

**POWER SUPPLY PROCUREMENT PLAN  
PANGASINAN I ELECTRIC COOPERATIVE  
(PANELCO I)**

In compliance with the Department of Energy's (DOE) Department Circular No. DC 2018-02-0003, "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 the Competitive Selection process (CSP) Policy, the Power Supply Procurement Plan (PSPP) Report is hereby created, pursuant to the Section 4 of the said Circular.

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 PSPP is an integral part of the Distribution Utilities' Distribution Development Plan (DDP) and must be submitted to the Department of Energy with supported Board Resolution and/or notarized Secretary's Certificate.

The Third-Party Bids and Awards Committee (TPBAC), Joint TPBAC or Third Party Auctioneer (TPA) shall submit to the DOE and in the case of Electric Cooperatives (ECs), through the National Electrification Administration (NEA) the following:

- a. Power Supply Procurement Plan; and
- b. Distribution Impact Study/ Load Flow Analysis conducted that served as the basis of the Terms of Reference;
- c. Due diligence report of the existing generation plant

All Distribution Utilities' shall follow and submit the attached report to the Department of Energy for posting on the DOE CSP Portal. For ECs such reports shall be submitted to DOE and NEA. The NEA shall review the submitted report within ten (10) working days upon receipt prior to its submission to DOE for posting at the DOE CSP Portal.

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

- I. Table of Contents
- II. Introduction
- III. Demand Forecast (10 year historical and forecast)
- IV. Energy Sales and Purchase
- V. Daily Load Profile and Load Duration Curve
- VI. Currently approved SAGR for Off-Grid ECs to be passed-on to consumers;
- VII. DU's Current Supply and Demand
- VIII. Distribution Impact Study
- IX. Schedule of Power Supply Procurement

## TABLE OF CONTENTS

<b><i>TABLE OF CONTENTS</i></b>	<b><i>ii</i></b>
<b><i>INTRODUCTION</i></b>	<b><i>1</i></b>
<b><i>DEMAND FORECAST (10 YEAR HISTORICAL AND FORECAST)</i></b>	<b><i>2</i></b>
<b><i>ENERGY SALES AND PURCHASE</i></b>	<b><i>4</i></b>
<b><i>2017 DAILY LOAD PROFILE AND LOAD DURATION CURVE</i></b>	<b><i>6</i></b>
<b><i>DU's CURRENT SUPPLY AND DEMAND</i></b>	<b><i>7</i></b>
<b><i>EXISTING POWER SUPPLY CONTRACTS</i></b>	<b><i>8</i></b>
<b><i>SCHEDULE OF POWER SUPPLY PROCUREMENT</i></b>	<b><i>9</i></b>
<b><i>PANELCO I MONTHLY QUANTITIES</i></b>	<b><i>10</i></b>

## INTRODUCTION

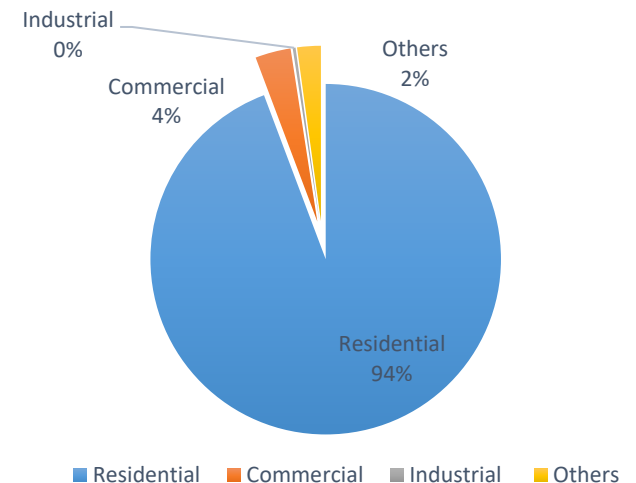
Panelco I is the exclusive franchise holder to operate an electric franchise to operate an electric light and power services in the City of Alaminos and Municipalities of Agno, Anda, Bani, Bolinao, Burgos, Dasol, Infanta and Mabini, all in the province of Pangasinan.

