

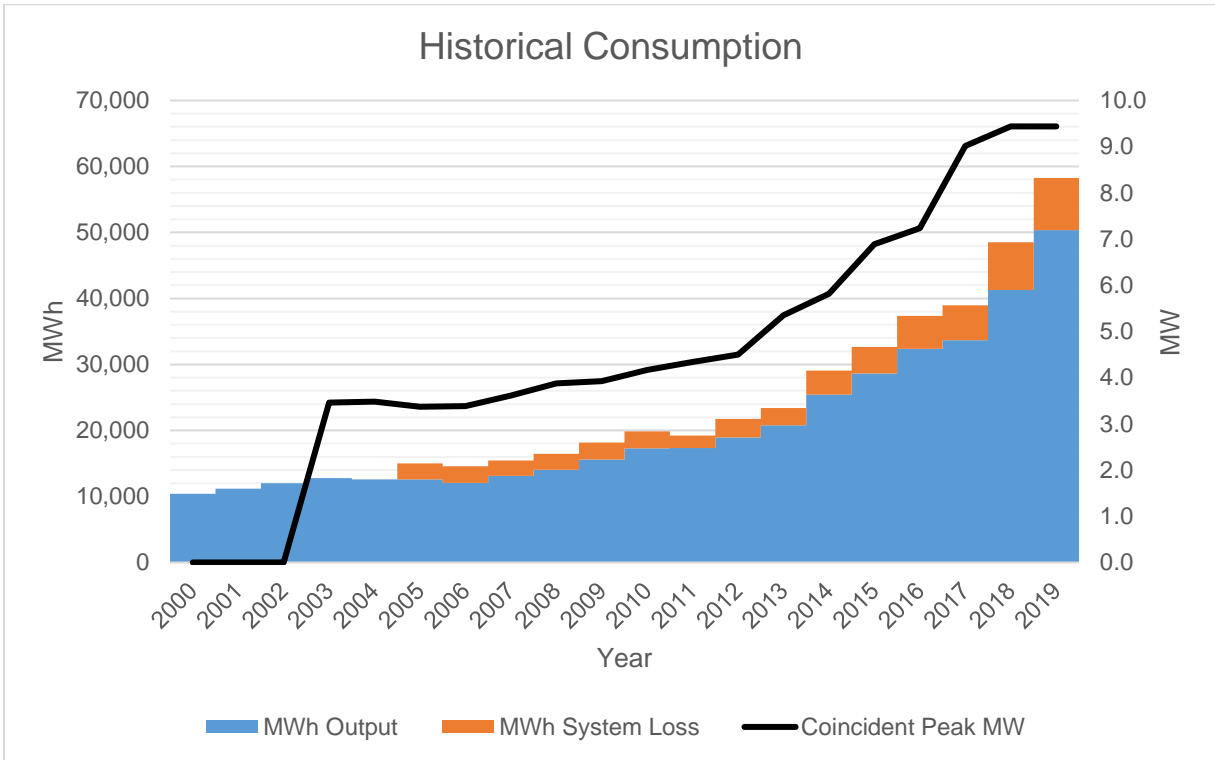
# **Power Supply Procurement Plan [2020]**

**[AURELCO - GRID]**

## Historical Consumption Data

	Coincident Peak MW	MWh Offtake	WESM	MWh Input	MWh Output	MWh System Loss	Load Factor	Discrepancy	System Loss
2000	0.00	13,663	0	13,663	10,390	0	#DIV/0!	-23.95%	0.00%
2001	0.00	14,705	0	14,705	11,192	0	#DIV/0!	-23.89%	0.00%
2002	0.00	15,787	0	15,787	11,987	0	#DIV/0!	-24.07%	0.00%
2003	3.46	16,875	0	16,875	12,787	0	56%	-24.22%	0.00%
2004	3.48	16,587	0	16,587	12,583	0	54%	-24.14%	0.00%
2005	3.37	16,901	0	16,901	12,610	2,379	57%	-11.31%	14.07%
2006	3.38	16,569	0	16,569	12,040	2,521	56%	-12.12%	15.21%
2007	3.62	17,680	0	17,680	13,132	2,322	56%	-12.59%	13.13%
2008	3.88	18,830	0	18,830	14,039	2,426	55%	-12.56%	12.88%
2009	3.93	20,850	0	20,850	15,582	2,572	61%	-12.93%	12.34%
2010	4.16	22,860	0	22,860	17,312	2,564	63%	-13.05%	11.22%
2011	4.34	22,514	0	22,514	17,322	1,923	59%	-14.52%	8.54%
2012	4.50	25,008	0	25,008	18,954	2,812	63%	-12.96%	11.25%
2013	5.35	26,819	0	26,819	20,772	2,629	57%	-12.74%	9.80%
2014	5.82	32,802	0	32,802	25,451	3,624	64%	-11.36%	11.05%
2015	6.89	36,780	0	36,780	28,642	4,026	61%	-11.18%	10.95%
2016	7.23	41,780	0	41,780	32,357	4,992	66%	-10.60%	11.95%
2017	9.02	46,744	0	46,744	33,673	5,281	59%	-16.67%	11.30%
2018	9.44	54,124	0	54,124	41,277	7,228	65%	-10.38%	13.36%
2019	9.44	58,277	0	58,277	50,331	7,945	71%	0.00%	13.63%

Peak Demand increased from 3.46 MW in 2003 to 9.44 MW in 2019 due to continuous development of Aurora Province particularly to its Capital town of Baler and due to the increase of tourism activities on the province. MWh Offtake increased from 13,663 MWh in 2000 to 58,277 MWh in 2019. Within the same period, Load Factor ranged from 56% to 71%. There was an abrupt increase in consumption on year 2013 due to the influx of tourists.

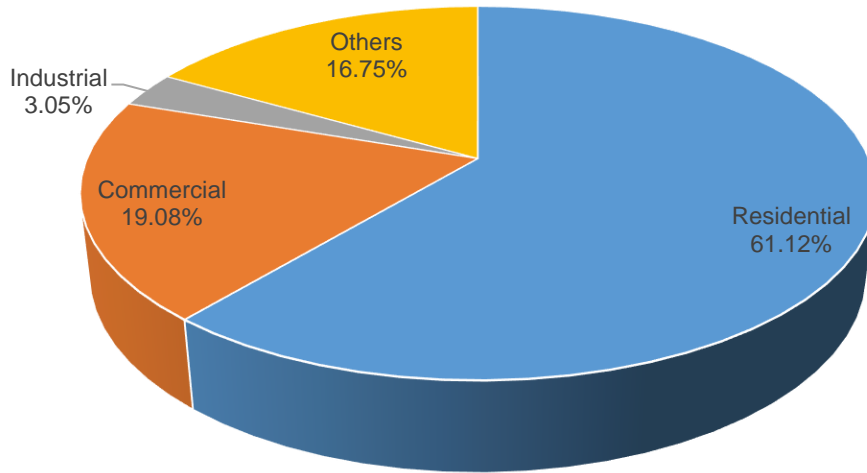


MWh Output and MWhr System Loss increased from year 2000 to 2019.



