BOHOL I ELECTRIC COOPERATIVE, INC. (BOHECO I)
POWER SUPPLY PROCUREMENT PLAN

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;
b. Distribution Impact Study/ Load Flow Analysis conducted that served as the basis of the Terms of Reference; and
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 PSSP 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. 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

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

TABLE OF CONTENTS

INTRODUCTION

BOHECO I's PROFILE

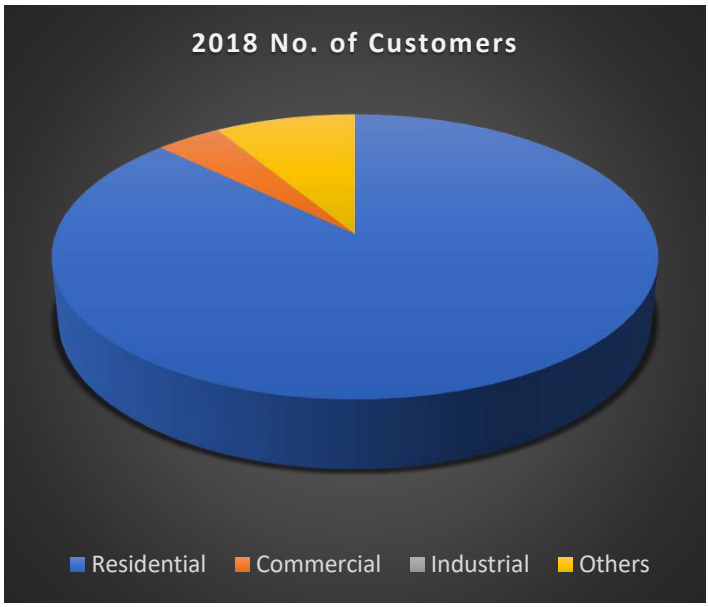
BOHECO I's franchise area covers twenty-six (26) municipalities within the Province of Bohol, namely: Alburquerque, Antequera, Baclayon, Balilihan, Batuan, Bilar, Calape, Carmen, Catigbian, Clarin, Corella, Cortes, Dauis, Dimiao, Inabanga, Lila, Loay, Loboc, Loon, Maribojoc, Panglao, Sagbayan, San Isidro, Sevilla, Sikatuna and Tubigon. At present, BOHECO I has a total substation capacity of 60 MVA with an aggregate loading of 61.67%. The system is operating at a power factor of 98.58%. BOHECO I has a maximum demand of 37.763 MW at a load factor of 67.53%. BOHECO I operates and maintains 45.58-km of 69-kV subtransmission lines, 1,744 km of primary distribution lines and 1,867 km of secondary distribution lines. Consistently, it upholds a single digit system loss and diligently complies with the standards of the Philippine Distribution Code where none of the voltage served is higher or lower than 10% of its nominal voltage. This electric cooperative's voltage unbalances are less than 2.5%. Its System Average Interruption Frequency Index (SAIFI) is 5.948 interruptions per customer-year, while the standard is 20 interruptions per customer-year for the year 2018. Its System Average Interruption Duration Index (SAIDI) is 11.262 hours customers-interruption duration while the standard is 45 hours.

BOHECO I's Franchise Map

Number of Customer Connections in Franchise	ACTUAL	FORECAST									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Residential	133,538	133,478	136,965	140,240	143,331	146,257	149,038	151,687	154,219	156,645	158,973
Commercial	6,237	6,378	6,571	6,764	6,956	7,146	7,333	7,518	7,700	7,879	8,055
Industrial	48	51	54	57	59	62	65	67	70	73	75
Others	13,405	13,651	13,934	14,198	14,442	14,671	14,887	15,090	15,284	15,467	15,641
Contestable Customers served by RES	1	2	2	2	2	2	2	2	2	2	2
Total (Captive Customers)	153,228	153,558	157,524	161,259	164,788	168,136	171,323	174,362	177,273	180,064	182,744

As Bohol Island maintains its highly lucrative market in the tourism industry, it turns to an imminent increased in business establishment and investments, thus increasing the electric power demand requirement of the island.

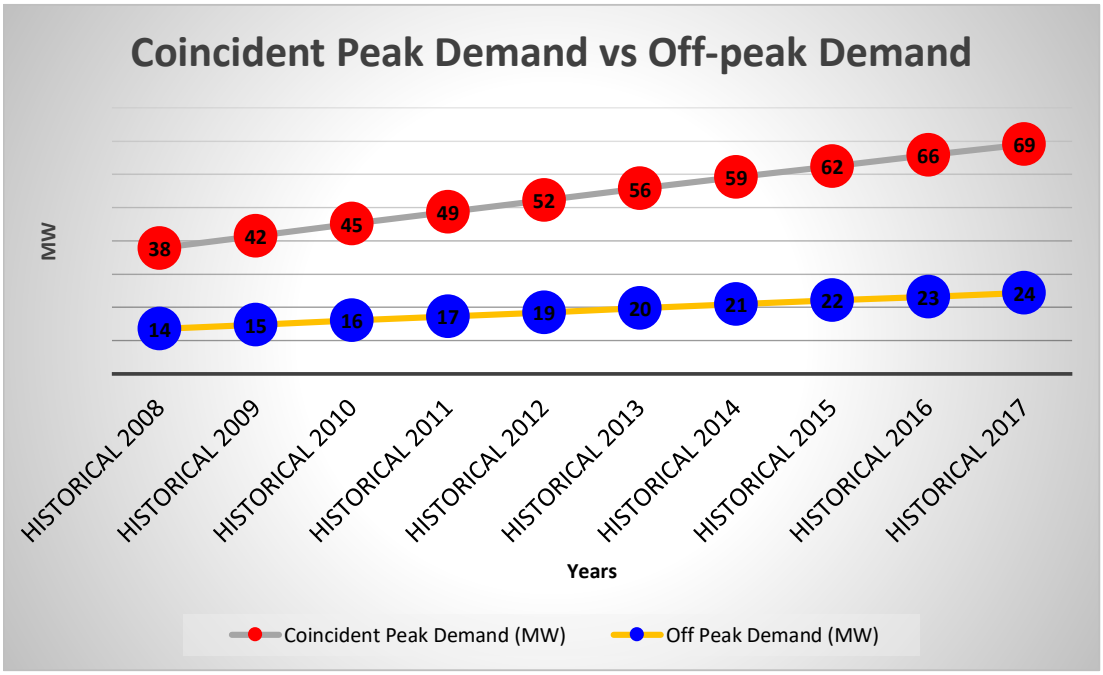
The Bohol International Airport is already operational, expected additional spot loads will sprout. At this point of time, there are four (4) hotel investments that will be built on the island of Panglao, initial information of their requirement (Ivy Wall Bohol: 3MW, Hotel 101: 1Mw, J Park: 4MW and Panglao Premiere: 12MW) was divulged by the investors.



