

Republic of the Philippines  
**ENERGY REGULATORY COMMISSION**  
San Miguel Avenue, Pasig City



**IN THE MATTER OF THE  
APPLICATION FOR THE  
APPROVAL OF THE  
AMENDMENT OF THE POWER  
PURCHASE AGREEMENT  
(PPA) BETWEEN CAGAYAN  
ELECTRIC POWER AND  
LIGHT CO., INC. (CEPALCO)  
AND BUBUNAWAN POWER  
COMPANY, INC. (BPC), WITH  
PRAYER FOR PROVISIONAL  
AUTHORITY**

**ERC CASE NO. 2014-041 RC**

**CAGAYAN ELECTRIC POWER  
AND LIGHT CO., INC.  
(CEPALCO) AND  
BUBUNAWAN POWER  
COMPANY, INC. (BPC),**

**D O C K E T E D**  
Date: MAY 02 2018  
By: [Signature]

**Applicants.**

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**DECISION**

Before this Commission for resolution is the *Application* dated 27 March 2014 filed on 10 April 2014 by Applicants Cagayan Electric Power and Light Co., Inc. (CEPALCO) and Bubunawan Power Company, Inc. (BPC) for the approval of their Power Purchase Agreement (PPA) with Prayer for Provisional Authority. This is pursuant to Section 25 of Republic Act (R.A.) No. 9136<sup>1</sup>, otherwise known as the Electric Power Industry Reform Act, and Section 1, Rule 20 (B) of Energy Regulatory Commission's (ERC) Rules of Practice and Procedure (RPP)<sup>2</sup>.

<sup>1</sup> SEC. 25. Retail Rate. – The retail rates charged by distribution utilities for the supply of electricity in their captive market shall be subject to regulation by the ERC based on the principle of full recovery of prudent and reasonable economic costs incurred, or such other principles that will promote efficiency as may be determined by the ERC.

<sup>2</sup> Section 1. Applications for Approval of Power Supply Contract. – Applications for approval of power supply contract between a distribution utility and power producer, other than those

In their Application, CEPALCO and BPC alleged the following:

1. Applicant CEPALCO is a corporation duly organized and existing under and by virtue of Philippine laws, with principal office address at 44 Don Toribio Chavez Street, Cagayan de Oro City.
2. It is the sole and duly authorized franchisee and holder of a certificate of public convenience and necessity to install, operate and maintain a heat, light and power distribution system in the City of Cagayan de Oro, and in the Municipalities of Tagoloan, Villanueva and Jasaan, all in the Province of Misamis Oriental.
3. Co-applicant BPC is a corporation duly organized and existing under and by virtue of Philippine laws, with office address at MINERGY Road, Tablon, Cagayan de Oro City.
4. CEPALCO has an existing Power Purchase Agreement (PPA) with BPC, for the supply of electricity generated by the latter from its 6MW Hydro-electric Generating Plant located in Baungon, Bukidnon, executed on April 19, 1999, which was approved with some modifications, by the then Energy Regulatory Board (ERB), in ERB Case No. 99-21, in a Decision dated 3 January 2001.
5. Under the PPA, the cooperation period is twenty five (25) years to start from Commercial Operation.
6. On 17 December 2011, the Hydro-electric Plant was heavily damaged by flood, as a result of Typhoon Sendong, a super typhoon which hit Northern Mindanao that caused the loss of many lives and damage to properties in the city and nearby areas.
7. Since the plant was rendered inoperable, BPC and CEPALCO agreed to suspend the PPA and for BPC to rehabilitate the plant.
8. The electricity that will be generated by the BPC plant is needed by CEPALCO to augment to its power requirements.
9. Furthermore, the capacity that NPC can provide to CEPALCO beyond 25 March 2015, the expiry date of its CSEE with NPC, is uncertain since most of its assets in Mindanao are set to be privatized.
10. Lastly, there is power insufficiency in the Mindanao grid, and in fact, the National Grid Corporation of the Philippines (NGCP) is already rationing power to its transmission load customers in Mindanao due to lack of available power supply.

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July 2005), shall include a statement of the salient provisions of the said contract, including the stipulations on the pricing, and a statement of its impact on the overall rates of the applicant-utility once said contract is approved.

11. It is therefore necessary that BPC's hydro-plant be rehabilitated, and rehabilitation was a more economical option compared to getting power from a new plant.
12. BPC then undertook the rehabilitation of the plant to restore it to operating condition, and as a result it incurred rehabilitation costs in the amount of P422,147,273.00, even as it received insurance proceeds for the insurance claim on the damage incident.
13. With the rehabilitation costs, BPC could not anymore continue operation the plant using the rates of the ERB-approved PPA without incurring huge economic losses, and consequently, parties had to negotiate for its amendment.
14. Parties then entered into the Amendment of the Power Purchase Agreement (Annex "A"). Its salient features as compared to the existing PPA are shown in Table 1 as follows:

Table 1. Salient Features of the PPA.

		<b>Existing ERB Approved- PPA</b>	<b>Amendment to the PPA</b>
Cooperation Period		25 years from Commercial Date of Operation which is September 25, 2001	Cooperation period is 20 years from commissioning date after rehabilitation
Rates  (Note: Watershed Development Fee and Community Livelihood and Development Fee are still applicable in amended PPA)		Basic Energy Fee equivalent to the delivered rate of NPC to CEPALCO	Capital Recovery: P4.5883 per kilowatt-hour  O&M: P1.0319 per kilowatt-hour
	Escalation	Not applicable	The O&M Fee shall be escalated annually corresponding to the percentage change in the Consumer Price Index (CPI) of the Philippines
Minimum Off-take Provision		No minimum off-take as per ERB decision	Same; no minimum off-take. CEPALCO shall receive all electricity from BPC on "must take" basis

