

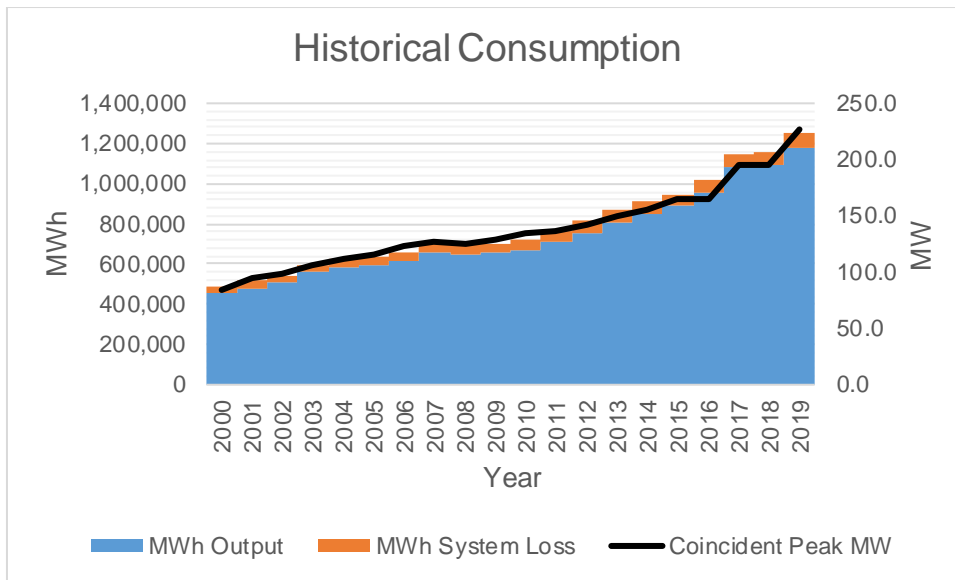
# **Power Supply Procurement Plan 2020**

**CAGAYAN ELECTRIC POWER AND LIGHT  
COMPANY, INC.  
Grid**

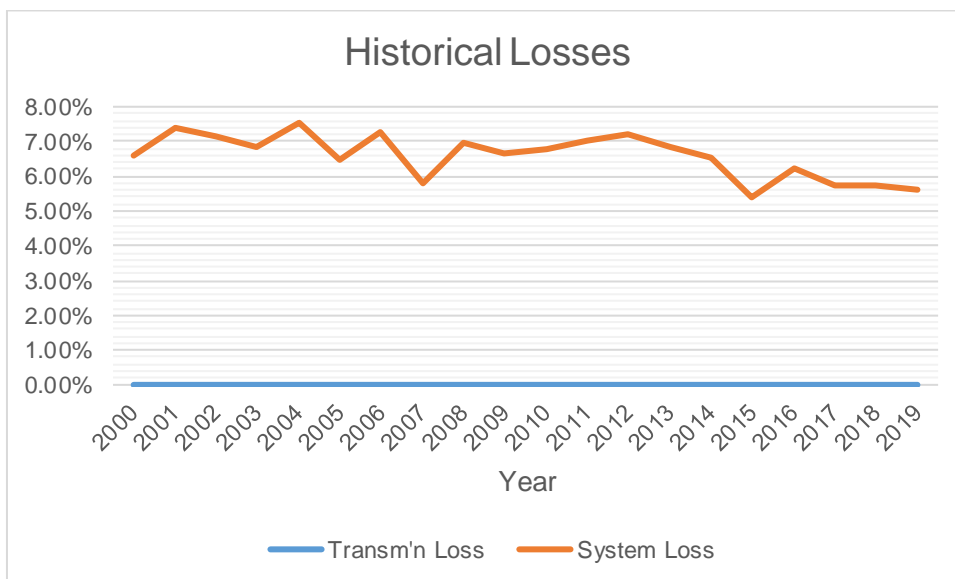
## Historical Consumption Data

	Coincident Peak MW	MWh Offtake	WESM	MWh Input	MWh Output	MWh System Loss	Load Factor	Discrepancy	Transm'n Loss	System Loss
2000	84.22	493,516	0	493,516	460,840	32,676	67%	0.00%	0.00%	6.62%
2001	95.26	516,370	0	516,370	478,292	38,079	62%	0.00%	0.00%	7.37%
2002	99.42	546,619	0	546,619	507,405	39,214	63%	0.00%	0.00%	7.17%
2003	106.90	598,896	0	598,896	557,782	41,114	64%	0.00%	0.00%	6.86%
2004	112.68	630,386	0	630,386	582,859	47,527	64%	0.00%	0.00%	7.54%
2005	115.90	639,467	0	639,467	598,110	41,356	63%	0.00%	0.00%	6.47%
2006	122.46	662,668	0	662,668	614,588	48,080	62%	0.00%	0.00%	7.26%
2007	126.16	701,190	0	701,190	660,664	40,526	63%	0.00%	0.00%	5.78%
2008	125.73	700,459	0	700,459	651,542	48,917	64%	0.00%	0.00%	6.98%
2009	129.78	700,227	0	700,227	653,727	46,500	62%	0.00%	0.00%	6.64%
2010	135.26	722,127	0	722,127	673,062	49,065	61%	0.00%	0.00%	6.79%
2011	135.85	768,747	0	768,747	714,615	54,131	65%	0.00%	0.00%	7.04%
2012	143.10	814,576	0	814,576	755,610	58,965	65%	0.00%	0.00%	7.24%
2013	148.82	870,255	0	870,255	810,505	59,750	67%	0.00%	0.00%	6.87%
2014	155.55	908,114	0	908,114	848,794	59,320	67%	0.00%	0.00%	6.53%
2015	165.39	946,045	0	946,045	895,015	51,030	65%	0.00%	0.00%	5.39%
2016	164.24	1,022,415	0	1,022,415	958,518	63,897	71%	0.00%	0.00%	6.25%
2017	195.38	1,143,583	0	1,143,583	1,077,693	65,889	67%	0.00%	0.00%	5.76%
2018	195.63	1,157,738	0	1,157,738	1,091,082	66,656	68%	0.00%	0.00%	5.76%
2019	226.83	1,251,282	0	1,251,282	1,181,227	70,055	63%	0.00%	0.00%	5.60%

Peak Demand increased from 195.63 MW in 2018 to 226.83 MW in 2019 at a rate of 15.95% due to the entry and operation of a 138kV Steel Plant on last quarter of 2019. MWh Offtake increased from 1,157,738 MWh in 2018 to 1,251,282 MWh in 2019 at a rate of 8.08% due to the entry and operation of the same Steel Plant. Within the same period, Load Factor ranged from 68% to 63%. There was an abrupt change in consumption on 2019 due to the specified 138kV Steel Plant.

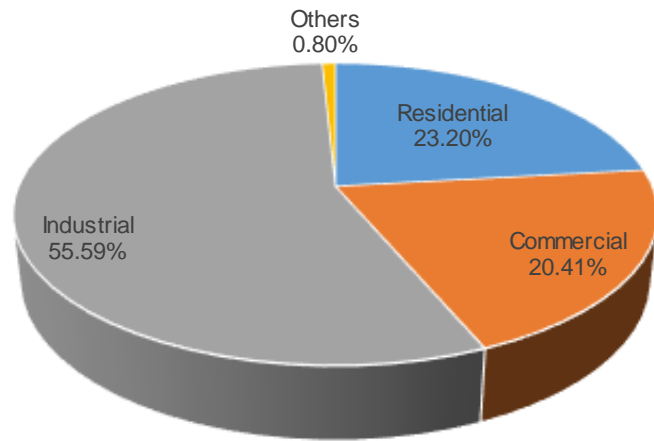


MWh Output increased from year 2018 to year 2019 at a rate of 8.26%, while MWh System Loss decreased at a rate of 2.78% within the same period.