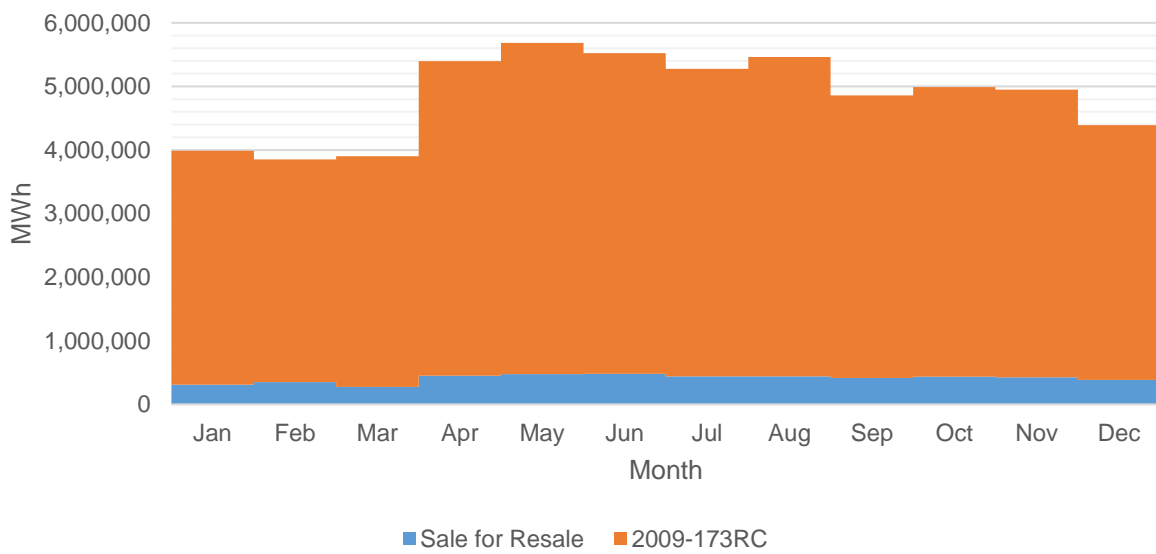
System Loss ranged from 8.54% to 15.21%. System Loss peaked at 15.21% on year 2006.

Previous Year's Shares of Energy Sales



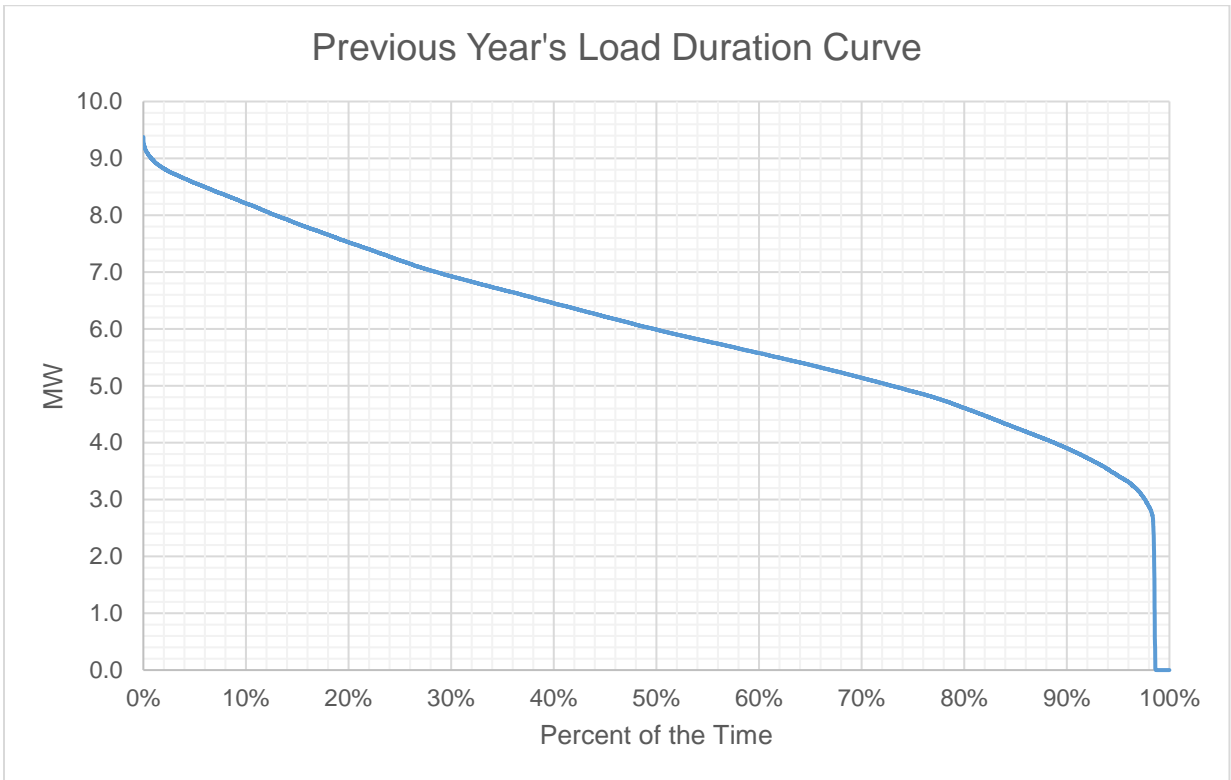
Residential customers account for the bulk of energy sales at 61.12%. Industrial customers accounted for only 3.05% of energy sales.