15. Table 2 below shows the derivation of the Capital Recovery Fee and the Operation and Maintenance Fee:

Table 2. Derivation of the Capital Recovery Fee and O&M Fee

<b>Details</b>	<b>Figure</b>
Project Cost:	
Plant Appraised Value (May 2010), Peso	542,365,030
Less: Insurance Proceeds, Peso	(316,712,065)
Cost of Rehabilitation, Peso	422,147,273
IDC including Financing, Peso	24,497,075
<b>Total Project Cost, Peso</b>	<b>672,297,313</b>
Weighted Average Asset Life, Years	20
Weighted Average Cost of Capital	16.22%
Annual Annuity, Peso	114,707,638
Divided by Annual Energy Sales, kWh	25,000,000
<b>Capital Recovery Fee, P/kWh</b>	<b>4.5883</b>
Total Operation & Maintenance Cost, Peso	25,797,160
Divided by Annual Energy Sales, kWh	25,000,000
<b>Operation &amp; Maintenance Fee, P/kWh</b>	<b>1.0319</b>

16. Table 3 below shows the debt-equity ratio of the project and the derivation of the weighted average cost of capital for the project.

Table 3. Debt-Equity Ratio and WACC Derivation

<b>Cost Component</b>	<b>Amount</b>	<b>D/E Ratio</b>	<b>Cost</b>	<b>WACC</b>
Debt	P438,111,104	65%	8.32%	5.42%
Equity	P234,186,209	35%	31.0%	10.80%
<b>Total</b>	<b>P672,297,313</b>	<b>100%</b>		<b>16.22%</b>

17. Table 4 shows the main components of the project rehabilitation costs.

Table 4. Project Rehabilitation Cost Components

<b>Component</b>	<b>Cost, PhP</b>
Civil Works	200,397,979
Electro-Mechanical Works & Equipment	157,497,100
Substation & Transformer Rehabilitation	2,933,973
Taxes and Import Duties	41,215,970
Contingency	20,102,251
<b>Total Project Rehabilitation Costs</b>	<b>422,147,273</b>

18. Table 5 below is over-all rate impact to CEPALCO's customers if the Amendment to the PPA will be implemented:

Table 5. Rate Impact of the PPA Amendment

	Formula	Without BPC PPA		With BPC
		No Alternative Supplier	With Alternative Supplier	
Total Monthly Energy Requirement, kWh	A	71,772,513	71,772,513	71,772,513
Actual Monthly Energy Purchase, kWh	C	69,582,513	71,772,513	71,772,513
Total Cost of Monthly Energy Requirement, Peso	D= C/B	344,159,850	364,285,950	357,116,088

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Average Generation Cost, P/KWh	E= A-B	4.9461	5.0756	4.9757
Unserved Energy (Monthly), KWh		2,190,000		
Over-all Rate Impact, P/KWh				
With Alternative Supplier				5.0756
With BPC				4.9757
BPC is cheaper by				0.0999

19. Rehabilitation works were already completed and the commissioning of the Plant will be completed on 01 May 2014.
20. In support of this application, the following supporting documents are attached:

	Document	Annex
1	Amendment to the Power Purchase Agreement	"A"
2	Power Purchase Agreement	"B"
3	Decision of the ERB in ERB Case No. 99-21	"C"
4	Board Resolution of CEPALCO Authorizing the Amendment	"D"
5	Board Resolution of BPC Authorizing the Amendment	"E"

21. Applicants will comply with the requirements in Section 4 (e), Rule 3 of the Rules and Regulations of Republic Act 9136, in relation to Rule 6 of the ERC Rules of Practice and Procedure, prior to the filing of this application.

**ALLEGATIONS IN SUPPORT OF THE PRAYER  
 FOR PROVISIONAL AUTHORITY**

22. As stated above, the commissioning of the plant will be completed on 1 May 2014, hence CEPALCO has to receive the electricity from the BPC plant to augment CEPALCO's power requirements.
23. If CEPALCO will pay the rates using the ERC-approved PPA, which is equivalent to the landed rate of NPC/PSALM to CEPALCO, BPC will incur losses at the rate of P2.0056 per kwhr, or P146,400 per day, assuming BPC can supply power at an average of 73,000 kwhr per day and using the December 2013 charges of PSALM and NGCP.
24. CEPALCO therefore is seeking a provisional authority/rate to allow BPC to start supplying electricity to CEPALCO using the proposed rates provided in the Amendment to the Power Purchase Agreement.

PRAYER

PREMISES CONSIDERED, applicants CEPALCO and BPC respectfully pray that-

1. Upon filing and pending hearing of this application, a provisional authority/rate be issued;
2. After due notice and hearing, a decision be rendered approving the Amendment to the Power Purchase Agreement; and

Other relief or remedy as may be just and equitable under the circumstances are also prayed for.

Having found the said *Application* to be sufficient in form and substance, the Commission issued an *Order* and a *Notice of Public Hearing*, both dated 15 April 2014, setting the case for initial hearing, expository presentation, pre-trial conference, and evidentiary hearing on 30 May 2014.

In the same *Order*, CEPALCO and BPC were directed to cause the publication of the attached Notice of Public Hearing, at their own expense, twice (2x) for two (2) successive weeks in two (2) newspapers of general circulation in the Philippines. The last publication should be made not later than ten (10) days before the date of the scheduled initial hearing. They were also directed to inform the consumers within CEPALCO's franchise area, by any other means available and appropriate, of the filing of the application, their reasons therefor, and of the scheduled hearing thereon.

Likewise, the Offices of the Provincial Governor, the City and Municipal Mayors, and the Local Government Unit (LGU) legislative bodies within the franchise area of CEPALCO were furnished with copies of the *Order* and *Notice of Public Hearing* for the appropriate posting thereof on their respective bulletin boards.

On 20 May 2014, Engr. Robert F. Mallillin (Engr. Mallillin) filed a *Motion to Participate as Intervenor* and a *Pre-Trial Brief*, both dated 15 May 2014.

On 22 May 2014, CEPALCO and BPC filed their *Pre-Trial Brief* dated 21 May 2014.

On 27 May 2014, the National Association of Electricity Consumers for Reforms, Inc. (NASECORE) filed its *Petition for Intervention*.