DEMAND

Demand	HISTORICAL									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Coincident Peak Demand (MW)	24	25	25	27	27	27	28	32	34	36
Off Peak Demand (MW)	7	8	8	9	10	11	11	12	13	12

Demand	FORECAST									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Coincident Peak Demand (MW)	38	42	45	49	52	56	59	62	66	69
Off Peak Demand (MW)	14	15	16	17	19	20	21	22	23	24

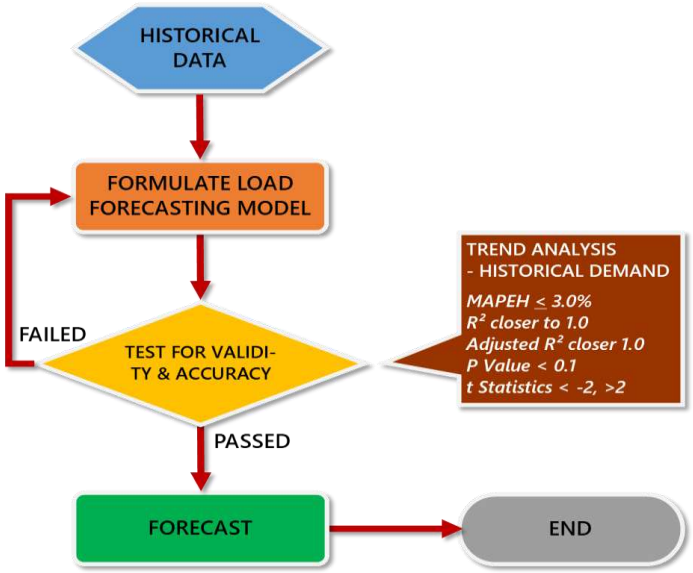


The province of Bohol is one of the major tourist destinations in the country, thus making the tourism industry as one of the major economic drivers in the franchised area of BOHECO I. Statistical Data from the year 2009 to 2018 shows that the demand (MW) is increasing.
Forecasting of electricity consumption and load growth (demand) is a crucial activity that needs to be done before planning the development of electric distribution systems and procurement of power supply. Electricity forecasts determine the right amount of power supply that needs to be procured and the improvement of future electrical systems required.
Electricity consumption and demand are affected by factors such as population growth, economic conditions, the price of basic commodities, geography, weather, land use, city/municipal plans, industrial plans, and development plans.

There are a variety of forecasting methodologies and models used in forecasting electricity consumption and demand. Econometric load forecasting models use economic and demographic data such as population, metrics for the economic activity such as Gross Domestic Products (GDP), prices of commodities, the number of visitors, and others, to predict electricity consumption. However, in the local Philippine setting, the availability of econometric data remains a challenge for using such models. Trend Analysis using regression models is one forecasting methodology that is widely used in the Philippines. This forecasting methodology takes advantage of the characteristic of electricity demand that normally has an increasing trend and can be described by simple polynomial equations arrived at using regression analysis. This forecasting methodology only requires historical load data which is readily available. The use and purpose of these load forecasting methods and the availability of data will determine which factors stated above must be considered.

Load Forecasting Flowchart below describes a flow diagram of our load forecasting process. We used 7 years of historical annual peak demand and energy data as inputs to our forecasting methodology. Forecasting models using polynomial equations are then formulated and tested to see if any of these models fit the historical data. The models are tested for validity using statistical tests such as R2 and Adjusted R2, which should have a value of at least 0.99, p-value < 0.1, t-stat < -2 or >2, and an accuracy better than 3%. If a forecast model does not pass the tests for validity and accuracy, other equations are formulated and tested until we find models that pass the validity and accuracy requirements.

Load Forecasting Flowchart



10-Year Historical Monthly Data

Year	Historical			Contracted Demand and Energy		Uncontracted Demand and Energy	
	Peak Demand (MW)	Off Peak Demand (MW)	Energy Input (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)
2009							
Jan	21.73	9.46	8,721.79	10.32	4,426.31	11.41	4,295.49
Feb	19.58	8.18	8,408.34	8.35	3,925.38	11.22	4,482.96
Mar	22.79	11.25	7,471.89	4.57	1,950.58	18.22	5,521.31
Apr	22.04	9.67	8,803.09	3.06	1,916.24	18.98	6,886.85
May	23.70	11.11	9,189.95	5.73	2,935.65	17.97	6,254.30
Jun	20.42	8.28	9,154.77	5.75	2,986.94	14.67	6,167.83
Jul	20.15	8.95	8,540.37	8.61	3,955.77	11.55	4,584.61
Aug	22.49	9.28	9,314.93	4.76	2,562.41	17.73	6,752.52
Sep	21.90	8.74	9,876.33	2.25	1,764.21	19.65	8,112.12
Oct	21.71	10.10	9,301.51	2.51	1,695.79	19.20	7,605.72
Nov	21.84	9.17	9,616.01	2.32	1,565.05	19.52	8,050.95
Dec	22.41	8.24	9,183.59	4.96	2,782.63	17.46	6,400.96
2010							
Jan	22.47	9.78	9,129.20	5.73	2,702.65	16.75	6,426.55
Feb	20.79	8.69	9,057.51	3.07	1,998.01	17.72	7,059.50
Mar	22.13	10.92	8,323.04	0.71	910.87	21.42	7,412.17
Apr	22.37	9.81	9,901.62	0.21	995.10	22.16	8,906.52
May	23.53	11.03	10,470.86	-0.67	863.92	24.20	9,606.94
Jun	23.89	9.68	10,363.72	2.55	1,498.41	21.34	8,865.31
Jul	23.89	10.60	9,387.89	5.05	1,813.56	18.84	7,574.32
Aug	22.54	9.30	10,016.21	7.28	3,709.78	15.26	6,306.43
Sep	22.52	8.98	10,007.42	7.21	3,703.79	15.30	6,303.63
Oct	22.34	10.39	9,774.75	19.03	8,420.94	3.31	1,353.81
Nov	24.78	10.41	10,144.92	20.78	8,627.43	4.00	1,517.50
Dec	23.91	8.79	10,238.84	19.32	8,452.10	4.59	1,786.73
2011							
Jan	24.42	10.63	10,276.96	21.67	8,202.29	2.75	2,074.67
Feb	22.08	9.23	9,964.90	21.41	8,781.20	0.67	1,183.70
Mar	22.01	10.86	9,082.22	21.44	10,019.35	0.57	-937.13
Apr	23.24	10.20	10,374.86	20.61	9,832.45	2.63	542.41
May	23.78	11.14	10,671.21	21.08	9,526.86	2.70	1,144.35
Jun	23.69	9.60	10,853.12	6.38	3,536.42	17.31	7,316.70
Jul	23.39	10.38	10,253.17	23.96	10,518.05	-0.57	-264.89
Aug	23.03	9.51	10,530.75	22.28	10,256.28	0.74	274.47
Sep	24.17	9.64	10,630.41	23.21	10,279.84	0.96	350.56
Oct	23.28	10.83	10,023.57	20.08	8,672.26	3.20	1,351.30
Nov	24.17	10.15	10,606.22	19.08	8,582.32	5.09	2,023.90
Dec	25.24	9.28	10,468.64	23.09	9,685.04	2.15	783.61
2012							
Jan	24.67	10.73	10,764.71	24.33	10,664.88	0.34	99.83
Feb	23.76	9.93	10,498.33	22.16	9,881.95	1.61	616.39
Mar	22.33	11.02	9,760.24	18.90	8,441.98	3.43	1,318.26
Apr	24.30	10.66	11,282.06	20.57	9,771.85	3.73	1,510.21
May	24.20	11.34	11,377.01	19.11	9,272.00	5.08	2,105.01
Jun	27.64	11.20	11,470.49	20.32	8,659.82	7.32	2,810.67
Jul	24.06	10.68	10,603.03	21.97	9,771.37	2.09	831.65
Aug	25.05	10.34	11,175.28	19.61	8,988.55	5.44	2,186.73
Sep	24.76	9.88	11,073.20	20.85	9,466.53	3.91	1,606.67