MWh Offtake for Last Historical Year

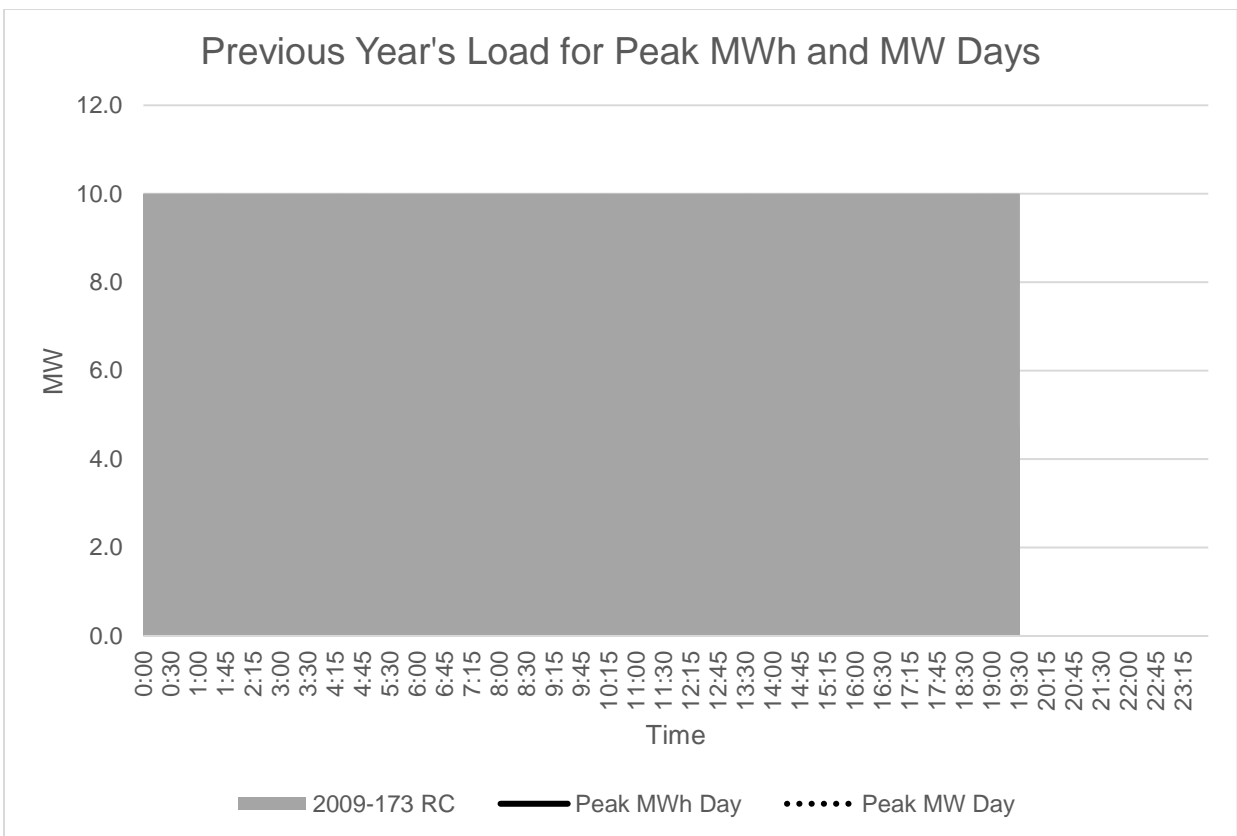


For 2019, the total Offtake for the last historical year is higher than the quantity stipulated in the PSA. The PSA with Masinloc Power Partners Corp Ltd. accounts for the bulk of MWh Offtake.

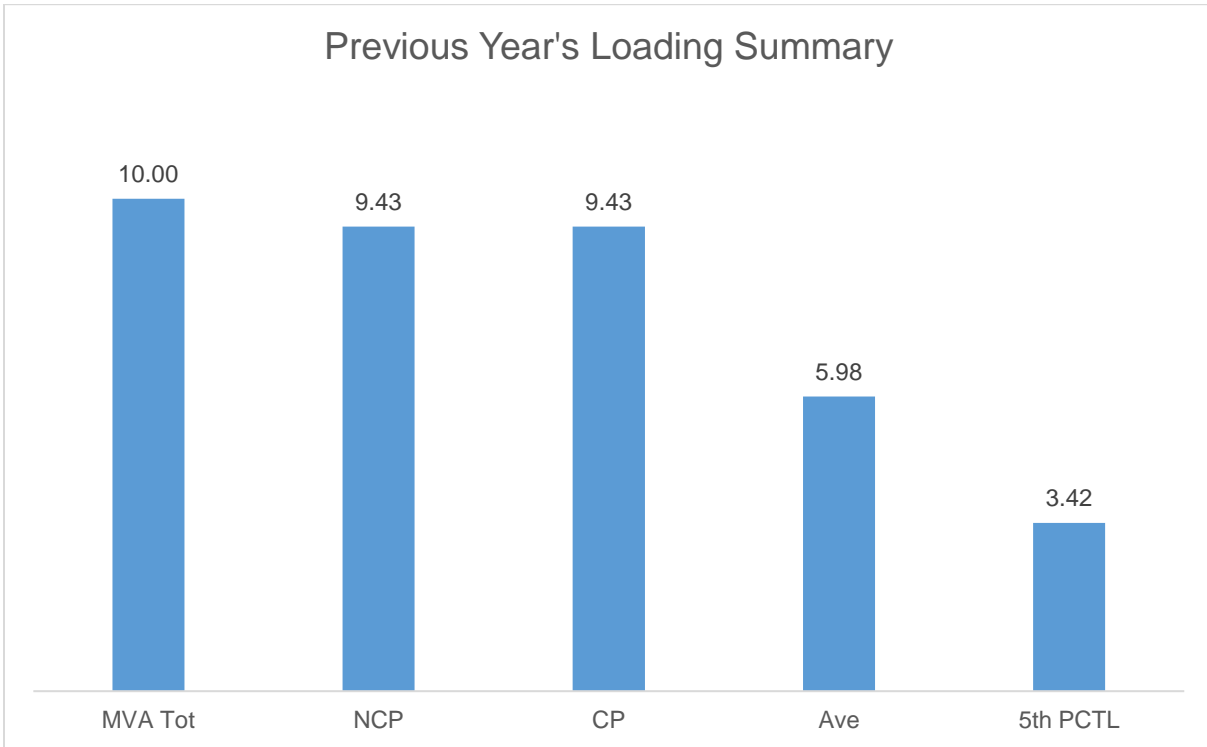
## Previous Year's Load Profile



Based on the Load Duration Curve, the minimum load is 3 MW and the maximum load is 9 MW.



Peak MW occurred on 8 PM due to residential customers. Peak daily MWh occurred on the same time with the same reason. As shown in the Load Curves, the available supply is higher than the Peak Demand.



The 10 MVA substation has a Non-coincident Peak Demand of 9.43 MW, which is 94% of the substation capacity at a power factor of 96%. The load factor or the ratio between the Average Load and the Non-coincident Peak Demand is 63.41%. A safe estimate of the true minimum load is the fifth percentile load of 3.42 MW which is 36.27% of the Non-coincident Peak Demand.

Metering Point	Substation MVA	Substation Peak MW
San Isidro	10	9.435

The existing 10 MVA substation is more than 70% loaded and with the energization of the new 10 MVA substation, the overloading would be addressed.

## Forecasted Consumption Data

		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Existing Contracting Level	Target Contracting Level	MW Surplus / Deficit
2020	Jan	9.39	10.00	0.00	0.000	106%	106%	0.61
	Feb	7.90	10.00	0.00	0.000	127%	127%	2.10
	Mar	9.16	10.00	0.00	0.000	109%	109%	0.84
	Apr	11.07	10.00	0.00	0.000	90%	90%	-1.07
	May	10.96	10.00	0.00	0.000	91%	91%	-0.96
	Jun	11.02	10.00	0.00	0.000	91%	91%	-1.02
	Jul	10.47	10.00	0.00	0.000	96%	96%	-0.47
	Aug	10.80	10.00	0.00	0.000	93%	93%	-0.80
	Sep	11.50	10.00	0.00	0.000	87%	87%	-1.50
	Oct	11.30	10.00	0.00	0.000	88%	88%	-1.30
	Nov	11.10	10.00	0.00	0.000	90%	90%	-1.10
	Dec	11.20	10.00	0.00	0.000	89%	89%	-1.20
2021	Jan	12.38	10.00	0.00	0.000	81%	81%	-2.38
	Feb	12.44	10.00	0.00	0.000	80%	80%	-2.44
	Mar	12.52	10.00	0.00	0.000	80%	80%	-2.52
	Apr	13.80	10.00	0.00	0.000	72%	72%	-3.80
	May	13.66	10.00	0.00	0.000	73%	73%	-3.66
	Jun	13.74	10.00	0.00	0.000	73%	73%	-3.74
	Jul	13.05	10.00	0.00	0.000	77%	77%	-3.05
	Aug	12.89	10.00	0.00	0.000	78%	78%	-2.89
	Sep	12.56	10.00	0.00	0.000	80%	80%	-2.56
	Oct	13.22	10.00	0.00	0.000	76%	76%	-3.22
	Nov	12.53	10.00	0.00	0.000	80%	80%	-2.53
	Dec	12.81	10.00	0.00	0.000	78%	78%	-2.81