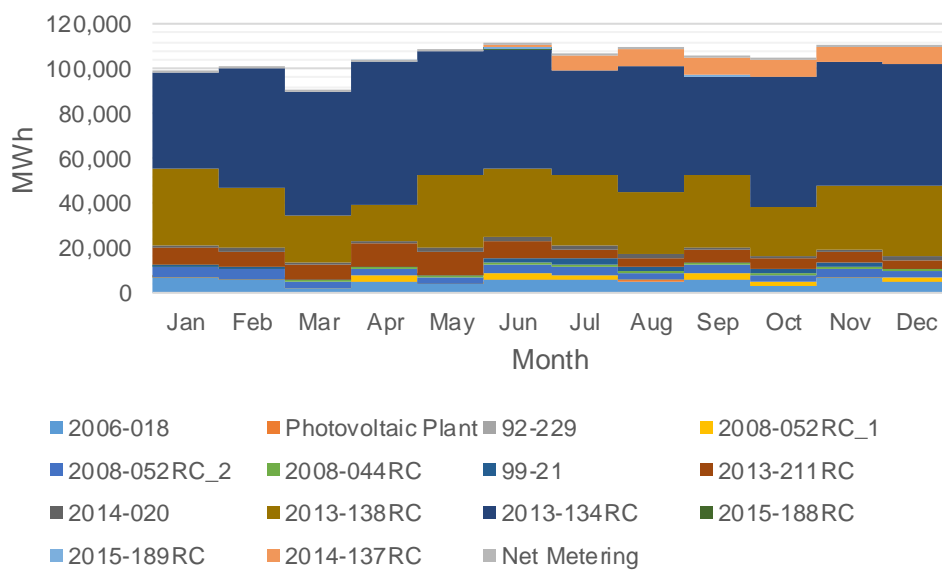
Historically, Transmission Loss cannot be determined while System Loss ranged from 5.39% to 7.54%. CEPALCO cannot calculate its contribution to Transmission Loss with the available data. Transmission Loss is calculated by subtracting the Total kWh at the NGCP Metering Points to the Total kWh measured at Plant Gate of Grid connected generators. Since CSEE-PSALM, one of CEPALCO's Grid suppliers, provides kWh measured at the metering point instead of their Plant Gate, CEPALCO is constrained to determine the Transmission Loss using the above formula. System Loss peaked at 7.54% on year 2004 because of increasing demand and the radial configuration of CEPALCO's distribution system.

### Previous Year's Shares of Energy Sales

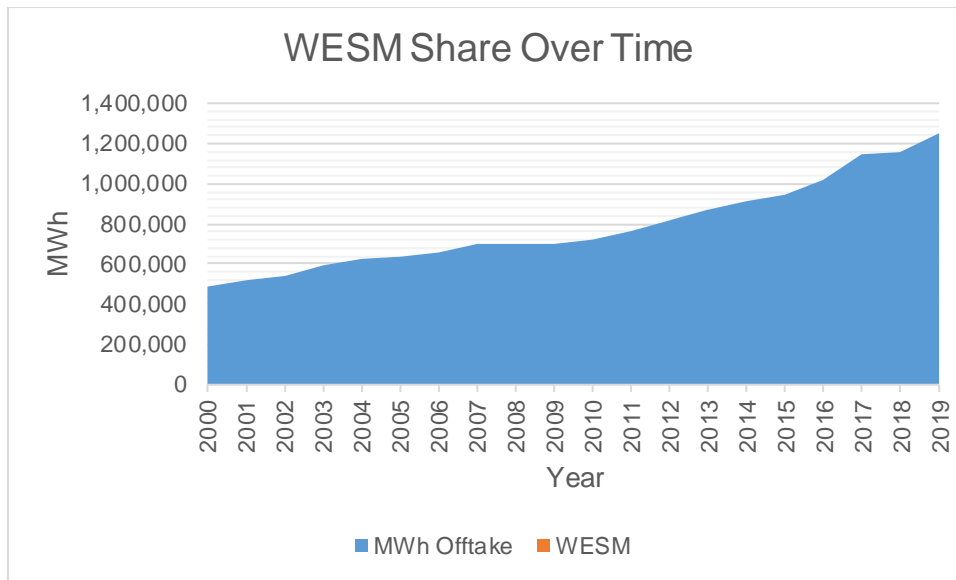


Industrial customers account for the bulk of energy sales at 55.59%. In contrast, other customers, specifically street lights, accounted for only 0.80% of energy sales.

### MWh Offtake for Last Historical Year

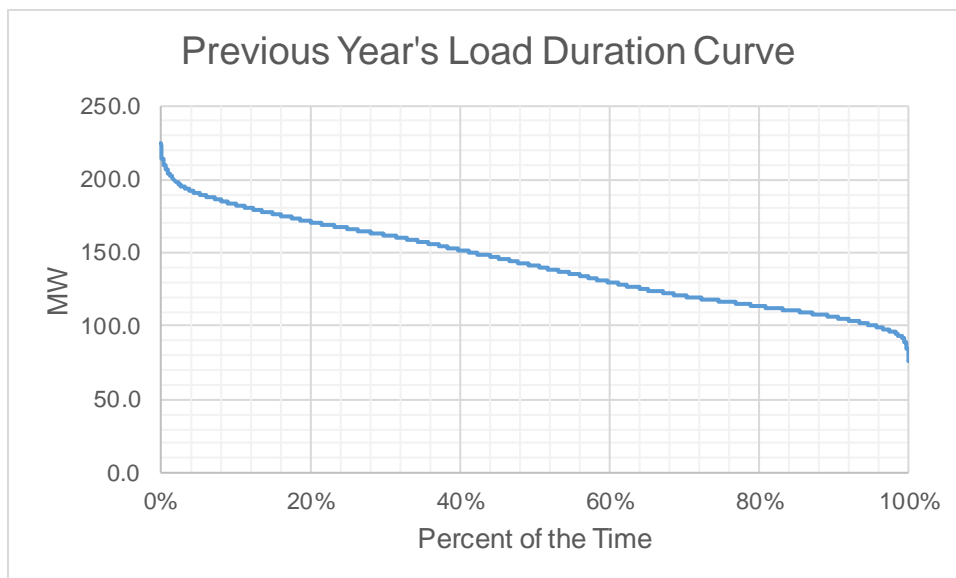


The total Offtake for the last historical year is lower than the quantity stipulated in the PSA. The PSA with case no. 2013-134RC and 2015-138RC accounts for the majority of MWh Offtake.