Year	Historical			Contracted Demand and Energy		Uncontracted Demand and Energy	
	Peak Demand (MW)	Off Peak Demand (MW)	Energy Input (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)
Oct	24.76	11.52	10,892.60	19.48	8,800.93	5.28	2,091.67
Nov	25.61	10.76	11,331.12	20.73	9,365.60	4.88	1,965.52
Dec	26.96	9.91	10,755.75	22.11	9,417.78	4.86	1,337.97
2013							
Jan	26.70	10.10	11,366.63	23.26	10,021.25	3.44	1,345.39
Feb	24.22	10.08	10,916.88	20.79	9,509.15	3.43	1,407.73
Mar	24.11	10.34	10,055.29	17.95	7,578.87	6.16	2,476.43
Apr	25.97	10.07	12,066.11	16.90	8,249.39	9.07	3,816.72
May	26.52	11.16	12,408.33	17.88	8,763.78	8.63	3,644.55
Jun	25.76	10.07	11,989.80	19.25	9,090.25	6.50	2,899.56
Jul	24.83	10.11	11,297.15	18.81	8,751.36	6.02	2,545.79
Aug	25.08	10.10	11,715.80	20.42	9,731.95	4.66	1,983.85
Sep	26.30	11.53	12,049.91	18.93	8,927.94	7.38	3,121.97
Oct	27.12	10.09	10,187.02	17.82	6,688.82	9.30	3,498.20
Nov	21.92	10.16	5,041.60	17.97	3,969.09	3.95	1,072.51
Dec	21.47	10.06	8,879.17	15.90	7,160.62	5.57	1,718.56
2014							
Jan	23.11	10.06	9,844.95	19.42	8,465.27	3.69	1,379.68
Feb	21.54	9.00	9,538.70	16.99	7,743.28	4.55	1,795.42
Mar	21.81	10.76	9,045.49	16.38	6,824.97	5.43	2,220.52
Apr	23.83	10.45	11,183.03	18.12	8,594.00	5.71	2,589.03
May	24.79	11.62	12,112.94	19.92	9,608.97	4.87	2,503.97
Jun	24.56	9.95	11,873.44	20.79	9,680.49	3.77	2,192.95
Jul	24.26	10.77	11,146.48	21.35	9,609.58	2.91	1,536.90
Aug	24.68	10.19	11,992.88	21.30	10,019.49	3.38	1,973.39
Sep	23.95	9.56	11,530.71	20.56	9,665.39	3.39	1,865.33
Oct	23.86	11.10	11,335.58	23.11	10,618.67	0.75	716.91
Nov	25.12	10.55	11,993.01	22.43	10,421.89	2.70	1,571.11
Dec	27.28	10.03	11,175.20	24.33	9,860.92	2.95	1,314.28
2015							
Jan	25.53	11.11	11,057.95	24.08	10,646.11	1.45	411.84
Feb	24.75	10.34	11,385.58	23.68	10,650.20	1.07	735.38
Mar	24.59	12.13	10,305.08	17.40	6,851.45	7.19	3,453.63
Apr	25.83	11.33	12,795.47	21.72	10,455.28	4.12	2,340.19
May	28.03	13.14	13,721.91	22.14	10,425.70	5.90	3,296.21
Jun	27.25	11.05	13,666.23	24.04	11,693.90	3.22	1,972.33
Jul	27.12	12.04	12,714.15	23.92	10,925.20	3.20	1,788.95
Aug	26.82	11.07	13,708.06	26.31	12,859.09	0.50	848.97
Sep	26.92	10.74	13,688.68	24.10	11,881.02	2.82	1,807.66
Oct	27.06	12.59	13,470.15	25.20	12,066.56	1.86	1,403.59
Nov	27.43	11.52	13,874.17	22.03	10,726.31	5.40	3,147.86
Dec	28.23	10.38	13,486.36	20.68	9,575.39	7.55	3,910.97
2016							
Jan	29.64	9.62	13,580.23	20.32	9,265.22	9.32	4,315.01
Feb	27.81	11.11	13,569.26	19.97	9,498.48	7.85	4,070.78
Mar	28.91	12.27	13,330.01	20.69	9,100.91	8.22	4,229.10
Apr	29.83	12.49	15,617.42	21.00	11,251.89	8.83	4,365.53
May	31.20	12.53	16,417.21	22.39	11,064.66	8.81	5,352.55
Jun	31.73	13.91	15,902.68	24.90	12,207.56	6.82	3,695.12
Jul	32.28	10.04	14,869.68	28.40	13,288.33	3.88	1,581.36
Aug	31.17	10.53	16,167.59	25.98	12,866.72	5.19	3,300.88
Sep	30.53	10.93	15,789.92	28.92	12,965.05	1.61	2,824.87

Year	Historical			Contracted Demand and Energy		Uncontracted Demand and Energy	
	Peak Demand (MW)	Off Peak Demand (MW)	Energy Input (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)
Oct	31.32	10.14	15,161.68	30.89	13,457.83	0.43	1,703.86
Nov	30.86	11.51	15,393.28	29.82	13,400.54	1.04	1,992.74
Dec	32.47	10.02	15,209.06	31.40	12,838.13	1.07	2,370.93
2017							
Jan	35.15	11.41	15,591.31	25.39	11,785.28	9.76	3,806.03
Feb	30.95	12.36	14,489.41	26.19	10,538.18	4.76	3,951.23
Mar	31.78	13.49	13,847.49	30.36	13,221.87	1.42	625.62
Apr	33.17	13.89	16,044.00	32.06	15,408.39	1.11	635.61
May	34.02	13.66	17,095.29	35.48	17,081.71	-1.46	13.58
Jun	33.84	14.84	17,377.67	35.53	17,752.51	-1.69	-374.84
Jul	32.19	10.01	11,754.37	27.60	10,722.21	4.59	1,032.16
Aug	32.38	10.94	17,077.53	29.94	15,536.89	2.45	1,540.65
Sep	32.98	11.81	17,135.23	33.48	17,280.41	-0.49	-145.18
Oct	33.56	10.86	16,632.64	34.01	16,940.88	-0.45	-308.23
Nov	33.51	12.50	17,292.68	33.83	17,567.33	-0.32	-274.66
Dec	34.90	10.76	16,087.94	34.47	16,105.35	0.43	-17.41
2018							
Jan	35.61	13.38	16,677.89	36.87	17,711.54	-1.26	-1,033.65
Feb	33.92	13.40	16,536.16	35.26	17,405.50	-1.34	-869.34
Mar	33.53	13.41	15,257.13	35.52	16,266.17	-1.99	-1,009.04
Apr	35.42	16.47	18,023.63	35.55	17,829.08	-0.13	194.55
May	36.50	18.88	19,158.87	33.69	17,559.27	2.80	1,599.59
Jun	37.18	18.24	19,427.16	35.84	18,239.92	1.34	1,187.24
Jul	37.46	14.21	18,640.69	33.86	17,162.80	3.60	1,477.89
Aug	37.76	14.72	20,035.17	31.20	16,733.13	6.56	3,302.04
Sep	35.51	13.37	18,329.45	35.56	17,996.56	-0.05	332.88
Oct	36.30	13.40	18,176.86	35.76	17,757.51	0.54	419.34
Nov	36.43	14.83	18,625.13	35.73	18,169.40	0.70	455.73
Dec	36.99	14.37	18,274.97	35.80	17,576.74	1.20	698.23

