14 be reduced by PhP615 Million.

4.7 Expenditure program proposed by GB Associates

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

Table 4.2: Adjustments in the DLPC Forecast Capital Expenditure for the Second Regulatory Period – GB Associates Recommendation (PhP Million, real 2009)

	Jan to Jun 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Deletion of Digos line acquisition	-	(30.00)				
Adjustment to cost of administration building			(35.00)			
Deferral of Sta. Ana substation upgrade			(31.05)		31.05	
Deletion of new Maa substation				(60.06)		
Deletion of new Mintal substation					(35.71)	
Deletion of Magtuod switching station						(247.50)
Deletion of new Buhangin substation						(46.60)
Deletion of Pampanga substation upgrade					(27.09)	
Adjustments to expenditure on substation equipment		(18.58)	(18.33)	(8.03)	(22.14)	(18.12)
Adjustments to expenditure on laboratory equipment						(5.00)
Adjustments to expenditure on SM mall fit out		(13.65)				
Adjustments to expenditure on other regulated distribution services		(72.45)	(84.44)	(91.94)	(88.38)	(92.52)
Adjustments to expenditure on other regulated connection services		(3.88)	(4.47)	(5.17)	(5.60)	(5.98)
Adjustments to expenditure on other regulated retail services		-	(3.61)	(6.17)	(8.40)	(10.72)
Adjustments to expenditure on substation equipment		(8.89)	(10.46)	(20.75)	0.35	(24.71)
Adjustments to expenditure on power operated equipment		(5.76)	1.64	(2.36)	(7.13)	0.34
Adjustments for deletion of works and asset management system.					(35.24)	
Total recommended adjustments		-153.21	-185.72	-194.48	-198.29	-450.81

4.8 ERC Draft Determination on the Capital Expenditure Program

- 4.8.1 The ERC accepts the recommendations made by GB Associates based on its review and analysis of DLPC’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.
- 4.8.2 The ERC’s draft 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.

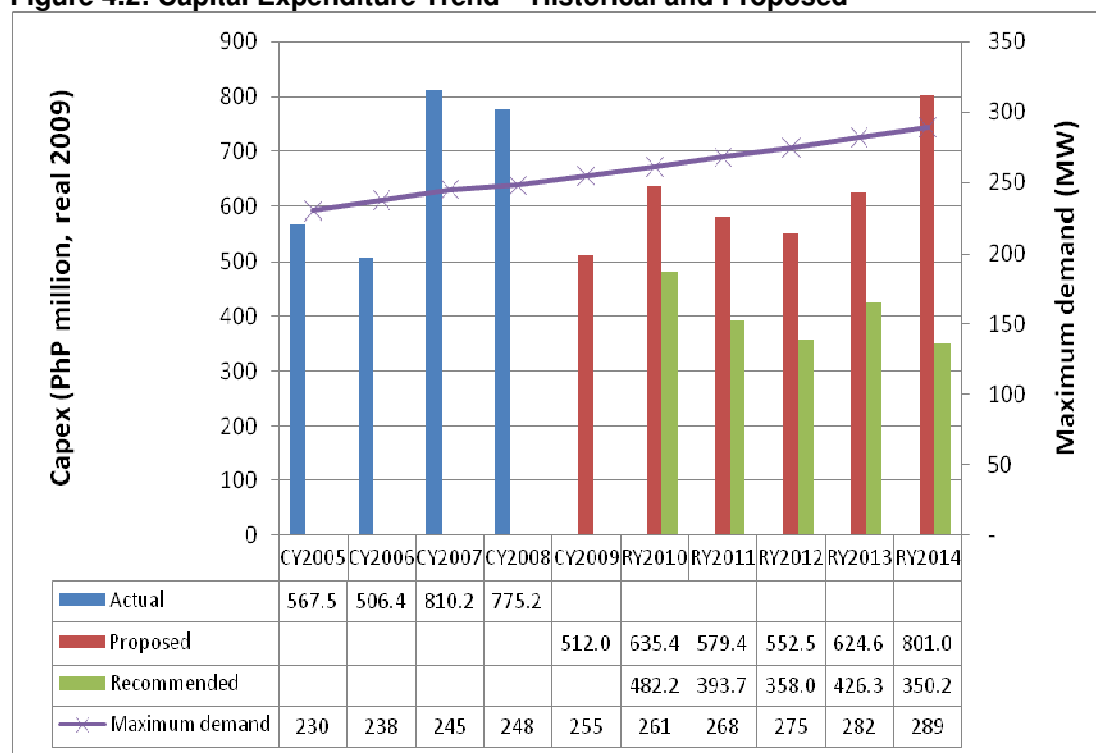
Table 4.3 : ERC Draft Determination on DLPC’s Capital Expenditure Program (PhP thousand)

	RY2010	RY2011	RY2012	RY2013	RY2014	TOTAL
Nominal values	489,387	414,672	393,358	487,164	416,145	1,711,339
Real values (2009)	482,208	393,631	358,004	426,325	350,169	1,528,129
Nominal values, including CWIP factor	499,930	424,515	401,362	497,230	423,865	1,746,972

Note: The total is excluding Regulatory Year 2010.

- 4.8.3 In Figure 4.2, the ERC’s allowed capital expenditure is compared with DLPC’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.

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 DLPC 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 2009¹⁸. Since DLPC 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 DLPC'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 (ROS) 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 DLPC are included in the Expenditure Review Report.¹⁹ 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.

¹⁸ 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.

¹⁹ ERC Operating and Maintenance Expenditure (OPEX) Review report titled “*REVIEW OF OPERATING AND MAINTENANCE EXPENDITURE FORECAST: SECOND REGULATORY PERIOD – Davao Light and Power Co., Inc.*”, dated November 9, 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 DLPC

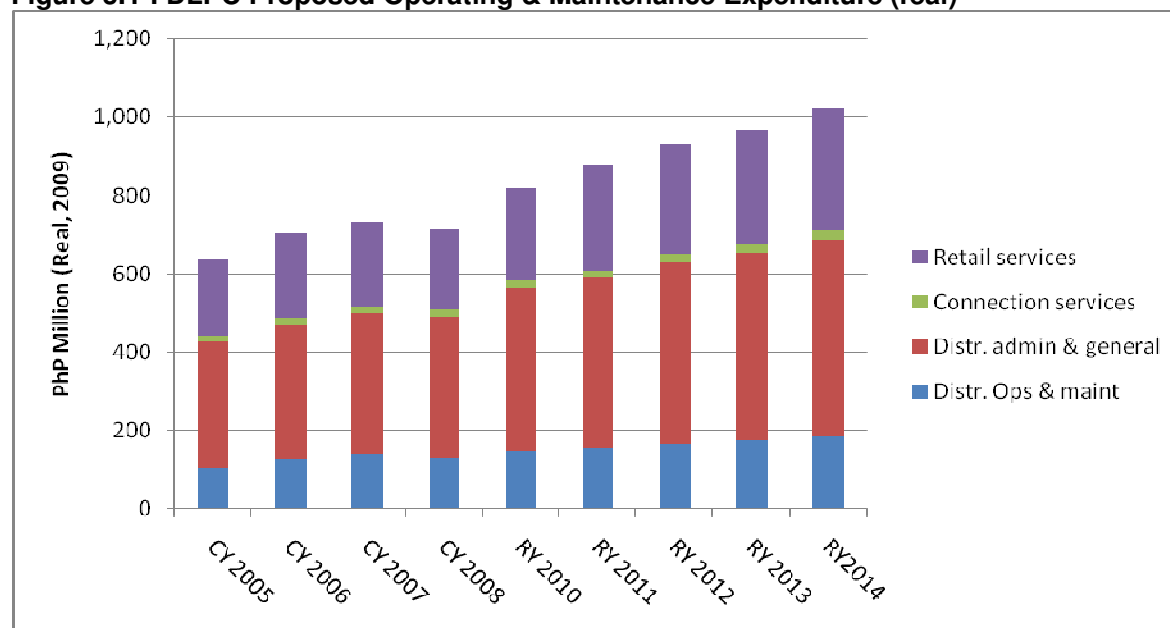
5.3.1 DLPC’s historical operating and maintenance expenditure and the forecast expenditure as submitted in its Revenue Application are shown in Table 5.1. The expenditure figures are in nominal values for the year indicated. It should be noted that the figures up to 2009 are for calendar years, while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

Table 5.1 : DLPC Application for Operating and Maintenance Expenditure

OPEX Category	Actual (PhP million, real 2009)				Forecast (PhP million, real 2009)				
	CY 2005	CY 2006	CY 2007	CY 2008	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Distr. Ops & maint	103.7	126.7	138.4	130.5	146.2	155.7	165.4	176.5	185.8
Distr. admin & general	321.8	342.5	360.1	359.2	418.4	433.2	464.7	475.2	501.7
Connection services	16.5	17.0	16.9	16.6	18.5	19.3	20.6	22.0	23.3
Retail services	195.7	219.6	217.1	206.7	236.2	267.4	280.4	294.5	310.1
Total OPEX	637.8	705.6	732.5	713.0	819.2	875.6	931.1	968.2	1,020.9

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

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



5.3.3 DLPC is forecasting considerable increases in its operating and maintenance expenditure over the Second Regulatory Period, mainly resulting from increased administrative and general expenses.

5.4 Analysis of operating and maintenance expenditure - methodology

5.4.1 ERC's review of DLPC's operating and maintenance expenditure forecasts is discussed in detail in the Expenditure Review Report. The ERC assessed DLPC'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 DLPC'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
- DLPC'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 (IEEC was omitted as it was considered an outlier). This also includes the three (3) DUs in the second entry point given sufficient information to include 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.

5.6 Analysis of the OPEX Line items

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

Administrative and General Expenditures - Management Contract

DLPC has a management contract in place with Aboitiz Power Corporation (APC) for the provision of management expertise and services. In return, it pays APC for management fees equal to 2% of its gross revenue. The key officers under the management contract consists of seven (7) directors and eleven (11) executives who do not receive any compensation in terms of salary and related fees from DLPC but are covered by the management fee. The management fee for the year 2008 amounted to PhP136 million, which represents 19% of its total OPEX. Services provided by APC that are charged to the management fee and not directly to DLPC includes the following:

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

A comprehensive description of these services is provided in the revenue application but no attempt was made to quantify the value of each of these services. In response to a clarificatory question asking DLPC to provide a breakdown of how this management fee is paid, DLPC stated that the cost was a certain percent charge to revenue per contract and they further explained as follows:

In the absence of a management contract, DLPC will have to put in place seven (7) directors, eleven (11) executives and fifty-six (56) staff to perform the functions of the APC support personnel. Based on the theoretical cost, the hiring of personnel will entail additional OPEX cost amounting to PhP213 million.

ERC assessed what it considered to be a reasonable complement of additional staff required if the services supplied under the management contract were supplied in house and determined the cost for these additional positions. Based on this assessment, ERC considers the management fee to be reasonable.

Administrative and General Expenditures – Office Supplies and Expenses

DLPC indicated in its submission that part of said expense was that of litigation or legal in nature in which no further information was provided. ERC contends that these services should form part of the services supplied under the APC management contract. The impact of this adjustment on the base year OPEX is a reduction by PhP5.38 million.

Administrative and General Expenditures – Outside Services

DLPC indicated in its submission that part of said expense was that of audit and legal consultancy in which no further information was provided. ERC contends that these services should form part of the services supplied under the APC management contract. The impact of this adjustment on the base year OPEX is a reduction by PhP23.49 million.

Administrative and General Expenditures – Employee Pension and Benefits

During the clarificatory meeting, DLPC was asked to provide details of its employee pension and benefits expenses for CY2008. The ERC contends that additional benefits like medical expenses, meal allowance, employees' welfare and rice subsidy given to DLPC employees should not be recovered from its consumer rates. If DLPC 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 DLPC 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 PhP17.58 million.

Regulated Retail – Bad Debts Expense

DLPC included the amount of PhP35 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.

DLPC's 2008 accounts written-off amounted to PhP34.96 million and Accounts Receivable-Trade (AR) amounted to PhP241.28 million. 1% of outstanding trade accounts receivable is PhP2.4 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 PhP32.55 million.