No. of Customer Connections in	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Residential	71,220	75,617	79,890	84,236	88,652	93,141	97,701	102,333	107,036	111,811	116,657
Commercial	2,379	2,395	2,417	2,439	2,463	2,487	2,513	2,539	2,567	2,595	2,624
Industrial	203	214	227	241	256	272	289	307	325	345	365
Others	1,610	1,669	1,726	1,785	1,845	1,907	1,970	2,033	2,099	2,165	2,233
<b>Total</b>	<b>75,412</b>	<b>79,894</b>	<b>84,260</b>	<b>88,701</b>	<b>93,217</b>	<b>97,807</b>	<b>102,472</b>	<b>107,212</b>	<b>112,026</b>	<b>116,915</b>	<b>121,879</b>



The positive outlook on PANELCO I's kWh sales growth is mainly driven by positive economic growth in the region. GRDP for 2017 grew by 10.9% vs 2016; and NEDA projected a growth range of 9.2% to 10.5% yearly GRDP up to year 2022. PANELCO I is expecting big loads in the coverage area wherein the project of Robinson Supermaket and Savemore. Construction of Hotels and Hospital are also in the list of on going projects of the Alaminos City LGU. PANELCO I has total of contract capacity demand 15,530 kilowatts and contracted energy demand of 78,945,770 kilowatthour for ther year 2017 with MPPCL-AES which contract is until October 25, 2022.

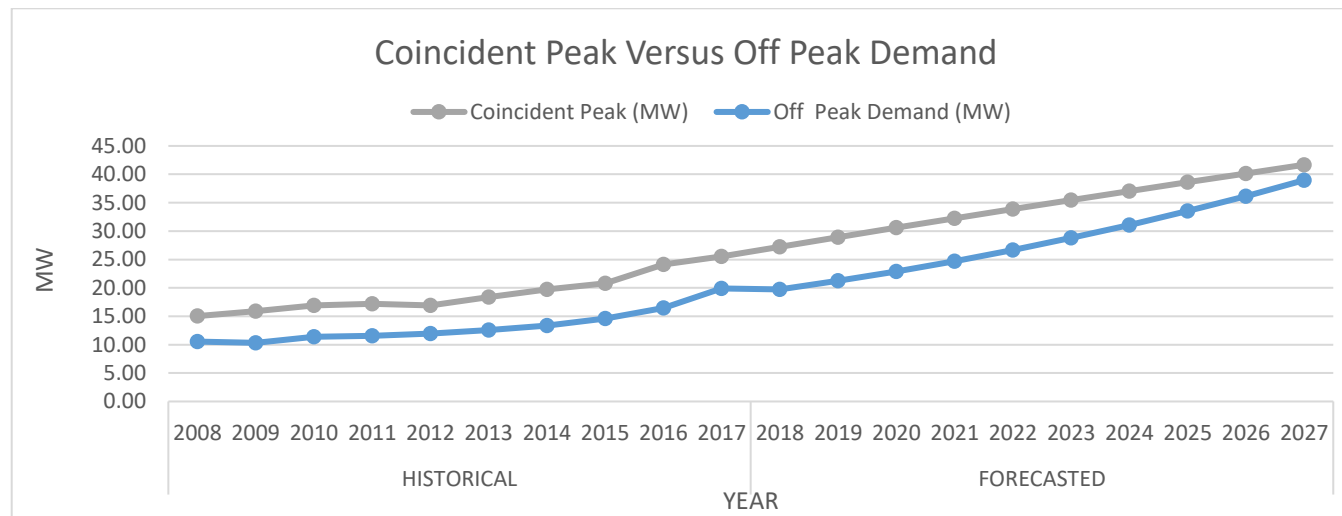
**2017 No. of Customers**



### DEMAND FORECAST (10 YEAR HISTORICAL AND FORECAST)

Demand	HISTORICAL									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Coincident Peak (MW)	15.03	15.91	16.93	17.19	16.93	18.36	19.75	20.79	24.14	25.57
Off Peak Demand (MW)	10.52	10.33	11.38	11.57	11.94	12.58	13.38	14.58	16.46	19.91

Demand	FORECASTED									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Coincident Peak (MW)	27.22	28.92	30.59	32.24	33.87	35.48	37.06	38.62	40.16	41.68
Off Peak Demand (MW)	19.73	21.23	22.88	24.69	26.67	28.79	31.08	33.53	36.13	38.97



