



## POWER SUPPLY PROCUREMENT PLAN

Pursuant to Section 4 of the Department of Energy's (DOE) Department Circular No. DC 2018-02-0003, and entitled, "Adopting and Prescribing the Policy for the Competitive Selection Process in the Procurement by the Distribution Utilities of Power Supply Agreement for the Captive Market" or a.k.a the Competitive Selection Process (CSP) Policy, Distribution Utilities (DUs) are mandated to submit their Power Supply Procurement Plan (PSPP) Report.

The PSPP refers to the DUs' plan for the acquisition of a variety of demand-side and supply-side resources to cost-effectively meet the electricity needs of its customers. The aim is the reliable and steady supply of the basic delivery of electricity services at transparent and affordable price. Thus, the PSPP is an integral part of the DUs' Distribution Development Plan (DDP) that must be submitted to the DOE supported by management action through a Board Resolution and/or a Notarized Secretary's Certificate.

One also of the salient features of the CSP Policy is the creation of a The Third-Party Bids and Awards Committee (TPBAC) and/or Joint TPBAC which shall spearhead and manage the CSP. The TPBAC shall be a five (5) member committee, three (3) of which are from the DU and the remaining two (2) shall come from the captive customers in its respective franchise area. The DOE's mandate on this is to afford the captive customers a representation in the CSP activity which will balance the level playing field in their role as one of the electric power industry participants. It must be emphasized that the end product of CSP translates to rate impact passed on to end consumers, most preferably the cheapest and affordable electricity prices.

Therefore, all DUs, PELCO II included, shall submit this PSPP Report in accordance to this circular to DOE through posting on the DOE CSP Portal. For ECs such reports shall be submitted to DOE and the National Electrification Administration (NEA). The NEA shall review the submitted report within ten (10) working days upon receipt prior to its submission to DOE for posting.

The content of the PSPP Report shall be consistent with the DDP. The tables and graph format to be used is provided on the following sheets stated below. Further, the PSPP shall contain the following sections:

- I. Table of Contents
- II. Introduction
- III. Energy and Demand Forecast (10 year historical and forecast)
- IV. Energy Sales and Purchase
- V. Daily Load Profile and Load Duration Curve
- VI. Existing Contracts & Existing GenCos due diligence report
- VII. Currently approved SAGR for Off-Grid ECs to be passed-on to consumers;
- VIII. DU's Current Supply and Demand
- IX. Distribution Impact Study
- X. Schedule of Power Supply Procurement
- XI. Timeline of the CSP
- XII. Annex - Monthly Data

For inquiries, you may send it at [doe.csp@gmail.com](mailto:doe.csp@gmail.com) or you may contact us through telephone numbers (02) 840-2173 and (02) 479-2900 local 202.



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## INTRODUCTION

**INTRODUCTION - PART 1.** Pampanga II Electric Cooperative, Inc. (PELCO II) is a Region III and On-Grid Electric Cooperative (EC). PELCO II is the exclusive franchise holder of a Certificate of Franchise issued by the National Electrification Commission ("NEC") of the National Electrification Administration ("NEA") to operate an electric light and power services in the city and municipalities in the Province of Pampanga, namely: 1) Guagua, 2) Bacolor, 3) Porac, 4) Sasmuan, 5) Lubao, 6) Sta. Rita, and 7) Mabalacat City. Mabalacat City became a 3rd class city on July 21, 2012 following a referendum. Included in the aforementioned areas being served by PELCO II are other locations outside of NEA grant pursuant to government interventions and these are 13) Palmayo Resettlement and 23) Barangay Anon, Floridablanca, Pampanga; and 37) Sta. Lucia Resettlement, Magalang, Pampanga. The first two (2) areas are part of the franchise of Porac while the last resettlement is within the franchise area of Mabalacat City. With this approved franchise, PELCO II covers three (3) districts of Pampanga, viz, Districts 1, 2 and 3.

PELCO II's date of incorporation is April 23, 1979 and took place at Bacolor, Pampanga on the occasion of annual general membership assembly (AGMA) of former PELCO later split to PELCO I, PELCO II and PELCO III. From an estimate of approximately 30, 000 consumers, the cooperative now serves 192,698 based on year-end December 2017 statistics.

The 2017 operational performance of PELCO II reveals the following information: A) Operating Revenue of Php 3.61 B; B) System Loss of 10.88%; C) Collection Efficiency of 98.71%, and D) Peak Demand of 94 MW. The NEA standards classify PELCO II as a mega-large coop with 100% energized households and a load growth of approximately eight percent (8%).

The consumer population is a mix of residential, commercial, industrial and other types and are served by the strong workforce of 514 employees. This translates to productivity ratio 375 consumers per employee, higher by 25 vis-à-vis the standard of 350. To better serve these customers, PELCO II operates twelve (12) sub-offices and additional bayad centers. Statistics shows that residential consumers are the predominant type at 87% and the remaining 13% represents the non-residential ones. The load capacity is backed by six (6) substations at 125 MVA and connected to the primary and secondary distribution line system of 1,130 kms.

Section 2 of the EPIRA law states the DUs obligation to ensure the quality, reliability, security, and affordability of the supply of electric power. Further, Section 23 of EPIRA states the DU's obligation to supply electricity in the least cost manner to its captive market subject to collection of retail rates duly approved by ERC. Furthermore, Section 1 of DOE Circular No. 2003-12-11 DU's must henceforth take cognizance and assume full responsibility to forecast, assure, and contract for the supply of electric power in their respective franchise areas to meet their obligations as a DU, the manner of which to undertake such obligation is consistent with ERC Resolution No. 21, Series of 2005 and the subsequent rules and regulations issued by ERC, DOE and NEA. The CSP Circular is anchored on this mandate as one way to ensure that electricity prices passed on to DUs end consumers are transparent, competitive and more importantly, the possible lowest and cheapest generation costs.

The Third-Party Bids and Awards Committee (TPBAC) and/or Joint TPBAC undertakes to fulfill the mandate of the CSP side by side with the other stakeholders' participation.

A graphical presentation is shown in the next page indicating the basic highlights of the cooperative particularly the scope of franchise coverage, the people it caters and serves and its pivotal role in the development of Pampanga.



## INTRODUCTION

### DISTRIBUTION UTILITIES PROFILE

**INTRODUCTION PART 2 - PELCO II's** franchise area covers part of the Province of Pampanga as shown by the highlighted portions of the map, the identification of the six (6) towns/municipalities and one (1) city. From 1979 up to present, the cooperative plays a major role in the development of these areas from low class municipality to high class category. Under the political divisions of this province, PELCO II includes parts of the 1st, 2nd and 3rd Districts.



Figure No. 1

Number of Customer Connections in Franchise	Actual	Forecast									
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Residential	167,476	176,908	185,900	195,307	205,057	215,079	225,310	235,689	246,156	256,664	267,147
Commercial	6,975	7,447	7,933	8,441	8,972	9,526	10,101	10,699	11,318	11,961	12,624
Industrial	378	414	463	511	560	607	654	700	745	790	834
Others	17,869	18,955	19,684	20,376	21,035	21,669	22,279	22,867	23,435	23,987	24,525
Total (Captive Customers)	192,698	203,724	213,980	224,635	235,624	246,681	258,344	269,955	281,654	293,402	305,130
Contestable Customers served by LRES/RES	-	7	7	7	7	7	7	7	7	7	7

Table No. 1

The 2017 customer profile reveals that PELCO II's predominant group consists of residential end users at 87% and the remaining 13% comes from the non-residential block specifically commercial and industrial types. With the potential entry of spot and big loads, PELCO II's load is consistent with its upward trend year to year. At present, it already caters to a host of various other services like retail, manufacturing, banking, food processing and other big businesses. On the aspect of retail competition and open access (RCOA), PELCO II is a designated SOLR entity and by 2018, the potential contestable customers are seven (7) but will increase to a minimum of eight (8) following the government's contestability rules.