2022	Jan	13.23	10.00	0.00	0.000	76%	76%	-3.23
	Feb	13.29	10.00	0.00	0.000	75%	75%	-3.29
	Mar	13.37	10.00	0.00	0.000	75%	75%	-3.37
	Apr	14.75	10.00	0.00	0.000	68%	68%	-4.75
	May	14.59	10.00	0.00	0.000	69%	69%	-4.59
	Jun	14.67	10.00	0.00	0.000	68%	68%	-4.67
	Jul	13.94	10.00	0.00	0.000	72%	72%	-3.94
	Aug	13.77	10.00	0.00	0.000	73%	73%	-3.77
	Sep	13.41	10.00	0.00	0.000	75%	75%	-3.41
	Oct	14.12	10.00	0.00	0.000	71%	71%	-4.12
	Nov	13.39	10.00	0.00	0.000	75%	75%	-3.39
	Dec	13.68	10.00	0.00	0.000	73%	73%	-3.68
2023	Jan	14.06	10.00	0.00	0.000	71%	71%	-4.06
	Feb	14.12	10.00	0.00	0.000	71%	71%	-4.12
	Mar	14.21	10.00	0.00	0.000	70%	70%	-4.21
	Apr	15.67	10.00	0.00	0.000	64%	64%	-5.67
	May	15.50	10.00	0.00	0.000	65%	65%	-5.50
	Jun	15.59	10.00	0.00	0.000	64%	64%	-5.59
	Jul	14.81	10.00	0.00	0.000	68%	68%	-4.81
	Aug	14.63	10.00	0.00	0.000	68%	68%	-4.63
	Sep	14.25	10.00	0.00	0.000	70%	70%	-4.25
	Oct	15.00	10.00	0.00	0.000	67%	67%	-5.00
	Nov	14.22	10.00	0.00	0.000	70%	70%	-4.22
	Dec	14.54	10.00	0.00	0.000	69%	69%	-4.54
2024	Jan	14.86	10.00	0.00	0.000	67%	67%	-4.86
	Feb	14.93	10.00	0.00	0.000	67%	67%	-4.93
	Mar	15.02	10.00	0.00	0.000	67%	67%	-5.02
	Apr	16.57	10.00	0.00	0.000	60%	60%	-6.57
	May	16.39	10.00	0.00	0.000	61%	61%	-6.39
	Jun	16.49	10.00	0.00	0.000	61%	61%	-6.49

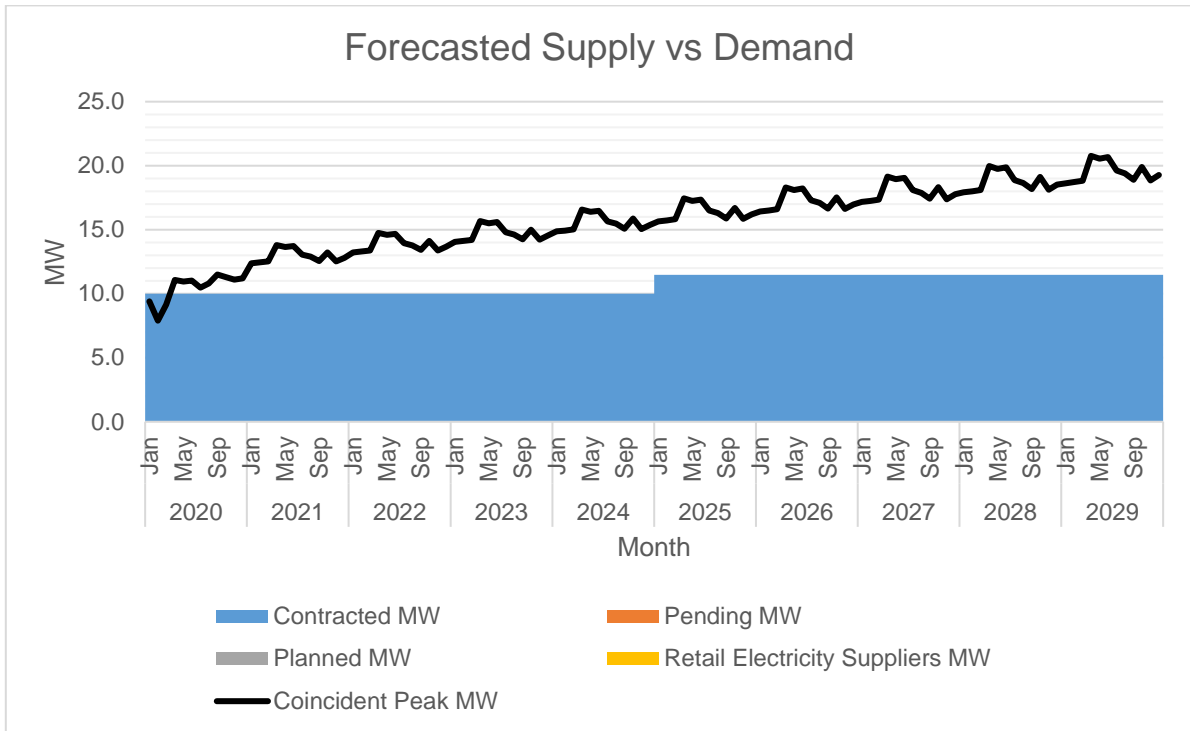


	Jul	15.66	10.00	0.00	0.000	64%	64%	-5.66
	Aug	15.47	10.00	0.00	0.000	65%	65%	-5.47
	Sep	15.07	10.00	0.00	0.000	66%	66%	-5.07
	Oct	15.87	10.00	0.00	0.000	63%	63%	-5.87
	Nov	15.04	10.00	0.00	0.000	66%	66%	-5.04
	Dec	15.37	10.00	0.00	0.000	65%	65%	-5.37
2025	Jan	15.65	11.48	0.00	0.000	73%	73%	-4.17
	Feb	15.72	11.48	0.00	0.000	73%	73%	-4.24
	Mar	15.82	11.48	0.00	0.000	73%	73%	-4.34
	Apr	17.44	11.48	0.00	0.000	66%	66%	-5.96
	May	17.26	11.48	0.00	0.000	67%	67%	-5.78
	Jun	17.36	11.48	0.00	0.000	66%	66%	-5.88
	Jul	16.49	11.48	0.00	0.000	70%	70%	-5.01
	Aug	16.29	11.48	0.00	0.000	70%	70%	-4.81
	Sep	15.87	11.48	0.00	0.000	72%	72%	-4.39
	Oct	16.71	11.48	0.00	0.000	69%	69%	-5.23
	Nov	15.84	11.48	0.00	0.000	72%	72%	-4.36
	Dec	16.19	11.48	0.00	0.000	71%	71%	-4.71
2026	Jan	16.42	11.48	0.00	0.000	70%	70%	-4.94
	Feb	16.49	11.48	0.00	0.000	70%	70%	-5.01
	Mar	16.60	11.48	0.00	0.000	69%	69%	-5.12
	Apr	18.30	11.48	0.00	0.000	63%	63%	-6.82
	May	18.11	11.48	0.00	0.000	63%	63%	-6.63
	Jun	18.21	11.48	0.00	0.000	63%	63%	-6.73
	Jul	17.30	11.48	0.00	0.000	66%	66%	-5.82
	Aug	17.09	11.48	0.00	0.000	67%	67%	-5.61
	Sep	16.65	11.48	0.00	0.000	69%	69%	-5.17
	Oct	17.53	11.48	0.00	0.000	65%	65%	-6.05
	Nov	16.61	11.48	0.00	0.000	69%	69%	-5.13
	Dec	16.98	11.48	0.00	0.000	68%	68%	-5.50