During the hearing on 30 May 2014, the Commission looked into the documents presented by the Applicants to prove their compliance with the publication and posting requirements provided in the *Order* dated 15 April 2014, all of which were requested to be marked as Exhibits “C” to “L-1”, inclusive. Thereafter, the Commission verified CEPALCO and BPC’s substantial compliance with the said directives. Thus, the Commission acquired jurisdiction over the instant case.

During the said hearing, Konsumanteng Kagay-anon, Inc. (KKI) entered its appearance and filed its *Petition for Intervention* dated 30 May 2014.

Engr. Mallillin, NASECORE and KKI were admitted as Intervenors during the hearing, but only Engr. Mallillin and KKI participated therein as such.

Subsequently, an *Order* dated 23 June 2014 was issued by the Commission granting Provisional Authority to implement the PPA subject of the instant case with the following disposition:

WHEREFORE, the foregoing premises considered, the Commission hereby PROVISIONALLY APPROVES the Amendment of the Power Purchase Agreement (PPA) between Cagayan Electric Power and Light Company, Incorporated (CEPALCO) and Bubunawan Power Company, Incorporated (BPC), subject to the following conditions:

- a. The applicable generation rate shall be PhP3.2824/kWh, broken down as follows:

<b>Component</b>	<b>Rate (PhP/kWh)</b>
Capital Recovery Fee	2.2505
O&M Fee	1.0319
Total	3.2824

- b. The said O&M Fee shall be subject to a monthly adjustment on the Philippine Consumer Price Index (CPI), as published by the National Statistics Office (NSO), using the base month indicated in the instant application;
- c. The final generation cost that can be recovered shall be determined by the Commission in its Decision in the instant application; and

- d. In the event that the final rate is higher than that provisionally granted, the resulting additional charges shall be collected by BPC from CEPALCO. On the other hand, if the final rate is lower than that provisionally granted, the amount corresponding to the reduction shall be refunded by BPC to CEPALCO.

SO ORDERED.

On 10 July 2014, CEPALCO and BPC filed their *Formal Offer of Exhibits* (FOE) dated 08 July 2014. Intervenors Engr. Mallillin, NASECORE and KKI did not file any Comment on the FOE.

An *Order* dated 22 June 2015 was issued by the Commission extending the provisional authority granted in the Order dated 23 June 2014 until the same is revoked or made permanent by the Commission.

On 07 October 2015, Applicants filed a *Motion for Leave to Admit Memorandum* with even date, and with attached *Memorandum with Motion for Early Resolution*.

Subsequently, Applicants filed several Motions for Resolution dated 09 February 2016, 19 May 2016 and 08 March 2017.

An *Order* dated 15 May 2017 was issued by the Commission requiring the Applicants to submit several documents to facilitate the final evaluation of the instant case. Subsequently, on 25 May 2017, the Applicants filed their *Joint Compliance* with the said Order.

Having found the exhibits contained in the Applicants' FOE to be relevant and material in the evaluation of the instant case, the Commission admitted the same.

### **ISSUE**

Whether the Power Purchase Agreement (PPA) entered into by Applicants should be approved.



**THE COMMISSION'S RULING**

The Commission hereby resolves to APPROVE WITH MODIFICATION the instant Application.

**DISCUSSION**

**I. THE LAW EMPOWERS  
THE COMMISSION TO  
REVIEW POWER  
SUPPLY AGREEMENTS.**

Republic Act No. 9136, otherwise known as the *Electric Power Industry Reform Act of 2001* (EPIRA) mandates the Commission to be the primary regulatory arm of the State tasked with overseeing the restructured electric power industry. Towards this end, the Commission is empowered to determine if Distribution Utilities (DUs) are supplying their captive market with electricity in the least cost manner.<sup>3</sup>

Likewise, Section 25 of the EPIRA provides that the retail rate<sup>4</sup> charged by DUs is subject to regulation by the Commission based on the principle of full recovery of prudent and reasonable economic costs incurred, or such other principles that will promote efficiency.

The law also provides that the bilateral power supply contracts entered into by DUs with Generation Companies (GenCo) are subject to review by the Commission.<sup>5</sup> Section 4 (e), Rule 5 of the EPIRA Implementing Rules and Regulation (IRR), on the other hand, requires that the prices charged by a GenCo for the supply of electricity shall be subject to the Commission's regulation.

The instant Application seeks the Commission's approval of the Amendments to the PPA entered into by and between CEPALCO and BPC. It prescribes fees which will form part of BPC's generation cost. Consequently, the generation cost forms part of the retail rate charged by CEPALCO to its customers.

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<sup>3</sup> Section 23, Republic Act No. 9136, otherwise known as the Electric Power Industry Reform Act of 2001 (EPIRA).

<sup>4</sup> Paragraph uuu, Rule 4, IRR of EPIRA, defines Retail Rate as the total price paid by end-users consisting of the charges for generation, transmission and related Ancillary Services, distribution, supply and other related charges for electric service.

<sup>5</sup> Section 45 (b) of the EPIRA.

As such, pursuant to the provisions of the EPIRA and its IRR, the Commission is empowered to exercise jurisdiction over the instant Application.

**II. THE AMENDMENTS TO  
THE PPA IS APPROVED  
WITH MODIFICATION.**

CEPALCO has an existing PPA (Original PPA) with BPC executed on 19 April 1999 for the supply of electricity from the latter's 6MW Hydro-electric Generating Plant located in Baungon, Bukidnon. The same was approved by then Energy Regulatory Board (ERB) in a *Decision* dated 03 January 2001 under ERB Case No. 99-21<sup>6</sup>. The term of the said Original PPA is twenty five (25) years from Commercial Operation<sup>7</sup>.

However, on 17 December 2011, the Hydro-electric Plant was heavily damaged by flood due to Typhoon Sendong<sup>8</sup>. As such, CEPALCO and BPC agreed to suspend the Original PPA and for BPC to rehabilitate the plant<sup>9</sup>.