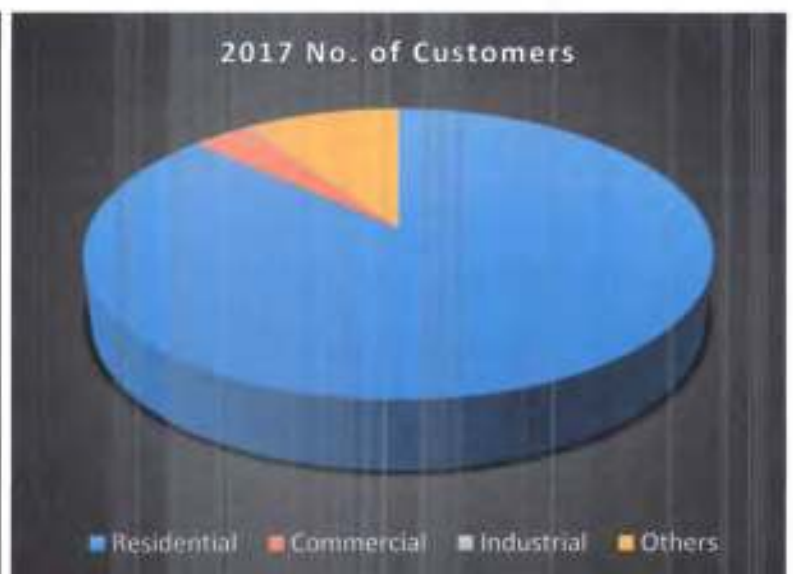


Figure No. 2



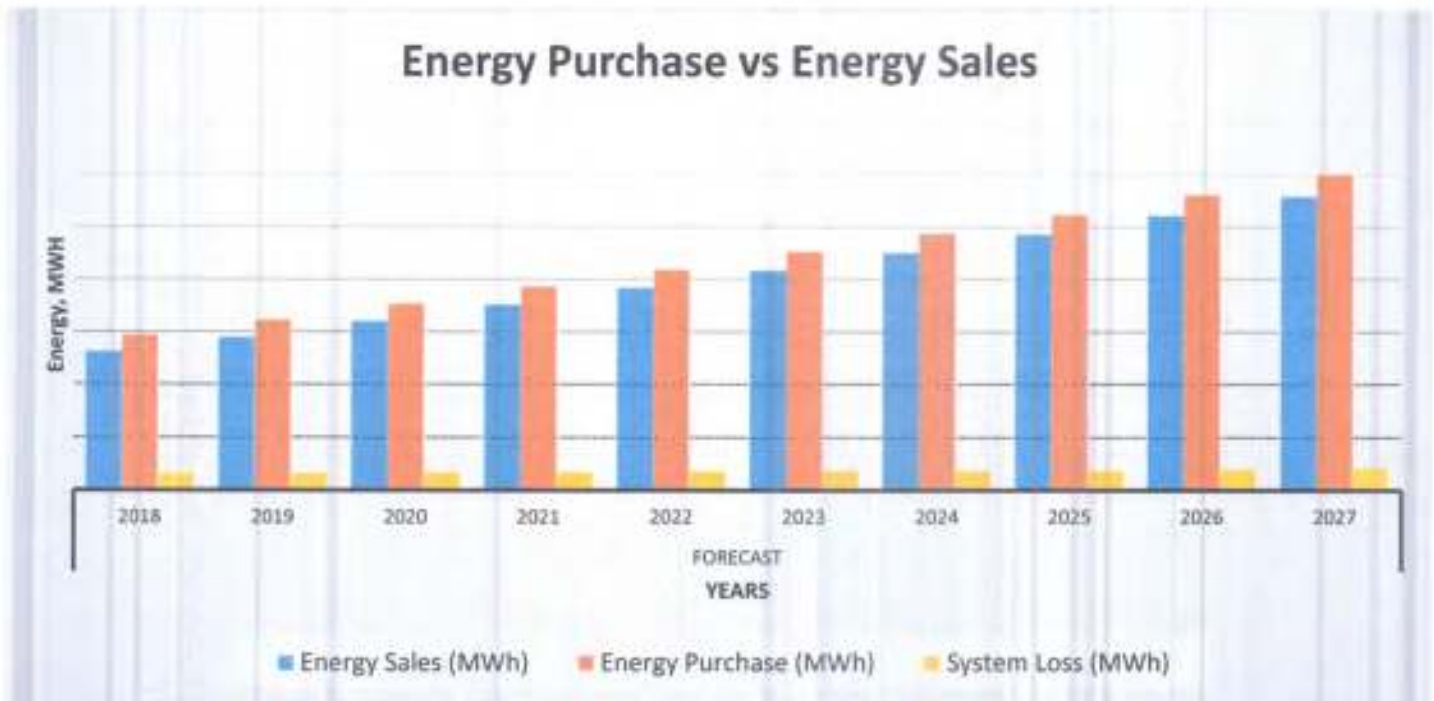
## ENERGY SALES AND PURCHASE

Energy Sales and Purchase	Historical									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Energy Sales (MWh)	241,322	271,507	303,687	297,788	311,925	326,546	344,644	372,556	421,727	467,996
Energy Purchase (MWh)	295,834	319,048	352,882	342,729	359,129	375,882	396,134	421,571	474,770	526,452
System Loss (MWh)	54,513	47,541	49,195	44,941	47,204	49,335	51,490	49,015	53,042	58,456
System Loss (%)	18.43%	14.90%	13.94%	13.11%	13.14%	13.13%	13.00%	11.63%	11.17%	11.10%

*Table No. 2*

Energy Sales and Purchase	Forecast									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Energy Sales (MWh)	526,132	582,032	641,233	703,394	767,898	834,648	903,196	973,579	1,046,446	1,118,920
Energy Purchase (MWh)	587,792	644,483	706,515	771,180	837,860	906,241	975,900	1,046,859	1,124,135	1,203,139
System Loss (MWh)	61,659	62,450	65,282	67,787	69,961	71,593	72,705	73,280	78,689	84,220
System Loss (%)	10.49%	9.69%	9.24%	8.79%	8.35%	7.90%	7.45%	7.00%	7.00%	7.00%

*Table No. 3*



*Figure No. 3*

The historical profile of PELCO II on sales and energy purchases indicates an upward trend over the years and this will likely keep the pace in the coming years because developments in the area of the cooperative also keep its momentum of rapid growth. The entry of spot and big loads of customers mostly on manufacturing, retail services, banking, food processing and a host of other business ventures ensures the load growth of the cooperative. It is also emphasized that with the development of Clark area as a Green City and business hub of the North, its adjacent area like Mabalacat City and Porac areas will also experience the same pace as related businesses will sprout.

It is also important to note that the entry of the Alvierra projects of the Ayala Group in Porac, Pampanga sometime in 2013 is also paving the way for more developments to come. Because it is near SCTEX, hence, accessibility is easy and just like Clark, related businesses continue to grow.



## DEMAND

Demand	Historical									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Coincident Peak Demand (MW)	53.499	59.062	65.541	64.661	66.190	71.486	75.863	76.310	85.233	93.068
Off Peak Demand (MW)	29.553	33.593	39.076	35.743	39.091	41.804	45.614	43.823	50.895	51.794
Date Occurred (mm/dd)	07/21	04/16	05/19	06/06	04/27	04/17	05/16	06/11	05/03	06/26
Off-Peak to Peak Difference (MW)	23.95	25.47	26.47	28.92	27.10	29.68	30.25	32.49	34.34	41.27

Table No. 4

Demand	Forecast									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Coincident Peak Demand (MW)	101.523	110.336	119.454	128.777	138.233	147.769	157.344	166.929	176.501	186.043
Off Peak Demand (MW)	63.040	70.309	77.883	85.662	93.575	101.567	109.598	117.639	125.667	133.666
Off-Peak to Peak Difference (MW)	38.48	40.03	41.57	43.11	44.66	46.20	47.75	49.29	50.83	52.38

