Aurora Electric Cooperative, Inc.

BRGY. RESERVA, BALER, AURORA

Power Supply Procurement Plan
2024-2033

OFF-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	0.00	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2001	0.00	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2002	0.00	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2003	0.00	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2004	0.00	1,406	0	1,406	1,156	250	#DIV/0!	0.00%	0.00%	17.77%
2005	0.85	2,068	0	2,068	1,708	360	28%	0.00%	0.00%	17.41%
2006	0.92	2,129	0	2,129	1,739	391	27%	0.00%	0.00%	18.36%
2007	0.99	2,700	0	2,700	2,217	483	31%	0.00%	0.00%	17.87%
2008	1.05	3,166	0	3,166	2,575	591	34%	0.00%	0.00%	18.65%
2009	1.10	3,420	0	3,420	2,895	525	35%	0.00%	0.00%	15.35%
2010	1.13	2,557	0	2,557	2,187	370	26%	0.00%	0.00%	14.46%
2011	1.14	2,800	0	2,800	2,265	535	28%	0.00%	0.00%	19.12%
2012	1.27	3,314	0	3,314	2,802	512	30%	0.00%	0.00%	15.44%
2013	1.51	3,811	0	3,811	3,220	591	29%	0.00%	0.00%	15.50%
2014	1.38	3,691	0	3,691	3,543	148	31%	0.00%	0.00%	4.00%
2015	1.13	3,239	0	3,239	2,804	434	33%	0.00%	0.00%	13.41%
2016	1.61	5,414	0	5,414	4,576	838	39%	0.00%	0.00%	15.47%
2017	1.25	4,424	0	4,424	3,790	634	40%	0.00%	0.00%	14.33%
2018	1.31	5,300	0	5,300	4,599	701	46%	0.00%	0.00%	13.23%
2019	1.39	5,584	0	5,584	4,830	755	46%	0.00%	0.00%	13.52%
2020	1.59	6,765	0	6,765	5,991	774	49%	0.00%	0.00%	11.44%
2021	1.85	8,058	0	8,058	7,140	918	50%	0.00%	0.00%	11.39%
2022	2.04	8,919	0	8,919	7,967	951	50%	0.00%	0.00%	10.67%
2023	2.04	9,761	0	9,761	8,727	1,034	55%	0.00%	0.00%	10.60%

Peak Demand increased from 0.85 MW in 2005 to 2.04 MW in 2023 at a rate of 5.88% due to increasing number of customers. MWh Offtake increased from 1,406 MWh in 2004 to 9,761 MWh in 2023 at a rate of 12.57% due to increase in the number of customers. Within the same period, Load Factor ranged from 26% to 55%. There was an abrupt change in consumption on 2015 due to Typhoon Lando.

Historical Consumption
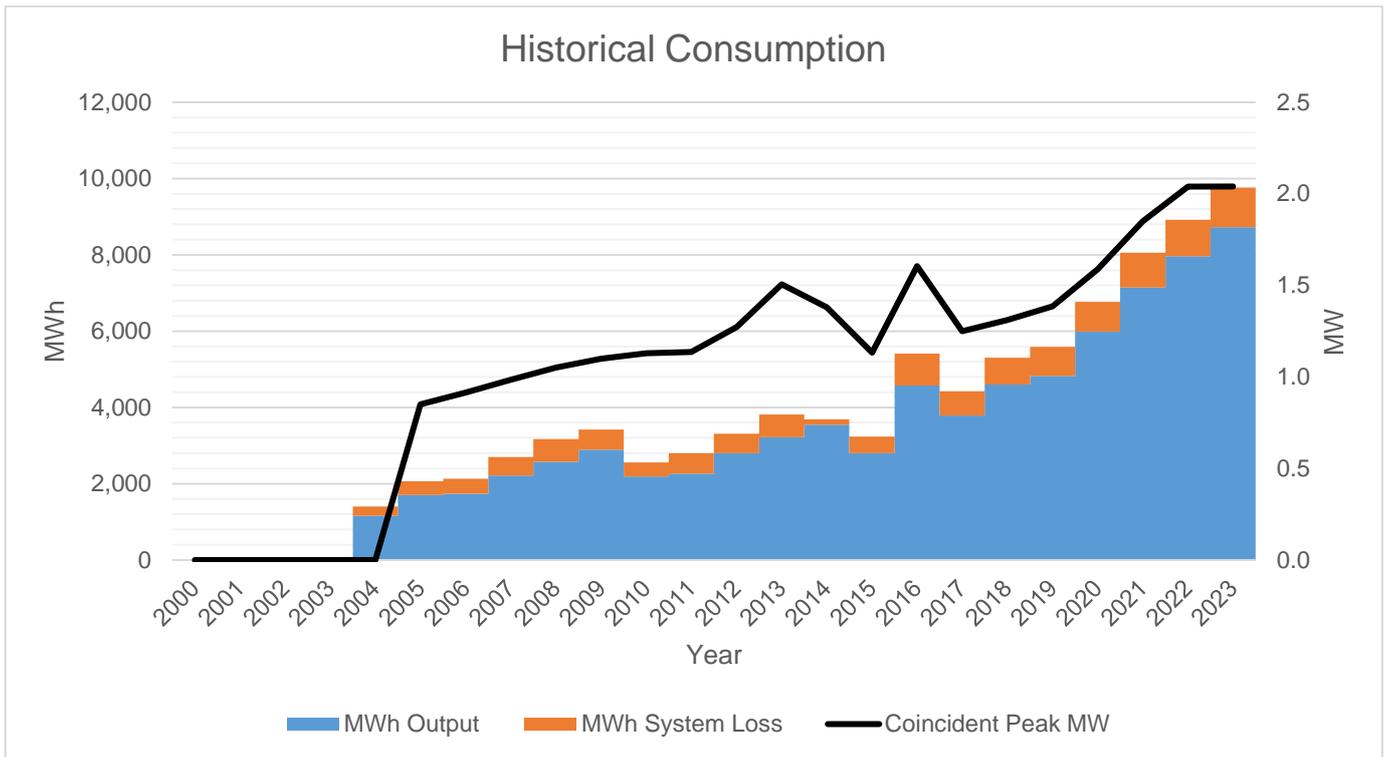
MWh Output increased from year 2004 to year 2023 at a rate of 13.12%, while MWh System Loss increased at a rate of 18.54% within the same period.