In rehabilitating the plant, BPC incurred costs in the amount of PhP422,147,273.00, even as it received insurance proceeds for the insurance claim on the incident<sup>10</sup>. BPC could no longer continue operating the plant using the ERB-approved costs without incurring huge economic losses. Thus, the parties had to negotiate for the amendment of the Original PPA.

The supply of electricity that will be generated by the BPC plant is necessary to augment CEPALCO's power requirements considering that the capacity that the National Power Corporation (NPC) can provide CEPALCO after the expiration of their Contract for the Supply of Electric Energy (CSEE) on 25 March 2015 is uncertain<sup>11</sup>. In addition, there is insufficiency of power in the Mindanao Grid.

Thus, on 23 December 2013, CEPALCO and BPC signed and executed the Amendments to the PPA subject of the instant Application.

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<sup>6</sup> Paragraph 4, Application.

<sup>7</sup> Paragraph 5, Application.

<sup>8</sup> Paragraph 6, Application.

<sup>9</sup> Paragraph 7, Application.

<sup>10</sup> Paragraph 12, Application.

<sup>11</sup> Paragraph 9, Application.

After careful evaluation of the contents of the Amendments to the PPA, the Commission deemed it proper to modify certain provisions in accordance with existing regulatory policies.

**A. Salient provisions of the Amendments to the PPA.**

A copy of the Amendments to the PPA entered into by CEPALCO and BPC on 23 December 2013 and subject of the instant case is attached to the Application as Annex "Q". Likewise, a copy of the Original PPA executed on 19 April 1999 and approved by the ERB in 2001 is attached to the Application as Annex "A".

The amended Original PPA shall take effect for a period of twenty (20) years from Commercial Operation, where BPC shall deliver electric power and energy to CEPALCO reckoned from the commissioning after the rehabilitation of the plant. CEPALCO and BPC likewise agreed that the period of cooperation may be extended upon agreement of the parties<sup>12</sup>.

During the Cooperation Period, CEPALCO shall purchase from BPC all the electricity generated by the plant on a "must take as available" basis. Any sale of power to any purchaser shall be with prior written consent of CEPALCO<sup>13</sup>.

CEPALCO and BPC shall likewise agree on procedures, standards, protective settings, and a program to be followed by BPC for the testing of the Power Station. CEPALCO agrees to take all electricity generated during such testing, and the payment of electricity will be based on the landed rate of NPC/ Power Sector Assets and Liabilities Management Corporation (PSALM)<sup>14</sup>.

Forced outage is the inability of BPC to provide the electricity due to the fault of BPC, except if such inability is due to (i) Allowed Downtime, or (ii) Force Majeure<sup>15</sup>.

In case of Forced Outage, CEPALCO shall pay BPC based on the Actual Delivered Energy in the billing period<sup>16</sup>.

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<sup>12</sup> Paragraph 1, Amendment to the PPA.

<sup>13</sup> Paragraph 5, Amendment to the PPA.

<sup>14</sup> Paragraph 4, Amendment to the PPA.

<sup>15</sup> Paragraph 8, Amendment to the PPA.

<sup>16</sup> Section 12.7, PPA.

In case of curtailment<sup>17</sup>, CEPALCO shall pay BPC the Basic Energy Fee equivalent to the energy that BPC could have possibly delivered to CEPALCO had there been no curtailment<sup>18</sup>.

In the event that BPC is unable to produce electricity due to severe drought projected to last for a period of more than one (1) year, both parties may proceed to suspend the agreement and the parties will meet to discuss the basis and terms upon which the arrangements set out in the PPA may be continued<sup>19</sup>.

The Basic Energy Fee shall be pegged at the 2012 price of PhP5.6202 per kWh, subject to escalation as set forth in Section 6.10.

The Basic Energy Fee<sup>20</sup> is broken down as follows:

Capital Recovery Fee	:PhP4.5883 per kWh
O&M	:PhP1.0319 per kWh

Section 6.10 provides that the Basic Energy Fee shall be escalated annually corresponding to the percentage change in the Consumer Price Index (CPI) of the Philippines from 2012 to 2013. Thereafter, the Operations and Maintenance (O&M) Fee shall be escalated annually corresponding to the percentage change in the CPI.

## **B. The Commission's evaluation of the Amendments to the PPA.**

It is the policy of the Commission to employ a cost-based methodology in evaluating the rates proposed in PSA Applications to ensure that only prudent and reasonable economic costs and a fair return on the investments made in acquiring and operating the power plants will be recovered by investors.

Pursuant to the said methodology, the following rate components were used by the Commission in determining the reasonableness of the proposed rates:

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<sup>17</sup> Section 12.9 of the PPA provides that Curtailment is the non-delivery of electricity by BPC or the delivery of electricity at levels below the minimum off-take, due to (i) the failure or inability of the CEPALCO grid, due to CEPALCO's fault, to absorb the energy output of the Plant, or (ii) a request by CEPALCO that its off-take be at a level below the minimum.

<sup>18</sup> Paragraph 9, Amendment to the PPA.

<sup>19</sup> Section 12.11, PPA.

<sup>20</sup> Paragraph 5, Amendment to the PPA.

- a. Capital Recovery Fee (CRF) - a capital related element that will allow BPC to recover the cost of its investment over the life of the plant together with a reasonable rate of return.
  
- b. Operations and Maintenance (O&M) Fee - a component to recover operations and maintenance costs. The power plant O&M cost is commonly composed of Fixed and Variable components. The Variable O&M cost represents locally denominated plant operating cost such as salaries, wages, overhead and technical expenses, while Fixed O&M cost represents maintenance of spare parts, supplies, and all other costs associated with the said parts that are usually imported.
  - Fixed O&M - a component to recover fixed O&M costs. This cost is determined by the capacity of the plant, not the level of utilization; and
  - Variable O&M - an element to recover variable O&M costs. These non-fuel costs will vary with the amount of electricity generated.