10-Year Forecasted Monthly Data

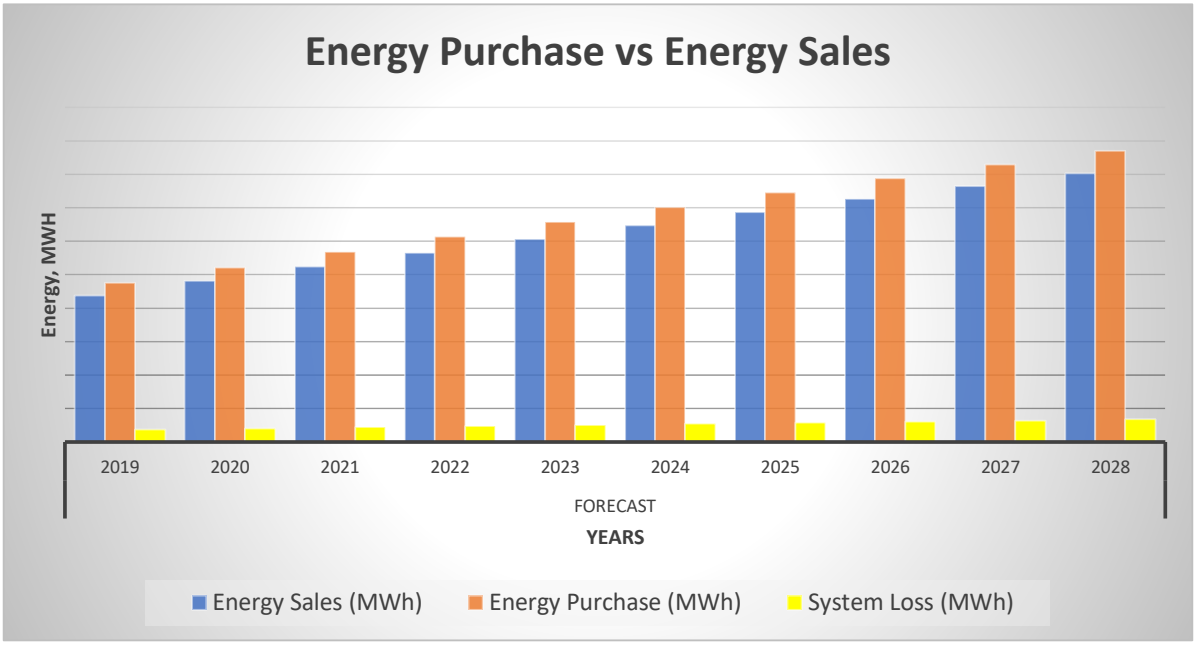
Year	Forecast			Contracted Demand and Energy		Uncontracted Demand and Energy		Committed for CSP	
	Coincident Peak Demand (MW)	Off Peak Demand (MW)	Energy Requirement (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)
2019									
Jan	38.83	12.75	19,213.86	35.27	19,266.99	3.56	1,944.73		
Feb	36.99	12.14	19,036.63	35.27	19,266.99	1.72	939.59		
Mar	36.57	12.00	17,585.24	35.27	17,402.45	1.30	641.43		
Apr	38.63	12.68	20,739.96	35.27	19,266.99	3.36	1,835.47		
May	39.87	13.09	22,011.16	35.27	18,645.48	4.60	2,431.79		
Jun	40.54	13.31	22,445.66	35.27	19,266.99	5.27	2,878.85		
Jul	40.86	13.41	21,513.01	35.27	18,645.48	5.59	2,955.15		
Aug	41.19	13.52	23,036.29	35.27	19,266.99	5.92	3,233.93		
Sep	38.74	12.72	21,079.17	35.27	19,266.99	3.47	1,895.56		
Oct	39.58	12.99	21,091.37	35.27	18,645.48	4.31	2,278.48		
Nov	39.74	13.04	21,431.19	35.27	19,266.99	4.47	2,441.83		
Dec	40.35	13.25	21,005.70	35.27	18,645.48	5.08	2,685.54		
2020									
Jan	42.45	13.94	21,040.89	32.80	18,650.55	9.65	6,102.00	6.60	2,002.21
Feb	40.44	13.28	20,847.04	32.80	18,650.55	7.64	4,834.32	6.60	2,002.21
Mar	39.98	13.13	19,257.45	32.80	16,845.66	7.18	4,101.09	6.60	1,873.04
Apr	42.24	13.87	22,712.21	32.80	18,650.55	9.44	5,969.10	6.60	2,002.21
May	43.59	14.31	24,104.20	32.80	18,048.92	10.79	6,600.64	6.60	1,937.63
Jun	44.32	14.55	24,580.10	32.80	18,650.55	11.52	7,285.48	6.60	2,002.21
Jul	44.68	14.67	23,558.90	32.80	18,048.92	11.88	7,267.91	6.60	1,937.63
Aug	45.03	14.79	25,227.07	32.80	18,650.55	12.23	7,735.48	6.60	2,002.21
Sep	42.36	13.91	23,083.56	32.80	18,650.55	9.56	6,044.91	6.60	2,002.21
Oct	43.27	14.21	23,097.09	32.80	18,048.92	10.47	6,408.89	6.60	1,937.63
Nov	43.44	14.26	23,469.10	32.80	18,650.55	10.64	6,730.64	6.60	2,002.21
Dec	44.12	14.49	23,003.07	32.80	18,048.92	11.32	6,926.00	6.60	1,937.63
2021									
Jan	46.04	15.12	22,853.64	32.82	18,656.24	13.22	8,360.71	7.60	2,324.54
Feb	43.87	14.41	22,643.31	32.82	18,656.24	11.05	6,985.62	7.60	2,324.54
Mar	43.37	14.24	20,916.58	32.82	16,850.80	10.54	6,021.69	7.60	2,113.03
Apr	45.82	15.05	24,669.05	32.82	18,656.24	12.99	8,216.43	7.60	2,324.54
May	47.28	15.53	26,180.89	32.82	18,054.43	14.45	8,844.32	7.60	2,249.56
Jun	48.07	15.79	26,697.87	32.82	18,656.24	15.25	9,644.48	7.60	2,324.54
Jul	48.46	15.91	25,588.81	32.82	18,054.43	15.64	9,568.92	7.60	2,249.56
Aug	48.85	16.04	27,400.75	32.82	18,656.24	16.02	10,132.40	7.60	2,324.54
Sep	45.95	15.09	25,072.28	32.82	18,656.24	13.12	8,298.40	7.60	2,324.54
Oct	46.94	15.41	25,087.13	32.82	18,054.43	14.11	8,637.45	7.60	2,249.56
Nov	47.12	15.47	25,491.08	32.82	18,656.24	14.30	9,042.36	7.60	2,324.54
Dec	47.85	15.72	24,984.82	32.82	18,054.43	15.03	9,198.12	7.60	2,249.56
2022									
Jan	49.23	16.29	24,645.48	32.85	18,661.68	16.38	10,361.14	9.60	2,960.51
Feb	46.91	15.52	24,418.66	32.85	18,661.68	14.06	8,890.90	9.60	2,960.51
Mar	46.37	15.34	22,556.55	32.85	16,855.71	13.52	7,722.67	9.60	2,687.45
Apr	48.99	16.21	26,603.24	32.85	18,661.68	16.14	10,206.88	9.60	2,960.51
May	50.55	16.73	28,233.61	32.85	18,059.69	17.70	10,832.35	9.60	2,865.01
Jun	51.40	17.01	28,791.12	32.85	18,661.68	18.55	11,733.74	9.60	2,960.51
Jul	51.81	17.15	27,595.11	32.85	18,059.69	18.97	11,607.09	9.60	2,865.01
Aug	52.23	17.28	29,549.11	32.85	18,661.68	19.38	12,255.42	9.60	2,960.51