Historical Losses

Historically, System Loss ranged from 4% to 19.12%. System Loss peaked at 19.12% on year 2011.

Previous Year's Shares of Energy Sales
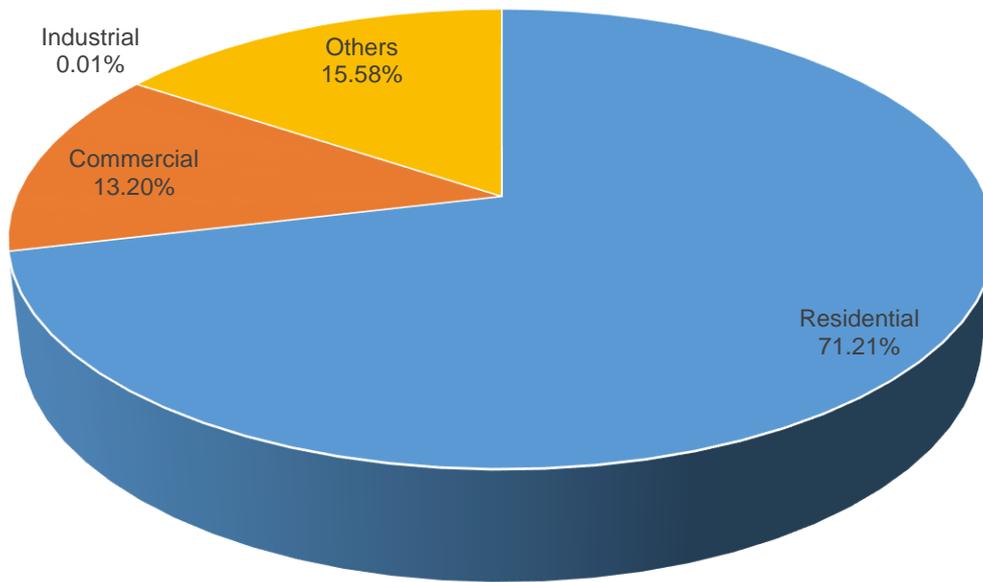
Residential customers account for the bulk of energy sales at 71.21% due to the high number of connections. In contrast, industrial customers accounted for only 0.01% of energy sales due to the low number of connections.

MWh Offtake for Last Historical Year
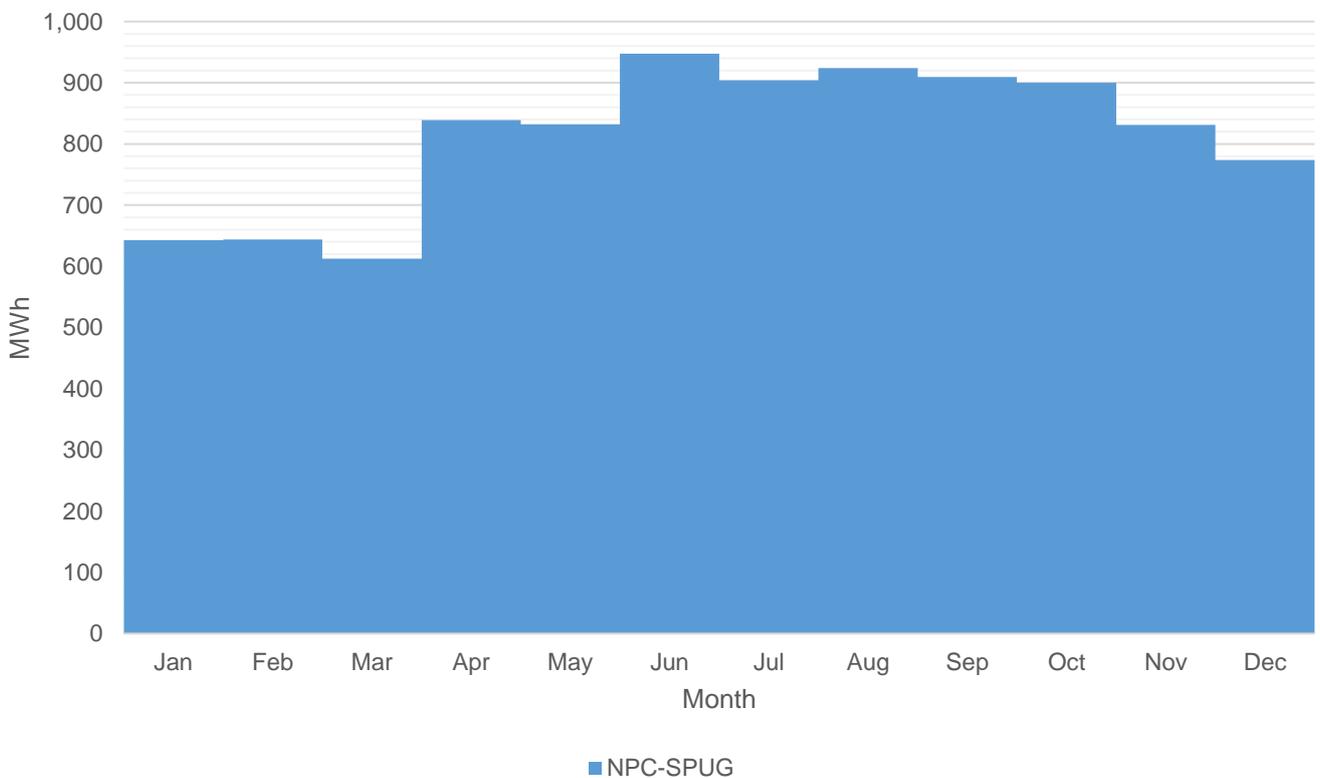
For 2023, the total Offtake for the last historical year is lower than the quantity stipulated in the PSA. The PSA with National Power Corporation accounts for the bulk of MWh Offtake.