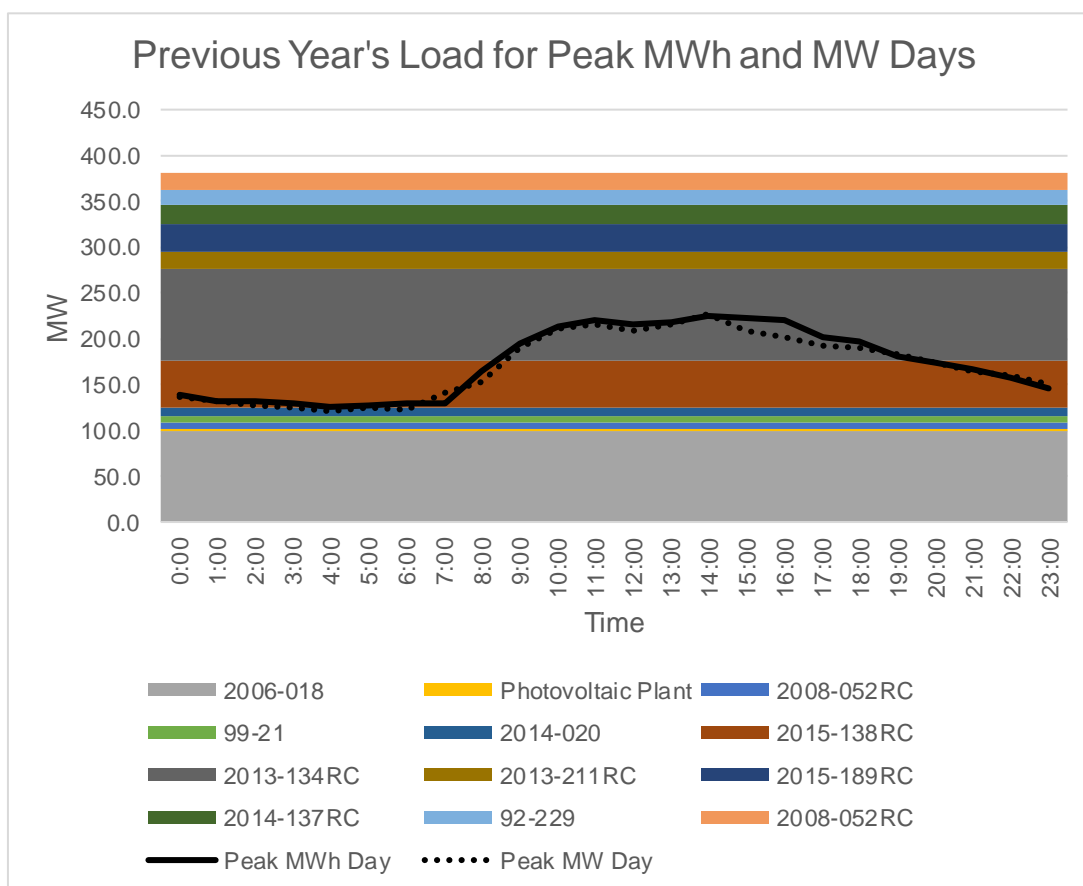


MWh Offtake increased from 1,157,738 MWh in 2018 to 1,251,282 MWh in 2019 at a rate of 8.08% due to the entry and operation of a 138kV Steel Plant on last quarter of 2019. The share of WESM in the total Offtake is maintained at 0% since energy requirement of CEPALCO can still be supplied by bilateral contracts through PSA.

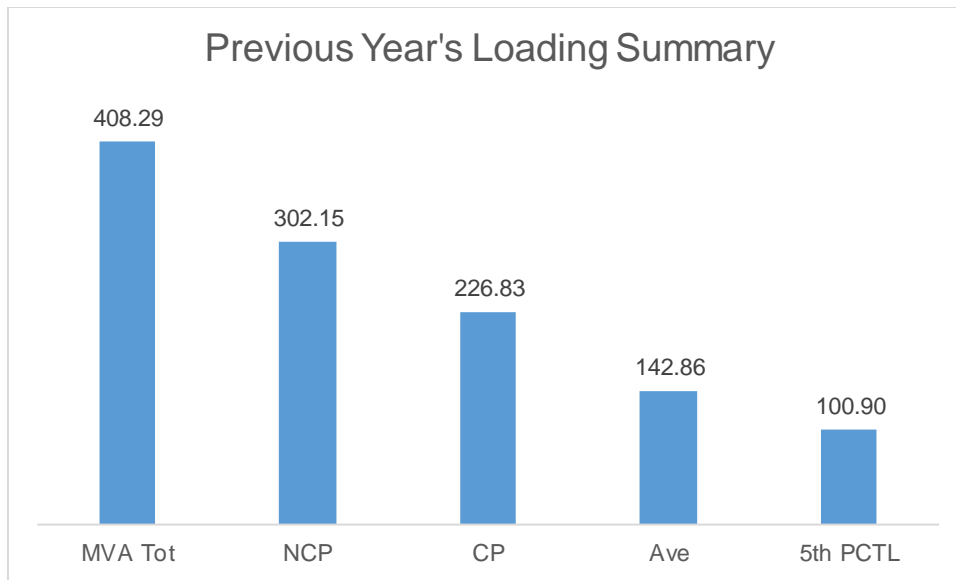
## Previous Year's Load Profile



Based on the Load Duration Curve, the minimum load is 76.15 MW and the maximum load is 226.84 MW for the last historical year.



Peak MW occurred on 14:00 due to the increased demand from medium voltage customers. Peak daily MWh occurred on 14:00 due to the increased demand from medium voltage customers. As shown in the Load Curves, the available supply is higher than the Peak Demand.



The Non-coincident Peak Demand is 302.15 MW, which is around 74.00% of the total substation capacity of 408.29 MVA at a power factor of 0.74. The load factor or the ratio between the Average Load of 142.86 MW and the Non-coincident Peak Demand is 47.28%. A safe estimate of the true minimum load is the fifth percentile load of 100.9 MW which is 33.39% of the Non-coincident Peak Demand.

Metering Point	Substation MVA	Substation Peak MW
M1	20	13.609
M2 + Cabulig	78.4	45.399
M3 + BPC + KSEC + Minergy Diesel + Minergy Coal	272.5	217.553
M4	10.45	0.000
M5	26.94	25.593

The metering points loaded at above 70% is “M3 + BPC + KSEC + Minergy Diesel + Minergy Coal” and “M5”. The loading problem for “M3 + BPC + KSEC + Minergy Diesel + Minergy Coal” will be solved by the proposed increase of capacity from the Grid. M5 is a 138kV metering point and is constrained by the total maximum demand of the connected bulk customers.

## Forecasted Consumption Data

		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Retail Electricity Suppliers MW	Existing Contracting Level	Target Contracting Level	MW Surplus / Deficit
2020	Jan	329.66	381.26	0.00	0.000		116%	116%	51.60
	Feb	325.89	381.26	0.00	0.000		117%	117%	55.37
	Mar	325.14	381.26	0.00	0.000		117%	117%	56.12
	Apr	339.04	381.26	0.00	0.000		112%	112%	42.22
	May	345.61	381.26	0.00	0.000		110%	110%	35.65
	Jun	339.21	381.26	0.00	0.000		112%	112%	42.05
	Jul	337.55	381.26	0.00	0.000		113%	113%	43.71
	Aug	339.61	381.26	0.00	0.000		112%	112%	41.65
	Sep	329.82	381.26	0.00	0.000		116%	116%	51.44
	Oct	344.49	381.26	0.00	0.000		111%	111%	36.77
	Nov	340.07	381.26	0.00	0.000		112%	112%	41.19
	Dec	341.33	381.26	0.00	0.000		112%	112%	39.93
2021	Jan	352.24	416.26	0.00	0.000		118%	118%	64.02
	Feb	348.22	416.26	0.00	0.000		120%	120%	68.04
	Mar	347.42	416.26	0.00	0.000		120%	120%	68.84
	Apr	362.26	416.26	0.00	0.000		115%	115%	54.00
	May	369.28	416.26	0.00	0.000		113%	113%	46.98
	Jun	362.45	416.26	0.00	0.000		115%	115%	53.81
	Jul	360.67	416.26	0.00	0.000		115%	115%	55.59
	Aug	362.88	416.26	0.00	0.000		115%	115%	53.38
	Sep	352.41	416.26	0.00	0.000		118%	118%	63.85
	Oct	368.09	416.26	0.00	0.000		113%	113%	48.17
	Nov	363.37	416.26	0.00	0.000		115%	115%	52.89
	Dec	364.71	416.26	0.00	0.000		114%	114%	51.55
2022	Jan	357.28	416.26	0.00	0.000		117%	117%	58.98
	Feb	353.19	416.26	0.00	0.000		118%	118%	63.07
	Mar	352.39	416.26	0.00	0.000		118%	118%	63.87
	Apr	367.44	416.26	0.00	0.000		113%	113%	48.82