To reiterate, Applicants CEPALCO and BPC proposed an amended rate of PhP5.6202/kWh, with the following cost components:

Table 1. Rate Proposed by Applicants.

<b>Component</b>	<b>Rate (PhP/kWh)</b>
CRF	4.5883
O&M	1.0319
Total Energy Fee	5.6202

### **1. Capital Recovery Fee**

BPC proposed a Capacity Recovery Fee (CRF) of PhP4.5883/kWh, which was derived after considering the total cost of constructing and rehabilitating the power plant, plus a reasonable return on capital.

The table below shows the detailed derivation of BPC's proposed CRF:

Table 2. Derivation of Proposed CRF.

<b>Particulars</b>	<b>Amount</b>
Total Project Cost	PhP672,297,313
Asset Life, Years	20 years
Weighted Average Cost of Capital	16.22%
Annual Revenue Requirement	PhP114,707,638
Divided by Annual Energy Sales	25,000,000 kWh
<b>Capital Recovery Fee</b>	<b>PhP4.5883/kWh</b>

### **1.1. Total Project Cost**

BPC proposed a total project cost in the amount of Six Hundred Seventy-Two Million Two Hundred Ninety-Seven Thousand Three Hundred Thirteen Pesos (PhP672,297,313.00) based on the assumption that sixty-five percent (65%) of the cost of the facility is financed through a loan, while the remaining balance equivalent to thirty-five percent (35%) is financed through equity. The table below shows the cost components of the facility of the power plant:

Table 3. Components of the Proposed Project Cost.

<b>Details</b>	<b>Amount (PhP)</b>	
Plant, Property and Equipment as of May 2010 Appraisal		<b>542,365,030</b>
<b>Add/(Deduct):</b>		
1. Insurance Proceeds		<b>(316,712,065)</b>
2. Total Cost of Rehabilitation		<b>422,147,273</b>
2.1 Civil Works	200,397,979	
2.2 Electro-Mechanical Works & Equipment	157,497,100	
2.3 Substation & Transformer Rehabilitation	2,933,973	
2.4 Taxes and Import Duties	41,215,970	
2.5 Contingency	20,102,251	
3. Interest During Construction incl. Financing		<b>24,497,075</b>
<b>Total Project Cost</b>		<b>672,297,313</b>

To verify the reasonableness of the proposed project cost, the Commission compared the same with other previously approved capital costs of other power plants having similar technology, thus:

**Table 4. Comparison of Project Costs Involving Hydro-electric Power Plants.**

Particulars	Smith Bell MHPP	San Luis MHPP	Santa Clara HPP	Bulanao MHPP	<b>BPC</b>
Project Cost (PhP)	199,582,590.13	80,295,062.18	1,360,600,907.12	109,547,757.00	<b>672,297,313</b>
Installed Capacity, MW	1.80	0.80	8.00	1.00	<b>7.00</b>
PhP/MW	110,879,216.74	100,368,827.73	170,075,113.39	109,547,757.00	<b>96,042,473</b>

As gleaned from above, BPC's Proposed Project Cost is the lowest among the hydro-electric power plants when calculated on a per MW basis.

Furthermore, the Commission made its own Project Cost calculation by using the Net Book Value (NBV) of the hydro-electric power plant before it was damaged by typhoon Sendong.

Based on the Audited Financial Statement (AFS) submitted by BPC, the NBV of the Plant, Property, and Equipment (PPE) as of December 2011 is Four Hundred Seventy-Three Million Two Hundred Sixteen Thousand and Six Hundred Seven Pesos (PhP473,216,607.00).

The said amount, however, includes a Land and Land Rights component in the amount of Forty Million Nine Hundred Sixty-Nine Thousand Seven Hundred Seventy-Two Pesos and 24/100 (PhP40,969,772.24). Based on the AFS, the item Land and Land Rights is comprised of the following:

**Table 5. Land and Land Rights Cost Components.**

Land	PhP418,284.00
Improvements and Site Development	PhP40,551,488.24
<b>TOTAL</b>	<b>PhP40,969,772.24</b>

The amount for Improvements and Site Development is itemized, as follows:

Table 6. Itemized Cost of Improvements and Site Development.

<b>Clearing, Blasting &amp; Excavation works</b>	<b>AMOUNT (PhP)</b>
VMC Turnkey Contract – clearing & excavation, granular refill, site facility & indirects, engineering (\$390,779.94)	8,545,867.74
Blasting & Excavation works, 1 lot	22,495,012.93
Philcan – completion of clearing & blasting works	331,719.10
<b>Access Road</b>	
General logistics & preparatory road works (\$35,000)	1,749,510.00
Access Road	7,399,777.97
Concreting of road near dam (Power Plant Site) 1 lot	29,600.50
<b>TOTAL</b>	<b>40,551,488.24</b>

Based on the foregoing, the Commission excluded the cost of Land amounting to Four Hundred Eighteen Thousand Two Hundred Eighty-Four Pesos (PhP418,284.00) from the Total Project Cost as it would be more appropriate to give the said item a reasonable rate of return. Thus, the NBV of the PPE to be considered in calculating the Total Project Cost should be Four Hundred Seventy-Two Million Seven Hundred Ninety-Eight Thousand Three Hundred Twenty-Three Pesos (PhP472,798,323.00).

It should also be noted that the hydro-electric power plant was insured for a total amount of Five Hundred Ninety-Two Million Five Hundred Ninety-One Thousand Four Hundred Forty-Six Pesos (PhP592,591,446.00). Of the total insurance, the amount of Five Hundred Thirty-Two Million Eight Hundred Forty-Seven Thousand Pesos (PhP532,847,000.00) covers Material Damages against insured perils, while the remaining amount of Fifty-Nine Million Seven Hundred Forty-Four Thousand Four Hundred Forty-Six Pesos (PhP 59,744,446.00) is for Business Interruption.