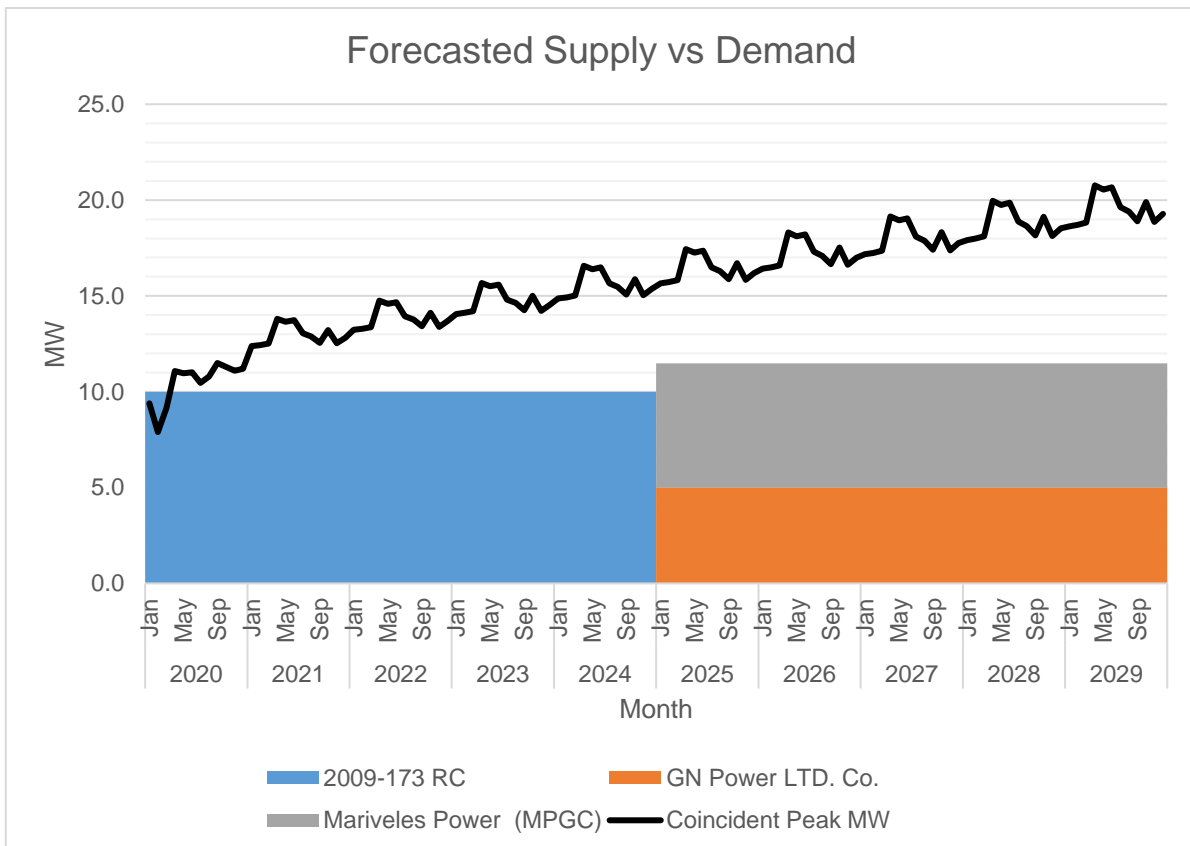
2027	Jan	17.18	11.48	0.00	0.000	67%	67%	-5.70
	Feb	17.25	11.48	0.00	0.000	67%	67%	-5.77
	Mar	17.36	11.48	0.00	0.000	66%	66%	-5.88
	Apr	19.14	11.48	0.00	0.000	60%	60%	-7.66
	May	18.94	11.48	0.00	0.000	61%	61%	-7.46
	Jun	19.05	11.48	0.00	0.000	60%	60%	-7.57
	Jul	18.09	11.48	0.00	0.000	63%	63%	-6.61
	Aug	17.87	11.48	0.00	0.000	64%	64%	-6.39
	Sep	17.41	11.48	0.00	0.000	66%	66%	-5.93
	Oct	18.33	11.48	0.00	0.000	63%	63%	-6.85
	Nov	17.38	11.48	0.00	0.000	66%	66%	-5.90
	Dec	17.76	11.48	0.00	0.000	65%	65%	-6.28
2028	Jan	17.91	11.48	0.00	0.000	64%	64%	-6.43
	Feb	17.99	11.48	0.00	0.000	64%	64%	-6.51
	Mar	18.10	11.48	0.00	0.000	63%	63%	-6.62
	Apr	19.96	11.48	0.00	0.000	58%	58%	-8.48
	May	19.75	11.48	0.00	0.000	58%	58%	-8.27
	Jun	19.87	11.48	0.00	0.000	58%	58%	-8.39
	Jul	18.87	11.48	0.00	0.000	61%	61%	-7.39
	Aug	18.64	11.48	0.00	0.000	62%	62%	-7.16
	Sep	18.16	11.48	0.00	0.000	63%	63%	-6.68
	Oct	19.12	11.48	0.00	0.000	60%	60%	-7.64
	Nov	18.12	11.48	0.00	0.000	63%	63%	-6.64
	Dec	18.53	11.48	0.00	0.000	62%	62%	-7.05
2029	Jan	18.63	11.48	0.00	0.000	62%	62%	-7.15
	Feb	18.71	11.48	0.00	0.000	61%	61%	-7.23
	Mar	18.83	11.48	0.00	0.000	61%	61%	-7.35
	Apr	20.77	11.48	0.00	0.000	55%	55%	-9.29
	May	20.55	11.48	0.00	0.000	56%	56%	-9.07

	Jun	20.67	11.48	0.00	0.000	56%	56%	-9.19
	Jul	19.63	11.48	0.00	0.000	58%	58%	-8.15
	Aug	19.39	11.48	0.00	0.000	59%	59%	-7.91
	Sep	18.89	11.48	0.00	0.000	61%	61%	-7.41
	Oct	19.89	11.48	0.00	0.000	58%	58%	-8.41
	Nov	18.85	11.48	0.00	0.000	61%	61%	-7.37
	Dec	19.27	11.48	0.00	0.000	60%	60%	-7.79

The Peak Demand was forecasted using Cubic Logarithmic Forecasting Model and was assumed to occur on the month of April due to summer season. Monthly Peak Demand is at its lowest on the month of January due to cold weather. In general, Peak Demand is expected to grow at a rate of 7.67% annually.