Previous Year's Load Profile

Previous Year's Load Duration Curve
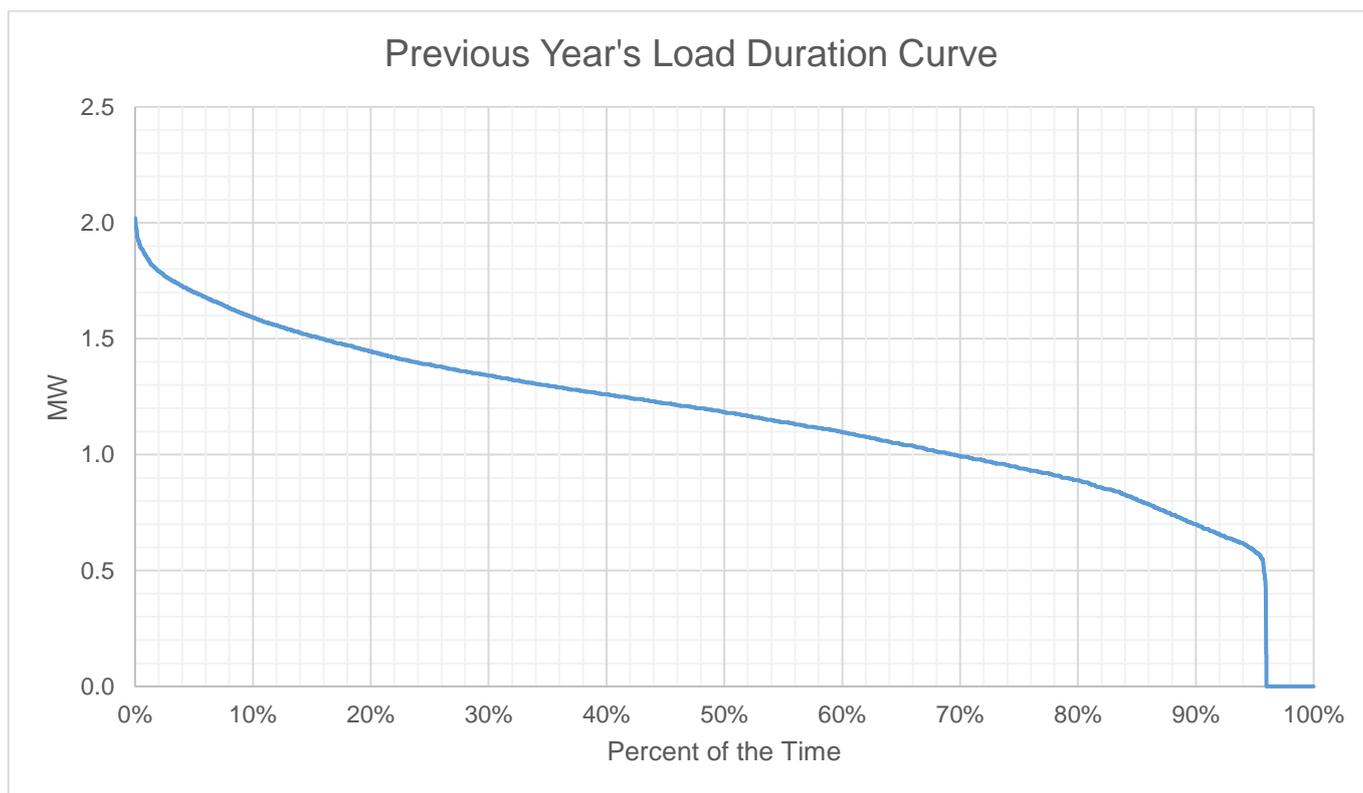
Based on the Load Duration Curve, the minimum load is 0.533 MW and the maximum load is 2.04 MW for the last historical year.

Previous Year's Load for Peak MWh and MW Days
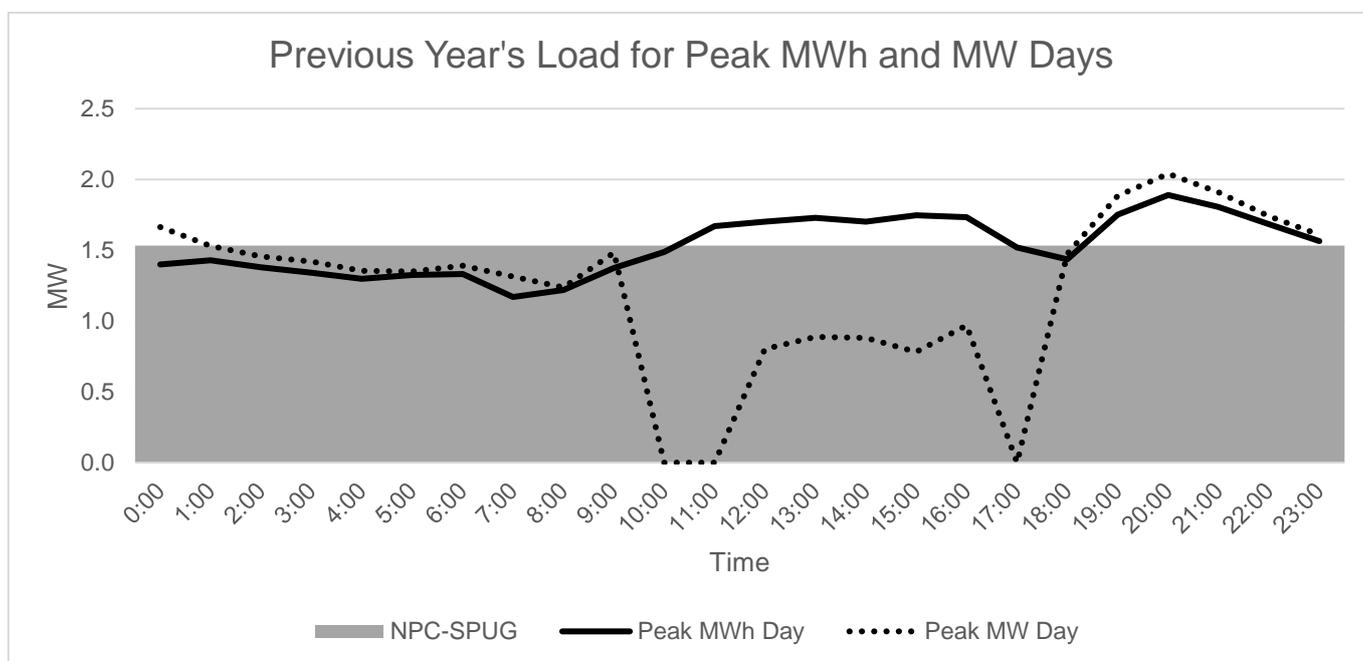
Peak MW occurred on 20:00 due to residential consumers. Peak daily MWh occurred on 20:00 due to residential consumers. As shown in the Load Curves, the available supply is lower than the Peak Demand.