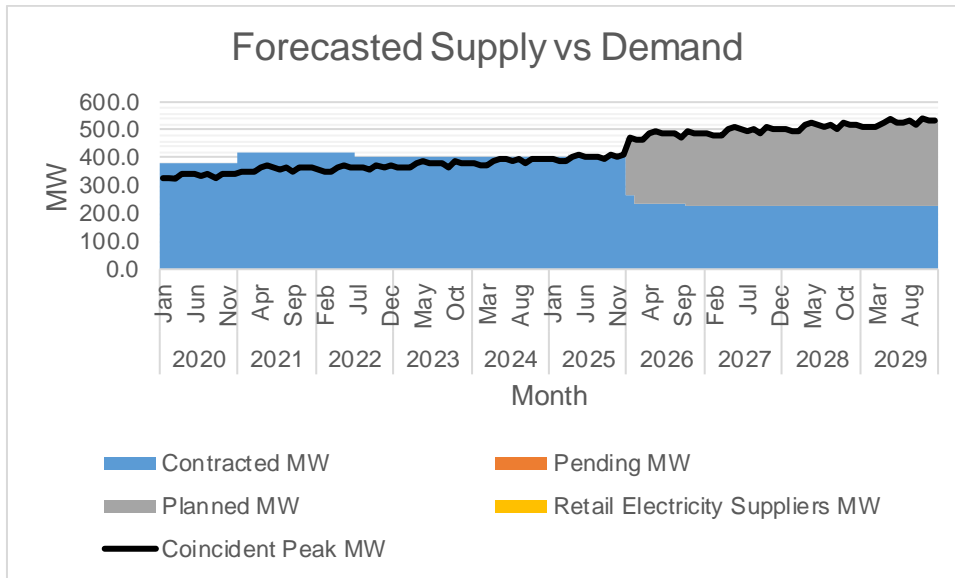


	May	374.56	416.26	0.00	0.000		111%	111%	41.70
	Jun	367.63	416.26	0.00	0.000		113%	113%	48.63
	Jul	365.83	400.95	0.00	0.000		110%	110%	35.12
	Aug	368.06	400.95	0.00	0.000		109%	109%	32.89
	Sep	357.45	400.95	0.00	0.000		112%	112%	43.50
	Oct	373.36	400.95	0.00	0.000		107%	107%	27.59
	Nov	368.57	400.95	0.00	0.000		109%	109%	32.38
	Dec	369.93	400.95	0.00	0.000		108%	108%	31.02
2023	Jan	368.72	400.95	0.00	0.000		109%	109%	32.23
	Feb	364.50	400.95	0.00	0.000		110%	110%	36.45
	Mar	363.67	400.95	0.00	0.000		110%	110%	37.28
	Apr	379.21	400.95	0.00	0.000		106%	106%	21.74
	May	386.55	400.95	0.00	0.000		104%	104%	14.40
	Jun	379.39	400.95	0.00	0.000		106%	106%	21.56
	Jul	377.54	400.95	0.00	0.000		106%	106%	23.41
	Aug	379.85	400.95	0.00	0.000		106%	106%	21.10
	Sep	368.90	400.95	0.00	0.000		109%	109%	32.05
	Oct	385.31	400.95	0.00	0.000		104%	104%	15.64
	Nov	380.37	400.95	0.00	0.000		105%	105%	20.58
	Dec	381.77	400.95	0.00	0.000		105%	105%	19.18
2024	Jan	381.10	400.95	0.00	0.000		105%	105%	19.85
	Feb	376.75	400.95	0.00	0.000		106%	106%	24.20
	Mar	375.89	400.95	0.00	0.000		107%	107%	25.06
	Apr	391.95	400.95	0.00	0.000		102%	102%	9.00
	May	399.54	400.95	0.00	0.000		100%	100%	1.41
	Jun	392.14	400.95	0.00	0.000		102%	102%	8.81
	Jul	390.23	400.95	0.00	0.000		103%	103%	10.72
	Aug	392.61	400.95	0.00	0.000		102%	102%	8.34
	Sep	381.29	400.95	0.00	0.000		105%	105%	19.66
	Oct	398.25	400.95	0.00	0.000		101%	101%	2.70
	Nov	393.15	400.95	0.00	0.000		102%	102%	7.80
	Dec	394.60	400.95	0.00	0.000		102%	102%	6.35
2025	Jan	393.68	400.95	0.00	0.000		102%	102%	7.27

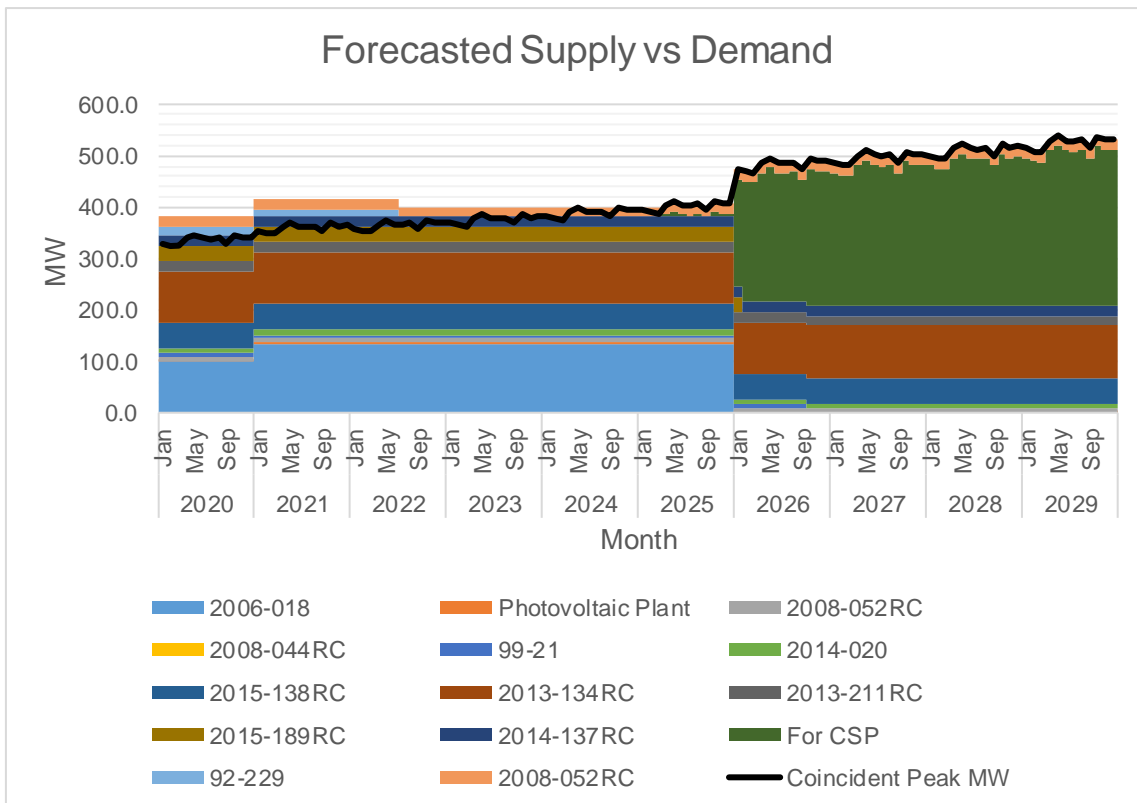
	Feb	389.18	400.95	0.00	0.000		103%	103%	11.77
	Mar	388.29	400.95	0.00	0.000		103%	103%	12.66
	Apr	404.88	400.95	0.00	3.934		99%	100%	0.00
	May	412.73	400.95	0.00	11.779		97%	100%	0.00
	Jun	405.09	400.95	0.00	4.136		99%	100%	0.00
	Jul	403.11	400.95	0.00	2.156		99%	100%	0.00
	Aug	405.57	400.95	0.00	4.620		99%	100%	0.00
	Sep	393.88	400.95	0.00	0.000		102%	102%	7.07
	Oct	411.40	400.95	0.00	10.450		97%	100%	0.00
	Nov	406.12	400.95	0.00	5.172		99%	100%	0.00
	Dec	407.62	400.95	0.00	6.670		98%	100%	0.00
2026	Jan	473.46	265.95	0.00	207.507		56%	100%	0.00
	Feb	468.04	235.95	0.00	232.092		50%	100%	0.00
	Mar	466.97	235.95	0.00	231.023		51%	100%	0.00
	Apr	486.93	235.95	0.00	250.976		48%	100%	0.00
	May	496.36	235.95	0.00	260.411		48%	100%	0.00
	Jun	487.17	235.95	0.00	251.219		48%	100%	0.00
	Jul	484.79	235.95	0.00	248.838		49%	100%	0.00
	Aug	487.75	235.95	0.00	251.801		48%	100%	0.00
	Sep	473.69	235.95	0.00	237.737		50%	100%	0.00
	Oct	494.76	228.95	0.00	265.813		46%	100%	0.00
	Nov	488.42	228.95	0.00	259.465		47%	100%	0.00
	Dec	490.22	228.95	0.00	261.267		47%	100%	0.00
2027	Jan	486.80	228.95	0.00	257.848		47%	100%	0.00
	Feb	481.23	228.95	0.00	252.280		48%	100%	0.00
	Mar	480.13	228.95	0.00	251.181		48%	100%	0.00
	Apr	500.65	228.95	0.00	271.696		46%	100%	0.00
	May	510.35	228.95	0.00	281.397		45%	100%	0.00
	Jun	500.90	228.95	0.00	271.946		46%	100%	0.00
	Jul	498.45	228.95	0.00	269.498		46%	100%	0.00
	Aug	501.49	228.95	0.00	272.544		46%	100%	0.00
	Sep	487.03	228.95	0.00	258.084		47%	100%	0.00
	Oct	508.70	228.95	0.00	279.754		45%	100%	0.00

