

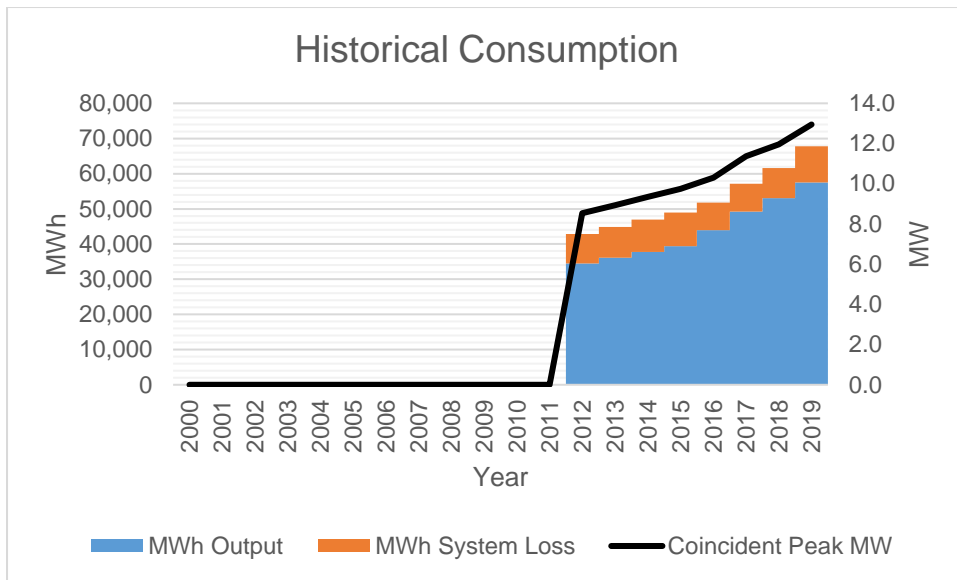
Power Supply Procurement Plan 2020

ABRA ELECTRIC COOPERATIVE

Historical Consumption Data

	Coincident Peak MW	MWh Offtake	WESM	MWh Input	MWh Output	MWh System Loss	Load Factor	Discrepancy	Transm'n Loss	System Loss
2012	8.53	43,188	43,188	42,835	34,473	8,362	57%	0.00%	0.82%	19.52%
2013	8.93	45,247	45,247	44,877	36,115	8,762	57%	0.00%	0.82%	19.52%
2014	9.34	47,318	47,318	46,931	37,768	9,163	57%	0.00%	0.82%	19.52%
2015	9.75	49,383	49,383	48,979	39,418	9,561	57%	0.00%	0.82%	19.52%
2016	10.30	52,202	52,202	51,769	43,972	7,797	57%	0.00%	0.83%	15.06%
2017	11.37	57,770	57,770	57,165	49,190	7,975	57%	0.00%	1.05%	13.95%
2018	11.96	62,126	62,126	61,611	53,009	8,602	59%	0.00%	0.83%	13.96%
2019	12.95	68,455	14,146	67,820	57,496	10,324	60%	0.00%	0.93%	15.22%

Peak Demand increased from 8.53 MW in 2012 to 12.95 MW in 2019 at a rate of 6.17% due to economic development in the province. MWh Offtake increased from 43,188 MWh in 2012 to 68,455 MWh in 2019 at a rate of 6.83% due to the same economic growth. Within the same period, Load Factor ranged from 57% to 60%. There was an abrupt change in consumption on 2017 due to economic growth.

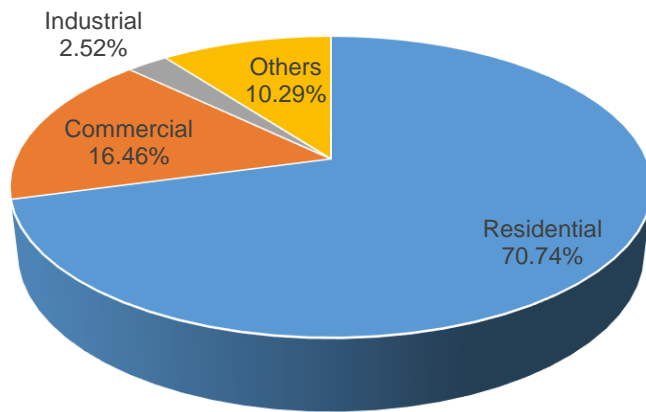


MWh Output increased from year 2012 to year 2019 at a rate of 7.62%, while MWh System Loss increased at a rate of 3.63% within the same period.