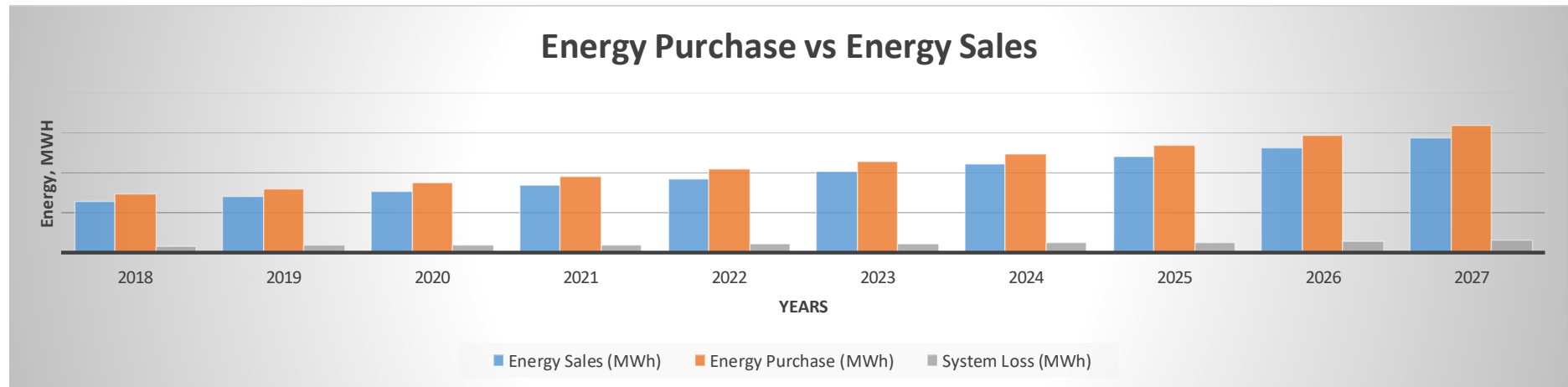
In 2017, there was no significant entry of big industrial/commercial customer or spot load except for the expected normal forecasted load. Looking forward, we are anticipating a demand growth of about 8.7MW in 2022 from year 2017. This is triggered by growth in GDP as well as establishment of commercial buildings.

In the following diagram, the bulk of energy requirements of PANELCO I is currently being supplied by Masinloc Power Partners Limited (MPPCL), a coal-powered generator. Currently, any excess or deficit from the supply is being sold to or bought from the Wholesale Spot Market (WESM), with a total of 12.86 MW uncontracted demand in 2019 and has an increasing trajectory for the succeeding years. In this regard, PANELCO I intends to limit the volatilities in prices experienced through its exposure to the WESM beginning in the 3<sup>rd</sup> quarter of 2019 by entering into a Power Supply Agreement (PSA) for its peaking requirements. This will likewise fulfill PANELCO I's mandate to the Renewable Portfolio Standards (RPS). Additionally, PANELCO I's contract with MPPCL is about to expire in 2022, which covers 16 MW of baseload contracted demand. Hence, PANELCO I intends to conduct a Competitive Selection Process (CSP) for its uncontracted capacities up to a maximum of 32 MW.