	Nov	502.18	228.95	0.00	273.228		46%	100%	0.00
	Dec	504.03	228.95	0.00	275.080		45%	100%	0.00
2028	Jan	500.55	228.95	0.00	271.599		46%	100%	0.00
	Feb	494.82	228.95	0.00	265.874		46%	100%	0.00
	Mar	493.69	228.95	0.00	264.743		46%	100%	0.00
	Apr	514.79	228.95	0.00	285.839		44%	100%	0.00
	May	524.76	228.95	0.00	295.813		44%	100%	0.00
	Jun	515.04	228.95	0.00	286.095		44%	100%	0.00
	Jul	512.53	228.95	0.00	283.578		45%	100%	0.00
	Aug	515.66	228.95	0.00	286.710		44%	100%	0.00
	Sep	500.79	228.95	0.00	271.841		46%	100%	0.00
	Oct	523.07	228.95	0.00	294.123		44%	100%	0.00
	Nov	516.36	228.95	0.00	287.413		44%	100%	0.00
	Dec	518.27	228.95	0.00	289.318		44%	100%	0.00
2029	Jan	514.73	228.95	0.00	285.780		44%	100%	0.00
	Feb	508.84	228.95	0.00	279.893		45%	100%	0.00
	Mar	507.68	228.95	0.00	278.731		45%	100%	0.00
	Apr	529.37	228.95	0.00	300.424		43%	100%	0.00
	May	539.63	228.95	0.00	310.681		42%	100%	0.00
	Jun	529.64	228.95	0.00	300.688		43%	100%	0.00
	Jul	527.05	228.95	0.00	298.099		43%	100%	0.00
	Aug	530.27	228.95	0.00	301.320		43%	100%	0.00
	Sep	514.98	228.95	0.00	286.030		44%	100%	0.00
	Oct	537.89	228.95	0.00	308.943		43%	100%	0.00
	Nov	530.99	228.95	0.00	302.043		43%	100%	0.00
	Dec	532.95	228.95	0.00	304.001		43%	100%	0.00

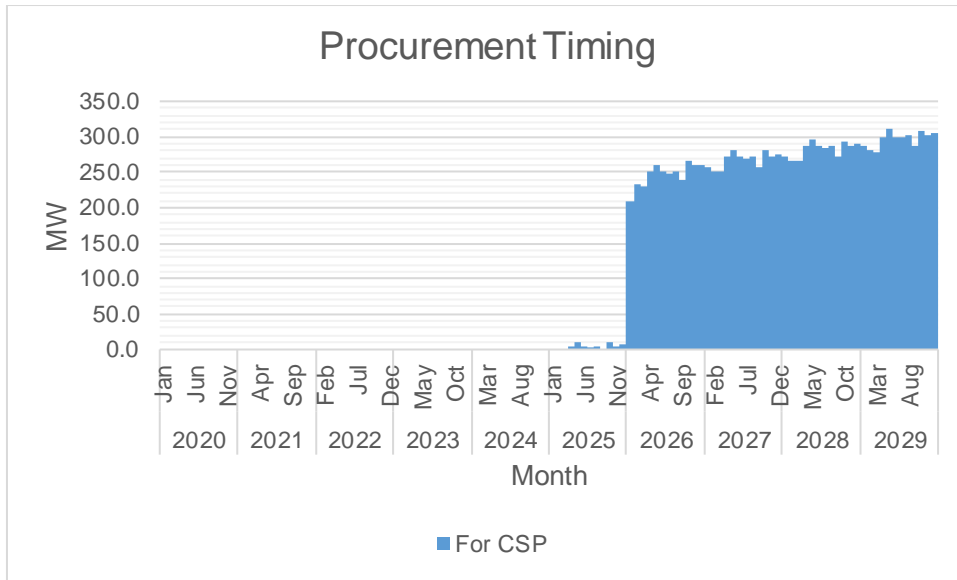
The Peak Demand was forecasted using ARIMA for normal growth plus indicative and was assumed to occur on the month of May due to the effect of summer season based on historical load profile. Monthly Peak Demand is at its lowest on the month of March based on historical load profile. In general, Peak Demand is expected to grow at a rate of 5.21% annually.



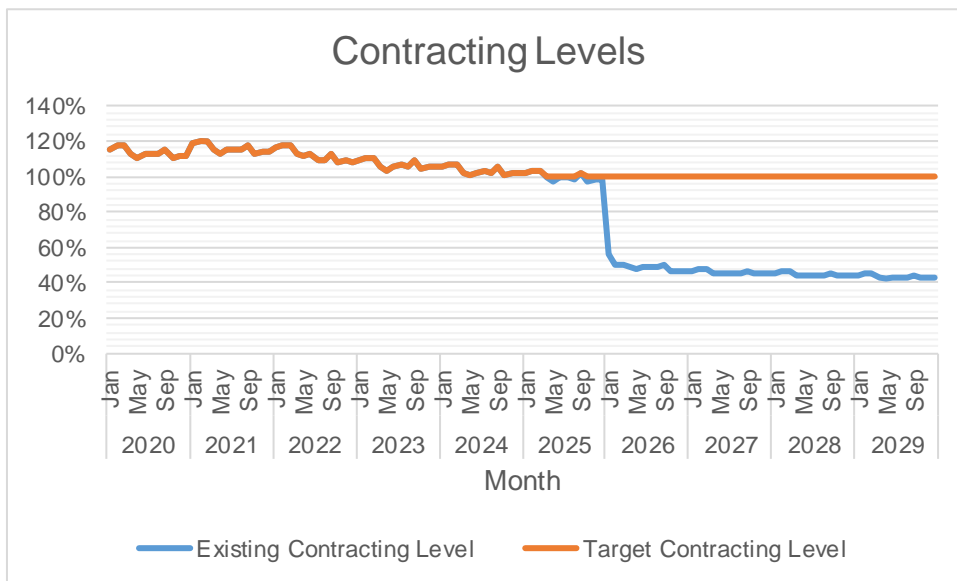
The available supply is generally above the Peak Demand until 2025. Starting 2026, available supply is below the Peak Demand due to the entry of large load and no CSEE from PSALM. The lack of MW demand will be solved by the Planned MW from additional suppliers through CSP.