The resulting 2008 base year operating expenditures after the ERC' recommended total adjustments amounting to PhP85.14 million are as shown in Table 5.2. This has been used in the OPEX model to forecast future expenditures:

Table 5.2: Adjusted Base Year 2008 Operating and Maintenance Expenditure (PhP million, real 2009)

Operating and Maintenance Expenditure Category	2008
Operation	59.44
Maintenance	85.02
Administration and General	310.25
Regulated Retail Services	171.83
Total Operating & Maintenance Expenditure	626.54

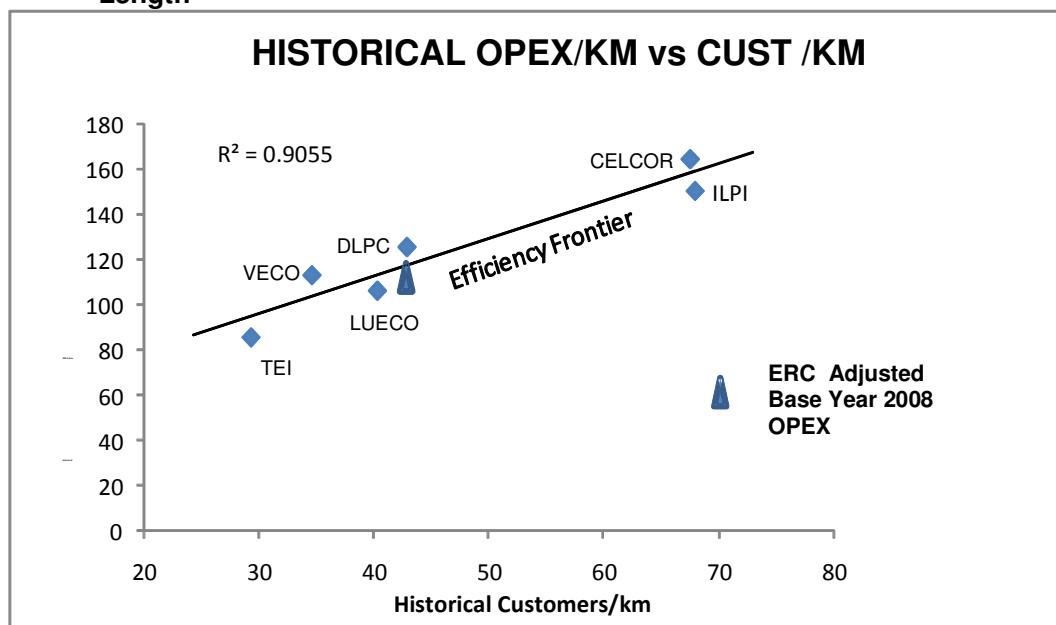
5.7 Confirmation that the Base Year Cost Data is Efficient

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 ILPI²⁰).

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²⁰ 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 DLPC’s average historical OPEX which is above the efficiency frontier. The ERC’ adjusted base year OPEX, which has also been plotted on the graph, positions below the efficiency frontier.

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

5.8 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 5.3 below:

Table 5.3: ERC’s Base OPEX Forecasts

Operating and Maintenance Expenditure Category	2011	2012	2013	2014
Distribution and Connection Services Operating and Maintenance	153.36	155.59	157.74	159.78
Administrative and General	312.63	313.28	313.87	314.45
Regulated Retail Services	190.83	201.20	214.41	231.45
Total Operating & Maintenance Expenditure	656.83	670.08	686.03	705.68

5.8.2 Table 5.4 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 that DLPC included in its revenue application.

Table 5.4: Comparison of DLPC and ERC Forecast Operating and Maintenance Expenditure (PhP million, real 2009)

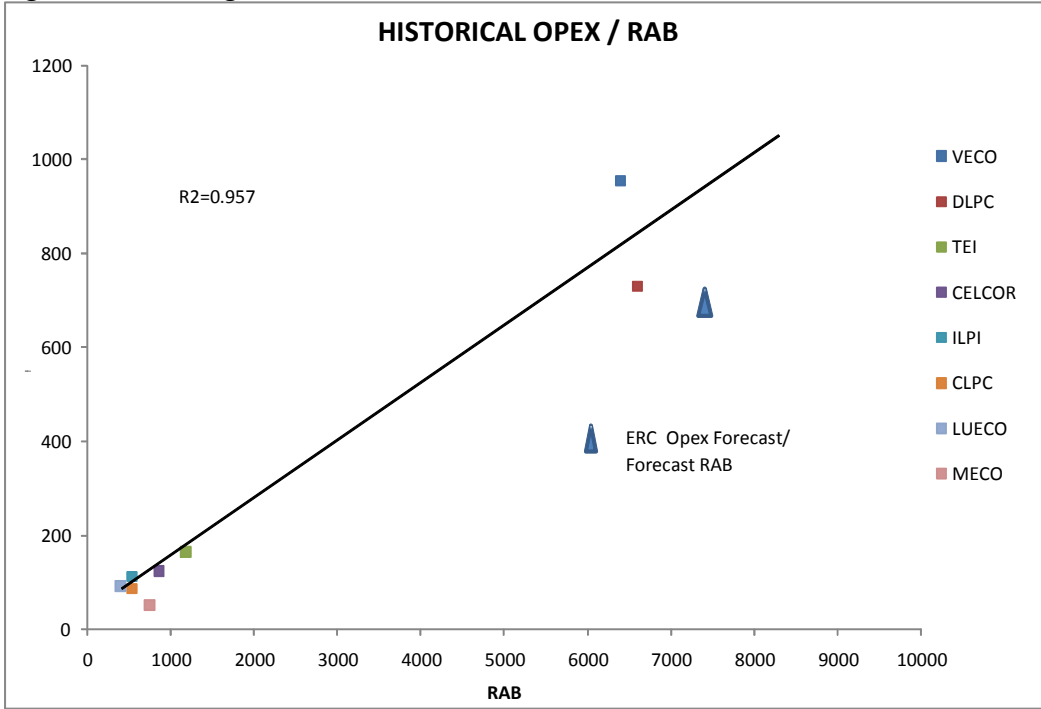
Operating and Maintenance Expenditure Category	2010	2011	2012	2013	2014	Total¹
Distribution and Connection Services Operating and Maintenance						
DLPC	163.33	173.59	184.56	197.00	207.42	925.90
ERC Forecast	150.25	153.36	155.59	157.74	159.78	776.73
Difference	- 13.07	- 20.23	- 28.96	- 39.26	- 47.64	- 149.17
Administrative and General						
DLPC	419.66	434.61	466.20	476.72	503.40	2,300.59
ERC Forecast	311.77	312.63	313.28	313.87	314.45	1,566.01
Difference	- 107.89	- 121.97	- 152.92	- 162.85	- 188.95	- 734.58
Regulated Retail Services						
DLPC	236.16	267.38	280.35	294.51	310.11	1,388.52
ERC Forecast	182.23	190.83	201.20	214.41	231.45	1,020.13
Difference	- 53.93	- 76.55	- 79.15	- 80.09	- 78.66	- 368.38
Total Operating and Maintenance Expenditure						
DLPC	819.15	875.58	931.11	968.23	1,020.93	4,615.01
ERC Forecast	644.26	656.83	670.08	686.03	705.68	3,362.88
Difference	- 174.89	- 218.75	- 261.03	- 282.20	- 315.25	- 1,252.13
Recommended Adjustment	- 174.89	- 218.75	- 261.03	- 282.20	- 315.25	- 1,252.13

¹ This total includes RY2010 plus the Second Regulatory Period

5.9 Inter Business Benchmarking

- 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 three (3) DUs in the second entry point (MECO, CLPC and ILPI) given available data used in the analysis. The average ERC OPEX forecasts are 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.
- 5.9.3 Additionally, Figure 5.3 also shows the relative size of VECO and DLPC with the size of TEI, CELCOR, ILPI, CLPC, LUECO and MECO. The utilities in the latter group are all grouped in the lower left side of the graph indicating low magnitudes of their asset base. Five (5) of these utilities are almost on the efficiency frontier while one (1) is below the efficiency frontier. DLPC, which is presumed to have the advantage of economies of scale and scope due to its size, should be expected to be below the efficiency frontier.

Figure 5.3: Average Historical OPEX / RAB

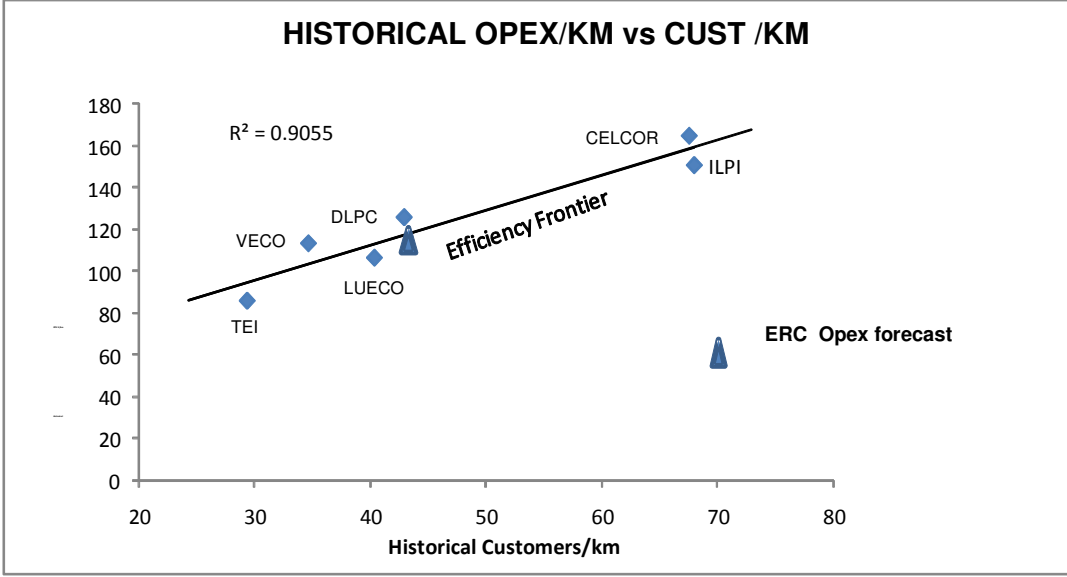


5.9.4 Figure 5.4 shows the normalized benchmarking study of OPEX/km vs. customers/km with the average ERC adjusted OPEX forecasts plotted on the graph. In this study, ERC included Iligan Light and Power, Inc. (ILPI), an entrant DU in the second entry point, given sufficient information to include it in this analysis. MECO and CLPC were not included given insufficient information to be included. The ERC adjusted DLPC OPEX forecast lies below the efficiency frontier. Hence ERC considers these forecasts to be relatively efficient.

5.9.5 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.

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

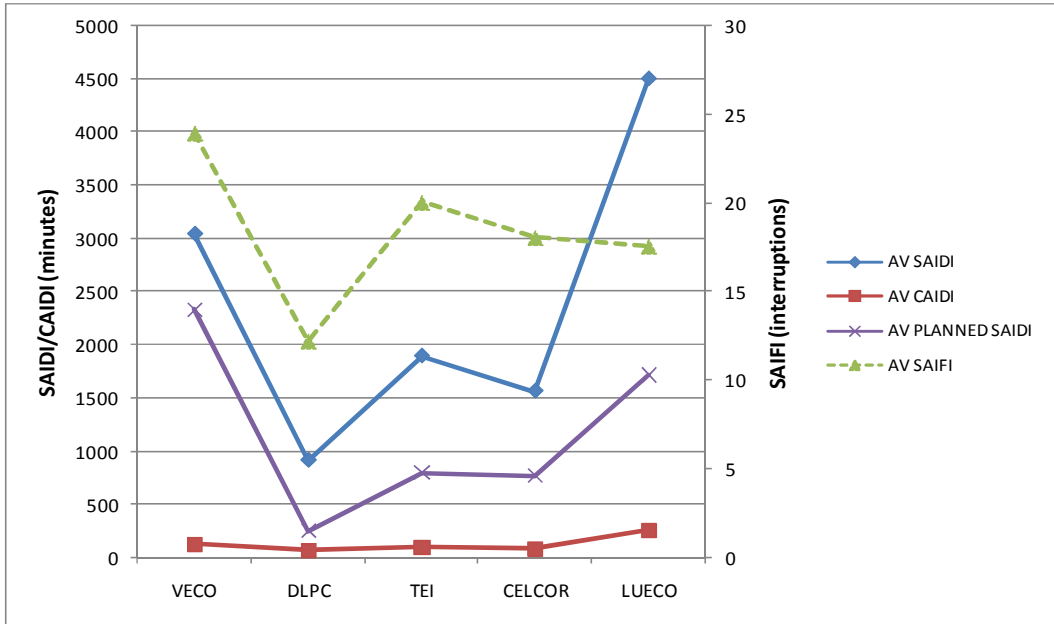


5.9.6 Based on these two benchmarking studies, ERC contends that its adjusted OPEX forecasts are relatively efficient.

5.10 OPEX vs. Performance/Efficiency Benchmarking

5.10.1 The ERC has benchmarked the historical network performance of five (5) of the six (6) DUs entering PBR at the third entry point, IEEC was excluded due to limited data available. The results of this analysis are shown graphically in Figure 5.5.