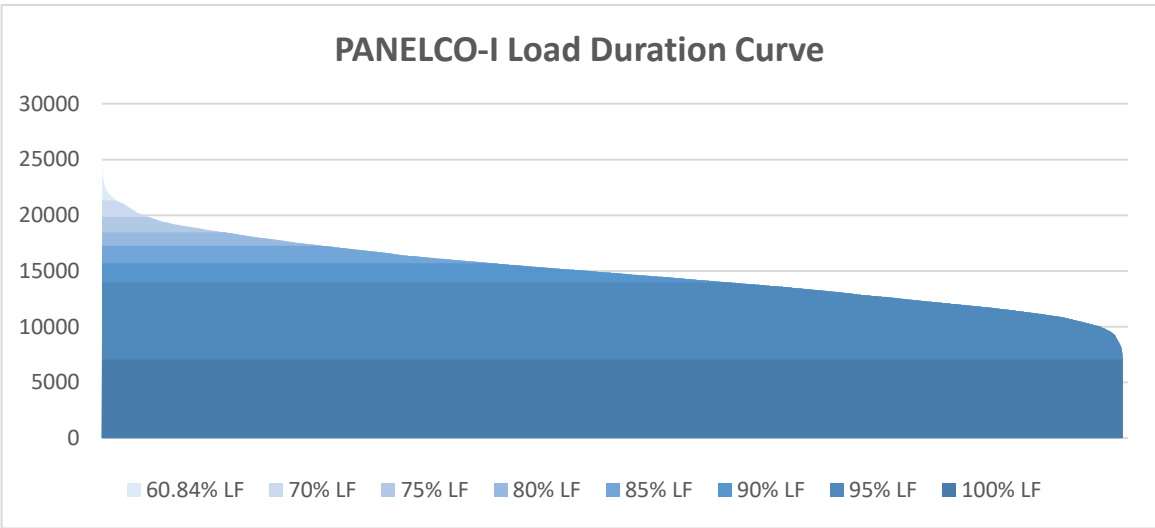
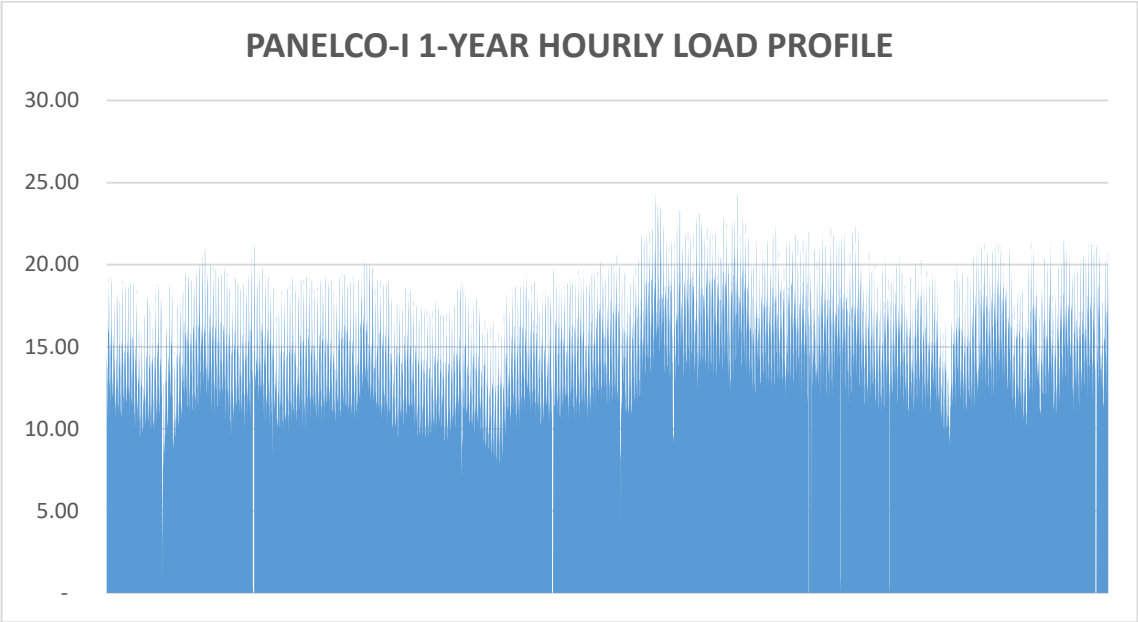
### ENERGY SALES AND PURCHASE

ENERGY SALES AND PURCHASE	HISTORICAL									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Energy Sales (MWh)	56,478.00	57,702.47	71,633.37	69,502.53	72,124.77	79,278.14	85,555.73	93,991.88	107,667.35	116,795.87
Energy Purchase (MWh)	68,866.75	69,077.02	84,280.80	83,114.85	86,761.93	94,217.01	99,537.54	108,023.05	123,491.39	133,195.54
System Loss (MWh)	12,388.75	11,374.55	12,647.43	13,612.32	14,637.16	14,938.86	13,981.81	14,031.17	15,824.04	16,399.66

ENERGY SALES AND PURCHASE	FORECAST									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Energy Sales (MWh)	126,898.16	138,238.92	150,144.85	162,613.65	175,643.27	189,231.95	203,378.17	218,080.71	233,338.59	249,151.11
Energy Purchase (MWh)	143,220.16	155,110.94	167,637.33	180,799.34	194,596.97	209,030.21	224,099.08	239,803.56	256,143.66	273,119.38
System Loss (MWh)	16,322.00	16,872.02	17,492.48	18,185.69	18,953.69	19,798.26	20,720.90	21,722.85	22,805.07	23,968.27