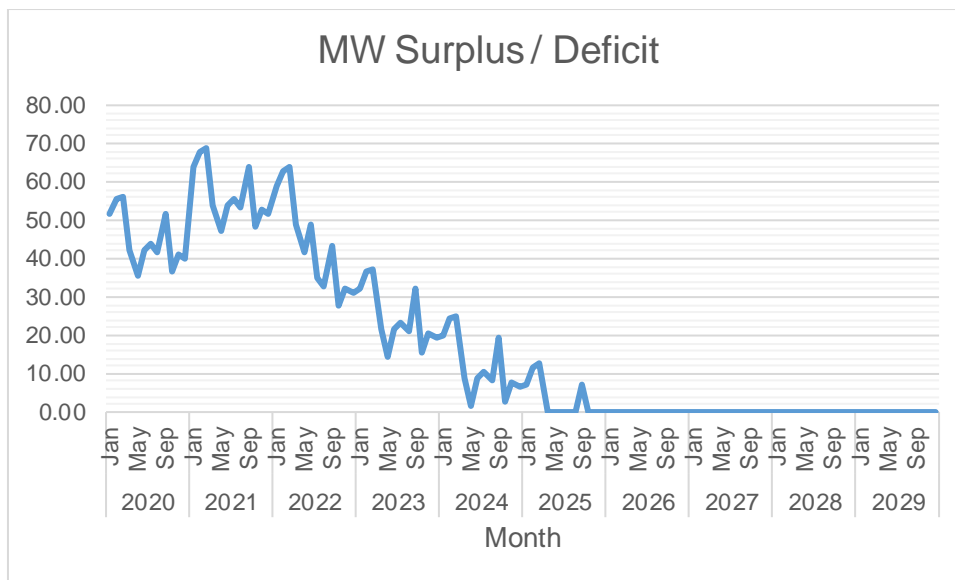
Of the available supply, the largest is 150 MW from Minergy Power Corporation (Coal). This is followed by 100 MW from CSEE-PSALM starting 2<sup>nd</sup> quarter of 2020 until 2025.



The first wave of supply procurement will be for 11.78 MW planned to be available by the month of April 2025. This will be followed by 310.68MW planned to be available by the month of January 2026.



As of 2019, there is over-contacting by 23.99%. The highest target contracting level is 119.81% which is expected to occur on March 2021. The lowest target contracting level is 100% which is expected to occur on April 2025.



As of 2019, there is over-contacting by 54.43 MW. The highest surplus is 68.84 MW which is expected to occur on the month of March 2021. The lowest surplus is 0 MW which is expected to occur on the month of April 2025.

		MWh Offtake	MWh Output	MWh System Loss	Transm'n Loss	System Loss
2020	Jan	153,889	81,279	7,411	42.37%	8.36%
	Feb	153,889	80,672	7,356	42.80%	8.36%
	Mar	153,889	78,035	7,116	44.67%	8.36%
	Apr	153,889	86,645	7,901	38.56%	8.36%
	May	153,889	88,033	8,027	37.58%	8.36%
	Jun	153,889	92,174	8,405	34.64%	8.36%
	Jul	153,889	90,007	8,207	36.18%	8.36%
	Aug	153,889	88,667	8,085	37.13%	8.36%
	Sep	153,889	87,481	7,977	37.97%	8.36%
	Oct	153,889	87,672	7,995	37.83%	8.36%
	Nov	153,889	90,637	8,265	35.73%	8.36%
	Dec	153,889	92,697	8,453	34.27%	8.36%
2021	Jan	155,649	87,892	7,754	38.55%	8.11%
	Feb	155,649	87,385	7,709	38.90%	8.11%
	Mar	155,649	84,220	7,430	41.12%	8.11%
	Apr	155,649	93,591	8,256	34.57%	8.11%
	May	155,649	95,099	8,389	33.51%	8.11%
	Jun	155,649	99,584	8,785	30.38%	8.11%
	Jul	155,649	97,237	8,578	32.02%	8.11%
	Aug	155,649	95,788	8,450	33.03%	8.11%
	Sep	155,649	94,361	8,324	34.03%	8.11%
	Oct	155,649	94,619	8,347	33.85%	8.11%
	Nov	155,649	98,008	8,646	31.48%	8.11%
	Dec	155,649	100,268	8,845	29.90%	8.11%
2022	Jan	155,661	88,914	7,320	38.18%	7.61%
	Feb	155,661	88,388	7,277	38.54%	7.61%
	Mar	155,661	85,202	7,015	40.76%	7.61%
	Apr	155,661	94,689	7,796	34.16%	7.61%

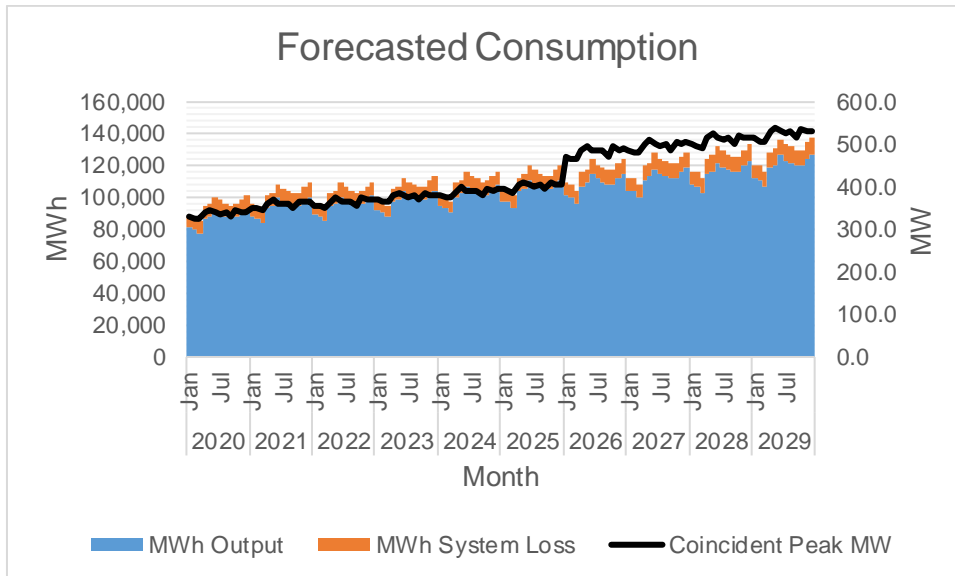
	May	155,661	96,213	7,921	33.10%	7.61%
	Jun	155,661	100,751	8,295	29.95%	7.61%
	Jul	144,961	98,374	8,099	26.55%	7.61%
	Aug	144,961	96,908	7,978	27.64%	7.61%
	Sep	144,961	95,469	7,860	28.72%	7.61%
	Oct	144,961	95,728	7,881	28.53%	7.61%
	Nov	144,961	99,151	8,163	25.97%	7.61%
	Dec	144,961	101,439	8,351	24.26%	7.61%
2023	Jan	144,976	91,714	7,551	31.53%	7.61%
	Feb	144,976	91,170	7,506	31.94%	7.61%
	Mar	144,976	87,890	7,236	34.39%	7.61%
	Apr	144,976	97,678	8,042	27.08%	7.61%
	May	144,976	99,249	8,171	25.90%	7.61%
	Jun	144,976	103,932	8,557	22.41%	7.61%
	Jul	144,976	101,480	8,355	24.24%	7.61%
	Aug	144,976	99,967	8,230	25.37%	7.61%
	Sep	144,976	98,487	8,108	26.47%	7.61%
	Oct	144,976	98,752	8,130	26.28%	7.61%
	Nov	144,976	102,280	8,421	23.64%	7.61%
	Dec	144,976	104,638	8,615	21.88%	7.61%
2024	Jan	144,993	94,650	7,792	29.35%	7.61%
	Feb	144,993	94,085	7,746	29.77%	7.61%
	Mar	144,993	90,707	7,468	32.29%	7.61%
	Apr	144,993	100,811	8,300	24.75%	7.61%
	May	144,993	102,432	8,433	23.54%	7.61%
	Jun	144,993	107,267	8,831	19.93%	7.61%
	Jul	144,993	104,735	8,623	21.82%	7.61%
	Aug	144,993	103,174	8,494	22.98%	7.61%
	Sep	144,993	101,651	8,369	24.12%	7.61%
	Oct	144,993	101,922	8,391	23.92%	7.61%
	Nov	144,993	105,560	8,691	21.20%	7.61%
	Dec	144,993	107,993	8,891	19.39%	7.61%
2025	Jan	145,013	97,728	8,046	27.06%	7.61%
	Feb	145,013	97,143	7,998	27.50%	7.61%
	Mar	145,013	93,660	7,711	30.10%	7.61%
	Apr	145,013	104,097	8,570	22.31%	7.61%
	May	145,013	105,770	8,708	21.06%	7.61%
	Jun	145,013	110,764	9,119	17.33%	7.61%
	Jul	145,013	108,149	8,904	19.28%	7.61%
	Aug	145,013	106,537	8,771	20.48%	7.61%
	Sep	145,013	104,967	8,642	21.66%	7.61%
	Oct	145,013	105,246	8,665	21.45%	7.61%
	Nov	145,013	108,999	8,974	18.65%	7.61%
	Dec	145,013	111,511	9,180	16.77%	7.61%
2026	Jan	138,786	100,956	8,312	21.27%	7.61%
	Feb	138,393	100,349	8,262	21.52%	7.61%
	Mar	138,393	96,756	7,966	24.33%	7.61%
	Apr	138,393	107,542	8,854	15.89%	7.61%
	May	138,393	109,269	8,996	14.54%	7.61%