BPC filed a claim to its insurers for the losses covered by each insurance policy due to the damages suffered by its plant and caused by Typhoon Sendong. However, upon the evaluation of the insurers as regards the total amount of insurance proceeds that may be recovered, BPC agreed with all the insurers for the final settlement of its claim for material damages, business interruptions, and other claims in the total amount of Three Hundred Sixteen Million Seven Hundred Twelve Thousand Sixty-Five Pesos (PhP316,712,065.00).

The Commission likewise perused the agreements entered into by BPC with several contractors for the rehabilitation of the hydro-electric power plant. Upon careful examination of the agreements and other submitted documents, the Commission arrived at a total rehabilitation cost in the amount of Three Hundred Sixty Million



Eight Hundred Twenty-Nine Thousand and Fifty-Three Pesos (PhP360,829,053.00), which is the same amount proposed by BPC excluding the costs for contingency, taxes, and import duties.

The Commission also recomputed the contingency cost based on the allowable percentage of 3.5% of the Engineering, Procurement, and Construction (EPC) cost, and arrived at the amount of Fourteen Million Seventy-One Thousand Five Hundred Seventy-Six Pesos (PhP14,071,576.00). Thus, the total rehabilitation cost was derived as follows:

Table 7. Total Rehabilitation Cost.

<b>PARTICULARS</b>	<b>AMOUNT(PhP)</b>
Civil Works	200,397,979
Electro-Mechanical Works & Equipment	157,497,100
Substation & Transformer Rehabilitation	2,933,973
<b>Sub-total</b>	<b>360,829,053</b>
Taxes and Import Duties	41,215,970
Contingency	14,071,576
<b>TOTAL REHABILITATION COST</b>	<b>416,116,598</b>

As regards the amount pertaining to the incurred Interest During Construction (IDC) and the finance cost, BPC assumed a total amount of Twenty-Four Million Four Hundred Ninety Seven Thousand and Seventy-Five Pesos (PhP24,497,025.00). Upon further verification from the documents submitted by applicant BPC, and considering that the actual amount of the loan borrowed by BPC for the rehabilitation of the plant is Two Hundred Fifty Million Pesos (PhP250,000,000.00) with an interest rate of 6.09%, the Commission adjusted the IDC and finance cost to Fifteen Million Two Hundred Twenty-Five Thousand Pesos (PhP15,225,000.00).

On the basis of the foregoing, in arriving at the Project Cost to be used in calculating the CRF, the Commission disaggregated the NBV, insurance proceeds, and rehabilitation cost associated with the PPE, and categorized the same into totally/substantially damaged, partially damaged, and not damaged, thus:

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		Carrying Value (Net of Land) 472,798,323		
	Totally/Substantially Damaged	Partially Damaged	Not Damaged	
	TOTAL			
NBV	472,798,323.00	207,200,000.00	143,000,000.00	122,598,323.00
(Material Damage Insurance)	<u>(259,703,202.66)</u>	<u>(177,908,951.04)</u>	<u>(81,794,251.62)</u>	<u>-</u>
<b>Net After Insurance</b>	<b>213,095,120.34</b>	<b>29,291,048.96</b>	<b>61,205,748.38</b>	<b>122,598,323.00</b>
Rehab Cost	<u>360,829,053.00</u>	<u>231,090,381.51</u>	<u>129,738,671.49</u>	<u>-</u>
<b>Sub-Total</b>	<b>573,924,173.34</b>	<b>261,011,430.47</b>	<b>190,944,419.87</b>	<b>122,598,323.00</b>
ADD:				
Taxes and Import duties	41,215,970.00			
Contingency	14,071,576.00			
IDC	15,225,000.00			
Insurance: (Business FFF) (Business Interruption) (Other Claims)	<u>(539,000.00)</u> <u>(54,019,862.53)</u> <u>(2,450,000.00)</u>			
<b>Total Asset Base</b>	<b>587,427,856.81</b>			

Thereafter, the Commission excluded from the computation of the project cost the amount of Fifty-Four Million Nineteen Thousand Eight Hundred Sixty-Two Pesos and 53/100 (PhP54,019,862.53) pertaining to Business Interruption Insurance because it has already served its purpose during the rehabilitation of the plant.

Likewise, the amount of Twenty-Nine Million Two Hundred Ninety-One Thousand Forty Eight Pesos and 96/100 (PhP29,291,048.96) pertaining to the Unrecovered Value for totally/substantially damaged PPE was deducted from the project cost considering that the PPEs were already washed out and totally destroyed, thus bearing no more value.

Consequently, the Project Cost in the amount of Six Hundred Twelve Million One Hundred Fifty-Six Thousand Six Hundred Seventy Pesos and 12/100 (PhP612,156,670.12) is derived as follows:

Table 8. Derivation of Project Cost.

<b>Component</b>	<b>Amount (in PhP)</b>
Total Asset Base	587,427,856.81
Add: Business Interruption Insurance	54,019,862.53
Less: Unrecovered Value for Totally/ Substantially Damaged PPE	(29,291,048.96)
<b>Total Project Cost</b>	<b>612,156,670.12</b>

### 1.2 Weighted Average Cost of Capital (WACC)

BPC submitted a nominal post-tax WACC of 16.22% for its hydro-electric power plant, which is based on a cost of debt of 8.32% and a cost of equity of 31%. It was computed using the following formula:

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

where:

- $r_e$  = the cost of equity;
- $r_d$  = the cost of debt;
- $E$  = the amount of equity funding equivalent to 35%;
- $D$  = the amount of debt funding equivalent to 65%; and
- $V$  =  $E + D$ .

BPC averred that during the time of preparation of the documents and data for the instant Application, only the Promissory Note with Security Bank was available. Thus, assumptions were made judiciously to approximate the level of debt that the company would incur for the rehabilitation of the plant, and the Applicants proposed a total debt of Four Hundred Thirty-Eight Million Pesos (PhP438,000,000.00).

At present, however, the said loan has been replaced by the existing loan agreement of BPC with the Bank of Philippine Islands (BPI) in the amount of Two Hundred Fifty Million Pesos Only (PhP250,000,000.00).