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



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

5.10.2 The above graph uses CY2006 to CY2008 data submitted by the utilities. 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 Draft Determination on the Operating and Maintenance Expenditure

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

5.11.2 The model took into account that over the modeling period from 2010 to 2014, DLPC's network asset (as recommended in Section 4) will increase by 5.79% and customer numbers by 21.63%. It also took into account the capital expenditure forecasts recommended by GB Associates for DLPC, amounting to PhP1,487.15 million over the next regulatory period. This is a recommended reduction of 42.37% compared with DLPC'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, 28.38% lower than DLPC's.

Figure 5.6: Comparison of Operating and Maintenance Expenditure Forecast

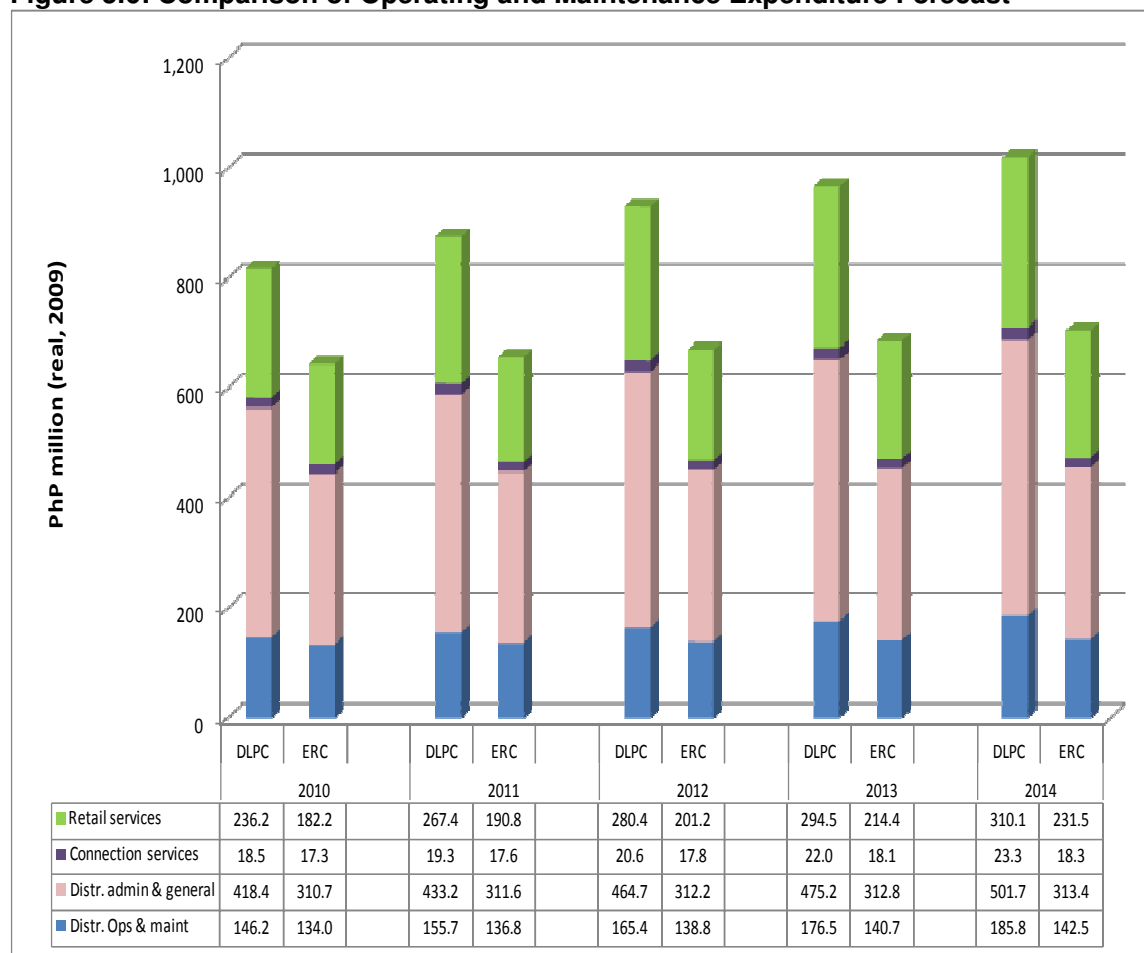
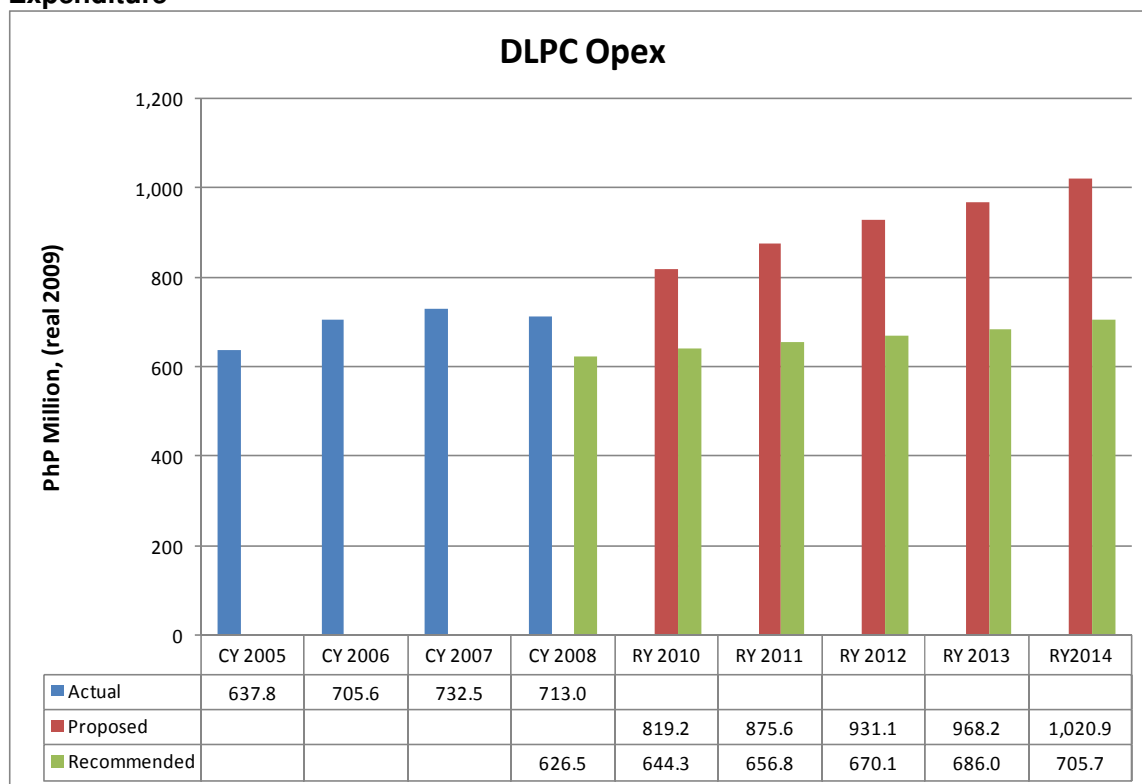


Figure 5.7: Historical and Forecast Trends – Operating and Maintenance Expenditure



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

Table 5.5: Draft Determination on Operating and Maintenance Expenditure

PhP (Thousand)	2010	2011	2012	2013	2014	TOTAL
Nominal values	653,853	691,942	736,252	783,925	838,637	3,050,755
Real values (2009)	644,260	656,831	670,079	686,026	705,679	2,718,615

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). DLPC 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 2009²¹. Since DLPC 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 DLPC'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 DLPC are included in the OPEX Review Report.²² 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.

6.2 Purpose of the taxes, levies and duties expenditure

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

²¹ 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.

²² ERC Operating and Maintenance Expenditure (OPEX) Review report titled "*REVIEW OF OPERATING AND MAINTENANCE EXPENDITURE FORECAST: SECOND REGULATORY PERIOD – Davao Light and Power Co., Inc.*", dated October 19, 2009

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

6.3.1 DLPC'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: DLPC Application for License Fees, Levies, Duties and Other Taxes Expenditure (Figures in the original Revenue Application)

Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Taxes (in Millions PhP, real 2009)						
Community Tax	0.01	0.01	0.01	0.01	0.01	0.01
Business Operations Permit	0.18	0.18	0.19	0.20	0.21	0.21
Real Estate Tax	2.49	2.64	2.88	3.15	3.44	3.75
Sub-Total Taxes	2.69	2.84	3.08	3.35	3.65	3.98
Duties						
Levies						
Regulatory Reset Expert Fees	-	-	21.95	1.73	1.80	1.87
Taxes, Levies and Duties	2.69	2.84	25.03	5.09	5.45	5.85

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

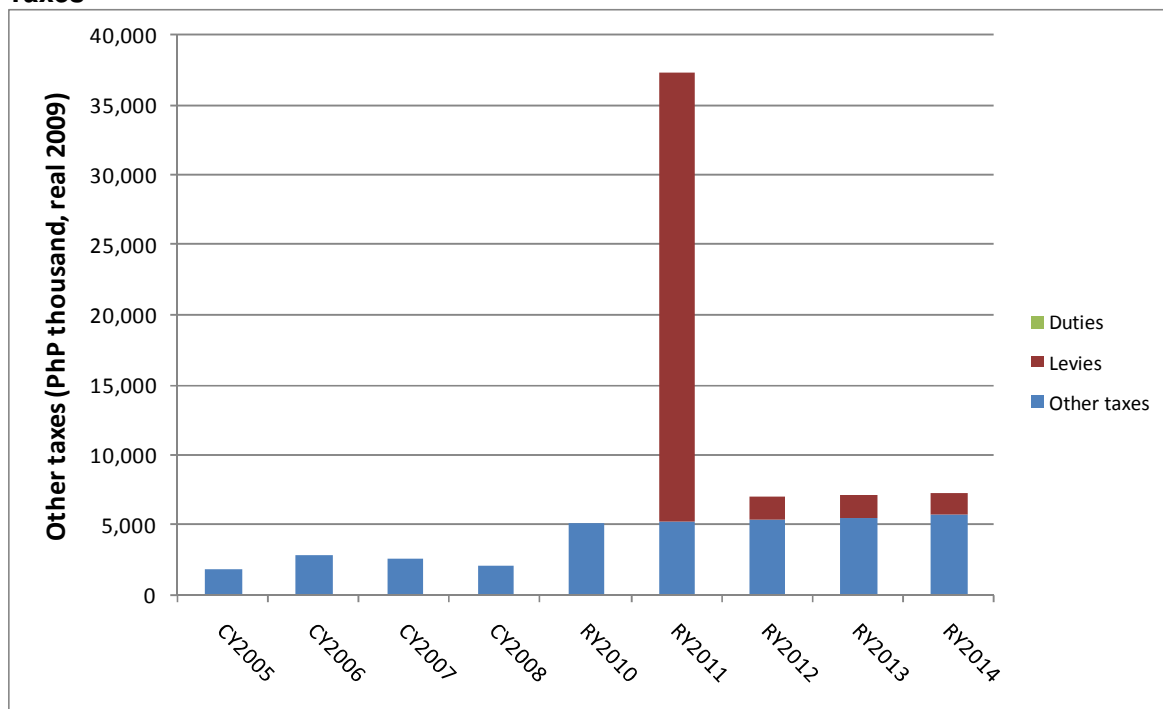
Table 6.2: DLPC's Application for License Fees, Levies, Duties and Other Taxes Expenditure (Figures revised by using the ERC financial indices forecasts)