2017 DAILY LOAD PROFILE AND LOAD DURATION CURVE

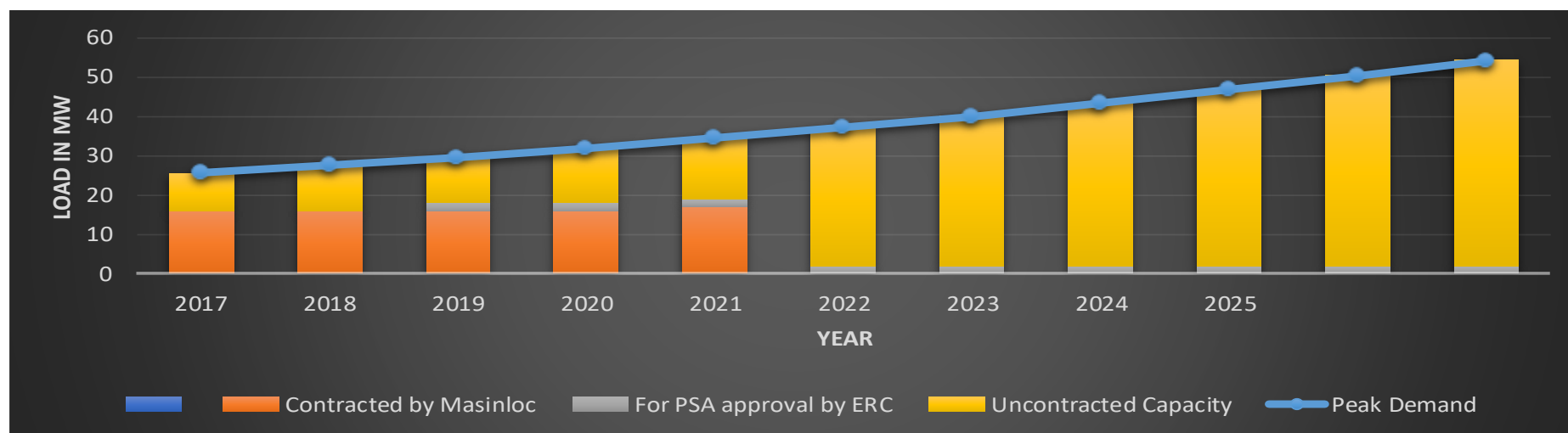


Based on the load curve identify the base-load, mid-merit and peaking. As such the data can be used for the strategy in contracting the DUs demand requirement. Over the year 2017, 85%-90% of the time, PANELCO I is consuming 15MW and more. PANELCO I is projecting an increase in its power requirements for both peaking and baseload demand. Currently, PANELCO I is sourcing its uncontracted demand from the WESM. Further, in 2022, baseload demand is projected to increase in a total of 20MW in the year 2022. In particular, in the 4<sup>th</sup> quarter of 2022, supply contract with Masinloc Power Partners will expire. This entails about 27 MW uncontracted capacity and exposure to the spot market. Hence, CSP for such uncontracted daytime peak demand from 2019 and demand that will be eventually uncontracted due to the expiration of its contract with Masinloc Power Partners needs CSP. This amounts to a total of 32MW for CSP.



## DU's CURRENT SUPPLY AND DEMAND

SUPPLY / DEMAND	ACTUAL	FORECAST									
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Peak Demand, MW	25.565	27.22	28.92	30.59	32.24	33.87	35.48	37.06	38.62	40.16	41.68
Supply Contracted, MW	15.71	15.88	16.06	16.24	16.42	16.61	0.00	0.00	0.00	0.00	0.00
Masinloc Power Partners Ltd.	15.71	15.88	16.06	16.24	16.42	16.61	0.00	0.00	0.00	0.00	0.00
Supply for Approval, MW	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Uncontracted Demand, MW	9.86	11.34	12.86	14.35	15.82	17.26	35.48	37.06	38.62	40.16	41.68



### EXISTING POWER SUPPLY CONTRACTS

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)
GenCo 1	MPPCL	100	26-Oct-09	25-Oct-22	16.61	74,981	Base	Grid			Coal	600	600
GenCo 2													
GenCo 3													
GenCo 4													
GenCo 5													

During the 4th Quarter of 2022, Supply Contract of PANELCO I with Masinloc Power Partners will expire. This entail about 32 MW uncontracted capacity and exposure to the spot market. Hence, CSP for such uncontracted demand is necessary.