	Jun	138,393	114,432	9,421	10.51%	7.61%
	Jul	138,393	111,728	9,198	12.62%	7.61%
	Aug	138,393	110,062	9,061	13.92%	7.61%
	Sep	138,393	108,444	8,928	15.19%	7.61%
	Oct	135,820	108,730	8,952	13.35%	7.61%
	Nov	135,820	112,606	9,271	10.27%	7.61%
	Dec	135,820	115,200	9,484	8.20%	7.61%
2027	Jan	135,845	104,342	8,590	16.87%	7.61%
	Feb	135,845	103,711	8,538	17.37%	7.61%
	Mar	135,845	100,002	8,233	20.32%	7.61%
	Apr	135,845	111,155	9,151	11.44%	7.61%
	May	135,845	112,940	9,298	10.02%	7.61%
	Jun	135,845	118,277	9,738	5.76%	7.61%
	Jul	135,845	115,482	9,507	7.99%	7.61%
	Aug	135,845	113,759	9,366	9.36%	7.61%
	Sep	135,845	112,089	9,228	10.69%	7.61%
	Oct	135,845	112,384	9,252	10.46%	7.61%
	Nov	135,845	116,389	9,582	7.27%	7.61%
	Dec	135,845	119,070	9,803	5.13%	7.61%
2028	Jan	135,873	107,893	8,883	14.06%	7.61%
	Feb	135,873	107,238	8,829	14.58%	7.61%
	Mar	135,873	103,405	8,513	17.63%	7.61%
	Apr	135,873	114,945	9,463	8.44%	7.61%
	May	135,873	116,789	9,615	6.97%	7.61%
	Jun	135,873	122,311	10,070	2.57%	7.61%
	Jul	135,873	119,418	9,832	4.87%	7.61%
	Aug	135,873	117,637	9,685	6.29%	7.61%
	Sep	135,873	115,911	9,543	7.67%	7.61%
	Oct	135,873	116,214	9,568	7.43%	7.61%
	Nov	135,873	120,357	9,909	4.13%	7.61%
	Dec	135,873	123,130	10,137	1.92%	7.61%
2029	Jan	135,903	111,618	9,189	11.11%	7.61%
	Feb	135,903	110,938	9,133	11.65%	7.61%
	Mar	135,903	106,973	8,807	14.81%	7.61%
	Apr	135,903	118,920	9,790	5.29%	7.61%
	May	135,903	120,827	9,947	3.77%	7.61%
	Jun	137,155	126,542	10,418	0.14%	7.61%
	Jul	135,903	123,547	10,171	1.61%	7.61%
	Aug	135,903	121,704	10,020	3.08%	7.61%
	Sep	135,903	119,919	9,873	4.50%	7.61%
	Oct	135,903	120,232	9,898	4.25%	7.61%
	Nov	135,903	124,520	10,252	0.83%	7.61%
	Dec	138,071	127,389	10,488	0.14%	7.61%

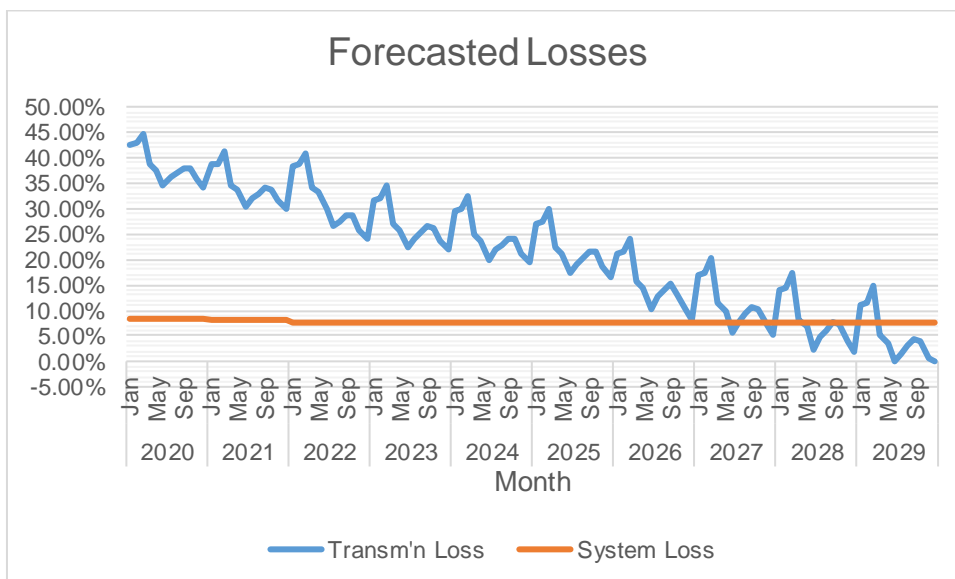
MWh Offtake was forecasted using linear regression using Gross Regional Domestic Product (GRDP) or Northern Mindanao as predictor.

System Loss was calculated through a Load Flow Study conducted on 2019 by CEPALCO using Synergi Electric software and PSS/E software. Based on the same study, the Distribution System can adequately convey electricity to customers.





MWh Output was expected to grow at a rate of 3.598% annually.



The Forecasted Transmission Loss derived from the PSPP 2020 template is not realistic for CEPALCO. Transmission Loss is calculated by subtracting the Total kWh at the NGCP Metering Points to the Total kWh measured at Plant Gate of Grid connected generators. Since CSEE-PSALM, one of CEPALCO's Grid suppliers, provides kWh measured at the metering point instead of their Plant Gate, CEPALCO is constrained to determine the Transmission Loss using the above formula. Hence, CEPALCO cannot determine its Forecasted Transmission Loss. On other hand, System Loss is expected to range from 7.61% to 8.36%.