	Actual (PhP thousand, real 2009)				Forecast (PhP thousand, real 2009)				
	CY2005	CY2006	CY2007	CY2008	RY2010	RY2011	RY2012	RY2013	RY2014
Other taxes	1,787	2,734	2,581	1,974	5,034	5,187	5,350	5,521	5,702
Levies	0	0	0	0	0	32,093	1,588	1,588	1,588
Duties	0	0	0	0	0	0	0	0	0
	1,787	2,734	2,581	1,974	5,034	37,280	6,938	7,109	7,290

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 DLPC forecast expenditure on license fees, levies, duties and other taxes is graphically represented, in real (2009) values. From Figure 6.1, DLPC 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: DLPC 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 DLPC's forecasts for license fees, levies, duties and other taxes during the Second Regulatory Period is discussed in detail in the OPEX Review Report. The ERC suggests the following disallowances in DLPC's application:

- DLPC's forecast taxes, levies and duties included a provision for fringe benefit tax. This component pertains to tax imposed on the fringe benefits provided by DLPC to its officers and employees.
- DLPC has included the amount of PhP11.6 million under PBR expenses for the year 2007-2009 which consist of the costs for the engagement of casual employees and lawyers for the preparation for the ARR & PIS filing and inventory of assets for the RAB valuation. Furthermore, DLPC's provision for the Reset Expert Fees is more than what ERC has specified.
- The annual provision for real property tax should be adjusted down to CY 2009 value. Taxes for which DLPC's liability has not been confirmed should not be included. In the event of the future imposition of additional real property taxes or should DLPC become liable for taxes that are not included in the annual revenue requirement, Article IX of the RDWR allows for unexpected tax liabilities imposed during the Second Regulatory Period by means of a "Tax Event Pass Through";
- DLPC proposed a provision for deficiency and amnesty taxes over the second regulatory period. DLPC did not indicate details and justification of such taxes. This should be excluded as a liability of a utility should not be passed on to its customers.

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

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

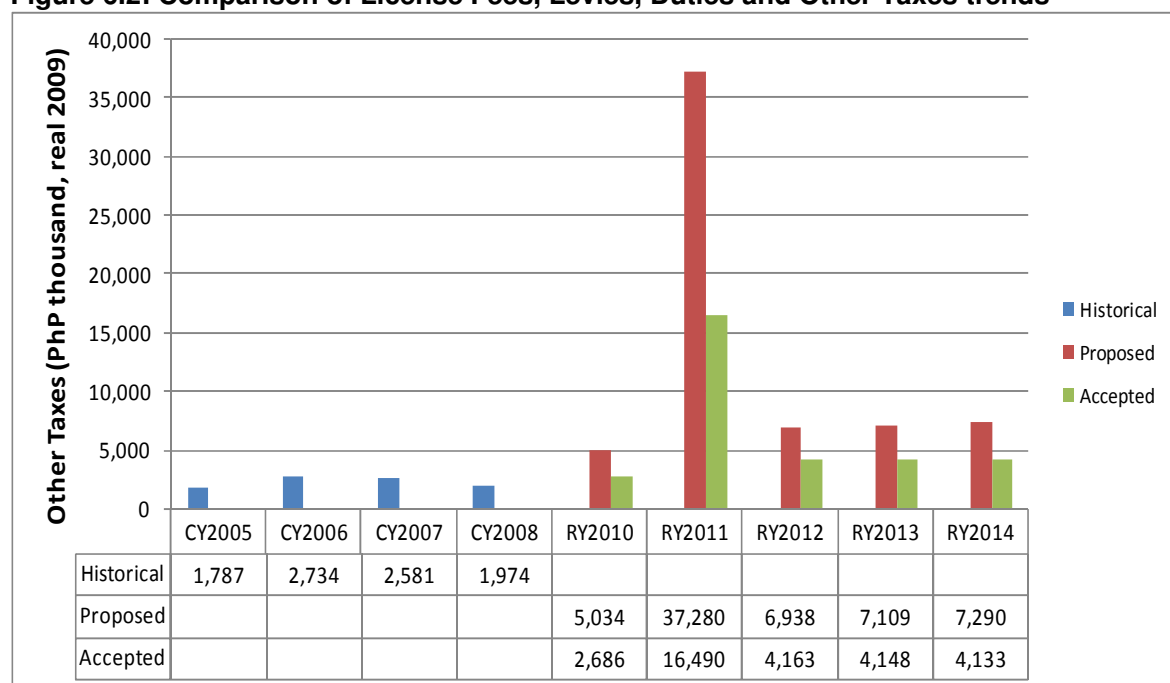
Year	CY 2009	RY 2010	RY 2011	RY 2012	RY 2013	RY 2014
Proposed in DLPC's Revenue Application						
Taxes, Levies and Duties	4.39	5.03	37.28	6.94	7.11	7.29
Adjustments						
Regulatory Reset Expert Fees			-7.19	-0.11	-0.13	-0.14
PBR expenses & Lawyers Fee	0.00	0.00	-11.10	0.00	0.00	0.00
Fringe Benefits	-0.20	-0.22	-0.25	-0.27	-0.30	-0.33
Real Property Taxes	0.00	-0.12	-0.26	-0.39	-0.54	-0.69
Deficiency and Amnesty Taxes	-1.5	-2.0	-2.0	-2.0	-2.0	-2.0
Total Adjustments	-1.70	-2.35	-20.79	-2.77	-2.96	-3.16
ERC's Provision for Taxes, Levies and Duties	2.69	2.68	16.49	4.17	4.15	4.13

6.5 Draft determination on license fees, levies, duties and other taxes

6.5.1 The ERC has made adjustments to DLPC's forecast for license fees, levies, duties and other taxes as described above.

6.5.2 In Figure 6.2 below, the historical and forecast trend is illustrated, based on the ERC's allowance for license fees, levies, duties and other taxes expenditure during 2008 and the Second Regulatory Period.

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



6.5.3 In Table 6.4, the ERC’s Draft 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: Draft Determination on License Fees, Levies, Duties and Other Taxes Expenditure

	RY2010	RY2011	RY2012	RY2013	RY2014	TOTAL
Nominal values	2,726,140	17,371,897	4,574,556	4,740,225	4,911,827	31,598,505
Real values (2009)	2,686,146	16,490,403	4,163,405	4,148,254	4,133,102	28,935,165

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.²³
- 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. (CAI) (hereafter jointly referred to as SKM) were appointed as the regulatory reset experts to conduct the initial revaluation for DLPC. The results of their valuation are described in the Initial Revaluation Report²⁴ and were accepted by the ERC. These reports were also presented to DLPC, 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 DLPC.
- 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.

²³ The optimization approach is described in Clause 4.8.6 and Appendix D of the RDWR

²⁴ SKM report titled "*Davao Light and Power Company 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	6,042,070,777	6,013,859,208	4,179,373,378
Non-system assets	1,241,208,876	1,235,868,071	994,017,654
Connection assets	266,327,094	266,327,094	175,394,827
Retail services assets	671,695,197	671,695,197	429,532,440
TOTAL	8,221,301,945	8,187,749,571	5,778,318,300

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 4.8. Disposal of assets is as reported by DLPC in the Revenue Application.

7.2.8 The construction work in progress factor (CWIP factor) is described in Section 4.8.9 of the RDWR. This is to compensate Regulated Entities for the investment cost of capital tied up during construction of major projects. During the reset period for the First Entry Group, the ERC conducted a study on the appropriate CWIP factor for typical distribution projects, based on information provided by 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.²⁵ This was further updated for the Final Determination for

²⁵ 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 requested from the Third Entry Group, but at the date of preparing this document, no further project information was forthcoming. The ERC has therefore decided to adopt the same CWIP factor used for the Final Determination for the Second Entry Group, adapted for the WACC used for this Draft 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 Draft Determination

Project category	CWIP factor
Substations	4.88%
All other capital projects	3.53%

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 Draft Determination on the opening value of the RAB

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

Table 7.3 : Opening Value of the DLPC 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	376.1	2.8	18.2	7.7	0.1	0.0	2.5	401.7
Substation Equipment	991.7	72.3	44.9	89.6	1.6	0.4	51.4	1,103.4
Distribution Lines - network	1,654.9	107.5	75.5	122.5	3.7	0.0	61.6	1,803.4
Underground distribution network	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Line Transformers - Distribution	1,002.5	67.1	45.7	159.6	4.1	0.0	40.3	1,176.8
Other	154.2	9.2	7.1	-7.2	0.4	0.0	-1.1	143.4
Non-network assets								0.0
Land and structures	589.2	7.9	28.4	60.5	0.7	0.0	7.0	676.6
Furniture, transportation, tools	131.5	25.2	5.2	58.1	4.3	0.0		165.2
Materials, supplies and spares	150.4	0.0	7.3	0.0	0.0	0.0		157.8
Other	122.9	36.6	4.2	47.2	5.5	0.0		132.2
Connection assets								0.0
Overhead connections	64.9	4.4	3.0	5.3	0.1	0.0	2.4	71.1
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	110.5	0.0	5.4	15.8	0.4	0.0	4.6	135.9
Retail service assets								0.0
Metering	429.5	34.7	19.3	120.3	3.5	0.0	0.0	530.9
Other	0.0	0.0	0.0	57.2	5.7	0.0	0.0	51.5
Transferred subtrans. assets								0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0		0.0
TOTAL	5,778.3	367.6	264.2	736.6	30.2	0.4	168.9	6,549.7

Source : DLPC application, SKM Valuation, ERC analysis

7.4 Regulatory depreciation

- 7.4.1 The ERC reviewed DLPC’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, DLPC’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 DLPC’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 DLPC 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 DLPC’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 DLPC 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 DLPC 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 DLPC RAB (calculated by the ERC) (PhP Millions)

ODRC depreciation	RY2010	RY2011	RY2012	RY2013	RY2014
Depreciation of the opening asset base	245.1	268.2	252.0	235.9	235.9
Depreciation of assets acquired January 2009– June 2010	27.2	44.0	44.0	44.0	44.0
Depreciation of assets acquired during the 2nd regulatory period	0.0	9.5	28.9	50.1	71.8
Subtotal	272.2	321.8	325.0	330.0	351.8
plus Disposals	3.8	3.5	4.0	4.6	5.3
minus Income from Disposals	-3.5	-3.0	-3.3	-3.6	-3.9
TOTAL	272.5	322.3	325.8	331.1	353.2

Source : ERC analysis

7.5 Draft Determination - Rolled forward asset base

- 7.5.1 The ERC’s Draft 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		6,549,743	6,651,989	6,727,586	6,893,748
Depreciation on RAB		322,268	325,766	331,068	353,167
Capital Expenditure		424,515	401,362	497,230	423,865
Change in assets used over regulatory Lines		0	0	0	0
Closing Value of RAB	6,549,743	6,651,989	6,727,586	6,893,748	6,964,447
Average RAB for the Year	6,549,743	6,600,866	6,689,788	6,810,667	6,929,097

Source : ERC analysis and financial model

7.6 Draft 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 occur that the average lag time until payment of electricity accounts is 40 days – well in excess of the standard payment terms, which varied between 10 and 20 days. For the First Entry Group the ERC assumed an efficient payment period of 15 days. In 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 therefore concluded that it is not appropriate to allow any working capital for energy purchases. It accepts that the Regulated Entities do have a longer debtor settlement period than that contracted and that they therefore would have working capital tied up in energy purchases. However, the ERC believes that late payments should be made subject to penalties to recover this lost working capital, rather than recover this from the distribution (or energy) rates, which would penalize those customers who are paying their accounts within the prescribed time.