## SCHEDULE OF POWER SUPPLY PROCUREMENT

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
Base	20 MW	4,320,000	Nov 2022	Nov 2047	28-Jan-2019	8-Feb-2019	22-Feb-2019	1-Mar-2019	8-Mar-2019	13-Mar-2019	1-Apr-2019
Midmerit/ Peaking	7 MW	356,210	Nov 2022	Nov 2027	28-Jan-2019	8-Feb-2019	22-Feb-2019	1-Mar-2019	8-Mar-2019	13-Mar-2019	1-Apr-2019
Peaking (daytime peak)	5 MW	7,500	July 2019	July 2034	28-Jan-2019	8-Feb-2019	22-Feb-2019	1-Mar-2019	8-Mar-2019	13-Mar-2019	1-Apr-2019

## PANELCO I MONTHLY QUANTITIES

Year <span>▼</span>	Forecast			Contracted and For PSA Approval Demand and Energy		Uncontracted Demand and Energy		Committed for CSP	
	Coincident Peak Demand	Off Peak Demand (MW)	Energy Requirement	Demand (MW)	Energy (MWh)	Uncontracted Demand (MW)	Uncontracted Energy (MWh)	Demand (MW)	Energy (MWh)
<b>2018</b>									
January	21.97	14.53	10,968.65	15.710	6,693.25	6.26	4,275.40		
February	22.49	13.92	10,547.36	15.260	6,717.20	7.23	3,830.16		
March	23.20	13.74	11,194.23	15.760	6,575.00	7.44	4,619.23		
April	25.51	13.39	13,838.21	15.530	7,400.97	9.98	6,437.24		
May	27.22	13.84	14,300.94	14.900	6,559.07	12.32	7,741.87		
June	24.86	14.94	13,096.40	15.190	6,469.48	9.67	6,626.92		
July	24.59	15.64	12,156.58	15.880	6,545.46	8.71	5,611.12		
August	23.62	16.56	12,043.93	15.370	6,656.99	8.25	5,386.94		
September	23.62	18.37	11,888.60	15.530	6,723.32	8.09	5,165.28		
October	23.31	19.26	11,442.55	15.180	6,471.55	8.13	4,971.00		
November	24.94	19.73	12,832.98	15.060	6,740.13	9.88	6,092.85		
December	23.33	18.10	11,943.03	14.900	6,248.29	8.43	5,694.74		
<b>2019</b>									
January	24.80	15.63	11,975.36	18	8,111.71	6.91	3,863.65		
February	25.38	14.98	11,515.40	17	8,129.66	7.97	3,385.74		
March	26.34	14.78	12,221.65	18	7,987.02	8.42	4,234.63		
April	28.92	14.41	15,108.29	18	8,819.91	11.23	6,288.38		
May	28.42	14.89	15,613.48	17	7,986.14	11.33	7,627.34		
June	26.52	16.08	14,298.39	17	7,880.21	9.17	6,418.18		
July	26.23	16.83	13,272.31	18	7,962.70	8.17	5,309.61	5	524.61
August	25.20	17.82	13,149.33	18	8,074.11	7.67	5,075.22	5	462.61
September	25.19	19.76	12,979.74	18	8,138.41	7.50	4,841.33	5	558.90
October	24.87	20.72	12,492.76	17	7,885.68	7.52	4,607.08	5	631.25
November	26.60	21.23	14,010.79	17	8,154.43	9.38	5,856.36	5	668.56
December	24.89	19.47	13,039.17	17	7,660.74	7.82	5,378.43	5	674.27
<b>2020</b>									
January	26.24	16.85	13,088.04	18	8,187.18	8.35	4,900.86	5	694.77
February	26.85	16.14	12,585.35	17	8,199.05	9.44	4,386.30	5	668.64
March	27.86	15.93	13,357.21	18	8,055.96	9.94	5,301.25	5	786.54
April	30.59	15.53	16,512.06	18	8,895.88	12.90	7,616.18	5	711.33
May	30.06	16.05	17,064.20	18	8,070.33	12.06	8,993.87	5	597.21
June	28.05	17.33	15,626.91	17	7,947.85	10.70	7,679.06	5	521.84
July	27.75	18.14	14,505.50	18	8,036.92	9.69	6,468.58	5	524.61
August	26.66	19.21	14,371.08	18	8,148.22	9.13	6,222.86	5	462.61
September	26.65	21.30	14,185.74	18	8,210.45	8.96	5,975.29	5	558.90
October	26.31	22.34	13,653.51	17	7,956.75	8.96	5,696.76	5	631.25
November	28.14	22.88	15,312.59	18	8,225.69	10.14	7,086.90	5	668.56
December	26.33	20.99	14,250.69	17	7,730.11	9.26	6,520.58	5	674.27
<b>2021</b>									
January	27.65	18.18	14,306.68	18	8,261.30	9.76	6,045.38	5	694.77
February	28.30	17.42	13,757.19	17	8,273.30	10.89	5,483.89	5	668.64
March	29.36	17.20	14,600.92	18	8,128.66	11.44	6,472.26	5	786.54
April	32.24	16.76	18,049.52	18	8,977.68	14.55	9,071.85	5	711.33
May	31.68	17.32	18,653.07	18	8,143.18	13.68	10,509.88	5	597.21
June	29.57	18.71	17,081.95	18	8,019.38	11.57	9,062.58	5	521.84
July	29.25	19.58	15,856.13	18	8,109.41	11.19	7,746.71	5	524.61
August	28.09	20.73	15,709.20	18	8,221.92	10.56	7,487.28	5	462.61
September	28.09	22.99	15,506.60	18	8,284.82	10.40	7,221.77	5	558.90
October	27.73	24.11	14,924.81	17	8,028.37	10.38	6,896.43	5	631.25
November	29.66	24.69	16,738.37	18	8,300.23	11.66	8,438.15	5	668.56
December	27.75	22.65	15,577.60	17	7,799.28	10.68	7,778.32	5	674.27