Previous Year's Loading Summary
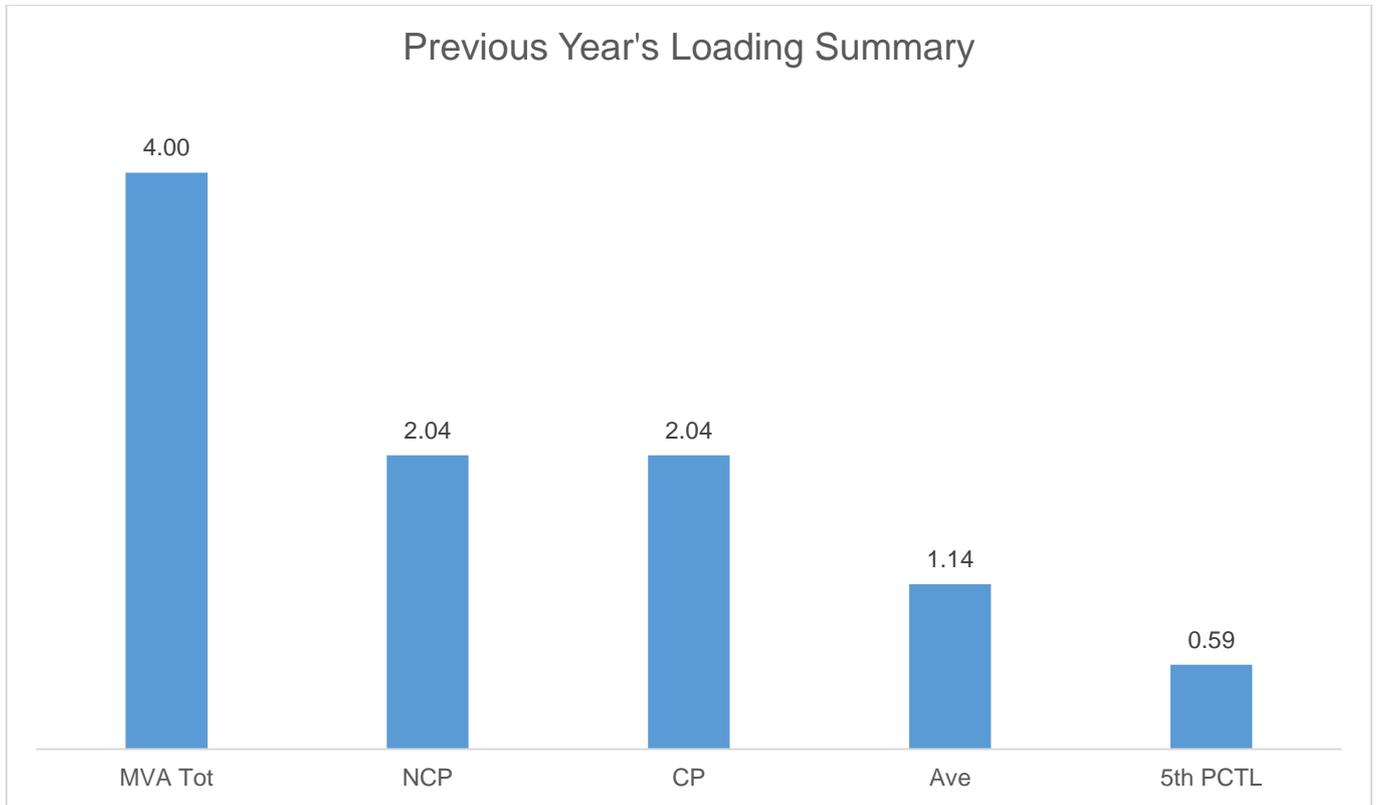
The Non-coincident Peak Demand is 2.04 MW. The load factor or the ratio between the Average Load of 1.14 MW and the Non-coincident Peak Demand is 55.88% of. A safe estimate of the true minimum load is the fifth percentile load of 0.59 MW which is 28.92% of the Non-coincident Peak Demand.

Metering Point	Substation MVA	Substation Peak MW
Esteves	4	2.040

National Power Corporation SPUG has a series of Diesel Generators as a source of power in CADIDI area.

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
2024	Jan	1.533	1.53	0.00	0.000		100%	100%	0.00
	Feb	1.421	1.42	0.00	0.000		100%	100%	0.00
	Mar	1.661	1.66	0.00	0.000		100%	100%	0.00
	Apr	1.757	1.76	0.00	0.000		100%	100%	0.00
	May	1.874	1.87	0.00	0.000		100%	100%	0.00
	Jun	2.012	2.01	0.00	0.000		100%	100%	0.00
	Jul	1.828	1.83	0.00	0.000		100%	100%	0.00
	Aug	1.831	1.83	0.00	0.000		100%	100%	0.00
	Sep	2.171	2.17	0.00	0.000		100%	100%	0.00

	Oct	1.848	1.85	0.00	0.000		100%	100%	0.00
	Nov	1.737	1.74	0.00	0.000		100%	100%	0.00
	Dec	1.688	1.69	0.00	0.000		100%	100%	0.00
2025	Jan		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Feb		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Mar		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Apr		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	May		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jun		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jul		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Aug		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Sep		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Oct		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Nov		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Dec		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
2026	Jan		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Feb		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Mar		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Apr		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	May		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jun		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jul		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Aug		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Sep		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Oct		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Nov		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Dec		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
2027	Jan		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Feb		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Mar		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Apr		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	May		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jun		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jul		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Aug		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Sep		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Oct		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Nov		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Dec		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
2028	Jan		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Feb		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Mar		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Apr		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	May		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jun		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jul		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Aug		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Sep		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Oct		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Nov		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Dec		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00

2029	Jan		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Feb		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Mar		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Apr		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	May		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jun		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jul		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Aug		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Sep		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Oct		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Nov		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Dec		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
2030	Jan		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Feb		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Mar		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Apr		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	May		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jun		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jul		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Aug		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Sep		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Oct		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Nov		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Dec		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
2031	Jan		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Feb		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Mar		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Apr		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	May		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jun		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jul		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Aug		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Sep		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Oct		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Nov		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Dec		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
2032	Jan		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Feb		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Mar		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Apr		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	May		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jun		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Jul		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Aug		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Sep		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Oct		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Nov		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Dec		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
2033	Jan		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Feb		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
	Mar		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00