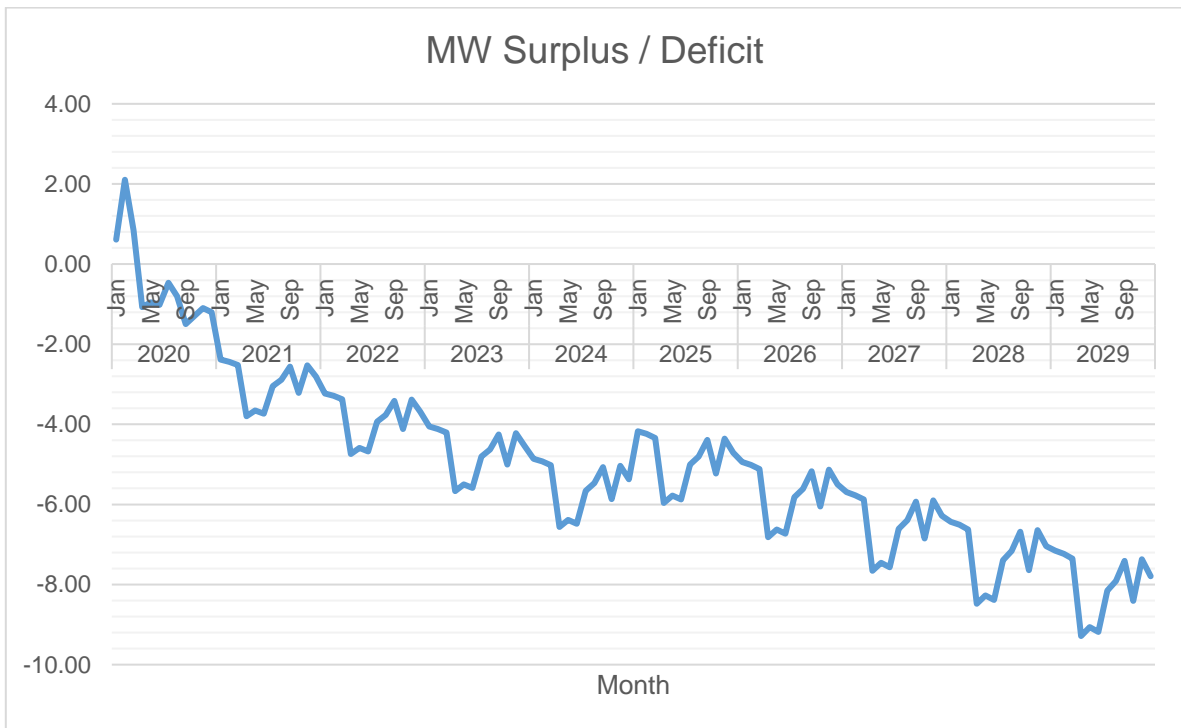
The available supply is generally below the Peak Demand. The deficit from 2020 to 2024 will be supplied by MPPCL. From 2025 onward there is a plan of amending the contract to either of the supplier.



Of the available supply, the largest is 10 MW from MPPCL. This is followed by 6.48 MW from Mariveles Power (MPGC).



Currently, there is over-contracting by 127% that occurs on February 2020 because of the effect of COVID-19 pandemic. The highest target contracting level is 96% which is expected to occur on July 2020. The lowest target contracting level is 55% which is expected to occur on April 2029.



The highest surplus is 2.10 MW which is occurs on the month of February 2020. The lowest deficit is -9.29MW which is expected to occur on the month of April 2029.

		<b>MWh Offtake</b>	<b>MWh Output</b>	<b>MWh System Loss</b>	<b>Transm'n Loss</b>	<b>System Loss</b>
2020	Jan	4,067	3,680	387	0.00%	9.52%
	Feb	4,232	3,830	402	0.00%	9.51%
	Mar	4,130	3,736	394	0.00%	9.54%
	Apr	5,335	4,824	512	0.00%	9.59%
	May	5,785	5,230	554	0.00%	9.58%
	Jun	5,730	5,181	549	0.00%	9.58%
	Jul	5,231	4,732	499	0.00%	9.53%
	Aug	5,802	5,249	554	0.00%	9.54%
	Sep	5,177	4,684	494	0.00%	9.53%
	Oct	5,143	4,650	493	0.00%	9.58%
	Nov	4,792	4,334	458	0.00%	9.56%
	Dec	4,689	4,241	448	0.00%	9.54%
2021	Jan	4,374	3,966	408	0.00%	9.33%
	Feb	4,552	4,127	425	0.00%	9.34%
	Mar	4,442	4,025	417	0.00%	9.38%
	Apr	5,738	5,197	541	0.00%	9.44%
	May	6,221	5,635	587	0.00%	9.43%
	Jun	6,163	5,582	580	0.00%	9.42%
	Jul	5,626	5,099	527	0.00%	9.37%
	Aug	6,240	5,655	585	0.00%	9.38%
	Sep	5,568	5,046	522	0.00%	9.37%
	Oct	5,531	5,010	521	0.00%	9.42%
	Nov	5,154	4,669	485	0.00%	9.40%
	Dec	5,043	4,570	473	0.00%	9.38%
2022	Jan	4,671	4,239	432	0.00%	9.24%
	Feb	4,861	4,411	450	0.00%	9.25%
	Mar	4,743	4,302	441	0.00%	9.30%
	Apr	6,127	5,554	574	0.00%	9.37%
	May	6,643	6,022	622	0.00%	9.36%
	Jun	6,581	5,966	615	0.00%	9.34%
	Jul	6,007	5,450	558	0.00%	9.28%
	Aug	6,664	6,044	620	0.00%	9.30%
	Sep	5,946	5,394	552	0.00%	9.29%
	Oct	5,906	5,354	552	0.00%	9.35%
	Nov	5,503	4,990	513	0.00%	9.33%
	Dec	5,385	4,884	500	0.00%	9.29%
2023	Jan	5,105	4,637	468	0.00%	9.16%
	Feb	5,312	4,825	487	0.00%	9.17%
	Mar	5,184	4,706	478	0.00%	9.23%
	Apr	6,697	6,074	623	0.00%	9.30%
	May	7,261	6,586	675	0.00%	9.29%
	Jun	7,192	6,525	667	0.00%	9.28%
	Jul	6,566	5,961	605	0.00%	9.21%