7.6.5 Further lead/lag information was requested from the Third Entry Group Regulated Entities, but at the date of preparation of this Draft Determination, has not been received.

The ERC has therefore decided to adopt the same working capital factor that it used for the Final Determination for the Second Entry Group. This was set at 4.9% of the operating and maintenance expenditure allowed.

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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 7.2.8). It is therefore one of the key parameters to be determined for the Second Regulatory Period.

8.2 Approach to the WACC

8.2.1 During the regulatory reset period for the First Entry Group, the ERC prepared a report²⁶ (the WACC Report) and conducted public consultation on the manner in which the Regulatory WACC for the Second Regulatory Period should be determined. After the consultation, the recommended methodology described in the WACC Report was accepted.

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

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

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

- Due to the developing nature of the local economy and the utility infrastructure business, the systemic risk faced by investors in Philippines utilities are higher than that faced by investors in comparable utilities in developed countries. It is therefore not appropriate to directly compare the observed asset beta of international utilities with the local environment, and these observed values will therefore be adapted (increased) by a factor of a quarter (25%).
- The point value at which the WACC will be set from the range of likely values determined by the ERC²⁷, 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

²⁶ 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.

²⁷ A range of values is determined to reflect the uncertainty in the value of many of the parameters used to determine the WACC.

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 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 9.58% to 12.98% 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 observations²⁸. 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 (55:45 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 University²⁹ 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 0.65 to 1.00. 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 higher 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 Draft Determination – Regulatory WACC

- 8.4.1 The ERC's Draft 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 17.36% (p.a.).

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²⁸ It is noted that Meralco is the only electricity distribution company traded on 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.

²⁹ <http://pages.stern.nyu.edu/~adamodar/>

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

Parameters		Mid Range Regulatory WACC Estimate by ERC		
		Low	Mid	High
Gearing (Debt) ratio	$D/(D+E)$	40%	40%	40%
Equity ratio	$E/(D+E)$	60%	60%	60%
Debt to Equity	D/E	0.67	0.67	0.67
Asset beta (degeared empirical beta)	β_a	0.688	0.688	0.688
Risk free rate (nominal - US\$ 10 Year Bond Yields in USA)		3.53%	3.63%	3.73%
Country Risk Margin (excluding FX Risk)	CRP	1.56%	1.94%	2.32%
Risk free rate used in WACC	R_f	9.58%	11.29%	12.98%
Debt Margin	DM	2.00%	2.50%	3.00%
Cost of debt (pre-tax nominal peso terms)	K_d	11.58%	13.79%	15.98%
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	3.11%	5.03%	6.95%
Inflation Rate (USA)		(1.07%)	(0.30%)	0.47%
Calculated Equity (Regeared) Betas	Formula	Low	Mid	High
Equity Beta (1) Simple No Tax Adjustment - RDWR	1	1.15	1.15	1.15
Equity Beta (2) Simple Tax Adjustment	2	1.01	1.01	1.01
Other Parameters				
Equity beta (geared beta)	β_e	1.15	1.15	1.15
Cost of Equity (post-tax nominal)	K_e	16.46%	18.16%	19.86%
WACC Matrix - Commercial Practice & RTWR				
	Post-tax nominal	13.12%	14.76%	16.39%
	Post-tax real	9.71%	9.26%	8.82%
	Pre-tax nominal	18.74%	21.08%	23.41%
	Pre-tax real	15.16%	15.28%	15.39%
Vanilla WACC (nominal)		14.51%	16.41%	18.31%
WACC set at 75th percentile of suggested range		17.36%		

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 DLPC. 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 P₀-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 DLPC for its Revenue Application.

9.2 Annual Revenue Requirement – DLPC application

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

- a) The capital expenditure proposed in DLPC’s Revenue Application.
- b) The operating and maintenance expenditure proposed in DLPC’s Revenue Application.
- c) The levies, duties and other taxes proposed in DLPC’s Revenue Application.
- d) The energy consumption forecasts included in DLPC’s Revenue Application.
- e) The financial indices proposed in DLPC’s Revenue Application.
- f) DLPC’s calculation of the value of the opening RAB.
- g) The depreciation calculations proposed in DLPC’s Revenue Application.
- h) A Regulatory WACC of 16.27%.
- i) A working-capital allowance of 4.9% of OPEX.
- j) A corporate income tax rate set to zero for the Second Regulatory Period.

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

Building block	2011	2012	2013	2014
Return on capital	1,104.8	1,151.8	1,204.5	1,281.8
OPEX	915.7	1,014.7	1,097.3	1,203.3
Regulatory depreciation	338.8	350.7	374.1	404.3
Corporate income tax	0.0	0.0	0.0	0.0
Other taxes	39.0	7.6	8.1	8.6
TOTAL	2,398.3	2,524.7	2,683.9	2,898.0

Source : DLPC Revenue Application

9.3 Annual Revenue Requirement – ERC analysis

9.3.1 The ERC modeled the annual revenue requirement for DLPC based on its energy forecasts described in Section 3.3, expenditure allowances discussed in Sections 4.8, 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)	6,600,866	6,689,788	6,810,667	6,929,097
OPEX approved (see Table 5.5)	691,942	736,252	783,925	838,637
Working capital allowed (4.9% of OPEX)	33,905	36,076	38,412	41,093
Subtotal - capital invested	6,634,771	6,725,864	6,849,079	6,970,191
RETURN ON CAPITAL	1,151,664	1,167,475	1,188,863	1,209,886
Regulatory WACC (see Section 8)	17.36%			
Working capital factor (see Section 7.6)	4.9%			

Source: ERC Analysis

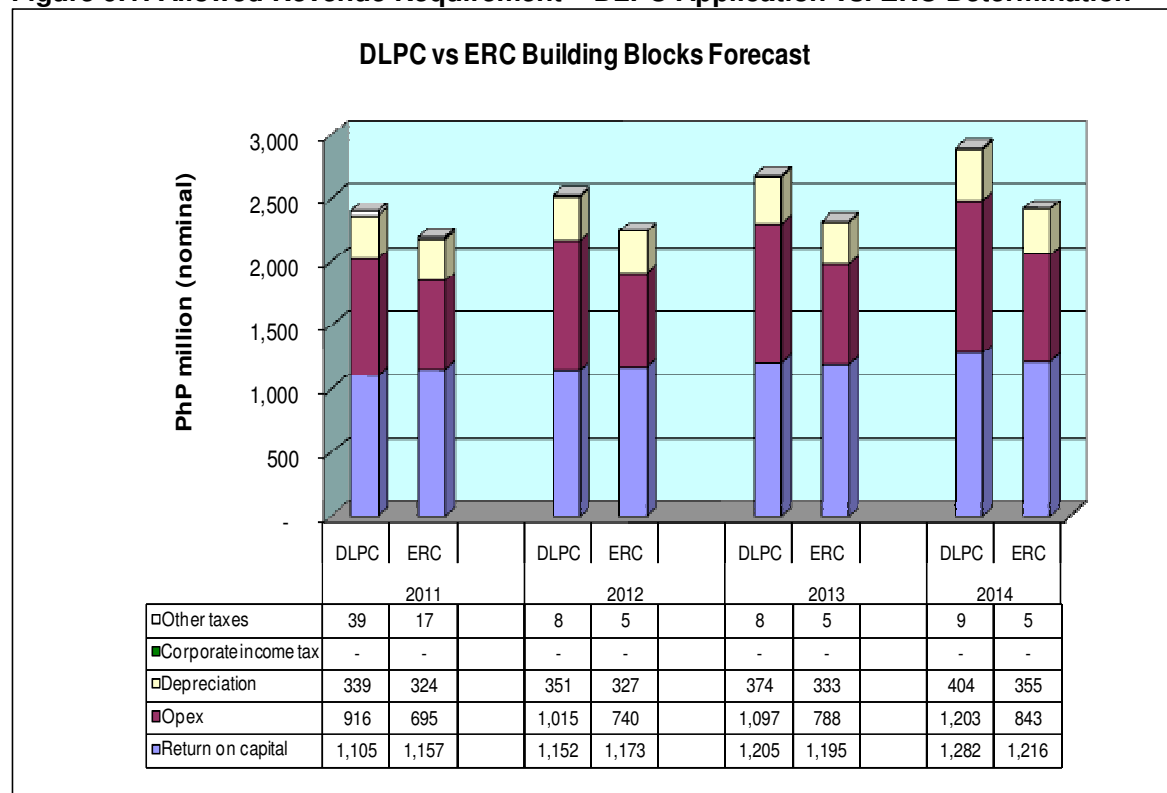
9.3.3 Based on its modeling, the ERC's determination of DLPC's annual revenue requirement for the Second Regulatory Period is indicated in Table 9.3. This is also graphically represented in Figure 9.1.

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

Building block	2011	2012	2013	2014
Return on capital (see Table 9.2)	1,151.7	1,167.5	1,188.9	1,209.9
OPEX (see Table 5.5)	691.9	736.3	783.9	838.7
Regulatory depreciation (see Table 7.4)	322.3	325.8	331.1	353.2
Corporate income tax (set to zero)	0	0	0	0
Other taxes (see Table 6.4)	17.4	4.6	4.7	4.9
TOTAL	2,183.3	2,234.2	2,308.6	2,406.7

Note: These figures do not include the required GSL provision

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

Building block	2011	2012	2013	2014
Return on capital (see Table 9.2)	1,151.7	1,167.5	1,188.9	1,209.9
OPEX (see Table 5.5)	691.9	736.3	783.9	838.6
Regulatory depreciation (see Table 7.3)	322.3	325.8	331.1	353.2
Corporate income tax (set to zero)	0	0	0	0
Other taxes (see Table 6.4)	17.4	4.6	4.7	4.9
TOTAL	2,183.3	2,234.2	2,308.6	2,406.6

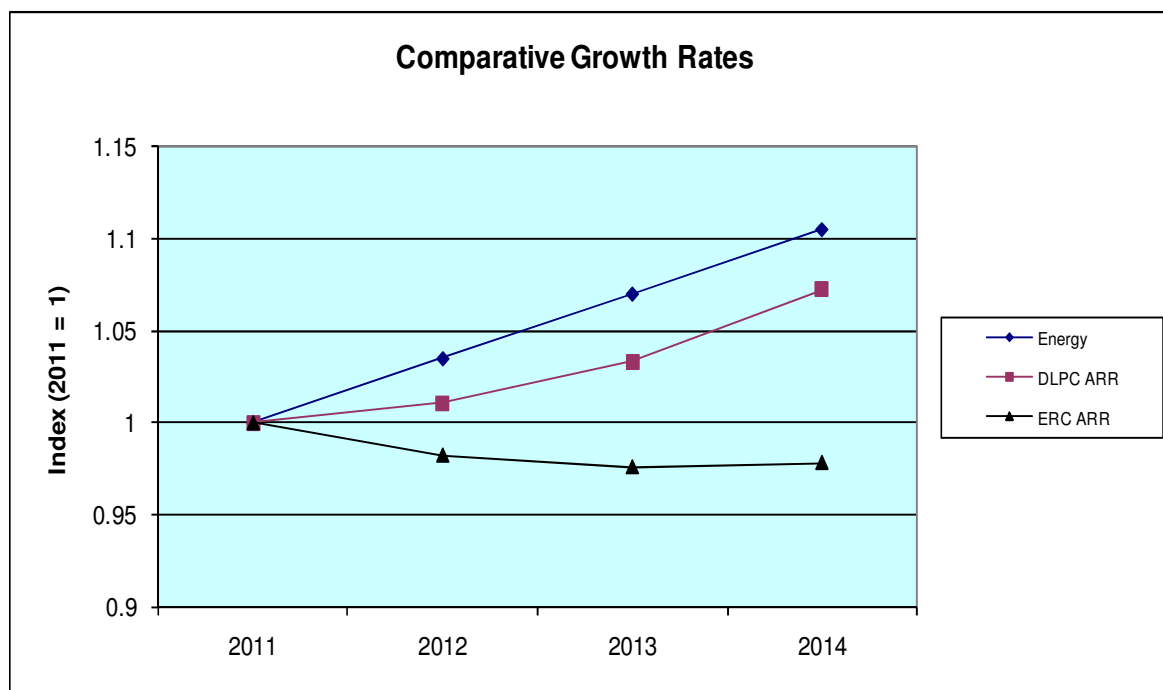
Note: These figures do not include the required GSL provision

9.3.5 In Figure 9.2, the ERC’s approved annual revenue requirement is compared with that of DLPC and the forecast energy consumption on the DLPC network, on a normalized basis (using the 2009 values as basis and working with the real values for expenditure).