Apr		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
May		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
Jun		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
Jul		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
Aug		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
Sep		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
Oct		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
Nov		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00
Dec		0.00	0.00	0.000		#DIV/0!	#DIV/0!	0.00

The Peak Demand was forecasted using linear with smoothing and was assumed to occur on the month of April due to summer. Monthly Peak Demand is at its lowest on the month of February due to cold weather.
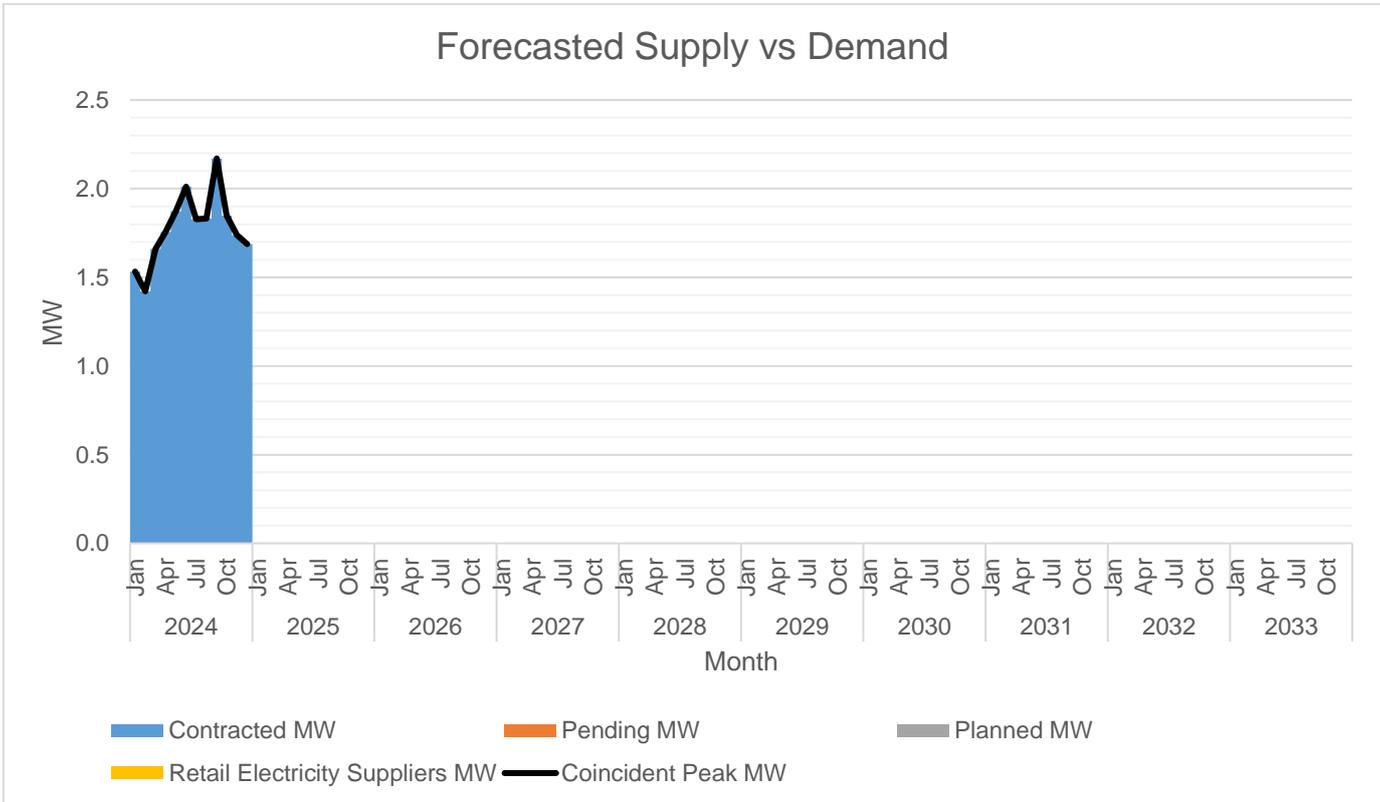
The available supply is generally below the Peak Demand.

Forecasted Supply vs Demand
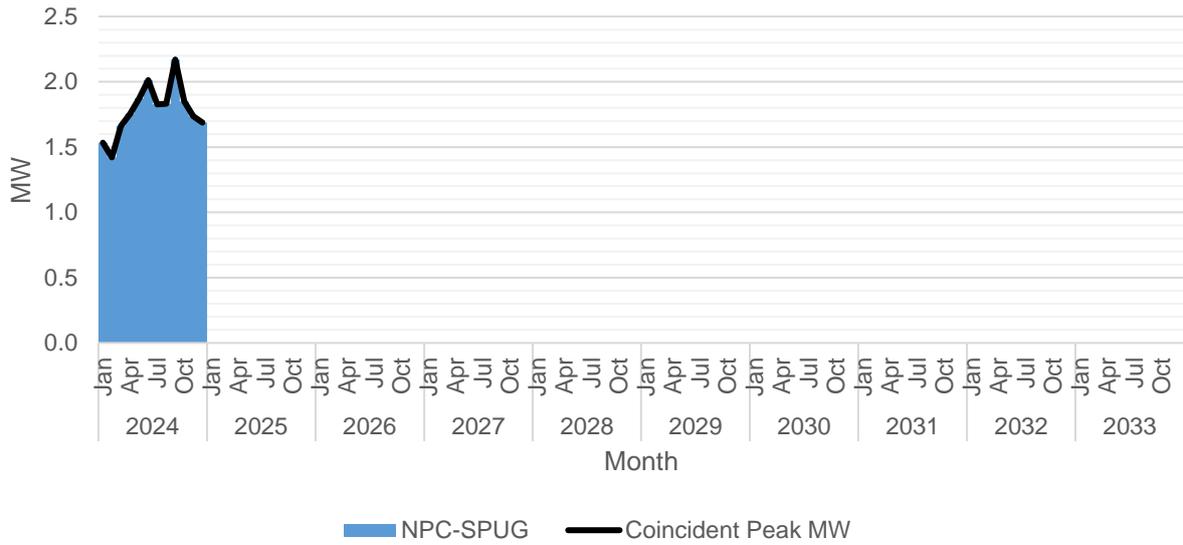
The CADIDI area is planned to be connected to the grid on the 2024.