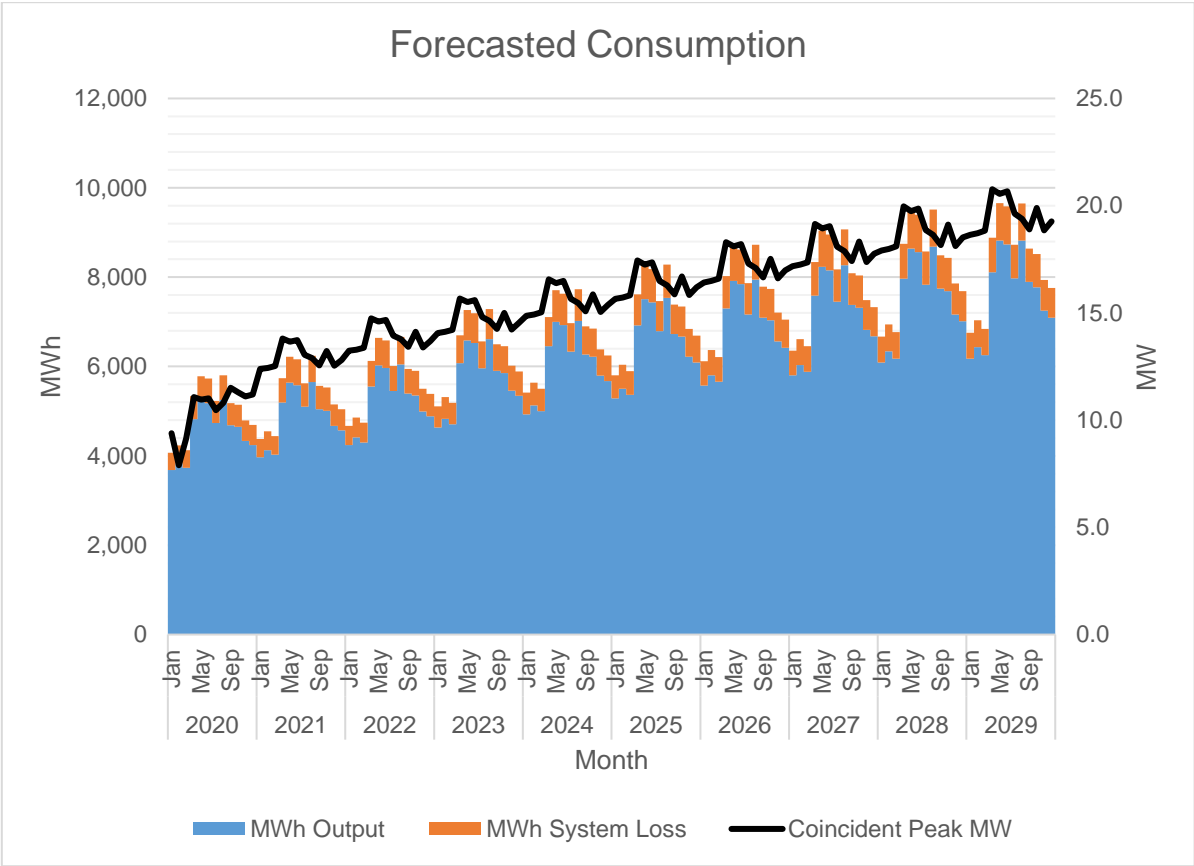
	Aug	7,283	6,611	672	0.00%	9.23%
	Sep	6,499	5,900	599	0.00%	9.21%
	Oct	6,455	5,856	599	0.00%	9.29%
	Nov	6,015	5,458	557	0.00%	9.26%
	Dec	5,885	5,343	543	0.00%	9.22%
2024	Jan	5,417	4,927	490	0.00%	9.05%
	Feb	5,637	5,126	511	0.00%	9.06%
	Mar	5,501	4,999	502	0.00%	9.13%
	Apr	7,106	6,452	655	0.00%	9.22%
	May	7,705	6,996	709	0.00%	9.20%
	Jun	7,632	6,931	701	0.00%	9.19%
	Jul	6,967	6,333	634	0.00%	9.10%
	Aug	7,728	7,023	705	0.00%	9.13%
	Sep	6,896	6,268	628	0.00%	9.11%
	Oct	6,850	6,220	630	0.00%	9.20%
	Nov	6,383	5,798	585	0.00%	9.16%
	Dec	6,245	5,676	570	0.00%	9.12%
2025	Jan	5,804	5,286	518	0.00%	8.92%
	Feb	6,041	5,500	540	0.00%	8.94%
	Mar	5,894	5,363	532	0.00%	9.02%
	Apr	7,615	6,920	694	0.00%	9.12%
	May	8,256	7,504	752	0.00%	9.11%
	Jun	8,178	7,435	743	0.00%	9.09%
	Jul	7,465	6,794	671	0.00%	8.99%
	Aug	8,281	7,534	747	0.00%	9.02%
	Sep	7,389	6,724	665	0.00%	9.00%
	Oct	7,340	6,672	668	0.00%	9.10%
	Nov	6,839	6,220	619	0.00%	9.06%
	Dec	6,692	6,089	603	0.00%	9.01%
2026	Jan	6,117	5,576	541	0.00%	8.84%
	Feb	6,366	5,802	564	0.00%	8.87%
	Mar	6,212	5,656	556	0.00%	8.95%
	Apr	8,025	7,298	727	0.00%	9.06%
	May	8,701	7,914	787	0.00%	9.04%
	Jun	8,619	7,841	778	0.00%	9.02%
	Jul	7,867	7,166	702	0.00%	8.92%
	Aug	8,727	7,947	781	0.00%	8.95%
	Sep	7,787	7,092	695	0.00%	8.92%
	Oct	7,735	7,036	699	0.00%	9.03%
	Nov	7,208	6,560	648	0.00%	8.99%
	Dec	7,052	6,422	630	0.00%	8.94%
2027	Jan	6,355	5,799	556	0.00%	8.74%
	Feb	6,614	6,034	580	0.00%	8.77%
	Mar	6,454	5,882	572	0.00%	8.86%
	Apr	8,337	7,589	749	0.00%	8.98%
	May	9,039	8,229	810	0.00%	8.96%

	Jun	8,954	8,153	801	0.00%	8.94%
	Jul	8,174	7,452	721	0.00%	8.82%
	Aug	9,067	8,264	803	0.00%	8.85%
	Sep	8,090	7,376	714	0.00%	8.83%
	Oct	8,036	7,317	719	0.00%	8.95%
	Nov	7,488	6,821	667	0.00%	8.90%
	Dec	7,327	6,679	648	0.00%	8.84%
2028	Jan	6,668	6,092	576	0.00%	8.64%
	Feb	6,940	6,338	601	0.00%	8.67%
	Mar	6,772	6,178	594	0.00%	8.77%
	Apr	8,748	7,969	779	0.00%	8.90%
	May	9,485	8,642	842	0.00%	8.88%
	Jun	9,395	8,563	832	0.00%	8.86%
	Jul	8,576	7,828	749	0.00%	8.73%
	Aug	9,514	8,680	834	0.00%	8.76%
	Sep	8,489	7,747	742	0.00%	8.74%
	Oct	8,432	7,684	748	0.00%	8.87%
	Nov	7,857	7,164	693	0.00%	8.82%
	Dec	7,688	7,015	673	0.00%	8.75%
2029	Jan	6,756	6,175	582	0.00%	8.61%
	Feb	7,035	6,433	602	0.00%	8.55%
	Mar	6,841	6,257	584	0.00%	8.54%
	Apr	8,885	8,111	775	0.00%	8.72%
	May	9,657	8,817	840	0.00%	8.70%
	Jun	9,584	8,735	850	0.00%	8.86%
	Jul	8,728	7,974	754	0.00%	8.63%
	Aug	9,648	8,816	832	0.00%	8.62%
	Sep	8,637	7,891	746	0.00%	8.64%
	Oct	8,519	7,775	743	0.00%	8.73%
	Nov	7,935	7,249	686	0.00%	8.65%
	Dec	7,758	7,093	667	0.00%	8.58%