Table No. 5

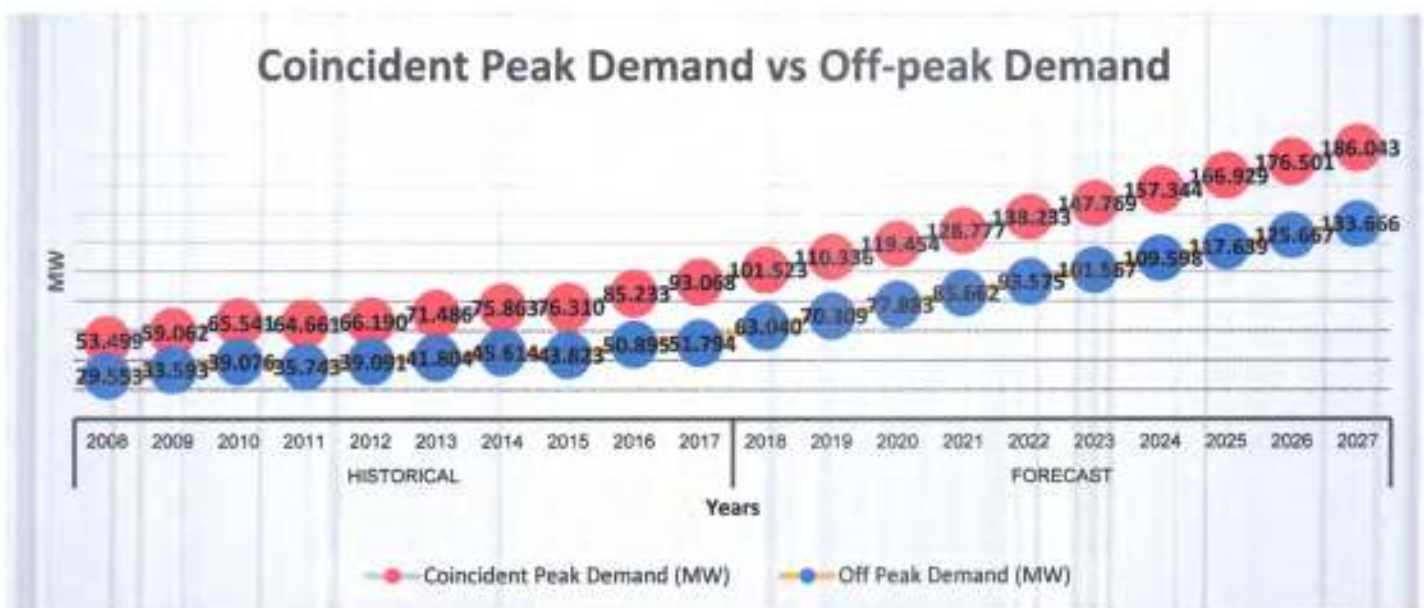


Figure No. 4

In the forecast analysis and methodology application, PELCO II used fifty seven (57) models. For this year's forecast, the historical data on load growth for the last seven (7) years, from 2011 to 2017 was considered. In the supply expansion, potential customers were taken into consideration including the developments in the franchise area of PELCO II. On the data of number of customer connections, the indicated information is based on historical data including those that will qualify pursuant to RCOA implementation.

These parameters were all considered in the determination and forecast of demand using the regression analysis model and validity tests measurements of T-stat and p-values. To achieve the credibility of the forecasted data, accuracy tests of MAPE, R2 and adjusted R2 are applied.

## LOAD PROFILE AND LOAD DURATION CURVE

### 2017 LOAD PROFILE (KW)

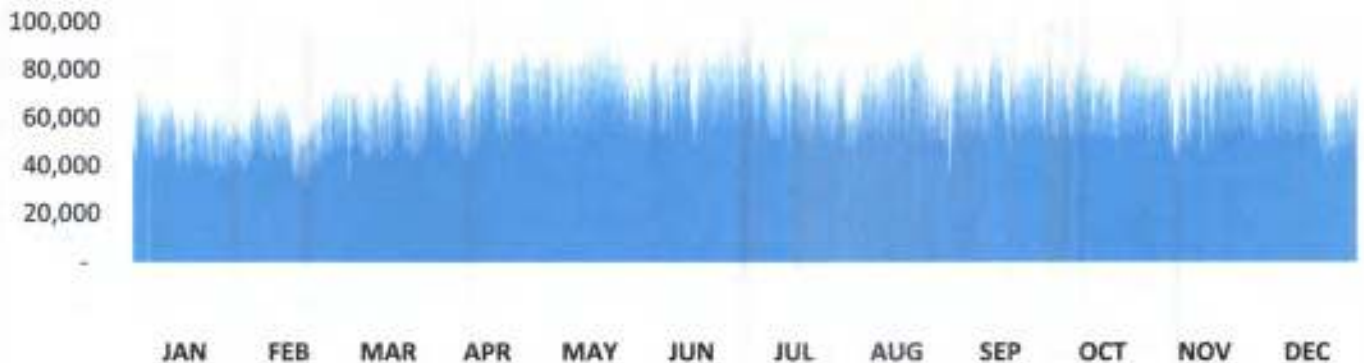


Figure No. 5

### 2017 LOAD DURATION CURVE (KW)



Figure No. 6

### 2017 SUPPLY DURATION CURVE (KW)

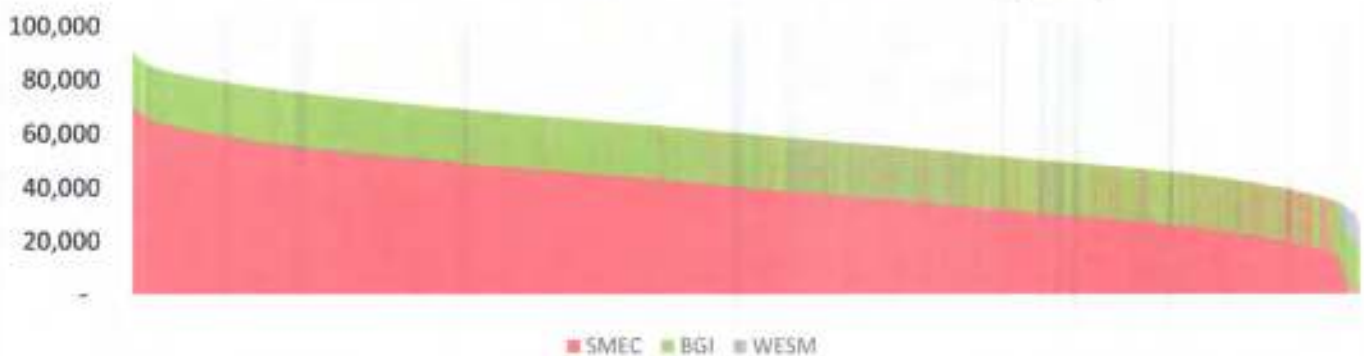


Figure No. 7

The 2017 Load Profile and Load Duration Curve expressed in kW states the level of capacity utilization and supply-demand scenario of PELCO II at approximately 90 kW. With the present registered consumers count of 192,698, baseload requirement is pegged at 65 kW while the next level thereafter is the mid-merit or intermediate and next step higher, the peaking level. This actual requirement is supplied by two (2) GENCOs through existing bilateral contracts (BC) and effective December 4, 2017, part of it is sourced from WESM following PELCO II's approval of its application from PEMC as direct WESM participant. The existing BCs, a 2.5 Year PSA with BGI and 5.0 Year PSC with SMEC will expire effective December 26, 2018 and December 26, 2019, respectively. With the expected increasing demand in the 10 Year planning horizon, from 90 kW to 186 kW in 2027, PELCO II contemplates to undertake three (3) biddings for baseload, mid-merit and peaking requirements thru CSP for the





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## MIX SUPPLY VS DEMAND AND THE OPTIMAL SUPPLY

Supply Demand	FORECAST										
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Peak Demand, MW	93.07	101.52	110.34	119.45	128.78	138.23	147.77	157.34	166.93	176.50	186.04
Supply Contracted, MW	93.07	60.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bacman Geothermal Inc. (BGI)	20.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
San Miguel Energy Corporation (SMEC)	73.07	30.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supply for PSA Approval, MW	0.00	0.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Bacman Geothermal Inc. (BGI)	0.00	0.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
Uncontracted Demand, MW	0.00	41.52	50.34	89.45	98.78	108.23	117.77	127.34	136.93	146.50	156.04

Table No. 6



Figure No. 6

For the requirements in 2018, BGI power supply is through a 2.5 Year power supply agreement (PSA) per ERC Case No. 2016-175 RC and is set to expire effective December 26, 2018. PELCO II in its desire to fulfill its mandate of providing continuity of supply for the benefit of its customers negotiated and entered into a ten (10) year contract with BGI following the rules on competitive selection process or CSP. The 10 Year contract is designed to serve the additional load of PELCO II of 10 MW due to load growth for the first year, December 26, 2017 to December 25, 2018, and the 30 MW from Year 2 - Year 10, from December 26, 2018 to December 25, 2027. This is the total of 10 MW plus the 20 MW replacement of the 2.5 Year PSA. Upon the start of Year 2018, PELCO II and BGI were still negotiating for the PSA following the cooperative's issuance of Notice of Award and was mutually finalized sometime in February of that year. Before signing of the PSA, it was first forwarded to NEA for evaluation and review and eventually the signing took place on June 6, 2018. Joint application of the PSA by both parties took place on September 20, 2018. The hearing took place on January 10, 2019 and as of date, post hearing





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**List of Existing Contracts and Details**