Year	Forecast			Contracted Demand and Energy		Uncontracted Demand and Energy		Committed for CSP	
	Coincident Peak Demand (MW)	Off Peak Demand (MW)	Energy Requirement (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)
Sep	49.13	16.26	27,038.08	32.85	18,661.68	16.28	10,294.52	9.60	2,960.51
Oct	50.19	16.61	27,054.10	32.85	18,059.69	17.34	10,611.17	9.60	2,865.01
Nov	50.38	16.67	27,489.71	32.85	18,661.68	17.54	11,089.96	9.60	2,960.51
Dec	51.16	16.93	26,943.76	32.85	18,059.69	18.32	11,210.63	9.60	2,865.01
2023									
Jan	52.72	17.45	26,412.44	32.87	18,666.88	19.85	12,554.32	11.60	3,596.48
Feb	50.23	16.62	26,169.36	32.87	18,666.88	17.36	10,979.86	11.60	3,596.48
Mar	49.65	16.43	24,173.75	32.87	16,860.41	16.79	9,587.64	11.60	3,261.87
Apr	52.46	17.36	28,510.56	32.87	18,666.88	19.59	12,389.12	11.60	3,596.48
May	54.13	17.91	30,257.82	32.87	18,064.72	21.26	13,011.87	11.60	3,480.46
Jun	55.04	18.22	30,855.31	32.87	18,666.88	22.18	14,024.22	11.60	3,596.48
Jul	55.49	18.36	29,573.55	32.87	18,064.72	22.62	13,841.53	11.60	3,480.46
Aug	55.93	18.51	31,667.64	32.87	18,666.88	23.06	14,582.88	11.60	3,596.48
Sep	52.61	17.41	28,976.58	32.87	18,666.88	19.74	12,482.98	11.60	3,596.48
Oct	53.74	17.78	28,993.74	32.87	18,064.72	20.87	12,775.01	11.60	3,480.46
Nov	53.95	17.85	29,460.59	32.87	18,666.88	21.09	13,334.80	11.60	3,596.48
Dec	54.79	18.13	28,875.50	32.87	18,064.72	21.92	13,416.97	11.60	3,480.46
2024									
Jan	56.16	18.58	28,152.35	19.69	10,324.19	36.47	23,063.47	40.60	20,981.53
Feb	53.51	17.71	27,893.25	19.69	10,324.19	33.82	21,386.31	40.60	20,981.53
Mar	52.89	17.50	25,766.18	19.69	9,325.08	33.20	18,965.52	40.60	19,627.88
Apr	55.88	18.49	30,388.68	19.69	10,324.19	36.19	22,887.50	40.60	20,981.53
May	57.66	19.08	32,251.03	19.69	9,991.15	37.97	23,238.28	40.60	20,304.71
Jun	58.64	19.40	32,887.88	19.69	10,324.19	38.95	24,629.25	40.60	20,981.53
Jul	59.10	19.56	31,521.68	19.69	9,991.15	39.42	24,122.06	40.60	20,304.71
Aug	59.58	19.71	33,753.73	19.69	10,324.19	39.89	25,224.35	40.60	20,981.53
Sep	56.04	18.54	30,885.39	19.69	10,324.19	36.35	22,987.47	40.60	20,981.53
Oct	57.25	18.94	30,903.69	19.69	9,991.15	37.56	22,985.97	40.60	20,304.71
Nov	57.47	19.02	31,401.29	19.69	10,324.19	37.78	23,894.86	40.60	20,981.53
Dec	58.37	19.31	30,777.65	19.69	9,991.15	38.68	23,669.80	40.60	20,304.71
2025									
Jan	59.54	19.70	29,864.12	19.71	10,328.99	39.84	25,191.76	29.60	18,123.84
Feb	56.73	18.77	29,589.27	19.71	10,328.99	37.02	23,413.49	29.60	18,123.84
Mar	56.08	18.56	27,332.86	19.71	9,329.41	36.37	20,775.35	29.60	16,954.56
Apr	59.25	19.61	32,236.43	19.71	10,328.99	39.54	25,005.18	29.60	18,123.84
May	61.14	20.23	34,212.03	19.71	9,995.79	41.43	25,353.30	29.60	17,539.20
Jun	62.17	20.57	34,887.59	19.71	10,328.99	42.46	26,851.93	29.60	18,123.84
Jul	62.67	20.74	33,438.33	19.71	9,995.79	42.96	26,290.36	29.60	17,539.20
Aug	63.17	20.90	35,806.09	19.71	10,328.99	43.46	27,482.91	29.60	18,123.84
Sep	59.42	19.66	32,763.35	19.71	10,328.99	39.71	25,111.18	29.60	18,123.84
Oct	60.70	20.09	32,782.75	19.71	9,995.79	40.99	25,085.78	29.60	17,539.20
Nov	60.94	20.17	33,310.61	19.71	10,328.99	41.23	26,073.27	29.60	18,123.84
Dec	61.88	20.48	32,649.06	19.71	9,995.79	42.17	25,810.84	29.60	17,539.20
2026									
Jan	62.88	20.81	31,547.40	5.73	1,480.00	57.15	36,139.87	45.60	28,242.24
Feb	59.91	19.82	31,257.06	5.73	1,480.00	54.18	34,262.11	45.60	28,242.24
Mar	59.22	19.60	28,873.47	5.73	1,336.78	53.49	30,553.28	45.60	26,420.16
Apr	62.56	20.70	34,053.42	5.73	1,480.00	56.84	35,942.86	45.60	28,242.24
May	64.56	21.36	36,140.37	5.73	1,432.26	58.83	36,002.76	45.60	27,331.20
Jun	65.65	21.72	36,854.02	5.73	1,480.00	59.92	37,892.93	45.60	28,242.24
Jul	66.17	21.90	35,323.07	5.73	1,432.26	60.44	36,992.24	45.60	27,331.20