Hence, the total amount of debt incurred for the rehabilitation of BPC's hydro-electric power plant is PhP250,000,000.00 only, and not PhP438,000,000.00 as stated in the Application.

Furthermore, since BPC and BPI has entered into a Loan Agreement, the Commission used the cost of debt indicated therein equivalent to 6.09%, which shall be subject to 10% corporate income tax.

On the other hand, a Pre-tax WACC of 18.02% was proposed by BPC.

The data and parameters used in the calculation of WACC was based on their value in 2012, the year when the Plant was rehabilitated, considering that it was also when BPC actually put to use its capital. Thus, the Commission arrived at a cost of equity of 16.44% using the Capital Asset Pricing Model (CAPM) Formula, to wit:

$$r_e = r_f + \text{Beta}_e \times \text{MRP}$$

Where:

$r_e$  = the nominal cost of equity;

$r_f$  = risk free rate estimated for the Philippines as estimated above;

$\text{Beta}_e$  = the equity beta for benchmark generation company; and

MRP = the Market Risk Premium (MRP)

Table 9. Cost of Equity.

<b>Parameters</b>	<b>2012</b>
Risk Free, $r_f$	6%
Beta	1.03
MRP	10.13%
<b>Cost of Equity*</b>	<b>16.44%</b>

Furthermore, BPC proposed the funding of the project to be through 40.84% debt and 59.16% equity. It should be pointed out that the 40.84% debt ratio is significantly lower than the standard gearing ratio (60%-75%) approved by the Commission.

Although the proposed debt ratio is supported by documents from its lenders and the fact that the rest of the rehabilitation cost of the hydro-electric power plant was funded by the insurance proceeds, the Commission deemed it best to base the debt ratio on the AFS to reflect the actual ratio.

Thus, the Commission derived the following WACC, *to wit*:

Table 10. WACC Computation.

	<b>Approved WACC</b>
Debt Element:	
Pre-Tax Cost of Debt	6.09%
Post-Tax Cost of Debt	-
Weight of Debt	40.84%
	2.49%
Equity Element	
Post-Tax Cost of Equity	16.44%
Pre-Tax Cost of Equity	18.27%
Weight of Equity	59.16%
	10.80%
<b>Post-tax WACC</b>	-
<b>Pre-tax WACC</b>	<b>13.29%</b>

### **1.3. BPC's Expected kWh Generation (Billing Determinant).**

The table below provides the computation of the annual saleable generation of the plant or Billing Determinant, *to wit*:

Table 11. Billing Determinant.

<b>Particulars</b>	<b>Values</b>
Installed Capacity	7,000
Net Dependable Capacity, kW	6,930
Capacity Factor	41.18%
No. of hours/year	8,760
<b>Billing Determinant, kWh</b>	<b>25,000,000</b>

The Billing Determinant (kWh) utilized to calculate the gross revenue was based on the Net Dependable Capacity (NDC) of the Plant at 6.93 MW. NDC is then multiplied by the number of operating hours per year.

Notably, the Capacity Factor (CF) proposed by BPC at 41.18% is higher than its average historical capacity factors for the last 10 years at 39.50%. Considering, however, that the CF of 41.18% is already within the range of the CFs for run-of-rivers<sup>21</sup>, the Commission considered the same in the calculation of the CRF.

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<sup>21</sup> Based on US EIA; [www.earth-policy.org](http://www.earth-policy.org); [www.energybc.ca](http://www.energybc.ca)

**1.4. Derivation of the CRF.**

Based on the foregoing, and using the Levelized Cost of Energy (LCOE) Method, the Commission derived a CRF of **PhP3.5352/kWh**, as follows:

Table 12. Derivation of the Approved CRF.

Project Cost	612,156,670.00
Pre-Tax WACC	13.29%
Remaining Life (in years)	20
A/P (20yrs, 13.29%)	0.1449
Annual Payment	88,691,164.51
Billing Determinant, kWh	25,000,000
<b>CRF (PhP/kWh)</b>	<b>3.54765</b>
Less: Terminal Value/kWh	.0146
<b>Sub-total</b>	<b>3.53302</b>
Return on Land	0.0022
<b>Total CRF (PhP/kWh)</b>	<b>3.5352</b>

**2. Operations and Maintenance Fee.**

Operations and Maintenance (O&M) costs are the recurring expenses which are related to the operation of a business or to the operation of the power plant facilities.

Based on the proposed tariff structure, CEPALCO shall pay BPC an O&M Fee of PhP1.0319/kWh, derived as follows:

Table 13. Proposed O&M Fee.

<b>Particulars</b>	<b>Amount</b>
<b><i>Operating Expenses:</i></b>	
Personnel	2,636,513
Operations and Maintenance	4,653,892
Others	1,301,297
<b><i>General &amp; Administrative (G&amp;A):</i></b>	
Taxes and Licenses	1,767,336
Insurance	3,244,282
Real Property Tax	10,915,286
Others	1,278,554
<b>Total O&amp;M Expense</b>	<b>25,797,160</b>
Divided by Annual Energy Sales, kWh	25,000,000
<b>Operation &amp; Maintenance Fee, P/kWh</b>	<b>1.0319</b>

BPC described the particulars of their proposed O&M fee as follows:

Table 14. Description of Particulars.

<b>Components</b>	<b>Particulars</b>
<b>Operating Expenses:</b>	
Personnel	Expenses for salaries, wages and benefits of O&M employees.
Operations and Maintenance	Expenses for repair and maintenance of plant equipment, outside services and fuel related to operations.
Others	Covers Travel & Transportation, Club Dues & Representation, Advertisement & Donation, Freight & Handling, Office Supplies, Communication, Subscription and other O&M related expenses.
<b>G&amp;A:</b>	
Taxes and Licenses	Taxes/fees due to BIR, NWRB, DOE, LGU, Special Land Use Permit, LTO, etc.
Insurance	Insurance for properties and equipment, business interruption, and vehicles.
Real Property Tax	RPT on structures & machineries
Others	Covers administrative related expenses such as salaries, wages & benefits, maintenance & repair, Legal & Audit, Travel & Transportation, Advertisement & Donation, Freight & Handling, Communication, Outside Services, Gasoline & Oil, Office Supplies, and other related expenses.