		MWh Offtake	MWh Output	MWh System Loss	Transm'n Loss	System Loss
2024	Jan	651.17	570	82	0.00%	12.53%
	Feb	687.65	646	42	0.00%	6.11%
	Mar	668.93	585	84	0.00%	12.56%
	Apr	868.77	750	118	0.00%	13.63%
	May	881.16	786	96	0.00%	10.86%
	Jun	1,040.64	1,004	37	0.00%	3.54%
	Jul	916.32	809	108	0.00%	11.76%
	Aug	893.29	738	155	0.00%	17.39%
	Sep	829.85	743	87	0.00%	10.47%
	Oct	856.79	732	124	0.00%	14.53%
	Nov	801.44	731	70	0.00%	8.73%
	Dec	791.45	752	39	0.00%	4.97%
2025	Jan	0	0	0	#DIV/0!	#DIV/0!
	Feb	0	0	0	#DIV/0!	#DIV/0!
	Mar	0	0	0	#DIV/0!	#DIV/0!
	Apr	0	0	0	#DIV/0!	#DIV/0!
	May	0	0	0	#DIV/0!	#DIV/0!
	Jun	0	0	0	#DIV/0!	#DIV/0!
	Jul	0	0	0	#DIV/0!	#DIV/0!
	Aug	0	0	0	#DIV/0!	#DIV/0!
	Sep	0	0	0	#DIV/0!	#DIV/0!
	Oct	0	0	0	#DIV/0!	#DIV/0!
	Nov	0	0	0	#DIV/0!	#DIV/0!
	Dec	0	0	0	#DIV/0!	#DIV/0!
2026	Jan	0	0	0	#DIV/0!	#DIV/0!
	Feb	0	0	0	#DIV/0!	#DIV/0!

	Mar	0	0	0	#DIV/0!	#DIV/0!
	Apr	0	0	0	#DIV/0!	#DIV/0!
	May	0	0	0	#DIV/0!	#DIV/0!
	Jun	0	0	0	#DIV/0!	#DIV/0!
	Jul	0	0	0	#DIV/0!	#DIV/0!
	Aug	0	0	0	#DIV/0!	#DIV/0!
	Sep	0	0	0	#DIV/0!	#DIV/0!
	Oct	0	0	0	#DIV/0!	#DIV/0!
	Nov	0	0	0	#DIV/0!	#DIV/0!
	Dec	0	0	0	#DIV/0!	#DIV/0!
2027	Jan	0	0	0	#DIV/0!	#DIV/0!
	Feb	0	0	0	#DIV/0!	#DIV/0!
	Mar	0	0	0	#DIV/0!	#DIV/0!
	Apr	0	0	0	#DIV/0!	#DIV/0!
	May	0	0	0	#DIV/0!	#DIV/0!
	Jun	0	0	0	#DIV/0!	#DIV/0!
	Jul	0	0	0	#DIV/0!	#DIV/0!
	Aug	0	0	0	#DIV/0!	#DIV/0!
	Sep	0	0	0	#DIV/0!	#DIV/0!
	Oct	0	0	0	#DIV/0!	#DIV/0!
	Nov	0	0	0	#DIV/0!	#DIV/0!
	Dec	0	0	0	#DIV/0!	#DIV/0!
2028	Jan	0	0	0	#DIV/0!	#DIV/0!
	Feb	0	0	0	#DIV/0!	#DIV/0!
	Mar	0	0	0	#DIV/0!	#DIV/0!
	Apr	0	0	0	#DIV/0!	#DIV/0!
	May	0	0	0	#DIV/0!	#DIV/0!
	Jun	0	0	0	#DIV/0!	#DIV/0!
	Jul	0	0	0	#DIV/0!	#DIV/0!
	Aug	0	0	0	#DIV/0!	#DIV/0!
	Sep	0	0	0	#DIV/0!	#DIV/0!
	Oct	0	0	0	#DIV/0!	#DIV/0!
	Nov	0	0	0	#DIV/0!	#DIV/0!
	Dec	0	0	0	#DIV/0!	#DIV/0!
2029	Jan	0	0	0	#DIV/0!	#DIV/0!
	Feb	0	0	0	#DIV/0!	#DIV/0!
	Mar	0	0	0	#DIV/0!	#DIV/0!
	Apr	0	0	0	#DIV/0!	#DIV/0!
	May	0	0	0	#DIV/0!	#DIV/0!
	Jun	0	0	0	#DIV/0!	#DIV/0!
	Jul	0	0	0	#DIV/0!	#DIV/0!
	Aug	0	0	0	#DIV/0!	#DIV/0!
	Sep	0	0	0	#DIV/0!	#DIV/0!
	Oct	0	0	0	#DIV/0!	#DIV/0!
	Nov	0	0	0	#DIV/0!	#DIV/0!
	Dec	0	0	0	#DIV/0!	#DIV/0!
2030	Jan	0	0	0	#DIV/0!	#DIV/0!
	Feb	0	0	0	#DIV/0!	#DIV/0!
	Mar	0	0	0	#DIV/0!	#DIV/0!
	Apr	0	0	0	#DIV/0!	#DIV/0!
	May	0	0	0	#DIV/0!	#DIV/0!