Year	Forecast			Contracted Demand and Energy		Uncontracted Demand and Energy		Committed for CSP	
	Coincident Peak Demand (MW)	Off Peak Demand (MW)	Energy Requirement (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)	Demand (MW)	Energy (MWh)
Aug	66.70	22.07	37,824.28	5.73	1,480.00	60.97	38,559.21	45.60	28,242.24
Sep	62.74	20.76	34,610.04	5.73	1,480.00	57.01	36,054.79	45.60	28,242.24
Oct	64.10	21.21	34,630.54	5.73	1,432.26	58.37	35,720.27	45.60	27,331.20
Nov	64.35	21.29	35,188.15	5.73	1,480.00	58.62	37,070.70	45.60	28,242.24
Dec	65.35	21.62	34,489.31	5.73	1,432.26	59.62	36,485.89	45.60	27,331.20
2027									
Jan	66.15	21.89	33,202.28	5.75	1,484.45	60.41	38,200.57	47.60	29,507.04
Feb	63.03	20.86	32,896.71	5.75	1,484.45	57.28	36,224.94	47.60	29,507.04
Mar	62.31	20.62	30,388.08	5.75	1,340.80	56.56	32,305.66	47.60	27,603.36
Apr	65.83	21.78	35,839.75	5.75	1,484.45	60.08	37,993.29	47.60	29,507.04
May	67.92	22.48	38,036.18	5.75	1,436.57	62.17	38,050.60	47.60	28,555.20
Jun	69.07	22.86	38,787.26	5.75	1,484.45	63.32	40,045.00	47.60	29,507.04
Jul	69.62	23.04	37,176.00	5.75	1,436.57	63.88	39,091.66	47.60	28,555.20
Aug	70.18	23.22	39,808.42	5.75	1,484.45	64.43	40,746.01	47.60	29,507.04
Sep	66.01	21.84	36,425.57	5.75	1,484.45	60.26	38,111.05	47.60	29,507.04
Oct	67.44	22.32	36,447.14	5.75	1,436.57	61.69	37,753.39	47.60	28,555.20
Nov	67.70	22.40	37,034.01	5.75	1,484.45	61.95	39,179.92	47.60	29,507.04
Dec	68.75	22.75	36,298.50	5.75	1,436.57	63.00	38,558.92	47.60	28,555.20
2028									
Jan	69.38	22.96	34,829.13	5.77	1,488.75	63.61	40,227.81	49.60	30,771.84
Feb	66.10	21.87	34,508.58	5.77	1,488.75	60.34	38,155.91	49.60	30,771.84
Mar	65.34	21.62	31,877.04	5.77	1,344.68	59.58	34,029.60	49.60	28,786.56
Apr	69.03	22.84	37,595.83	5.77	1,488.75	63.27	40,010.42	49.60	30,771.84
May	71.23	23.57	39,899.88	5.77	1,440.73	65.47	40,065.18	49.60	29,779.20
Jun	72.44	23.97	40,687.76	5.77	1,488.75	66.67	42,162.12	49.60	30,771.84
Jul	73.02	24.16	38,997.55	5.77	1,440.73	67.25	41,156.97	49.60	29,779.20
Aug	73.60	24.35	41,758.96	5.77	1,488.75	67.83	42,897.28	49.60	30,771.84
Sep	69.23	22.91	38,210.35	5.77	1,488.75	63.46	40,133.93	49.60	30,771.84
Oct	70.72	23.40	38,232.99	5.77	1,440.73	64.96	39,753.49	49.60	29,779.20
Nov	71.00	23.50	38,848.60	5.77	1,488.75	65.24	41,254.88	49.60	30,771.84
Dec	72.10	23.86	38,077.06	5.77	1,440.73	66.34	40,598.27	49.60	29,779.20

10-YEAR FORECAST - ENERGY SALES AND PURCHASE

ENERGY SALES AND PURCHASE	FORECAST									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Energy Sales (MWh)	219,063	240,488	261,718	282,671	303,299	323,573	343,480	363,013	382,171	400,959
Energy Purchase (MWh)	237,687	260,885	283,875	306,567	328,909	350,872	372,440	393,607	414,372	434,739
System Loss (MWh)	18,624	20,397	22,156	23,895	25,610	27,299	28,961	30,595	32,201	33,780



In accordance with the forecasting methodology, BOHECO I applied a combined approach where the forecasted system energy is allocated based on the forecast of each feeders.

System Energy Forecast

System Energy Mathematical Model.

$$Energy_{system} = a(t)^{-1} + b(\ln t)^{1} + c(lnt)^{2} + d$$

Table below shows the parameters/criteria being considered.

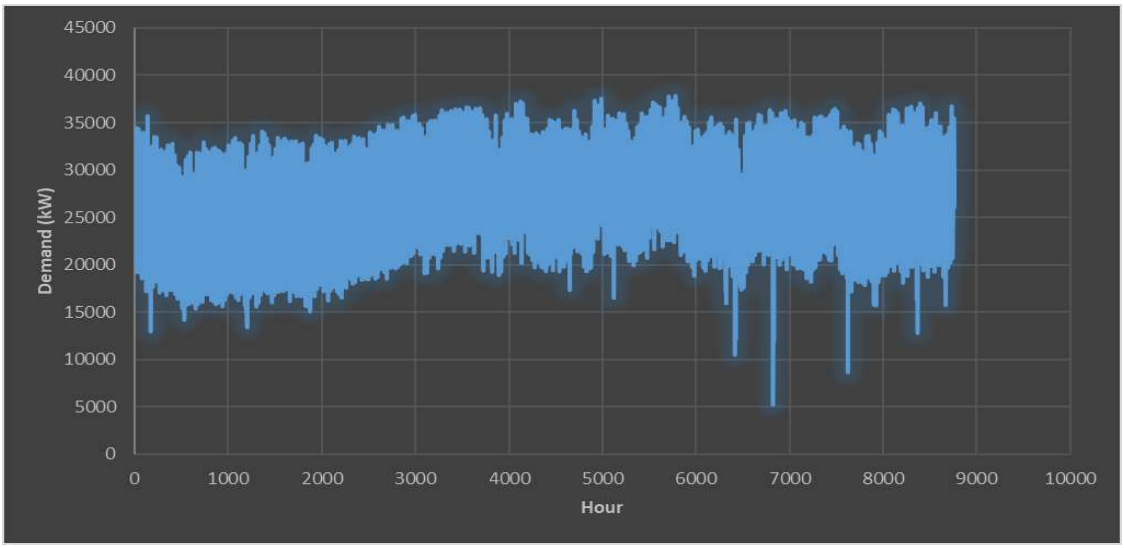
System Energy Forecasting Criteria and Intercepts

Intercepts		P Value	t Statistic
Coefficient	Value	< 0.1	< -2, >2
a	(215,022,902.92)	(3.204473)	0.049163
b	(190,873,621.42)	(3.435959)	0.041358
c	65,342,660.14	4.754762	0.017657
d	323,554,830.64	4.850179	0.016727

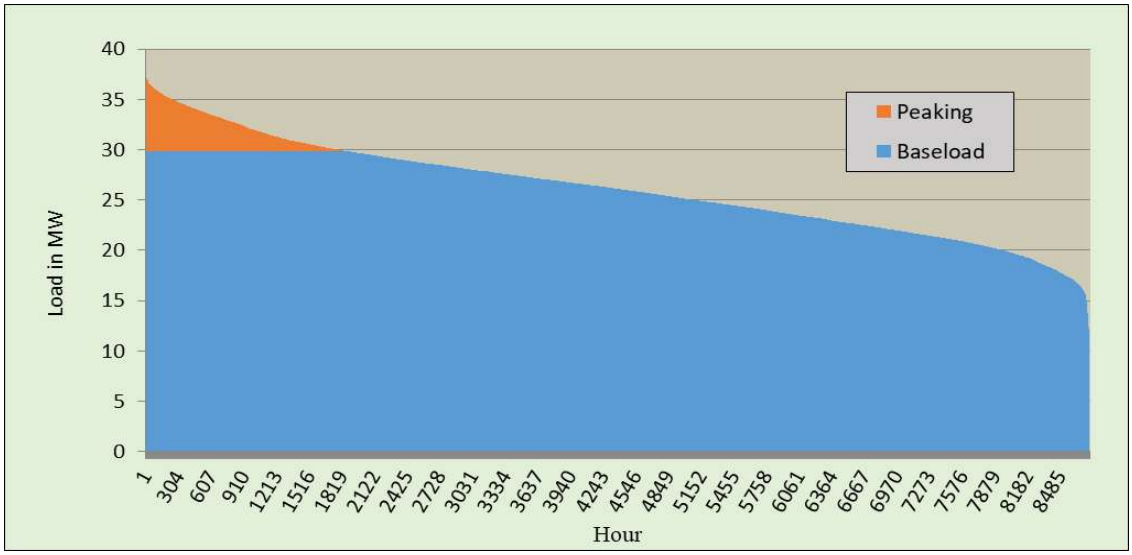
System Energy Forecast Validity Test Parameters & Result