Supply Contracted	Plant Owner/ Operator	Capacity Factor	PSA Effectivity (MM/YR)	PSA Expiration (MM/YR)	Contracted Capacity, MW	Contracted Energy, MWH	Base / Mid-merit / Peaking	Embedded/ Grid Connected	Utility-owned/ NPC/ IPP/ NPC-IPP	Status	Fuel Type	Installed Capacity (MW)	Net Dependable Capacity (MW)
	Bacman Geothermal Inc. (BGI)	99%	Feb. 26, 2017	Dec. 25, 2018	20.00	175,200	Base	Grid Connected	IPP	with Provisional Authority	Geothermal Steam	156	156
	San Miguel Energy Corporation (SMEC)	57%	Jan. 28, 2015	Dec. 25, 2019	73.07	365,461	Base	Grid Connected	IPP Administrator	with pending Motion for Re-consideration	Coal	1000	1000
	Firstgen Hydro Power Corporation (FGHPC)	100%	Aug. 5, 2017	Sep. 3, 2017	30.00	21,567	Base - Replacement Power	Grid Connected	IPP	with Provisional Authority	Hydro	132	132

Table No. 7

Discuss the following:  
Performance of the existing Contracted Generation Companies.  
For off-grid DUs specify the approved SAGR

**POWER SUPPLIERS:** A) SMEC power supply is by virtue of LOA covering the period November 26, 2015 - May 25, 2016 (subject to ERC approval and comment of SMEC) at approximately 50 MW capacity (later reduced to 30 MW due to BGI contract) and in excess, it is sourced through WESM pending the approval of the urgent motion for reconsideration (UMR) dated December 9, 2015 filed by SMEC on the August 17, 2015 ERC Decision of ERC Case No. 2015-029 RC. On November 16 & 26, 2015, respectively, PELCO II and SMEC received the August 17, 2015 ERC Decision approving with modification the PSC. SMEC's supply is extended to 2017 and continues this date.

B) The first base load of 20MW is sourced from BGI per approved provisional authority (PA) pursuant to ERC Order dated December 6, 2016 (ERC Case No. 2016-175 RC) and received by PELCO II on May 8, 2017 and further extended until revoked by ERC in its Decision dated November 17, 2017.

C) In a meeting with SMEC on December 20, 2017, PELCO II informed it that the cooperative is a direct WESM participant effective December 4, 2017. As such, beginning December 2017, SMEC's supply is for the 30 MW based on the PSA. PELCO II and BGI signed a second agreement dated June 22, 2018 re: Increase in Contract Capacity at 10 MW for the period June 26, 2018 to September 25, 2018, thereby, the effective capacity is 30 MW and further extended in the last quarter of 2018 in accordance with PELCO II's letter request dated October 4, 2018. In excess of 60 MW power requirements of PELCO II it is all sourced from WESM.

D) The power supply of First Gen Hydro Power Corporation (FGHPC) was to serve the replacement power from August 5 - September 3, 2017 while SMEC underwent a maintenance outage on the same date.

E) With the combined power supply of SMEC, BGI and FGHPC, the average generation cost (GC) for 2017 is Php 4.7930/kWh vis-a-vis 2016's Php 5.4072/kWh. Please refer to attach summary of 7-Page 2016 & 2017 GC labelled as DDP DSG.

# PAMPANGA II ELECTRIC COOPERATIVE, INC.

## Guagua, Pampanga

### SUMMARY OF 2017 GENERATION COSTS (Php)

PARTICULARS	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
<b>San Miguel Energy Corporation</b>													
Total Charges Before VAT	190,736,188.00	120,987,167.50	141,702,930.29	166,747,625.69	180,550,691.26	193,958,916.00	195,418,339.08	100,674,451.40	137,869,099.30	172,709,121.39	187,703,856.23	142,549,955.09	1,680,938,331.48
Actual Energy (MWh) - SMEC	38,405,888	27,294,082	26,804,340	33,515,810	35,816,760	36,943,884	32,463,792	14,137,420	20,062,293	32,380,465	33,114,738	19,773,806	388,673,265
SMEC Average GR	4.9588	4.4342	5.1343	5.0348	5.0387	5.2947	4.8162	6.2906	6.1829	5.3371	5.0643	4.9628	4.9609
<b>Blackan Geothermal, Inc.</b>													
Total Charges Before VAT		57,060,000.00	57,066,362.86	56,881,736.00	58,331,548.00	59,065,132.00	58,731,548.00	58,920,249.16	58,689,323.02	58,331,548.00	59,065,132.00	58,324,434.80	642,094,073.86
Actual Energy (MWh) - BCI		14,840,000	13,157,127	14,700,000	14,400,000	14,800,000	14,400,000	18,788,200	14,834,100	14,400,000	14,800,000	14,396,000	150,332,427
BIG Average GR		3.8596	4.3288	3.9093	4.0608	3.9894	4.0668	3.0881	4.0164	4.0098	3.9694	4.0819	4.0368
<b>First Gen Hydro Power Corporation</b>													
Total Charges Before VAT													
Actual Energy (MWh) - FGHPC													
FGRHPC Average GR													
<b>TOTAL Generation Costs (Php)</b>	190,736,188.00	178,047,167.50	198,769,293.15	227,629,361.69	244,782,239.26	253,024,048.00	214,149,887.08	225,674,451.40	222,454,801.30	229,089,879.09	226,768,990.23	201,675,190.49	2,809,371,207.30
<b>TOTAL VPP Purchased (TRC) (Php/MWh)</b>	38,405,888.00	36,904,382.00	36,717,488.77	46,278,616.00	50,216,760.00	50,833,884.00	46,893,792.00	49,008,730.00	47,678,182.00	44,070,465.00	47,804,799.00	43,113,806.00	544,163,981.77
<b>Overall Average GR</b>	<b>4.9586</b>	<b>4.8490</b>	<b>5.1285</b>	<b>4.7162</b>	<b>4.8745</b>	<b>4.8776</b>	<b>4.5824</b>	<b>4.4586</b>	<b>4.6583</b>	<b>4.9725</b>	<b>4.7249</b>	<b>4.6585</b>	<b>4.7930</b>

Note: Computation of the unit cost is based on total generation costs/kWh purchased per SMEC power bill or TRC including WESM. The generation unit cost is based on the VPP rate calculation submitted monthly to ERC in accordance to ERC Resolution 1 Series of 2012.

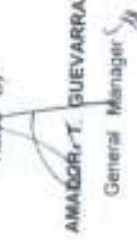
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**PAMPANGA II ELECTRIC COOPERATIVE, INC.**  
Guagua, Pampanga


**SUMMARY OF 2017 GENERATION COSTS**  
**FIRST GEN HYDRO POWER CORPORATION**

PARTICULARS	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Billing Determinants													
Actual Energy (kWh) - FGUPC								18,881,550	6,490,898	138,888			26,517,336
Actual Energy (MWh) - FGUPC							43,743,338	43,743,338	45,719,536	44,847,632			178,252,708
Contracted Energy (MWh)							22,000,000	22,000,000	22,000,000	22,000,000			88,000,000
Contracted Capacity (MW)							30 MVA	30 MVA	30 MVA	30 MVA			120 MVA
Generation Mix													
Hydroelectric (Non-Volatile)													
Renewables (Variable)								0.00%	0.00%	0.00%			0.00%
Renewables (Fixed)							100.00%	100.00%	100.00%	100.00%			100.00%
Basic Charges (Power)													
Fixed Capacity Charge							3,673M	3,673M	3,673M	2,745M			3,731M
Fuel Operation and Maintenance Payment							0.000M	0.000M	0.000M	0.000M			0.000M
Variable Contracted Energy							1,038M	1,038M	1,038M	1,038M			1,078M
Service Interruption Adjustment							0.000M	0.000M	0.000M	0.000M			0.000M
Capacity Utilization Discount							(5,471M)	(5,471M)	(5,471M)	(5,471M)			(21,884M)
<b>TOTAL</b>							4,832M	4,832M	4,832M	3,742M			4,078M
Basic Charges (P)													
Fixed Capacity Charge							16,319,000.26	16,319,000.26	16,319,870.97	1,955,751.30			17,162,181.82
Fuel Operation and Maintenance Payment													
Variable Contracted Energy							15,888,057.81	15,888,057.81	6,737,269.18				22,623,112.87
Service Interruption Adjustment													
Capacity Utilization Discount							(10,795,307.21)	(10,795,307.21)	(5,274,644.28)	(1,855,751.30)			(17,920,652.79)
<b>TOTAL</b>							60,879,799.82	60,879,799.82	26,096,478.87	(1,855,751.30)			85,029,515.59
10% VAT													
Total Charges After VAT							66,875,788.82	66,875,788.82	26,096,478.87	(1,855,751.30)			85,030,516.89

Note: Computation of the unit cost is based on total generation costs/kwh purchased per FGUPC power bill  
The generation unit cost is based on the USF rate calculations submitted monthly to ERC in accordance to ERC Resolution 1, Series of 2012.