The reasonableness of the O&M cost was determined by referring to the historical cost of operations of the power plant. Thus, the Commission referred to the AFS submitted by BPC for the year 2015 wherein the actual O&M expense was reflected, thus:

Table 15. BPC's Actual O&M Expense Based on its 2015 AFS.

<b>Components</b>	<b>Amount (PhP)</b>
Operating Expenses	12,994,807
General & Administrative	11,374,043
<b>Total O&amp;M Expense</b>	<b>24,368,850</b>

The Total O&M Expense disclosed in BPC's AFS was adopted by the Commission as it reflects the normal and complete annual information for the O&M of BPC.

Based on the foregoing, the Commission derived an O&M Fee of PhP0.9748/kWh, thus:

Table 16. Derivation of O&M Fee.

<b>Particulars</b>	
Total O&M Expense (PhP)	24,368,850
Billing Determinant (kWh)	25,000,000
<b>O&amp;M Fee (PhP/kWh)</b>	<b>0.9748</b>

### 3. Rate Implication.

An analysis was prepared by CEPALCO to determine the impact of the implementation of the PPA on its generation cost, thus:

Table 17. Rate Impact of CEPALCO's PPA with BPC.

<b>Particulars</b>	<b>Formula</b>	<b>Without BPC PPA</b>		<b>With BPC</b>
		<b>No Alternative Supplier</b>	<b>With Alternative Supplier</b>	
Total Monthly Energy Requirement, kWh	A	71,772,513	71,772,513	71,772,513
Actual Monthly Energy Requirement, kWh	B	69,582,513	71,772,513	71,772,513
Total Cost of Monthly Energy Requirement, PhP	C	344,159,850	364,285,950	357,116,088
Average Generation Cost, PhP/kWh	D = C/B	4.9461	5.0756	4.9757
Unserved Energy (Monthly), kWh	E = A-B	2,190,000		C
<b>Over-all Rate Impact, PhP/kWh:</b>				
With Alternative Supplier				5.0756
With BPC				4.9757
<b>Increase/(Decrease)</b>				<b>(0.0999)</b>

Based on Applicants' submission, CEPALCO and, ultimately, its consumers, will benefit from the implementation of the proposed rates in the Amendments to the PPA as it will result in a decrease of PhP0.0999/kWh in the generation rate.

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It must be noted, however, that the rates approved by the Commission are lower than the rates proposed by the Applicants, *to wit*:

Table 18. Comparison of Rates Proposed by Applicants with the Rates Herein Approved by the Commission.

<b>Components</b>	<b>BPC's Proposed Rates (PhP/kWh)</b>	<b>Approved Rates (PhP/kWh)</b>	<b>Difference (PhP/kWh)</b>
Capital Recovery Fee	4.5883	3.5352	(1.0531)
O&M Fee	1.0319	0.9748	(.0571)
<b>Total Energy Fee</b>	<b>5.6202</b>	<b>4.5100</b>	<b>(1.1102)</b>

Thus, CEPALCO's consumers will be paying generation rates much lower than what was simulated and applied for by Applicants CEPALCO and BPC.

The Commission has conducted a meticulous review and technical evaluation of the Application filed by CEPALCO and BPC taking into consideration all the submissions made by both parties, pursuant to its mandate under Section 23 of the EPIRA to ensure that distribution utilities supply electricity in the least cost manner to its captive market.

The Commission's evaluation of the instant Application revealed that the PPA entered into by CEPALCO and BPC will redound to the benefit of CEPALCO's end-consumers in so far as it will ensure the quality, reliability, security, and affordability of the supply of electric power.<sup>22</sup>

**WHEREFORE, PREMISES CONSIDERED,** the Application for approval of the Amendment to the Power Purchase Agreement (PPA) of applicants Cagayan Electric Power and Light Co., Inc. (CEPALCO) and Bubunawan Power Company, Inc. (BPC) is hereby **APPROVED WITH MODIFICATION**, subject to the following rates and conditions:

<sup>22</sup> As prescribed under Section 2 of the EPIRA.

a. Applicable Rate:

Component	Rate (PhP/kWh)
Capital Recovery Fee	3.5352
O&M Fee	0.9748
<b>Total Tariff</b>	<b>4.5100</b>

b. The O&M Fee shall be subject to monthly Philippine CPI adjustment published by the National Statistics Office (now Philippine Statistics Authority) using the base month indicated in the Application; and

c. Considering that there is a difference between the provisional rate and the final rate approved herein, Applicants CEPALCO and BPC must SUBMIT a recovery scheme, as well as documents in support thereof, within thirty (30) days from receipt of this Decision.

**SO ORDERED.**

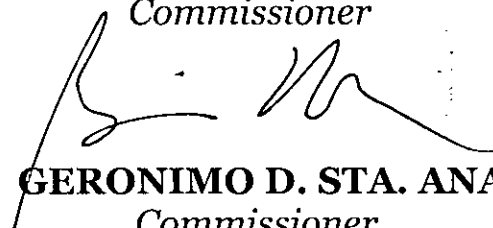
Pasig City, 22 August 2017.

**JOSE VICENTE B. SALAZAR\***  
Chairman and CEO

  
**ALFREDO J. NON**  
Commissioner

  
**GLORIA VICTORIA C. YAP-TARUC**  
Commissioner

  
**JOSEFINA PATRICIA A. MAGPALE-ASIRIT**  
Commissioner

  
**GERONIMO D. STA. ANA**  
Commissioner

LS: JEM/ARE/GLS/APV

ROS: MAG/LOC/FCBD

\* The Chairman was placed on preventive suspension as per Order of the Office of the President (OP-DC Case No. 17-D-094) dated 02 May 2017 and received on 04 May 2017.

UC

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