Test Parameters	MAPE	r^2	r^2adj	Growth Rate
Actual	0.676%	0.9965	0.99295	7.65%
Requisite	≤ 3%	>0.99	>0.99	Reasonable

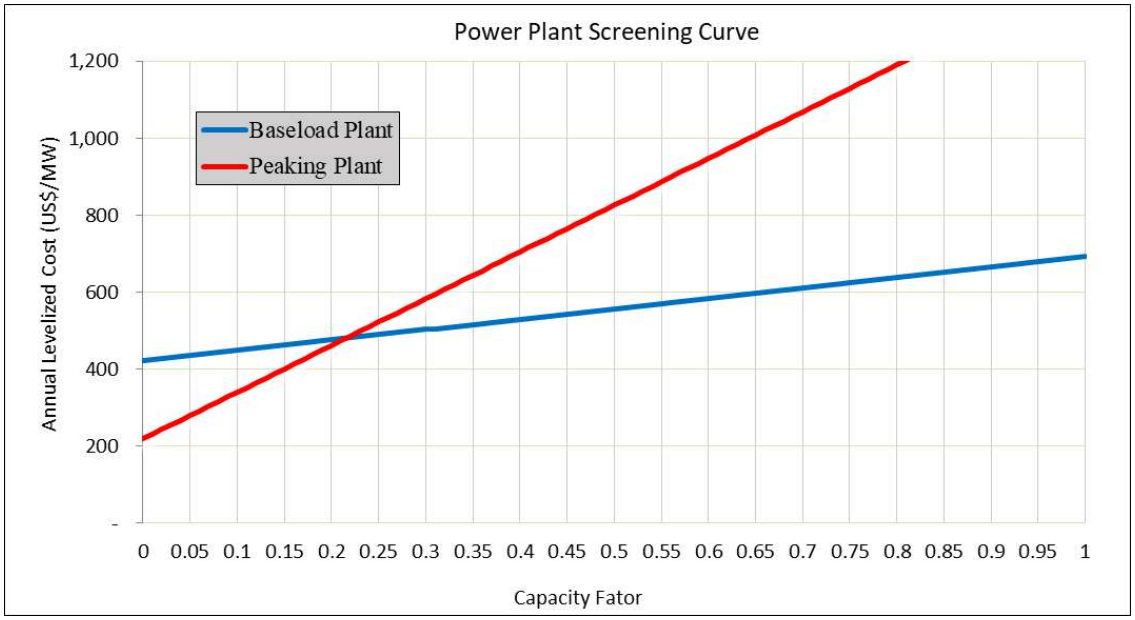
LOAD PROFILE AND LOAD DURATION CURVE



2018 BOHECO I's Hourly Load Profile (kW)



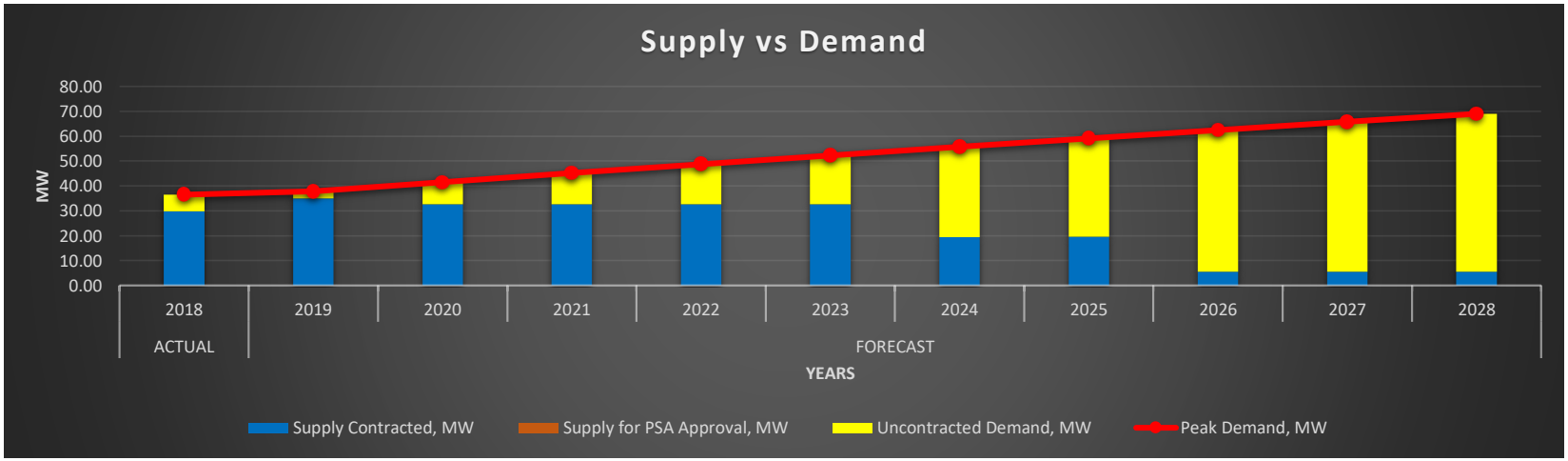
Load Duration Curve



From the power plant data, we generate the Power Plant Screening Curve shown above. We used power plant types representing peaking plants (Bunker Diesel) and typical baseload plant (Coal). The graph shows that for capacity factor less than 21.52%, the Power Plant utilizing Bunker C fuel is the least cost among the two power plant types. This is due to the relatively low investment cost for construction of Diesel Plants. Above 21.52% capacity factor, the Coal Plant becomes least cost as coal is a much cheaper fuel than Bunker C. Due to the high cost of fuel of Diesel Plants, they are normally operated as peaking plants with low utilization levels.

MIXSUPPLY VS DEMAND AND THE OPTIMAL SUPPLY

Supply Demand	ACTUAL	FORECAST									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Peak Demand, MW	**36.49**	**37.84**	**41.51**	**45.15**	**48.69**	**52.23**	**55.70**	**59.12**	**62.47**	**65.76**	**68.98**
Supply Contracted, MW	**29.80**	**35.07**	**32.60**	**32.62**	**32.65**	**32.67**	**19.49**	**19.51**	**5.53**	**5.55**	**5.57**
CEDC	14	14	14	14	14	14	14	14			
ULGEI	8										
GN POWER			12	12	12	12					
PSALM		12									
BSMHPC	2.5	2.5									
JHEP	5	5	5	5	5	5	5	5	5	5	5
NPC-SPUG	0.3	0.37	0.4	0.42	0.45	0.47	0.49	0.51	0.53	0.55	0.57
SMEC		*1.2*	*1.2*	*1.2*	*1.2*	*1.2*					
Supply for PSA Approval, MW	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
BSMHPC											
Uncontracted Demand, MW	**6.69**	**2.77**	**8.91**	**12.53**	**16.04**	**19.56**	**36.21**	**39.61**	**56.94**	**60.21**	**63.41**