## Power Supply

Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
2006-018	Base	Other	100.00	54,000	1/1/2020	1/1/2026
Photovoltaic Plant	Base	DU-owned	0.95	1,277	1/1/2008	1/1/2040
92-229	Peaking	Mindanao Energy Systems, Inc.	15.31	128,400	6/1/1995	6/1/2022
2008-052RC	Peaking	Mindanao Energy Systems, Inc.	20.00	126,900	1/1/2012	1/1/2032
2008-052RC	Base	Mindanao Energy Systems, Inc.	8.00	63,111	10/1/2012	10/1/2042
2008-044RC	Base	FG Bukidnon Power Corporation	0.00		4/1/2005	4/1/2025
99-21	Base	Bubunawan Power Company, Inc.	7.00	30,872	9/1/2001	9/1/2026
2013-211RC	Intermediate	Therma South, Inc.	20.00	153,600	10/1/2014	10/1/2039
2014-020	Base	Kirahon Solar Energy Corporation	10.00	17,790	10/1/2015	10/1/2040
2013-134RC	Base	Mindanao Energy Systems, Inc.	50.00	372,300	9/1/2017	9/1/2042
2015-138RC	Base	Mindanao Energy Systems, Inc.	100.00	744,600	9/1/2017	9/1/2042
2015-189RC	Intermediate	Mapalad Power Corporation	30.00	4,720	1/1/2016	1/1/2026
2014-137RC	Intermediate	Sarangani Energy Corporation	20.00	148,920	10/1/2014	10/1/2039

The PSA with PSALM filed with ERC under Case No. 2006-018 was procured through CSEE. It was selected to provide for base requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 2.74 P/kWh to 2.99 P/KWh in 2019.

The PSA with Mindanao Energy Systems, Inc. filed with ERC under Case No. 92-229 was procured through CSP. It was selected to provide for peaking requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 1.05 P/kWh to 10.24 P/KWh in 2019.

The PSA with Mindanao Energy Systems, Inc. filed with ERC under Case No. 2008-052RC was procured through CSP. It was selected to provide for peaking requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 8.47 P/kWh to 10.17 P/KWh in 2019.

The PSA with Mindanao Energy Systems, Inc. filed with ERC under Case No. 2008-052RC was procured through CSP. It was selected to provide for base requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 5.21 P/kWh to 5.22 P/KWh in 2019.

The PSA with FG Bukidnon Power Corporation filed with ERC under Case No. 2008-044RC was procured through CSP. It was selected to provide for base requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 4.14 P/kWh to 4.63 P/KWh in 2019.

The PSA with Bubunawan Power Company, Inc. filed with ERC under Case No. 99-21 was procured through CSP. It was selected to provide for base requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 5.03 P/kWh to 5.05 P/KWh in 2019.

The PSA with Therma South, Inc. filed with ERC under Case No. 2013-211RC was procured through CSP. It was selected to provide for intermediate requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 7.20 P/kWh to 11.02 P/KWh in 2019.

The PSA with Kirahon Solar Energy Corporation filed with ERC under Case No. 2014-020 was procured through CSP. It was selected to provide for base requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 9.73 P/kWh to 10.21 P/KWh in 2019.

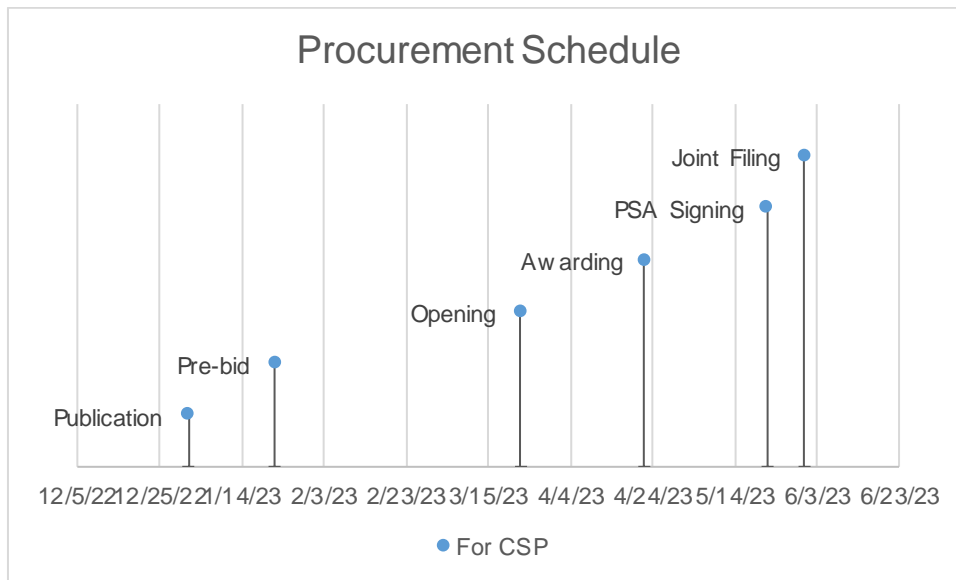
The PSA with Mindanao Energy Systems, Inc. filed with ERC under Case No. 2013-134RC was procured through CSP. It was selected to provide for base requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 5.98 P/kWh to 8.55 P/KWh in 2019.

The PSA with Mindanao Energy Systems, Inc. filed with ERC under Case No. 2015-138RC was procured through CSP. It was selected to provide for base requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 5.84 P/kWh to 9.52 P/KWh in 2019.

The PSA with Mapalad Power Corporation filed with ERC under Case No. 2015-189RC was procured through CSP. It was selected to provide for intermediate requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 0.69 P/kWh to 8.04 P/KWh in 2019.

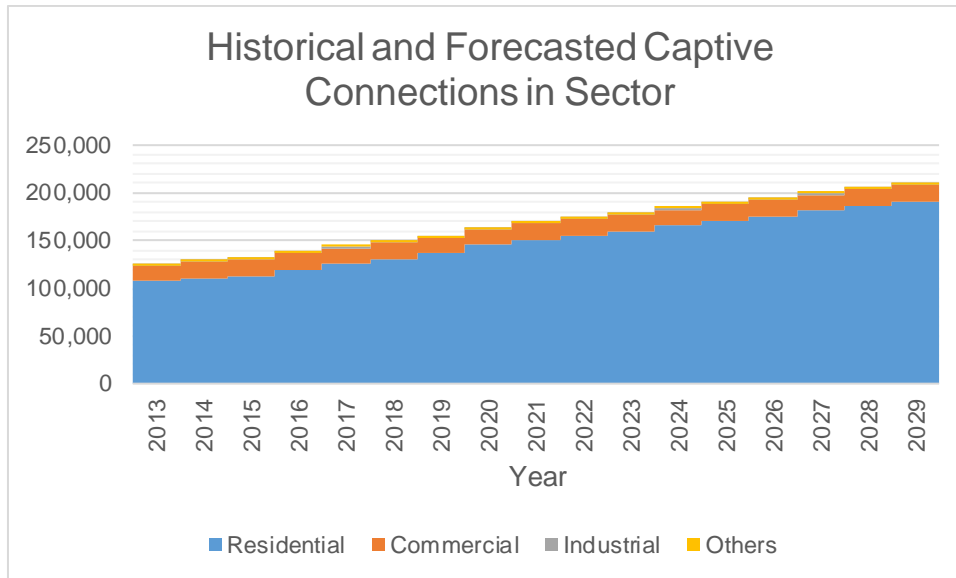
The PSA with Sarangani Energy Corporation filed with ERC under Case No. 2014-137RC was procured through CSP. It was selected to provide for intermediate requirements due to increased demand. The actual billed overall monthly charge under the PSA ranged from 2.40 P/kWh to 7.98 P/KWh in 2019.

	For CSP
Type	Intermediate
Minimum MW	310.68
Minimum MWh/yr	1,571,184
PSA Start	1/1/2025
PSA End	1/1/2040
Publication	1/1/2023
Pre-bid	1/22/2023
Opening	3/23/2023
Awarding	4/22/2023
PSA Signing	5/22/2023
Joint Filing	5/31/2023



For the procurement of 310.68 MW of supply which is planned to be available on 1/1/2025, the first publication or launch of CSP will be on 1/1/2023. Joint filing is planned on 5/31/2023, or 150 days later, in accordance with DOE's 2018 CSP Policy.

# Captive Customer Connections



The number of residential connections is expected to grow at a rate of 3.53% annually. Said customer class is expected to account for 23.20% of the total consumption.