	Jun	0	0	0	#DIV/0!	#DIV/0!
	Jul	0	0	0	#DIV/0!	#DIV/0!
	Aug	0	0	0	#DIV/0!	#DIV/0!
	Sep	0	0	0	#DIV/0!	#DIV/0!
	Oct	0	0	0	#DIV/0!	#DIV/0!
	Nov	0	0	0	#DIV/0!	#DIV/0!
	Dec	0	0	0	#DIV/0!	#DIV/0!
2031	Jan	0	0	0	#DIV/0!	#DIV/0!
	Feb	0	0	0	#DIV/0!	#DIV/0!
	Mar	0	0	0	#DIV/0!	#DIV/0!
	Apr	0	0	0	#DIV/0!	#DIV/0!
	May	0	0	0	#DIV/0!	#DIV/0!
	Jun	0	0	0	#DIV/0!	#DIV/0!
	Jul	0	0	0	#DIV/0!	#DIV/0!
	Aug	0	0	0	#DIV/0!	#DIV/0!
	Sep	0	0	0	#DIV/0!	#DIV/0!
	Oct	0	0	0	#DIV/0!	#DIV/0!
	Nov	0	0	0	#DIV/0!	#DIV/0!
	Dec	0	0	0	#DIV/0!	#DIV/0!
2032	Jan	0	0	0	#DIV/0!	#DIV/0!
	Feb	0	0	0	#DIV/0!	#DIV/0!
	Mar	0	0	0	#DIV/0!	#DIV/0!
	Apr	0	0	0	#DIV/0!	#DIV/0!
	May	0	0	0	#DIV/0!	#DIV/0!
	Jun	0	0	0	#DIV/0!	#DIV/0!
	Jul	0	0	0	#DIV/0!	#DIV/0!
	Aug	0	0	0	#DIV/0!	#DIV/0!
	Sep	0	0	0	#DIV/0!	#DIV/0!
	Oct	0	0	0	#DIV/0!	#DIV/0!
	Nov	0	0	0	#DIV/0!	#DIV/0!
	Dec	0	0	0	#DIV/0!	#DIV/0!
2033	Jan	0	0	0	#DIV/0!	#DIV/0!
	Feb	0	0	0	#DIV/0!	#DIV/0!
	Mar	0	0	0	#DIV/0!	#DIV/0!
	Apr	0	0	0	#DIV/0!	#DIV/0!
	May	0	0	0	#DIV/0!	#DIV/0!
	Jun	0	0	0	#DIV/0!	#DIV/0!
	Jul	0	0	0	#DIV/0!	#DIV/0!
	Aug	0	0	0	#DIV/0!	#DIV/0!
	Sep	0	0	0	#DIV/0!	#DIV/0!
	Oct	0	0	0	#DIV/0!	#DIV/0!
	Nov	0	0	0	#DIV/0!	#DIV/0!
	Dec	0	0	0	#DIV/0!	#DIV/0!

MWh Offtake was forecasted using cubic with smoothing. The assumed load factor is 62.38%. System Loss was calculated on 2023 by TSD using DSAS software. Based on the same study, the Distribution System can adequately convey electricity to customers.

Forecasted Consumption
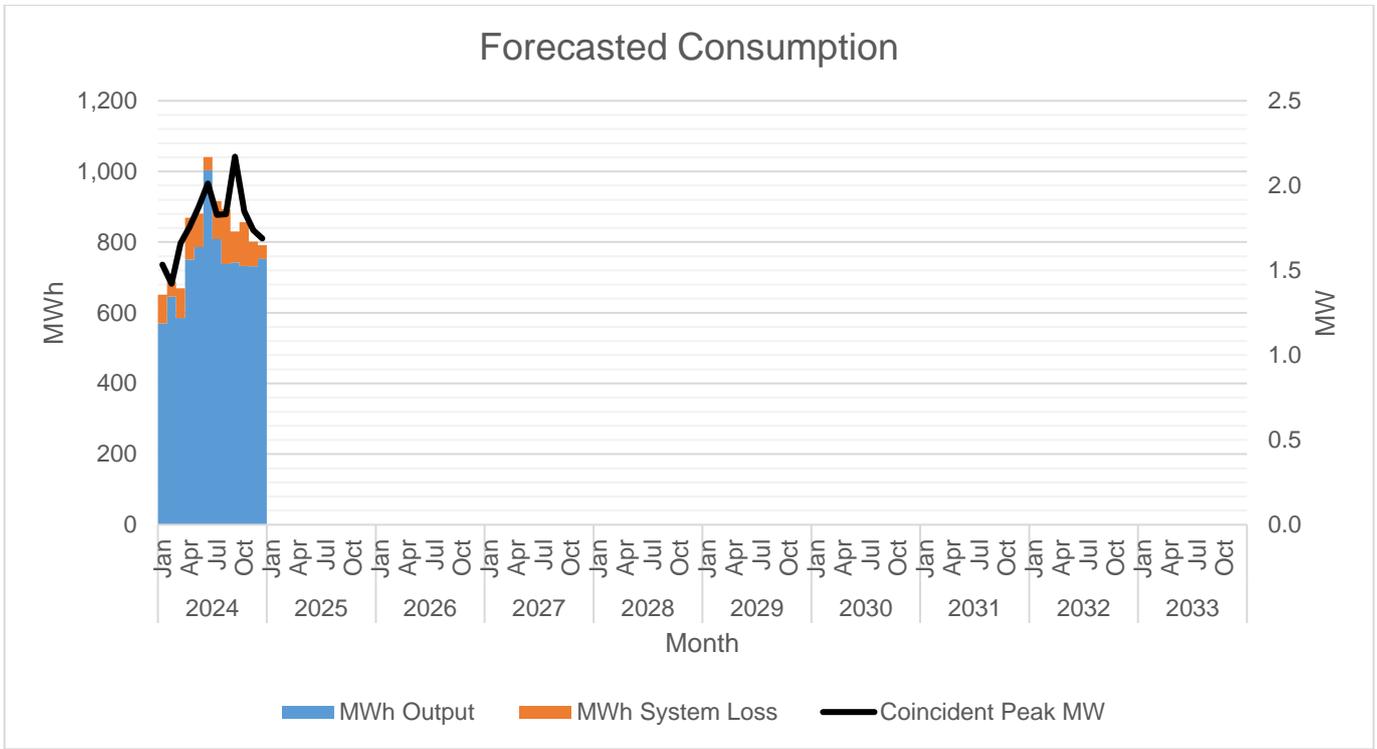
MWh Output for 2024 is 9,799MWH expected to grow at a rate of 3.32 monthly.