Prepared By:  
  
**RICHELLE A. MICLAT**  
Regulatory Management Engineer/RCO

Conflict Correct By:  
  
**JANET M. GUAZON**  
Head, Regulatory Management

Noted By:  
  
**AMADOR T. GUEVARRA**  
General Manager

**PAMPANGA II ELECTRIC COOPERATIVE, INC.**  
Guagus, Pampanga

**SUMMARY OF 2017 GENERATION COSTS**  
BACMAN GEOTHERMAL, INC.

PARTICULARS	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Billing Determinants													
Actual Energy (MWh) - BGI	14,640,000	13,187,127	14,780,000	14,600,000	14,600,000	14,600,000	14,600,000	14,700,000	14,650,000	14,600,000	14,600,000	14,600,000	159,232,427
Actual Energy (MWh) - PGCP	38,340,000	27,342,773	40,242,517	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	487,877,307
Contracted Energy (MWh)	14,600,000	14,600,000	14,600,000	14,600,000	14,600,000	14,600,000	14,600,000	14,600,000	14,600,000	14,600,000	14,600,000	14,600,000	159,232,427
Contracted Demand (MW)	20 MW	20 MW	20 MW	20 MW	20 MW	20 MW	20 MW	20 MW	20 MW	20 MW	20 MW	20 MW	20 MW
Generation Mix													
Non-schedule (Non-schedule)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Non-schedule (Variable)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Basic Charges (P/Wh)													
Fixed Capacity Charge	1.2863	1.2863	1.2863	1.2863	1.2863	1.2863	1.2863	1.2863	1.2863	1.2863	1.2863	1.2863	1.2863
Fixed Operation and Maintenance Payment	1.2527	1.4422	1.2545	1.2545	1.2545	1.2545	1.2545	1.2545	1.2545	1.2545	1.2545	1.2545	1.2545
Variable Contracted Energy	1.8000	1.6998	1.8000	1.8000	1.8000	1.8000	1.8000	1.8000	1.8000	1.8000	1.8000	1.8000	1.8000
Service Interruption Adjustment	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Capacity Allocation Discount	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
TOTAL	3.8890	4.1388	3.8891	3.8891	3.8891	3.8891	3.8891	3.8891	3.8891	3.8891	3.8891	3.8891	3.8891
Bank Charges (P)													
Fixed Capacity Charge	17,660,000.00	17,660,000.00	17,660,000.00	17,660,000.00	17,660,000.00	17,660,000.00	17,660,000.00	17,660,000.00	17,660,000.00	17,660,000.00	17,660,000.00	17,660,000.00	174,200,000.00
Fixed Operation and Maintenance Payment	18,340,000.00	19,069,000.00	18,340,000.00	18,340,000.00	18,340,000.00	18,340,000.00	18,340,000.00	18,340,000.00	18,340,000.00	18,340,000.00	18,340,000.00	18,340,000.00	194,200,000.00
Variable Contracted Energy	23,810,000.00	21,810,000.00	21,810,000.00	21,810,000.00	21,810,000.00	21,810,000.00	21,810,000.00	21,810,000.00	21,810,000.00	21,810,000.00	21,810,000.00	21,810,000.00	259,300,000.00
Service Interruption Adjustment													292,442,000.00
Capacity Allocation Discount	1,450,000.00	1,713,713.85	1,450,000.00	1,450,000.00	1,450,000.00	1,450,000.00	1,450,000.00	1,450,000.00	1,450,000.00	1,450,000.00	1,450,000.00	1,450,000.00	16,221,000.00
TOTAL	57,660,000.00	57,660,000.00	57,660,000.00	57,660,000.00	57,660,000.00	57,660,000.00	57,660,000.00	57,660,000.00	57,660,000.00	57,660,000.00	57,660,000.00	57,660,000.00	642,860,032.85
Total Charges After VAT	57,960,000.00	57,960,000.00	57,960,000.00	57,960,000.00	57,960,000.00	57,960,000.00	57,960,000.00	57,960,000.00	57,960,000.00	57,960,000.00	57,960,000.00	57,960,000.00	642,860,032.85

Note: Computation of the unit cost is based on total generation costs less purchased per BGI power sale

The generation unit cost is based on the LTRB rate calculations submitted monthly to ERC in accordance to ERC Resolution 1, Series of 2012.

Prepared By  
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*Amador T. Guevarra*  
**AMADOR T. GUEVARRA**  
General Manager



**PAMPANGA II ELECTRIC COOPERATIVE, INC.**  
Guagua, Pampanga

**SUMMARY OF 2017 GENERATION COSTS**  
**SAN MIGUEL ENERGY CORPORATION**

PARTICULARS	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
<b>Billing Determinants</b>													
Actual Energy (MWh) - SREC	26,464,000	22,804,000	25,604,340	25,515,510	33,876,760	20,853,004	32,483,732	19,127,420	26,582,282	22,296,468	25,114,765	26,733,006	284,013,068
Actual Energy (MWh) - RGOCP	37,204,203	36,342,020	37,542,373	46,482,517	49,080,413	49,672,123	45,194,180	45,743,934	46,754,036	44,907,623	45,006,280	42,898,242	525,213,810
Contracted Energy (MWh)	38,482,500	20,264,000	25,554,240	33,111,610	26,816,760	35,853,844	33,463,702	19,127,420	28,582,282	22,296,468	25,114,765	26,723,000	354,513,965
Contracted Demand (MW)													
Generation-Mx													
Renewable (Non-Volatile)	0.18%	2.25%	3.71%	1.50%	3.78%	2.72%	5.14%	2.89%	1.23%	5.14%	3.28%	1.10%	2.38%
Non-Renewable (Variable)	99.81%	97.75%	96.29%	98.41%	96.22%	97.28%	94.86%	97.11%	98.77%	94.86%	96.71%	98.90%	97.62%
<b>Basic Charges (P/MWh)</b>													
Average Generation Rate	4.2666	4.4900	4.3368	4.2226	4.3517	3.6217	4.1406	4.2772	4.2320	4.1296	4.0271	4.1694	4.1891
Franchise and Benefits to Host Communities Charges	0.0346	0.0346	0.0346	0.0346	0.0346	0.0346	0.0346	0.0346	0.0346	0.0346	0.0346	0.0346	0.3242
Sub-Total	4.2937	4.5246	4.3714	4.2572	4.3863	3.6563	4.1752	4.3118	4.2666	4.1642	4.0617	4.2040	4.2229
<b>Adjustments (P/MWh)</b>													
<b>Deferred Accounting Adjustments</b>													
GRAM DAA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ICERA DAA	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sub-Total	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Automatic Cost Adjustments (ACA)</b>													
FYPCA	0.3267	0.3267	0.3267	0.3268	0.3264	0.3263	0.3261	0.3270	0.3262	0.3262	0.3210	0.3462	0.2710
FVA	0.3621	0.3617	0.3617	0.3617	0.3615	0.3614	0.3617	0.3604	0.3614	0.3614	0.3573	0.3786	0.2886
Sub-Total	0.6888	0.6884	0.6884	0.6885	0.6879	0.6877	0.6878	0.6874	0.6876	0.6876	0.6783	0.7248	0.5606
<b>Total Charges P/MWh</b>	4.9825	5.2098	5.0601	4.9457	5.0638	4.3440	4.8634	4.9992	4.9542	4.8518	4.7407	4.8879	4.8010
Power Act Reduction													
Others	-0.0295	0.2287	0.2696	0.0084	0.1418	1.1708	-0.0172	0.2762	0.1274	0.5458	0.3234	0.0644	0.2742
<b>Total Charges P/MWh-Others</b>	4.9530	5.4385	5.3297	4.9541	5.2052	5.5148	4.8462	5.2754	5.0816	5.3976	5.0641	4.9523	5.1552
<b>Basic Charges (P)</b>													
Average Generation \$/MWh	154,186,671.53	89,873,696.95	116,007,756.60	151,699,291.85	155,662,856.18	130,214,236.64	134,417,468.70	81,967,175.99	115,838,070.26	132,600,261.49	135,028,686.31	120,338,441.13	1,328,748,848.60
Franchise and Benefits to Host Communities Charges	942,414.50	948,470.01	927,208.24	918,822.34	924,083.11	742,189.00	795,961.92	462,888.54	878,024.87	878,813.02	795,700.12	727,770.25	8,792,008.58