From this, it is clear that the DLPC application for its revenue requirement over the Second Regulatory Period is reasonably well aligned with the anticipated energy consumption growth, but that it does not seem to foresee better efficiencies during the Second Regulatory Period..

The ERC’s allowed revenue requirement for DLPC, which does not grow at the rate of expected consumption, does foresee operating efficiency gains as well as increase asset utilization.

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



Source: ERC analysis

9.4 Draft 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 Draft Determination with regard to DLPC’s allowed annual revenue requirement for the Second Regulatory Period is indicated in Table 9.4.

Table 9.4: Draft Determination - DLPC Annual Revenue Requirement (PhP, nominal)

	2011	2012	2013	2014
ARR without GSL allowance	2,183,245,465	2,234,067,652	2,308,595,581	2,406,601,212
GSL allowance	10,916,227	11,170,338	11,542,978	12,033,006
TOTAL ARR	2,194,161,692	2,245,237,990	2,320,138,559	2,418,634,218

9.5 Draft determination – Smoothed Maximum Average Price

9.5.1 The MAP for Regulated Distribution Services in 2010, as indicated by DLPC in their revenue application, based on its January 2008 to December 2008 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

DLPC revenue from Regulated Distribution Services from January 2008 to December 2008 ³⁰ (PhP)	1,480,626,841
Energy sales for January 2008 to December 2008 (kWh)	1,370,950,779
Average price (PhP/kWh)	1.080

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 DLPC for the Second Regulatory Period as follows (with a P₀-factor of zero) :

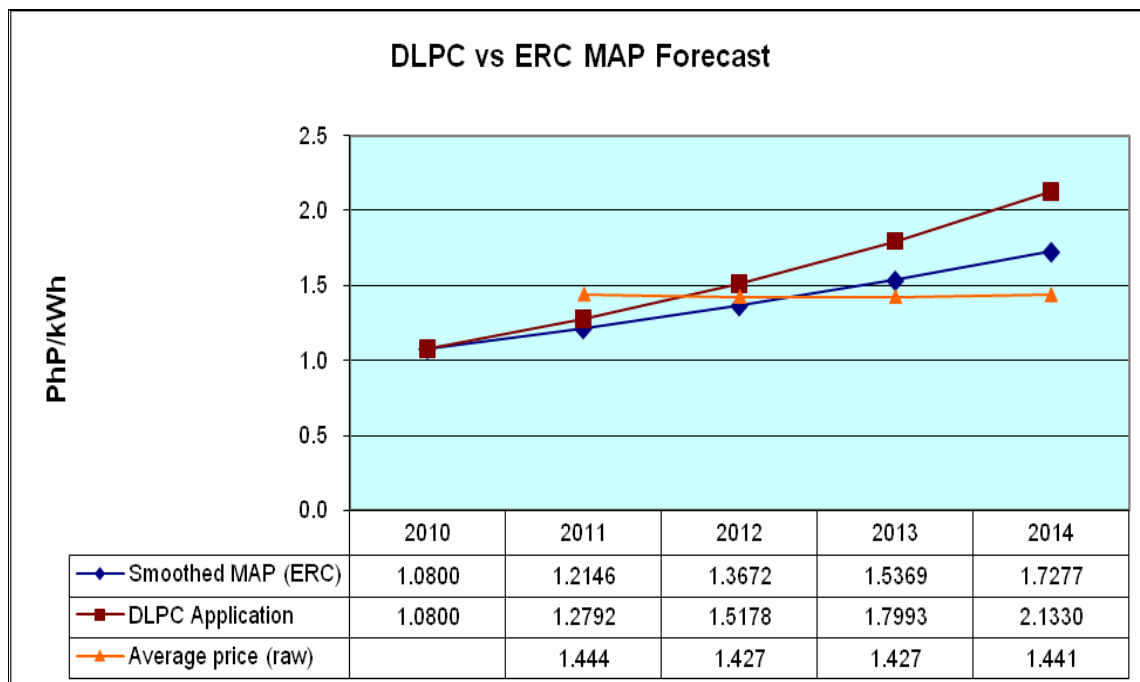
X-factor : -8.41%
MAP₂₀₁₀ : PhP1.080 (PhP/kWh)

Based on these values, the anticipated average annual price increases during the Second Regulatory Period will be at the rate of inflation plus 8.41%. 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 DLPC 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 DLPC modeled price path higher than the ERC. This is a result of the adjustment made from DLPC’s annual revenue requirement as discussed above.

Figure 9.3: Comparison of Anticipated Price Paths

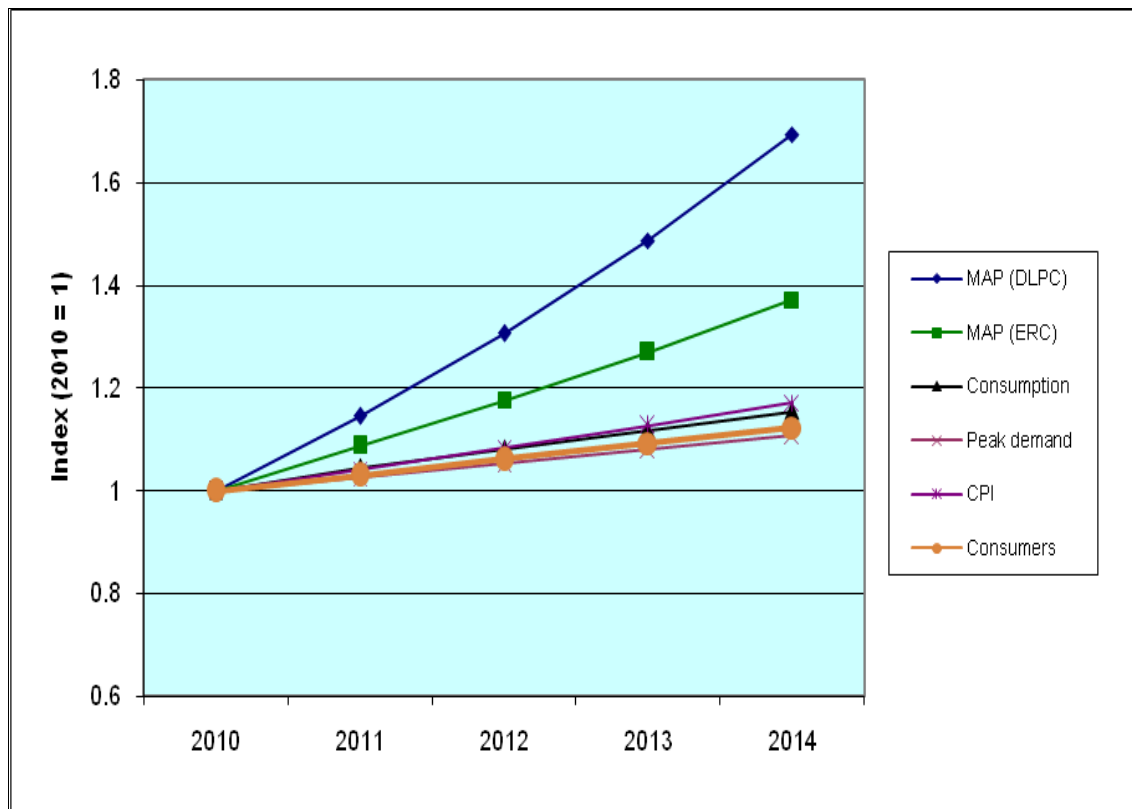


Source: ERC analysis

³⁰ This revenue is calculated after deducting 50% of related business revenue (RBR) earned from the distribution network.

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

Figure 9.4: Comparison of the Smoothed MAP to Other Indices

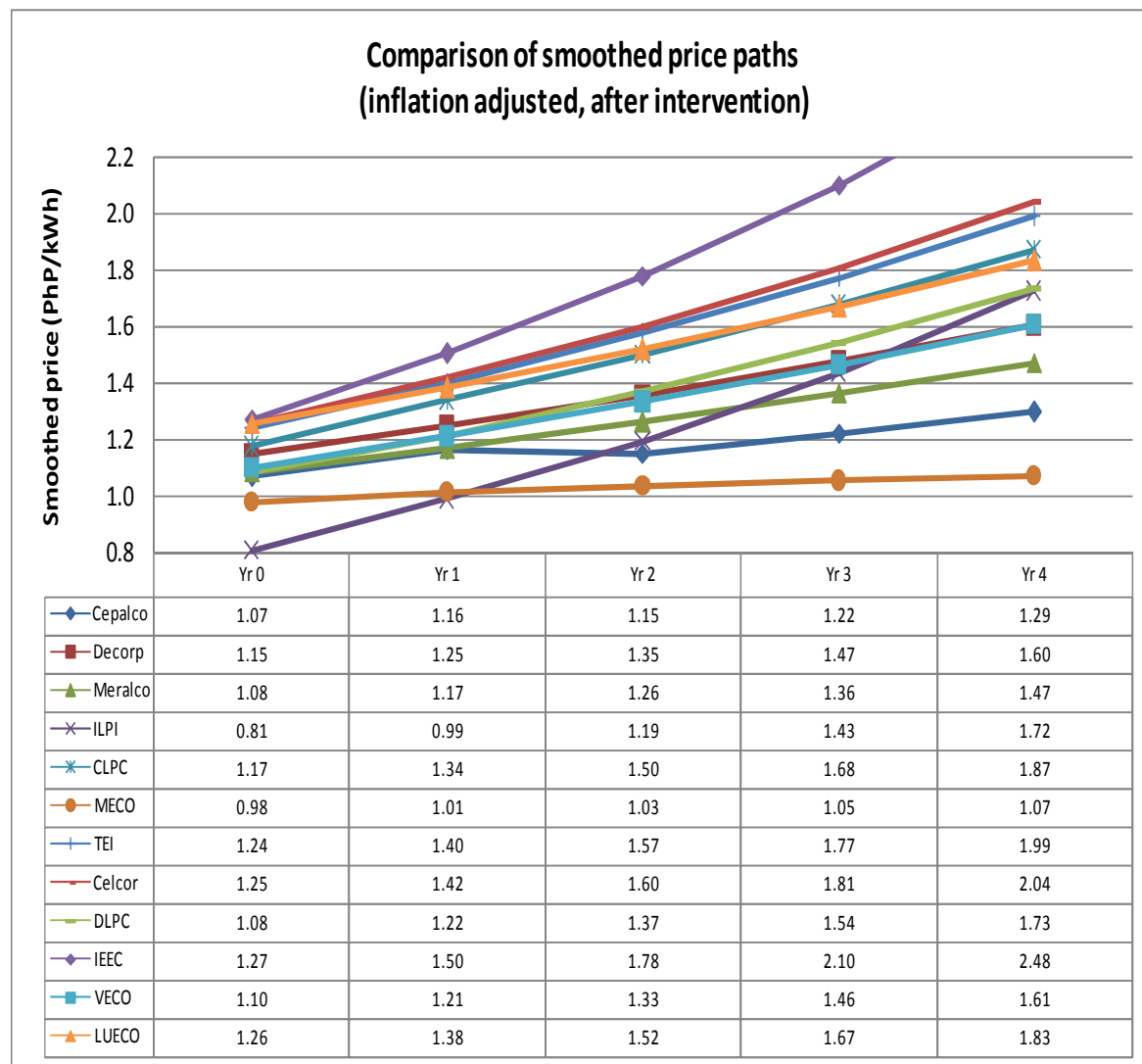


Source: ERC analysis

9.5.5 A further comparison of the proposed price-path is presented in Figure 9.5. In the said figure, the DLPC 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 DLPC price path is around 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 Since there will be further consultation on the expenditure approvals included in the Draft Determination, which may have an impact on the final X-factor and opening MAP, the ERC did not determine a P_0 -factor for the Draft Determination. It will make a final decision on this for the Final Determination, once the final allowed required revenue is determined.