<b>2022</b>									
January	29.05	19.64	15,631.30	18	8,336.01	11.16	7,295.29	5	694.77
February	29.72	18.81	15,030.93	17	8,348.13	12.31	6,682.79	5	668.64
March	30.85	18.57	15,952.78	18	8,201.93	12.93	7,750.84	5	786.54
April	33.87	18.10	19,720.68	18	9,060.12	16.18	10,660.56	5	711.33
May	33.28	18.71	20,380.10	19	8,216.62	14.28	12,163.49	5	597.21
June	31.06	20.20	18,663.53	18	8,091.47	13.06	10,572.05	5	521.84
July	30.72	21.14	17,324.20	18	8,182.48	12.66	9,141.72	5	524.61
August	29.51	22.38	17,163.67	18	8,296.20	11.98	8,867.47	5	462.61
September	29.51	24.83	16,942.31	18	8,359.78	11.82	8,582.53	5	558.90
October	29.13	26.03	16,306.65	17	8,100.56	11.78	8,206.09	5	631.25
November	31.16	26.67	18,288.13	2	1,344.00	29.16	16,944.13	32	16,689.72
December	29.15	24.46	17,019.88	2	1,344.00	27.15	15,675.88	32	15,548.29
<b>2023</b>									
January	30.42	21.20	17,061.89	2	1,344.00	28.42	15,717.89	32	15,586.10
February	31.13	20.32	16,406.57	2	1,344.00	29.13	15,062.57	32	14,996.31
March	32.31	20.05	17,412.78	2	1,344.00	30.31	16,068.78	32	15,901.91
April	35.48	19.54	21,525.53	2	1,344.00	33.48	20,181.53	32	19,603.37
May	34.86	20.20	22,245.30	2	1,344.00	32.86	20,901.30	32	20,251.17
June	32.53	21.81	20,371.62	2	1,344.00	30.53	19,027.62	32	18,564.86
July	32.18	22.83	18,909.72	2	1,344.00	30.18	17,565.72	32	17,249.15
August	30.91	24.17	18,734.50	2	1,344.00	28.91	17,390.50	32	17,091.45
September	30.90	26.81	18,492.88	2	1,344.00	28.90	17,148.88	32	16,873.99
October	30.51	28.11	17,799.05	2	1,344.00	28.51	16,455.05	32	16,249.54
November	32.63	28.79	19,961.87	2	1,344.00	30.63	18,617.87	32	18,196.08
December	30.53	26.41	18,577.55	2	1,344.00	28.53	17,233.55	32	16,950.20
<b>2024</b>									
January	31.78	22.89	18,598.44	2	1,344.00	29.78	17,254.44	32	16,969.00
February	32.52	21.93	17,884.10	2	1,344.00	30.52	16,540.10	32	16,326.09
March	33.75	21.64	18,980.94	2	1,344.00	31.75	17,636.94	32	17,313.25
April	37.06	21.09	23,464.07	2	1,344.00	35.06	22,120.07	32	21,348.06
May	36.42	21.80	24,248.67	2	1,344.00	34.42	22,904.67	32	22,054.20
June	33.98	23.54	22,206.24	2	1,344.00	31.98	20,862.24	32	20,216.02
July	33.62	24.64	20,612.69	2	1,344.00	31.62	19,268.69	32	18,781.82
August	32.29	26.09	20,421.69	2	1,344.00	30.29	19,077.69	32	18,609.92
September	32.28	28.94	20,158.30	2	1,344.00	30.28	18,814.30	32	18,372.87
October	31.87	30.34	19,401.99	2	1,344.00	29.87	18,057.99	32	17,692.19
November	34.09	31.08	21,759.59	2	1,344.00	32.09	20,415.59	32	19,814.03
December	31.89	28.51	20,250.60	2	1,344.00	29.89	18,906.60	32	18,455.94
<b>2025</b>									