*[Handwritten signatures and initials]*

**PAMPANGA II ELECTRIC COOPERATIVE, INC.**  
Guagua, Pampanga

**SUMMARY OF 2017 GENERATION COSTS**  
**SAN MIGUEL ENERGY CORPORATION**

PARTICULARS	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Sub-Total	165,178,088.05	160,324,078.84	158,623,083.00	143,275,214.25	156,736,688.20	170,896,423.57	155,212,028.82	82,208,244.83	118,374,188.12	134,410,914.52	135,633,848.43	171,674,217.38	1,817,547,797.78
Adjustments (P)													
Excess Accounting Adjustments													
12th GRAMM DAA													
Sec. 1401, CERRA, DAA													
Sub-Total													
Automatic Cost Adjustments (ACA)													
FFMCA	32,585,858.80	7,273,673.89	6,384,837.36	10,818,145.29	11,625,764.03	9,895,835.49	15,905,987.87	8,181,542.51	8,304,437.82	16,483,648.68	16,922,082.50	13,683,037.80	125,993,434.43
FuA	13,990,047.13	6,067,446.71	8,312,268.57	13,155,334.13	12,975,833.01	11,017,689.22	11,807,056.48	8,619,368.38	9,486,813.08	4,134,894.82	4,233,144.61	3,873,158.12	67,985,783.14
Sub-Total	26,575,905.93	13,341,120.60	14,697,105.94	23,973,479.42	24,601,597.04	20,913,524.71	27,713,044.35	16,800,910.89	17,791,250.90	20,618,543.50	21,155,227.11	17,556,195.92	242,616,207.67
Power Act Reduction													
Others - Minimum Charges (WESM)	(256,153.08)	(291,999.23)	(7,561,836.74)	(3,298,331.86)	(5,062,408.92)	(42,087,993.32)	(11,207,455.93)	(5,324,304.08)	(3,383,743.28)	(7,679,862.21)	(10,715,784.72)	(1,862,932.26)	(98,769,438.15)
Sub-Total	(256,153.08)	(291,999.23)	(7,561,836.74)	(3,298,331.86)	(5,062,408.92)	(42,087,993.32)	(11,207,455.93)	(5,324,304.08)	(3,383,743.28)	(7,679,862.21)	(10,715,784.72)	(1,862,932.26)	(98,769,438.15)
<b>Total Charges Before VAT</b>	<b>190,736,189.00</b>	<b>120,987,167.66</b>	<b>141,703,936.29</b>	<b>169,747,825.69</b>	<b>186,450,881.26</b>	<b>193,898,816.60</b>	<b>166,418,339.06</b>	<b>100,674,451.40</b>	<b>137,689,095.30</b>	<b>172,705,121.39</b>	<b>167,703,098.22</b>	<b>142,549,985.80</b>	<b>1,890,308,351.48</b>
VAT - VAT	22,645,933.13	14,163,050.41	16,372,878.52	19,827,384.43	21,678,188.08	21,096,049.11	16,744,627.10	11,735,963.28	16,268,053.15	18,889,274.33	18,458,064.14	18,915,377.01	218,181,175.28
<b>Total Charges After VAT</b>	<b>213,382,082.13</b>	<b>135,175,217.97</b>	<b>158,075,814.81</b>	<b>188,874,760.12</b>	<b>208,429,890.36</b>	<b>214,964,866.71</b>	<b>175,162,966.16</b>	<b>112,410,414.68</b>	<b>153,937,122.43</b>	<b>192,389,796.32</b>	<b>187,172,822.36</b>	<b>159,468,332.70</b>	<b>2,099,439,526.77</b>

Note: Computation of the unit cost is based on total generation costs/ kWh purchased per SMEC power bid or TRG including WESM  
The generation unit cost is based on the UPRR rate calculations submitted monthly to ERC in accordance to ERC Resolution 1, Series of 2012.

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General Manager



PAMPANGA II ELECTRIC COOPERATIVE, INC.

Guagua, Pampanga

# Annex 1 A - DDP DSC

SUMMARY OF 2016 GENERATION COSTS

SAN MIGUEL ENERGY CORPORATION

PARTICULARS	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Boiling Obligations													
Actual Energy (MWh) - SMEC	35,669,228	35,428,137	35,187,200	40,379,870	41,865,113	45,345,973	41,422,149	41,735,068	42,207,479	39,719,729	41,537,792	39,801,238	480,389,837
Actual Energy (MWh) - MOCOP	35,373,000	34,815,218	35,995,743	41,065,589	44,363,077	43,715,132	38,908,489	39,877,391	40,653,652	38,545,115	42,210,188	34,342,093	474,789,063
Contracted Energy (MWh)	35,555,228	35,420,137	35,115,320	35,000	41,565,113	45,345,973	41,422,149	37,788,652	42,207,479	39,719,729	41,537,792	39,601,238	438,045,293
Contracted Demand (MW)													
Generation Mix													
Hydroelectric (Non-Volatile)	15.07%	9.36%	10.78%	2.54%	5.17%	8.56%	12.28%	13.98%	26.71%	37.49%	70.56%	46.42%	32.61%
Non-Renewable (Variable)	85.37%	90.54%	89.24%	97.46%	94.81%	91.44%	87.74%	86.04%	79.29%	62.51%	29.44%	53.58%	77.39%
Basis Charges (P/MWh)													
Average Generation Rate	4.3124	4.9241	4.1824	4.1704	4.1060	4.6222	4.1660	4.1170	5.5878	4.1527	4.0627	4.1006	4.4264
Franchise and Benefits to Host Communities Charges	0.0248	0.0251	0.0278	0.0225	0.0222	0.0254	0.0294	0.0220	0.0172	0.0245	0.0245	0.0240	0.0220
Sub-Total	4.3372	4.9492	4.2102	4.1929	4.1282	4.6477	4.1954	4.1391	5.6050	4.1772	4.0872	4.1246	4.4484
Adjustments (P/MWh)													
Deferred Accounting Adjustments													
GROM (DA)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ICERIA (DA)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sub-Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Automatic Cost Adjustments (ACA)													
FPPCA	0.1280	0.3708	0.2660	0.3038	0.3522	0.3982	0.3984	0.3772	0.1094	0.3722	0.3722	0.3722	0.5480
F.A.	0.2552	0.2723	0.2613	0.2398	0.2496	0.2737	0.2738	0.2399	0.0779	0.2539	0.2678	0.2529	0.2480
Sub-Total	0.3832	0.6431	0.5273	0.5436	0.6018	0.6719	0.6722	0.6171	0.1873	0.6261	0.6400	0.6251	0.7960
Total Charges P/MWh	4.7204	5.5923	4.7375	4.7365	4.7282	5.2497	4.8926	4.7562	5.7923	4.8033	4.7272	4.7497	5.2444
Power Act Reduction													
Others	1.8196	0.1676	0.1811	0.4322	0.7296	0.7027	0.7320	0.7840	0.3656	0.7715	0.7870	0.8232	0.3000
Total Charges P/MWh-Others	6.5399	5.7599	5.0186	5.1687	5.4578	5.9524	5.6246	5.5402	6.1579	5.5748	5.5142	5.5729	5.5444
Basis Charges (P)													
Average Generation Rate	132,647,669.37	135,970,817.99	130,281,038.92	177,847,628.32	150,734,209.27	201,378,122.39	189,872,820.24	195,995,830.77	225,717,025.00	164,543,686.16	198,717,482.55	158,799,481.88	2,429,411,706.57
Franchise and Benefits to Host Communities Charges	818,248.24	848,258.88	890,229.71	968,115.92	1,028,145.27	1,110,975.34	1,018,842.81	928,053.01	363,795.91	973,132.26	1,017,675.90	970,250.32	9,829,078.79

*A. Aguirre*  
*S. Serrano*

PAMPANGA II ELECTRIC COOPERATIVE, INC.