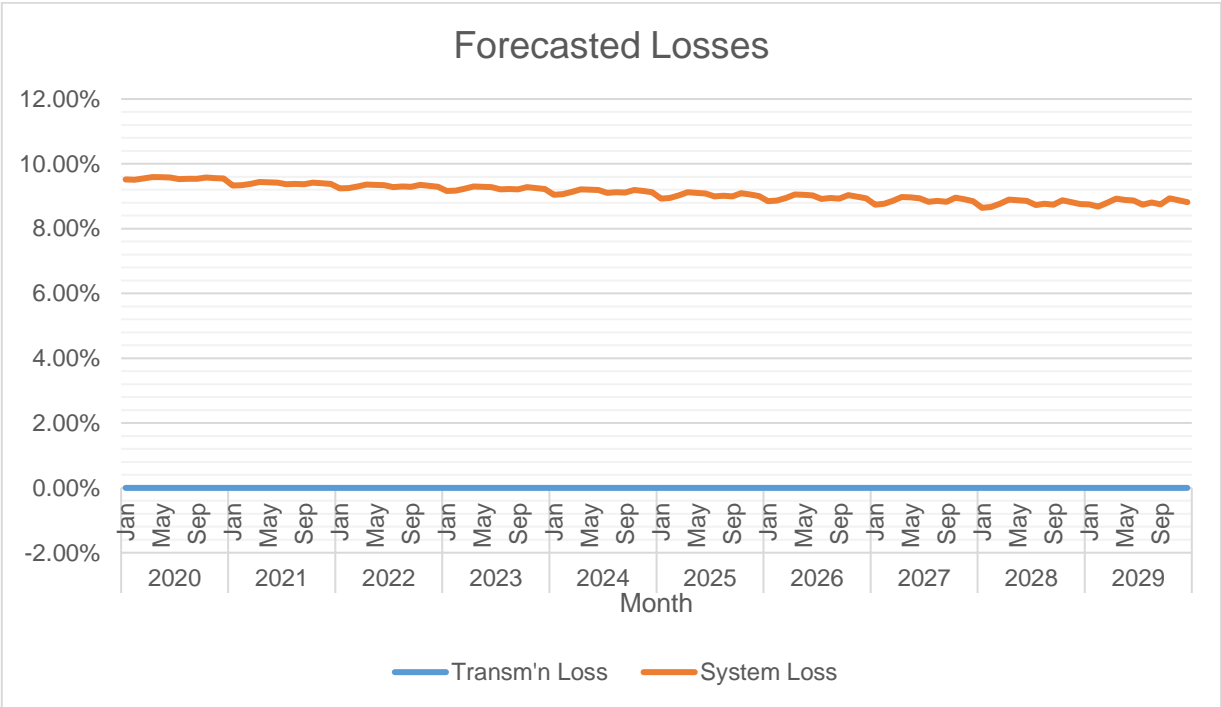
MWh Offtake was forecasted using Quadratic and Logarithmic with Trending Forecasting Model. The assumed load factor is 71%.

System Loss was calculated through a Load Flow Study using DSAS software. Based on the same study, the Distribution System can adequately convey electricity to customers.





MWh Output was expected to increase at a rate of 13.13% annually.



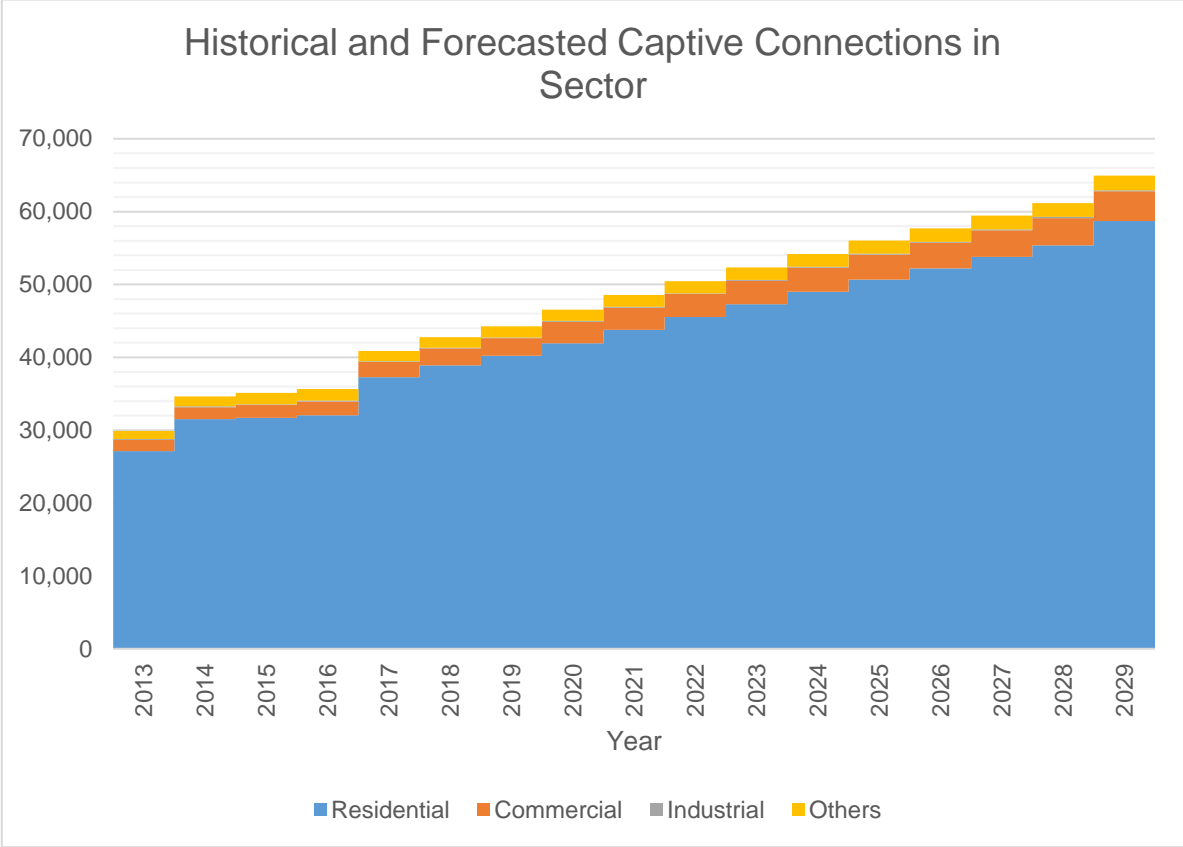
System Loss is expected to decrease from 9.59% to 8.54%.

# Power Supply

Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
2009-173 RC	Base	Masinloc Power Partners Company, Ltd.	600.00	5,256,000	1/1/2009	12/25/2024
GN Power LTD. Co.	Base	GN Power Mariveles Coal Plant Ltd.			6/1/2014	6/1/3034
Mariveles Power Generation Corporation (MPGC)	Base	Mariveles Power Generation Corporation			1/1/2024	1/1/3039

The PSA with MPPCL filed with ERC under Case No. 2009-173 RC was procured through bilateral contract. It was selected to provide for base/intermediate/peaking requirements. Historically, the utilization of the PSA is 100%. The actual billed overall monthly charge under the PSA ranged from 4.6102 P/kWh to 4.6950 P/kWh. Other contracts is to start on the coming years.

# Captive Customer Connections



The number of residential connections is expected to increase at a rate of 4.38% annually and is expected to account for 61.12% of the total consumption.