January	33.12	24.69	20,240.96	2	1,344.00	31.12	18,896.96	32	18,447.27
February	33.89	23.65	19,463.54	2	1,344.00	31.89	18,119.54	32	17,747.59
March	35.18	23.34	20,657.24	2	1,344.00	33.18	19,313.24	32	18,821.92
April	38.62	22.75	25,536.30	2	1,344.00	36.62	24,192.30	32	23,213.07
May	37.96	23.52	26,390.19	2	1,344.00	35.96	25,046.19	32	23,981.57
June	35.42	25.40	24,167.39	2	1,344.00	33.42	22,823.39	32	21,981.05
July	35.04	26.58	22,433.10	2	1,344.00	33.04	21,089.10	32	20,420.19
August	33.65	28.14	22,225.23	2	1,344.00	31.65	20,881.23	32	20,233.11
September	33.65	31.21	21,938.59	2	1,344.00	31.65	20,594.59	32	19,975.13
October	33.21	32.73	21,115.48	2	1,344.00	31.21	19,771.48	32	19,234.33
November	35.53	33.53	23,681.30	2	1,344.00	33.53	22,337.30	32	21,543.57
December	33.24	30.75	22,039.04	2	1,344.00	31.24	20,695.04	32	20,065.54
<b>2026</b>									
January	34.44	26.60	21,989.46	2	1,344.00	32.44	20,645.46	32	20,020.91
February	35.25	25.49	21,144.88	2	1,344.00	33.25	19,800.88	32	19,260.79
March	36.58	25.16	22,441.70	2	1,344.00	34.58	21,097.70	32	20,427.93
April	40.16	24.52	27,742.22	2	1,344.00	38.16	26,398.22	32	25,198.40
May	39.47	25.34	28,669.88	2	1,344.00	37.47	27,325.88	32	26,033.29
June	36.83	27.37	26,255.07	2	1,344.00	34.83	24,911.07	32	23,859.96
July	36.43	28.64	24,370.96	2	1,344.00	34.43	23,026.96	32	22,164.27
August	34.99	30.32	24,145.13	2	1,344.00	32.99	22,801.13	32	21,961.02
September	34.99	33.64	23,833.73	2	1,344.00	32.99	22,489.73	32	21,680.76
October	34.54	35.27	22,939.52	2	1,344.00	32.54	21,595.52	32	20,875.97
November	36.95	36.13	25,726.98	2	1,344.00	34.95	24,382.98	32	23,384.68
December	34.56	33.14	23,942.86	2	1,344.00	32.56	22,598.86	32	21,778.97
<b>2027</b>									
January	35.74	28.69	23,986.85	2	1,344.00	33.74	22,642.85	32	21,818.56
February	36.58	27.49	23,065.55	2	1,344.00	34.58	21,721.55	32	20,989.39
March	37.96	27.13	24,480.16	2	1,344.00	35.96	23,136.16	32	22,262.55
April	41.68	26.45	30,262.16	2	1,344.00	39.68	28,918.16	32	27,466.34
May	40.96	27.33	31,274.07	2	1,344.00	38.96	29,930.07	32	28,377.07
June	38.22	29.52	28,639.92	2	1,344.00	36.22	27,295.92	32	26,006.32
July	37.81	30.89	26,584.67	2	1,344.00	35.81	25,240.67	32	24,156.60
August	36.32	32.71	26,338.33	2	1,344.00	34.32	24,994.33	32	23,934.89
September	36.31	36.28	25,998.64	2	1,344.00	34.31	24,654.64	32	23,629.18
October	35.84	38.04	25,023.20	2	1,344.00	33.84	23,679.20	32	22,751.28
November	38.34	38.97	28,063.86	2	1,344.00	36.34	26,719.86	32	25,487.87
December	35.87	35.74	26,117.68	2	1,344.00	33.87	24,773.68	32	23,736.31