Guagua, Pampanga

# Annex 2 A - DDP DSC

SUMMARY OF 2016 GENERATION COSTS

SAN MIGUEL ENERGY CORPORATION

PARTICULARS	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Sub-Total	133,526,192.11	136,778,778.01	157,811,362.83	178,415,739.84	183,182,413.80	193,089,089.32	167,831,683.18	167,831,683.18	228,005,827.87	165,817,178.54	188,175,137.85	159,796,992.29	2,173,387,785.87
Adjustments (P)													
Defined Accounting Adjustments													
12th GRAM (DAA)													
9th-14th ICERA, DAA													
Sub-Total													
Automatic Cost Adjustment (AMA)													
FRPCA	13,288,816.02	13,013,251.11	12,817,887.28	14,482,482.20	15,521,811.87	16,882,305.75	15,427,486.07	14,072,225.93	6,518,437.83	14,787,855.11	15,484,518.96	14,743,540.81	165,204,408
FVA	8,486,088.00	8,600,810.44	9,487,388.25	10,317,383.38	11,014,583.32	11,966,802.27	10,031,355.12	9,878,913.84	3,773,515.93	10,483,036.48	10,961,823.21	10,450,788.71	117,754,168
Sub-Total	22,797,602.82	25,440,061.66	22,274,495.53	24,779,865.76	26,536,395.19	28,849,108.02	26,352,771.19	24,947,139.77	7,888,773.70	25,269,891.59	26,426,342.17	25,194,329.52	282,858,805.47
Power Act Reduction													
Others - Minimum Charges-LWESM	38,838,877.63	5,861,113.06	6,518,838.71	16,955,328.87	32,056,778.75	22,088,963.83	15,025,864.75	6,329,798.59	12,342,820.66	6,803,860.22	3,812,280.26	878,427.33	170,802,426
Sub-Total	38,838,877.63	5,861,113.06	6,518,838.71	16,955,328.87	32,056,778.75	22,088,963.83	15,025,864.75	6,329,798.59	12,342,820.66	6,803,860.22	3,812,280.26	878,427.33	170,802,426
Total Charges Before VAT	212,162,873.26	205,019,891.44	180,655,866.83	221,848,482.51	241,937,597.14	264,897,170.87	208,866,281.81	236,098,822.14	248,252,422.13	187,990,873.38	199,813,881.58	165,889,327.24	2,587,152,838.24
17% VAT	35,861,271.89	21,628,345.11	20,809,488.03	24,656,129.85	26,931,457.17	26,060,295.44	23,979,837.19	29,857,487.86	17,277,462.81	23,231,428.20	21,211,284.24	22,124,191.49	289,873,387.56
Total Charges After VAT	234,744,345.80	205,646,296.54	201,545,154.80	248,308,631.96	268,868,854.31	293,117,466.41	232,541,119.71	264,866,110.00	265,529,884.94	211,222,088.71	221,025,245.82	208,014,118.73	2,847,826,217.78

Note: Computation of the unit cost is based at total generation costs/ kWh purchased per NGOSP power bill from January - July 2016. GC from August - December 2016 is based on SMEC power bill. KWh purchased from WESM is considered.

The generation unit cost is based on the URR submitted monthly to ERC in accordance to ERC Resolution 1, Series of 2012.

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## DISTRIBUTION IMPACT STUDY

### I. Forecasted Growth

The projected growth within the Franchise Area of PELCO II is summarized on Table No. 8 below, the Peak Demand increases at an average ratio of 7.2% , the Energy Sales by 9.1%, and customer connections by 4.7%.

Year	Demand (MW)	Energy (MWh)	Number of Customers
2018	101,523	526,132	203,746
2019	110,336	582,032	214,019
2020	119,454	641,233	224,701
2021	128,777	703,394	235,723
2022	138,233	767,898	247,023
2023	147,769	834,648	258,537
2024	157,344	903,196	270,208
2025	166,929	973,579	281,976
2026	176,501	1,045,446	293,801
2027	186,043	1,118,920	305,614

Table No. 8

### II. Distribution System Assessment

The growth forecast within the franchise of PELCO II shows significant increase in demand, energy consumption and number of customer connections. The distribution system needs to be developed and expanded to accommodate the projected growth. The additional sub-transmission lines, substation capacity, including additional distribution lines, will address this growth requirements and, in some cases, the existing distribution facilities may be updated and upgraded.

#### A. Sub-transmission Line

Based on the Distribution Development Plan (DDP) the sub-transmission line expansion is shown on Table No. 9 below,

Sub- transmission Line Expansion										
2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
New Line										
8.3	27.2	5.8	0.0	6.0	0.0	2.0	0.0	2.0	7.3	58.6
Upgrading										
0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0

Table No. 9

The Table shows that the sub-transmission line that needs to be constructed is fifty-eight (58) kilometers and nine (9) kilometers of existing sub-transmission line to be upgraded.

#### B. Substation

To supply the needed capacity within the franchise, distribution substation capacity needs to be augmented. Based on the DDP, the projected capacity expansion is shown on the Table No. 10,

Substation Expansion										
2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
New Substation										
40	40	0	0	20	0	20	0	20	0	140
Uprating										
20	0	0	0	0	0	0	0	0	0	20

Table No. 10

The additional substation capacity will ensure that PELCO II will be able to support the development within the franchise. The location of the future substations are being carefully analyzed to optimize the capacity and expansion costs to be acquired at the least price.

### C. Distribution Lines

To connect the additional customers, PELCO II needs to expand its distribution lines by constructing new distribution lines to cover the whole franchise area. Some of the existing distribution lines will be uprated and upgraded to support the growing demand.

The Table No .11 below shows the projected distribution line expansion for the system,

Distribution Line Expansion										
2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
New Lines										
31.4	15.3	8.6	8.7	8.4	5.7	5.7	5.7	5.7	5.7	101.0
Uprating										
23.7	34.9	12.8	16.5	12.8	10.1	10.1	10.1	10.1	10.1	151.0

Table No. 11

### D. Connection Requirements

The connection requirements depends on the number of new customer connections within the franchise area.

This includes the additional distribution transformers, secondary lines, kWh meters, and service dropping materials. These are materials are needed to connect the projected new customers to the distribution system.

## III. Conclusion

PELCO II needs to ensure that it can deliver the needed power supply requirements of its customers within the franchise area. It needs to prepare the necessary Capital Expenditure projects to be implemented to meet demand growth and new customer connection.

The needed sub-transmission line, substation, distribution lines and other connection requirements shall be properly planned for the continuous, efficient, and quality service to the customers.





## SCHEDULE OF CSP

Base / mid-merit / peaking	For CSP		Proposed contract period		Proposed schedule (MM/YYYY)						
	Demand (MW)	Energy (MWh)	Start Month and Year	End Month and Year	Publication of Invitation to Bid	Pre-bid Conference	Submission and Opening of Bids	Bid Evaluation	Awarding	PSA Signing	Joint Application to ERC
Baseload	40	350,400	Jan 2020	Dec 2029	Jun 2019	Jul 2019	Aug 2019	Aug - Sep 2019	Oct 2019	Oct 2019	Oct - Dec 2019
Mid-merit	15	131,400	Apr 2020	Dec 2026	Aug 2019	Sep 2019	Oct 2019	Oct - Nov 2019	Dec 2019	Dec 2019	Jan - Feb 2020
Embedded Peaking with Ancillary Service Capability	15	131,400	Jan 2020	Dec 2034	Apr 2019	May 2019	Jun 2019	Jun - Aug 2019	Sep 2019	Sep 2019	Sep - Oct 2019

Table No. 12

**Note:**

\* Computed only based on contracted capacity's maximum energy can supply.  
 No minimum energy off-take (MEOT).