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 The ERC will not decide on side constraints for the Draft Determination. These will be determined for the Final Determination.

9.8 Draft Determination on the opening price and smoothing factor

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

X-factor	:	-8.41%
MAP ₂₀₁₀	:	PhP1.080 (PhP/kWh)

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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 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.³¹

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.³² 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 Draft Determination on the PIS that will apply to DLPC during the Second Regulatory Period is discussed below.

10.2 Overview of the Price-linked Incentive Scheme

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

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

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

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

³¹ 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.

³² ERC report titled "Framework for the Performance Incentive Scheme to apply from the Third Regulatory Period", dated March 1, 2006.

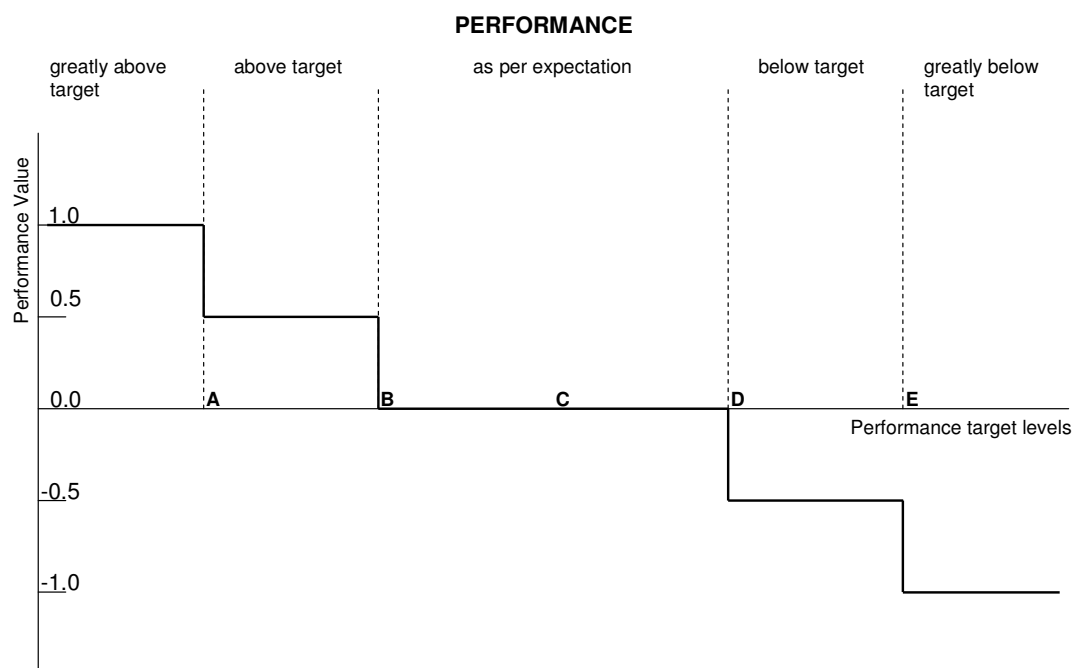
10.2.3 Performance will be assessed against a number of targets and, depending on the actual result, each index will be awarded a performance value, as described in Table 10.1 and illustrated in Figure 10.1 below.

Table 10.1 : Determining Performance Values

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

Note : Symbols A to E refer to figure 9.1 below

Figure 10.1 : Depiction of the Price-Linked Incentive Scheme



10.2.4 The target levels for each performance index (depicted as A to E in Figure 10.1) vary for each index and are determined by each Regulated Entity for their particular PIS. These targets are based on historical performance for each index, with point C typically representing the average performance over recent years³³. 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

³³ The actual details are as per the design of the PIS by each Regulated Entity.

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.³⁴ 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 issues³⁵, 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:

³⁴ 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.

³⁵ Or a very poorly designed GSL scheme.

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 DLPC

10.5.1 DLPC'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 was 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 DLPC as part of its Revenue Application is indicated. This identifies the performance indices proposed, the weighting to be allocated to each index and the proposed performance target levels.

Table 10.2: Price-linked Incentive Scheme Submitted by DLPC

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	10.47	11.35	12.22	13.1	13.98
Customer average interruption duration index (CAIDI)	Minutes	0.20	70.52	72.81	75.11	77.4	79.68
Planned system average interruption duration index (SAIDI)	Minutes	0.15	198.12	224.58	251.05	277.51	303.98
Probability of voltage levels falling within prescribed limits	%	0.10	2.0%	3.0%	4.0%	5.0%	6.0%
System losses	%	0.05	7%	8.5%	9.5%		
Average time to process applications for Regulated Distribution Services	Days	0.10	9.4	10.23	11.06	11.88	12.71
Average time to connect premises to the Regulated Distribution System	Days	0.10	3.34	4.0	4.66	5.32	5.99
Average time to answer calls at call centre	Seconds	0.10	7.99	9.58	11.18	12.77	14.37

10.5.3 It is the ERC's understanding that DLPC's capability to measure power outages and hence calculate the SAIFI, CAIDI and SAIDI indices is limited to outages on the major medium voltage feeders (one or more phases) and distribution transformers. This

capability will be further developed during the Second Regulatory Period, to allow the impact of outages to be measured more accurately, a more localized basis.

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

Table 10.3: Historical Network Performance

Performance Indices	Unit	2002	2003	2004	2005	2006	2007	2008	Average	Standard Deviation
SAIFI	no.	15.52	10.80	13.28	12.67	10.55	11.22	11.53	12.22	1.76
CAIDI	min.	70.17	74.99	78.24	79.84	68.52	80.08	73.91	75.11	4.59
Planned SAIDI	min.	288.68	320.62	300.57	195.61	240.30	185.61	225.95	251.05	52.93
Time to Process Application	days			10.17	13.92	9.90	10.27	11.02	11.06	1.65
Time to Connect Premises	days			7.01	4.32	3.82	4.13	4.03	4.66	1.32
Call Center Performance	secs			16.28	12.05	8.09	9.44	10.02	11.18	3.19

10.5.5 With regard to the probability of voltage levels violating the limits prescribed in the Philippines Distribution Code, DLPC proposes a target of 4.0% for the average value (Point C in Figure 10.1), based on the measured voltage of 97 load center samples at various points of the distribution system, 28 readings exceeded the 110% and 90% nominal voltage level of 230V from 830 long-duration voltage readings or 3.32% voltage violations.

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

10.6 Guaranteed Service Level Scheme proposed by DLPC

10.6.1 DLPC’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 DLPC in the Revenue Application

	Performance Measure	Unit	Threshold Level	Penalty Level (PhP)
GSL1a	Duration of Sustained Interruptions (urban/sub-urban)	Hours	20	84.66
GSL1b	Duration of Sustained Interruptions (rural)	Hours	25	84.66
GSL2a	No. of Sustained Interruptions (urban/sub-urban)	Number	20	84.66
GSL2b	No. of Sustained Interruptions (rural)	Number	25	84.66

GSL3a	Restoration Time (Urban/Sub-urban)	Hours	Within 12 hours	84.66
GSL3b	Restoration Time (Rural)	Hours	Within 15 hours	84.66
GSL4a	Time to Connect	Days	Beyond 4 days	84.66

10.6.2 DLPC noted that the proposed threshold values for the GSL1 and GSL2 components are based on historical figures from 2002 up to 2008.

10.6.3 The threshold values for the GSL3 components are based on historical figures from 2004 up to 2008.

10.6.4 DLPC 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. DLPC submitted tabulated historical values from 2004 to 2008 to support on how the threshold was determined.

10.6.5 The calculation of the penalty levels are based on the estimated value of the scheme³⁶, the number of customers likely to be affected if the proposed threshold values are adopted and a weighting allocated by DLPC to ensure consistent penalty amounts.

10.7 Excluded events proposed by DLPC

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

- a) Faults at customer side
- b) Faults due to fire incidents not caused by DLPC facilities
- c) Failure of the applicant to appear on the pre-agreed schedule
- d) The applicant prefers a particular date which is beyond the standard accomplishment period
- e) Planned interruptions are excluded in GSL3
- f) Under GSL3, affected customers living in barangays/barrios below will not be attended in faults will occur between 7:00 pm to 6:00 am the following day due to security risks

10.8 ERC Draft Decision on the Price-linked Incentive Scheme

10.8.1 The ERC accepts the performance indices proposed by DLPC 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 DLPC'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

³⁶ 0.5% of the annual revenue requirement for each year, as discussed in Paragraph 10.3.2.

had been applied to the historical performance figures, it would have provided acceptable outcomes.³⁷

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 DLPC. It also accepts that DLPC 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 DLPC'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 Draft Determination on the price-linked incentive scheme is presented in Table 10.5.

Table 10.5: ERC Draft Determination on the Price-Linked Incentive Scheme for DLPC

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	10.47	11.35	12.22	13.1	13.98
Customer average interruption duration index (CAIDI)	Minutes	0.20	70.52	72.81	75.11	77.4	79.68
Planned system average interruption duration index (SAIDI)	Minutes	0.15	198.12	224.58	251.05	277.51	303.98
Probability of voltage levels falling within prescribed limits	%	0.10	2.0%	3.0%	4.0%	5.0%	6.0%
System losses	%	0.05	7%	8.5%	9.5%		
Average time to process applications for Regulated Distribution Services	Days	0.10	9.4	10.23	11.06	11.88	12.71
Average time to connect premises to the Regulated Distribution System	Days	0.10	3.34	4.0	4.66	5.32	5.99
Average time to answer calls at call centre	Seconds	0.10	7.99	9.58	11.18	12.77	14.37

³⁷ Based on its calculation, the great majority of the historical performance values from 2000 to 2007 for the proposed indices involved would have resulted in neutral outcomes, i.e. no penalty or bonus. In no instance would performance have been assessed to greatly exceed expectations.

10.9 ERC Draft Decision on the GSL Scheme

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

10.9.2 The ERC will accept the targets and penalty levels proposed by DLPC for the Draft Determination but requests DLPC 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, DLPC was directed to submit additional simulations on the GSL scheme to reflect an increase in different levels of the GSL payments up to PhP100. DLPC complied with the Commission’s directive. In its compliance, DLPC 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 DLPC is described.

Table 10.6: ERC Draft Determination on the GSL Scheme for DLPC

	Performance Measure	Unit	Threshold Level	Penalty Level (PhP)
GSL1a	Duration of Sustained Interruptions (urban/sub-urban)	Hours	22	96.94
GSL1b	Duration of Sustained Interruptions (rural)	Hours	27	96.94
GSL2a	No. of Sustained Interruptions (urban/sub-urban)	Number	22	96.94
GSL2b	No. of Sustained Interruptions (rural)	Number	27	96.94
GSL3a	Restoration Time (Urban/Sub-urban)	Hours	Within 15 hours	96.94
GSL3b	Restoration Time (Rural)	Hours	Within 20 hours	96.94
GSL4a	Time to Connect	Days	Beyond 5 days	96.94

10.10 ERC Draft Determination on Excluded Events

10.10.1 The ERC will adopt the approach described in its PIS framework³⁸ to exclude the impact of certain events on DLPC’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

³⁸ Supra note 32

a utility, but which would be relatively common occurrences and should be manageable by an effective business.

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

Pasig City, November 9, 2009.