Forecasted Losses
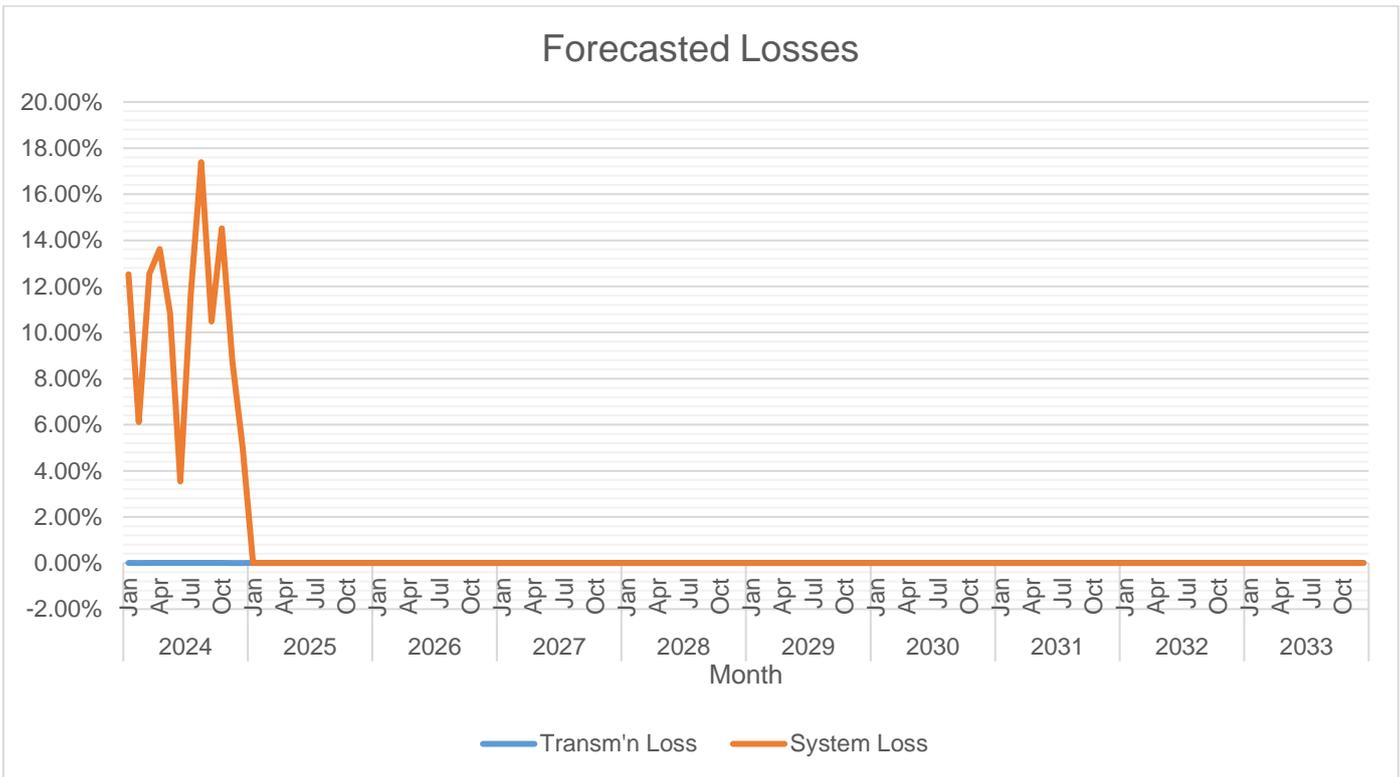
System Loss is expected to range from 4.0% to 10.6%. The ongoing construction of a 69kV sub-transmission line and a 10MVA substation will aid in a 24 hours continuous supply of electricity in DICADI area.

Power Supply

Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
NPC-SPUG	Base	National Power Corporation	1.59	11,148	12/26/2023	12/25/2024

DICADI area is planned to be connected to the grid in 2024.

Captive Customer Connections
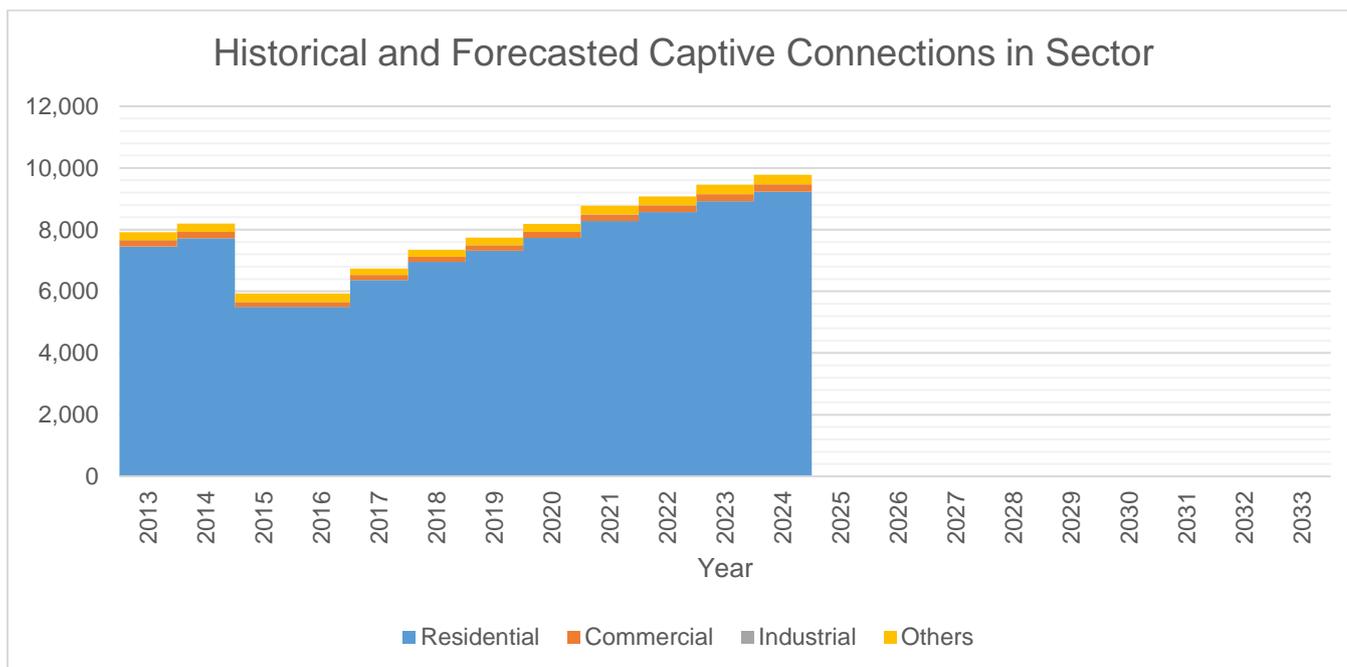
The number of residential connections is expected to grow at a rate of 3.18% monthly. Said customer class is expected to account for 71.21% of the total consumption.
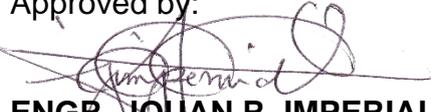
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