## 10 Year Monthly Data

Year	Forecast			Contracted and For PSA Approval Demand and Energy		Uncontracted Demand and Energy		Committed for CSP	
	Coincident Peak Demand (MW)	Off Peak Demand (MW)	Energy Req't (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)
<b>2018</b>									
Jan	78	36	42,322	60	44,640	18	0	0	0
Feb	80	35	42,572	60	44,640	20	0	0	0
Mar	89	40	43,180	60	40,320	29	2,860	0	0
Apr	99	45	53,540	60	44,640	39	8,900	0	0
May	102	46	54,768	60	43,200	42	11,568	0	0
Jun	101	47	55,014	60	44,640	41	10,374	0	0
Jul	98	43	49,443	60	43,200	38	6,243	0	0
Aug	95	45	49,999	60	44,640	35	5,359	0	0
Sep	94	41	51,056	60	44,640	34	6,416	0	0
Oct	92	43	48,462	60	43,200	32	5,262	0	0
Nov	89	45	50,407	60	44,640	29	5,767	0	0
Dec	89	39	47,030	60	43,200	29	3,830	0	0
<b>2019</b>									
Jan	85	40	46,404	60	44,640	25	1,764	15	11,160
Feb	87	39	46,677	60	44,640	27	2,037	15	11,160
Mar	97	45	47,345	60	40,320	37	7,025	15	10,080
Apr	108	51	58,704	60	44,640	48	14,064	15	11,160
May	110	52	60,050	60	43,200	50	16,850	15	10,800
Jun	110	52	60,320	60	44,640	50	15,680	15	11,160
Jul	107	48	54,212	60	43,200	47	11,012	15	10,800
Aug	103	50	54,821	60	44,640	43	10,181	15	11,160
Sep	102	46	55,980	60	44,640	42	11,340	15	11,160
Oct	100	48	53,136	60	43,200	40	9,936	15	10,800
Nov	97	50	55,268	60	44,640	37	10,628	15	11,160
Dec	97	43	51,565	60	43,200	37	8,365	15	10,800
<b>2020</b>									
Jan	92	46	50,870	30	22,320	62	28,550	55	40,920
Feb	94	44	51,170	30	22,320	64	28,850	55	40,920
Mar	105	51	51,902	30	20,160	75	31,742	55	36,960
Apr	117	57	64,354	30	22,320	87	42,034	55	40,920
May	119	58	65,830	30	21,600	89	44,230	55	39,600
Jun	119	59	66,126	30	22,320	89	43,806	55	40,920
Jul	116	54	59,430	30	21,600	86	37,830	55	39,600
Aug	111	56	60,098	30	22,320	81	37,778	55	40,920
Sep	110	52	61,369	30	22,320	80	39,049	55	40,920
Oct	108	54	58,251	30	21,600	78	36,651	55	39,600
Nov	104	56	60,588	30	22,320	74	38,268	55	40,920
Dec	105	49	56,529	30	21,600	75	34,929	55	39,600
<b>2021</b>									
Jan	99	51	55,526	30	22,320	69	33,206	55	40,920
Feb	102	49	55,854	30	22,320	72	33,534	55	40,920
Mar	113	57	56,652	30	20,160	83	36,492	55	36,960
Apr	126	64	70,244	30	22,320	96	47,924	55	40,920
May	129	65	71,855	30	21,600	99	50,255	55	39,600
Jun	128	66	72,178	30	22,320	98	49,858	55	40,920





## 10 Year Monthly Data

Year	Forecast			Contracted and For PSA Approval Demand and Energy		Uncontracted Demand and Energy		Committed for CSP	
	Coincident Peak Demand (MW)	Off Peak Demand (MW)	Energy Req't (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)
Jul	125	61	64,869	30	21,600	95	43,269	55	39,600
Aug	120	63	65,598	30	22,320	90	43,278	55	40,920
Sep	119	58	66,985	30	22,320	89	44,665	55	40,920
Oct	117	60	63,582	30	21,600	87	41,982	55	39,600
Nov	113	63	66,133	30	22,320	83	43,813	55	40,920
Dec	113	55	61,703	30	21,600	83	40,103	55	39,600
<b>2022</b>									
Jan	106	57	60,327	30	22,320	76	38,007	55	40,920
Feb	109	55	60,683	30	22,320	79	38,363	55	40,920
Mar	121	63	61,550	30	20,160	91	41,390	55	36,960
Apr	135	71	76,318	30	22,320	105	53,998	55	40,920
May	138	73	78,068	30	21,600	108	56,468	55	39,600
Jun	137	73	78,419	30	22,320	107	56,099	55	40,920
Jul	134	68	70,478	30	21,600	104	48,878	55	39,600
Aug	129	70	71,270	30	22,320	99	48,950	55	40,920
Sep	127	65	72,777	30	22,320	97	50,457	55	40,920
Oct	126	67	69,080	30	21,600	96	47,480	55	39,600
Nov	121	70	71,852	30	22,320	91	49,532	55	40,920
Dec	122	61	67,038	30	21,600	92	45,438	55	39,600
<b>2023</b>									
Jan	114	63	65,251	30	22,320	84	42,931	55	40,920
Feb	117	60	65,636	30	22,320	87	43,316	55	40,920
Mar	130	70	66,574	30	20,160	100	46,414	55	36,960
Apr	144	78	82,546	30	22,320	114	60,226	55	40,920
May	148	80	84,439	30	21,600	118	62,839	55	39,600
Jun	147	81	84,819	30	22,320	117	62,499	55	40,920
Jul	143	75	76,230	30	21,600	113	54,630	55	39,600
Aug	138	77	77,087	30	22,320	108	54,767	55	40,920
Sep	136	71	78,717	30	22,320	106	56,397	55	40,920
Oct	134	74	74,718	30	21,600	104	53,118	55	39,600
Nov	129	77	77,716	30	22,320	99	55,396	55	40,920
Dec	130	68	72,509	30	21,600	100	50,909	55	39,600
<b>2024</b>									
Jan	121	69	70,267	30	22,320	91	47,947	40	29,760
Feb	124	66	70,681	30	22,320	94	48,361	40	29,760
Mar	138	77	71,691	30	20,160	108	51,531	40	26,880
Apr	154	86	88,891	30	22,320	124	66,571	40	29,760
May	157	88	90,930	30	21,600	127	69,330	40	28,800
Jun	156	89	91,339	30	22,320	126	69,019	40	29,760
Jul	152	82	82,090	30	21,600	122	60,490	40	28,800
Aug	147	84	83,012	30	22,320	117	60,692	40	29,760
Sep	145	79	84,768	30	22,320	115	62,448	40	29,760
Oct	143	81	80,461	30	21,600	113	58,861	40	28,800
Nov	138	85	83,689	30	22,320	108	61,369	40	29,760
Dec	139	74	78,082	30	21,600	109	56,482	40	28,800
<b>2025</b>									



## 10 Year Monthly Data

Year	Forecast			Contracted and For PSA Approval Demand and Energy		Uncontracted Demand and Energy		Committed for CSP	
	Coincident Peak Demand (MW)	Off Peak Demand (MW)	Energy Req't (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)
Jan	128	75	75,376	30	22,320	98	53,056	40	29,760
Feb	132	73	75,820	30	22,320	102	53,500	40	29,760
Mar	147	84	76,904	30	20,160	117	56,744	40	26,880
Apr	163	94	95,355	30	22,320	133	73,035	40	29,760
May	167	97	97,541	30	21,600	137	75,941	40	28,800
Jun	166	97	97,980	30	22,320	136	75,660	40	29,760
Jul	162	90	88,058	30	21,600	132	66,458	40	28,800
Aug	155	92	89,048	30	22,320	125	66,728	40	29,760
Sep	154	86	90,931	30	22,320	124	68,611	40	29,760
Oct	152	89	86,311	30	21,600	122	64,711	40	28,800
Nov	146	92	89,774	30	22,320	116	67,454	40	29,760
Dec	147	81	83,760	30	21,600	117	62,160	40	28,800
<b>2026</b>									
Jan	136	83	80,940	30	22,320	106	58,620	40	29,760
Feb	139	80	81,417	30	22,320	109	59,097	40	29,760
Mar	155	92	82,581	30	20,160	125	62,421	40	26,880
Apr	172	104	102,393	30	22,320	142	80,073	40	29,760
May	177	107	104,741	30	21,600	147	83,141	40	28,800
Jun	175	107	105,213	30	22,320	145	82,893	40	29,760
Jul	171	99	94,559	30	21,600	141	72,959	40	28,800
Aug	164	101	95,621	30	22,320	134	73,301	40	29,760
Sep	163	95	97,643	30	22,320	133	75,323	40	29,760
Oct	160	98	92,683	30	21,600	130	71,083	40	28,800
Nov	154	102	96,401	30	22,320	124	74,081	40	29,760
Dec	155	90	89,943	30	21,600	125	68,343	40	28,800
<b>2027</b>									
Jan	143	91	86,628	30	22,320	113	64,308	40	29,760
Feb	147	88	87,139	30	22,320	117	64,819	40	29,760
Mar	163	101	88,384	30	20,160	133	68,224	40	26,880
Apr	182	114	109,590	30	22,320	152	87,270	40	29,760
May	186	117	112,103	30	21,600	156	90,503	40	28,800
Jun	185	117	112,607	30	22,320	155	90,287	40	29,760
Jul	180	109	101,204	30	21,600	150	79,604	40	28,800
Aug	173	111	102,342	30	22,320	143	80,022	40	29,760
Sep	171	104	104,506	30	22,320	141	82,186	40	29,760
Oct	169	107	99,196	30	21,600	139	77,596	40	28,800
Nov	163	111	103,176	30	22,320	133	80,856	40	29,760
Dec	164	99	96,264	30	21,600	134	74,664	40	28,800

Table No. 13