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)
CEDC	GBPC	0.85	10/2010	10/2025	14	104,244	Base	Grid Connec	IPP		Coal	246	200
GN POWER	GNPOWER	0.85	01/2018	01/2023	12	89,352	Base	Grid Connec	IPP		Coal	1,320	1,000
PSALM	PSALM	0.85			12	89,352	Base	Grid Connec	NPC		-	-	-
BSMHPP	BSMHPC	0.35	01/09	01/19	2.6	7,972	Base	Embedded	85% BOHECO I, 15% LGU Sevilla		Hydro	2.6	2.5
JHEP	BOHECO I	0.35	06/92	Perennial	5.2	15,943	Base	Embedded	Utility-Owned		Hydro	5.2	5
NPC-SPUG	NPC	0.32	01/18	12/22	0.3	781	Base	Embedded	NPC		Diesel		
SMEC	*SMEC*	*0.85*	*07/2019*	*07/2023*	*1.2*	*8,935*	*Base*	*Grid Connec*	*IPP*		*Coal*	*1,200*	*1,000*

The 54.71% of the Energy Demand is drawn from Cebu Energy Devt. Corp. (CEDC), 30.88% from Unified Leyte Geothermal Energy Inc. (ULGEI), 4.34% from BOHECO-Sevilla Mini-Hydro Corp. (BSMHC), 3.45% from Janopol Mini-ydro Power Plant (JMHPP) and the remaining 6.28% is drawn from WESM. Janopol Mini-Hyro Power Plant is a coop owned generation. Its generated power will be utilized by BOHECO I. Supply from BOHECO I - Sevilla Mini-Hydro Corporation has a 15-year contract from November 1998. Bilateral contract from Cebu Energy Devt. Corporation started from September 26, 2010 and will end on September 25, 2025. The bilateral contract with ULGEI ended last December 31, 2018 while GNPower started its supply of 12 MW recently this January 2019 and will end on December 2023.
The One Bohol Power (1BP) is on the Initial stage of the Long-Term Power Supply Procurement (CY2024-2033) that is subject to Competitive Selection Process.
BOHECO I has a committed demand (ladderized) for this Transaction.
Island barangays were initially supplied thru Diesel Generators owned and operated by BOHECO I. It was transferred to NPC-SPUG with a 5-Year Bilateral contract from 2018 to 2022. Last year 2018, it had 0.34% share for BOHECO I's energy requirement.

Small Power Utilities Group - Existing Approved Effective Rates

Table below shows the Effective Rate for the month of July 2019 as published on https://www.napocor.gov.ph/index.php/npc-spug-electricity-rates.

Areas	EFFECTIVE RATE, P/kWh				
	Existing Subsidized Approved Generation Rate (SAGR)	Deferred Accounting Adjustments (DAA)			TOTAL
		GRAM	ICERA	Total	
Mindoro Area	5.6404	0.0000	0.0000	0.0000	5.6404
Marinduque	5.6404	0.0000	0.0000	0.0000	5.6404
Mainland Palawan	5.6404	0.0000	0.0000	0.0000	5.6404
Catanduanes	5.6404	0.0000	0.0000	0.0000	5.6404
Masbate	5.1167	0.0000	0.0000	0.0000	5.1167
Tablas	5.6404	0.0000	0.0000	0.0000	5.6404
Romblon	5.6404	0.0000	0.0000	0.0000	5.6404
Bantayan	6.2553	0.0000	0.0000	0.0000	6.2553
Camotes	6.2553	0.0000	0.0000	0.0000	6.2553
Siquijor	6.2553	0.0000	0.0000	0.0000	6.2553
Tawi-Tawi	5.1167	0.0000	0.0000	0.0000	5.1167
Basilan	5.1167	0.0000	0.0000	0.0000	5.1167
Sulu	5.1167	0.0000	0.0000	0.0000	5.1167
Other Luzon					
Group 1	4.8024	0.0000	0.0000	0.0000	4.8024
Group 2	5.6404	0.0000	0.0000	0.0000	5.6404
Other Visayas	5.6404	0.0000	0.0000	0.0000	5.6404
Other Mindanao	4.8024	0.0000	0.0000	0.0000	4.8024

The existing SAGR is based on CY 2003 cost level which was approved by the Commission on 16 December 2005 under ERC Case No. 20014-449 RC for the First Wave Areas (inclusing Visayas) and on 7 March 2011 under ERC Case No. 2006-020 for the remaining NPC-Spug areas.

National Power Corporation (NPC) filed a petition seeking for the Commission's approval of the proposed new SAGR, with prayer for the issuance of provisional authority with ERC Case No. 2018-048 RC. This is in view of the implementation of TRAIN Law, where the electricity prices were affected since NPC-SPUG uses diesel and bunker fuels in its power plant. Later fuel prices increased due to this law. The said petition is still pending for Commission's decision specifically for the Visayas area.

DISTRIBUTION IMPACT STUDY

Distribution Impact Study (DIS) uses “POWERSOLVE" and Power System Simulator - Siemens Nodal Calculation (PSS-SINCAL) planning tools in assessing the current behavior of the distribution system and the future behavior when the load is increased as forecasted.

Substations and Distribution Lines were upgraded yearly based on simulations in line with the yearly forecasts of the increase of load. Projects were treated as Capital Expenditures and submitted to the ERC for approval.

The effect of the new power plant will be based on where it will be located. If it will be embedded, BOHECO I is capable of simulating the capacity, power quality and efficiency of lines and substations. BOHECO I ensures that the loading of the substations are at the optimal level through accurate capacity forecasting and planning to serve the incoming loads, including the spot loads due to the tourist influx in the Island of Bohol.

SCHEDULE OF CSP

Base / mid-merit / peaking	For CSP		Proposed contract period (MM/YYYY)		Proposed schedule (MM/DD/YYYY)						
	Demand (MW)	Energy (MWh)	Start Month and Year	End Month and Year	Publication of Invitation to Bid	Pre-bid Conferences	Submission and Opening of Bids	Bid Evaluation	Awarding	PSA Signing	Joint Application to ERC
Peaking	***Refer to Annex A***				1/19/2020 & 1/26/2020	2/19/2020 & 3/6/2020	17/04/2020	#########	#########	22/05/2020	03/06/2020
Base	CY 2024 -26MW CY 2025 -28MW CY 2026 -44MW CY 2027 -46MW CY 2028 -48MW CY 2029-2033 -50MW	194,126 209,059 328,522 343,454 358,387 372,300	01/2024	12/2033	1/19/2020 & 1/26/2020	2/17/2020 & 3/2/2020	28/05/2020	#########	#########	10/07/2020	15/07/2020
Base	*1.60*	*7,972.00*	*01/2021*	*12/2030*	7/5/2020 & 7/12/2020	*8/4/2020 & 8/18/2020*	*24/09/2020*	#########	#########	*29/10/2020*	*11/11/2020*

CSP for Peaking Power

Contract Term	Contract Year	Contract Duration	Capacity (MW)	Energy (MWh)
Short-Term	2020	26 June 2020 – 25 December 2020	5	10,976
	2021	26 December 2020 – 25 December 2021	6	22,464
	2022	26 December 2021 – 25 December 2022	8	29,952
Medium-Term	2023	26 December 2022 – 25 December 2023	10	37,440
	2024	26 December 2023 – 25 December 2024	13	48,805
	2025	26 December 2024 – 25 December 2025	15	56,160
	2026	26 December 2025 – 25 December 2026	16	59,904
	2027	26 December 2026 – 25 December 2027	17	63,648