ZENAIDA G. CRUZ-DUCUT
Chairperson


ALEJANDRO Z. BARIN
Commissioner


RAUF A. TAN
Commissioner


MARIA TERESA A.R. CASTAÑEDA
Commissioner


JOSE C. REYES
Commissioner

APPENDIX A : APPROVED CAPITAL EXPENDITURE PROGRAM

Category	Forecast (peso, nominal) (Regulatory Year)					
	Budget (Jan 09 to Jun 09)	Forecast, nominal (regulatory year)				
	2010	2010	2011	2012	2013	2014
Regulated Distribution Services Assets						
Network						
Land and Land Rights (Distribution Purposes)	0	0	0	11,866,538	0	23,530,554
Structures and Improvements	0	7,974,909	5,176,934	5,389,315	5,454,083	53,813,777
Station Equipment	0	0	-34,306,013	-69,211,503	-5,584,859	-366,568,090
Power transformers	-1,701	3,334,627	18,406,412	18,968,718	-538,120	3,016,499
Switchgear	-108,375	23,476,683	12,236,883	22,632,470	16,300,144	124,587,946
Protective equipment	-35,192	8,207,050	7,105,407	11,497,006	11,099,301	14,416,329
Metering & control equipment	-46,904	8,459,272	5,663,856	11,338,383	11,339,766	85,774,698
Communications equipment	0	0	0	403,330	0	7,353,797
Other station equipment	-6,268	21,496,564	19,904,135	23,337,808	27,422,955	93,708,781
Poles, Towers and Fixtures - Distribution	39,848,003	57,648,646	59,627,469	60,640,393	54,427,544	62,976,457
Overhead Conductors and Devices - Distribution	21,665,234	33,961,620	38,705,225	39,688,852	39,018,008	40,343,571
Underground Cables and Devices - Distribution	0	0	0	0	0	0
Underground Conduits - Distribution	0	0	0	0	0	0
Line Transformers - Distribution	55,689,799	76,628,688	73,837,900	74,716,160	78,422,129	81,904,004
Power Conditioning Equipment	1,344,551	13,526,342	16,933,004	3,437,505	7,974,225	8,207,255
Meters, Instruments and Metering Transformers - Distribution	0	0	0	0	0	0
Information Systems Equipment (distribution)	648,107	11,273,216	9,257,099	12,277,081	30,459,911	7,363,803
Regulated Entity Property on Consumer's Premises	0	0	0	0	0	0
Street Lights and Signal Systems	3,423,318	5,611,230	5,254,258	4,661,129	5,702,778	6,570,621
Submarine Cables	0	0	0	0	0	0
Non-network						
Land and Land Rights (non-network)	3,600,000	26,853,967	3,792,438	0	50,676,050	0
Structures and Improvements (non-network)	16,583,539	28,914,495	76,834,959	9,246,149	10,681,678	11,872,047
Office Furniture and Equipment	1,362,999	1,071,175	1,220,954	670,240	1,004,437	863,466
Transportation Equipment	9,101,987	11,877,475	13,810,318	22,702,308	20,246,170	22,605,352
Stores Equipment	215,000	0	0	0	148,551	95,073
Tools, Shop and Garage Equipment	11,650,000	6,845,495	9,567,774	11,677,687	7,930,537	6,470,902
Laboratory Equipment	10,000,000	608,933	1,053,455	329,626	0	0
Information Systems Equipment (non-network)	11,688,847	12,337,977	9,910,377	7,887,783	9,790,876	14,704,750
Power-operated Equipment	19,531,848	3,186,752	10,365,997	15,756,125	9,305,224	9,673,672
Communication Plant and Equipment	214,889	218,088	452,752	472,220	613,886	510,753
Miscellaneous Equipment	1,300,000	0	716,349	164,813	342,811	713,047
Materials						
Materials and supplies (including spares)	0	0	0	0	0	0
Transferred						
Subtrans						
subtransmission assets	0	0	0	0	0	0
Sub-total Regulated Distribution Services	207,669,680	363,513,206	365,527,939	300,550,134	392,238,086	314,509,062

Distribution Connection Services Assets							
Network	Poles, Towers and Fixtures (Customer)	0	0	0	0	0	0
	Overhead Conductors and Devices (Customer)	1,841,276	3,643,024	3,779,214	3,940,484	4,101,510	4,269,053
	Underground Conductors and Devices (Customer)	0	0	0	0	0	0
	Line Transformers (Customer)	5,252,524	6,977,410	7,094,001	7,162,311	7,519,177	7,915,155
	Information Systems Equipment (Connection)	0	0	0	0	0	0
Non-network	Land and Land Rights (non-network)	0	0	0	0	0	0
	Structures and Improvements (non-network)	0	0	0	0	0	0
	Office Furniture and Equipment	0	0	0	0	0	0
	Transportation Equipment	0	0	0	0	0	0
	Stores Equipment	0	0	0	0	0	0
	Tools, Shop and Garage Equipment	0	0	0	0	0	0
	Laboratory Equipment	0	0	0	0	0	0
	Information Systems Equipment (non-network)	0	0	0	0	0	0
	Power-operated Equipment	0	0	0	0	0	0
	Communication Plant and Equipment	0	0	0	0	0	0
	Miscellaneous Equipment	0	0	0	0	0	0
Materials	Materials and supplies (including spares)	0	0	0	0	0	0
Sub-total Distribution Connection Assets		7,093,800	10,620,434	10,873,215	11,102,795	11,620,688	12,184,208
Regulated Retail Services Assets							
	Meters, Instruments & Metering Transformers (Consumer Consumption Metering)	37,384,561	82,922,364	86,285,829	89,709,459	93,371,186	97,171,829
	Land and land rights	0	0	0	0	0	0
	Structures and improvements	0	-14,342,256	-38,172,467	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	57,216,674	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		37,384,561	125,796,782	48,113,363	89,709,459	93,371,186	97,171,829
TOTAL CAPEX		252,148,041	499,930,421	424,514,517	401,362,388	497,229,960	423,865,100

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

Opex Category and Sub-category		Forecast, nominal (regulatory year)	Forecast (peso, nominal) (Regulatory Year)			
		2010	2011	2012	2013	2014
Distribution						
Operation	Operation supervision & engineering	30,433,647	32,244,481	34,120,182	35,974,082	37,896,899
	Load dispatching	2,787,596	2,953,461	3,125,267	3,295,077	3,471,199
	Substations	3,399,903	3,602,200	3,811,745	4,018,854	4,233,662
	Overhead conductors & devices	11,243,434	11,912,430	12,605,391	13,290,297	14,000,664
	Underground cables & devices	0	0	0	0	0
	Streetlighting and signal systems	994,852	1,054,046	1,115,362	1,175,964	1,238,819
	Metering (distribution network)	3,572,400	3,784,961	4,005,137	4,222,754	4,448,460
	Rents	80,434	85,220	90,177	95,077	100,159
	Information technology (distribution network)	4,793,968	5,079,214	5,374,678	5,666,709	5,969,594
	Miscellaneous	1,591,977	1,686,701	1,784,818	1,881,795	1,982,377
Maintenance	Maintenance supervision & engineering	18,549,780	19,653,512	20,796,780	21,926,761	23,098,748
	Substations	6,621,618	7,015,611	7,423,718	7,827,081	8,245,439
	Overhead lines	32,766,297	34,715,926	36,735,394	38,731,390	40,801,585
	Underground cables & devices	0	0	0	0	0
	Streetlighting and signal systems	9,315,362	9,869,636	10,443,765	11,011,221	11,599,771
	Line transformers	743,038	787,249	833,045	878,308	925,253
	Information technology (distribution network)	8,231,602	8,721,391	9,228,725	9,730,162	10,250,240
	Metering (distribution network)	517,586	548,383	580,284	611,813	644,514
	Miscellaneous	381,167	403,847	427,339	450,558	474,641
Admin & Gen	Admin & general salaries	97,537,051	101,460,720	105,985,953	110,387,781	114,963,943
	Office supplies & expenses	5,567,149	5,791,101	6,049,389	6,300,633	6,561,828
	Information technology (admin & general)	13,186,913	13,717,389	14,329,196	14,924,319	15,543,012
	Outside services employed	52,421,553	54,530,340	56,962,438	59,328,213	61,787,683
	Property insurance	1,181,478	1,229,006	1,283,820	1,337,140	1,392,572
	Injuries & damages	291,761	303,498	317,034	330,202	343,890
	Employee pension & benefits	55,811,288	58,056,435	60,645,801	63,164,553	65,783,061
	Rents	4,056,501	4,219,684	4,407,885	4,590,954	4,781,274
	Maintenance of office & general plant	7,092,750	7,378,073	7,707,142	8,027,236	8,360,008
	Officers allowance & benefits	177,913	185,070	193,325	201,354	209,701
	Travel	4,579,529	4,763,752	4,976,219	5,182,893	5,397,751
	Training	17,422,567	18,123,433	18,931,753	19,718,031	20,535,448
	Regulatory liaison & compliance	5,450,198	5,665,734	5,918,164	6,164,059	6,420,172
	Water and Electricity	15,052,803	15,866,430	16,758,696	17,603,771	18,489,638
	Other	35,536,898	36,966,457	38,615,192	40,218,966	41,886,256
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		451,391,014	472,375,394	495,583,813	518,268,009	541,838,263

Distribution Connection Services						
Operation	Operation supervision & engineering	1,329,399	1,408,499	1,490,433	1,571,415	1,655,407
	Load dispatching	0	0	0	0	0
	Overhead connections & devices	2,143,972	2,271,541	2,403,679	2,534,281	2,669,739
	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)	348,553	369,292	390,774	412,007	434,029
	Miscellaneous	25,547	27,067	28,641	30,197	31,811
Maintenance	Maintenance supervision & engineering	2,905,848	3,078,749	3,257,844	3,434,857	3,618,450
	Load dispatching	0	0	0	0	0
	Overhead connections & devices	8,344,299	8,840,794	9,355,073	9,863,376	10,390,574
	Underground cables & devices	0	0	0	0	0
	Consumer installations	776,843	823,066	870,944	918,267	967,348
	Distribution transformers	0	0	0	0	0
	Information technology (connection assets)	587,870	619,300	655,552	691,931	730,329
	Miscellaneous	5,013	5,281	5,590	5,900	6,228
Admin & Gen	Admin & general salaries	874,367	909,540	950,106	989,566	1,030,589
	Office supplies & expenses	140,923	146,592	153,130	159,490	166,101
	Information technology (admin & general)	31,962	33,248	34,731	36,174	37,673
	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		17,514,595	18,532,968	19,596,499	20,647,462	21,738,279
Regulated Retail Services						
	Administration & management	73,156,689	78,484,347	84,222,979	90,054,357	96,222,366
	Consumer meter installations (planning, supply, install, maintain)	33,139,040	35,552,401	38,151,927	40,793,467	43,587,495
	Meter reading expenses	15,324,205	15,906,525	16,590,505	17,254,125	17,944,290
	Information technology (consumer related)	4,970,880	5,332,886	5,722,817	6,119,050	6,538,156
	Consumer records, billing and collection	51,049,114	58,001,871	68,131,194	82,042,675	101,501,296
	Bad debts	2,587,020	2,738,134	2,912,034	3,088,071	3,274,750
	Informational and instructional advertising	1,937,005	2,078,068	2,230,013	2,384,413	2,547,726
	Energy trading expenses	0	0	0	0	0
	Water and Electricity	2,491,809	2,626,495	2,774,199	2,914,091	3,060,735
	Miscellaneous consumer services expenses	291,581	312,815	335,688	358,930	383,514
Sub-total Regulated Retail Services		184,947,343	201,033,542	221,071,355	245,009,180	275,060,329
Total Operating & Maintenance Expenditure		653,852,952	691,941,904	736,251,668	783,924,650	838,636,871

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

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

Opex Category and Sub-category	Forecast, nominal (regulatory year)	Forecast (peso, nominal) (Regulatory Year)			
	2010	2011	2012	2013	2014
Levies					
Regulatory reset expert fees	0	14,542,164	1,623,145	1,670,757	1,719,581
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	14,542,164	1,623,145	1,670,757	1,719,581
Duties					
	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	183,977	190,969	199,180	207,147	215,433
Community tax	10,656	11,061	11,537	11,998	12,478
Real Property Tax	2,531,506	2,627,703	2,740,694	2,850,322	2,964,335
DEFICIENCY AND AMMESTY TAXES	0	0	0	0	0
DOCUMENTARY STAMP TAX	0	0	0	0	0
FRINGE BENEFIT TAX	0	0	0	0	0
MISCELLANEOUS TAXES	0	0	0	0	0
LOCAL FRANCHISE TAX	0	0	0	0	0
Sub-total Other Taxes	2,726,140	2,829,733	2,951,412	3,069,468	3,192,246
Total Other Taxes, Levies & Duties	2,726,140	17,371,897	4,574,556	4,740,225	4,911,827