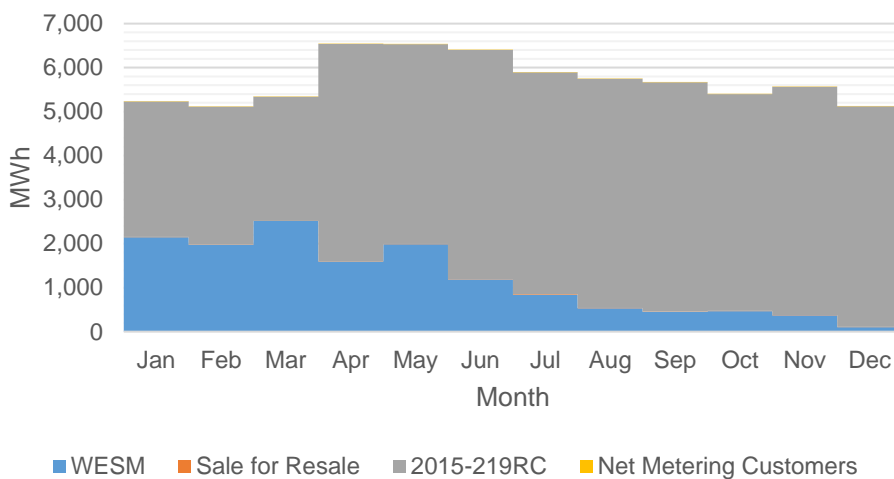
Historically, Transmission Loss ranged from 0.82 % to 1.05 % while System Loss ranged from 13.95 % to 19.52 %. Transmission Loss peaked at 1.05 % on year 2017 because of abrupt increase of demand. System Loss peaked at 19.52 % on year 2015.

Previous Year's Shares of Energy Sales

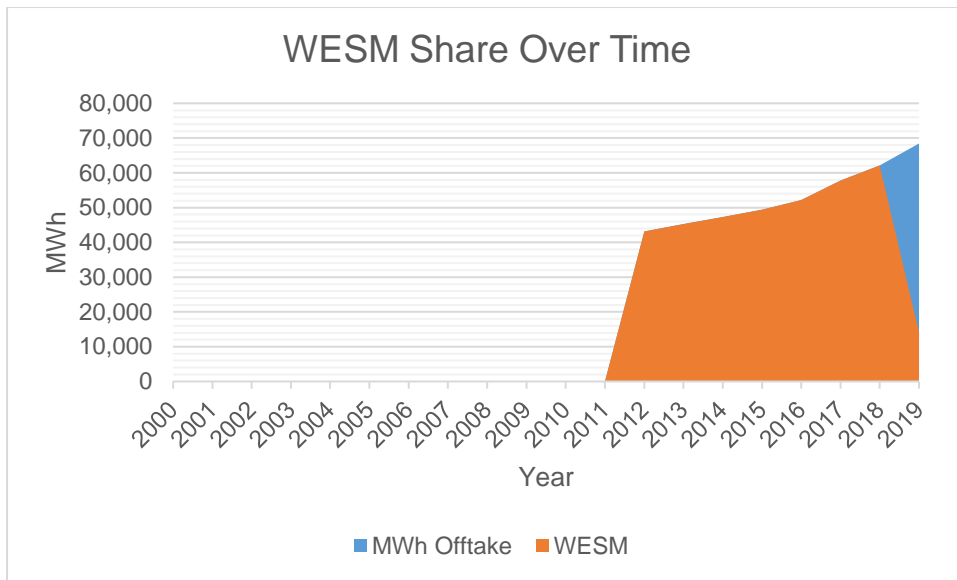


Residential customers account for the bulk of energy sales at 70.74% due to the high number of connections. In contrast, industrial customers accounted for only 2.52% of energy sales due to the low number of connections.

MWh Offtake for Last Historical Year

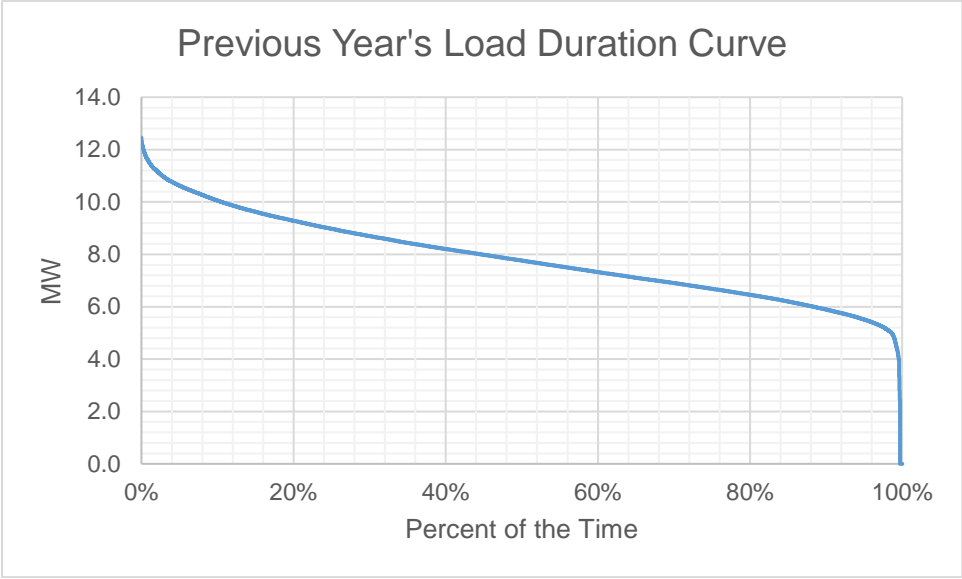


For 2015-219RC, the total Offtake for the last historical year is higher than the quantity stipulated in the PSA. The PSA with 2015-219RC accounts for the bulk of MWh Offtake.

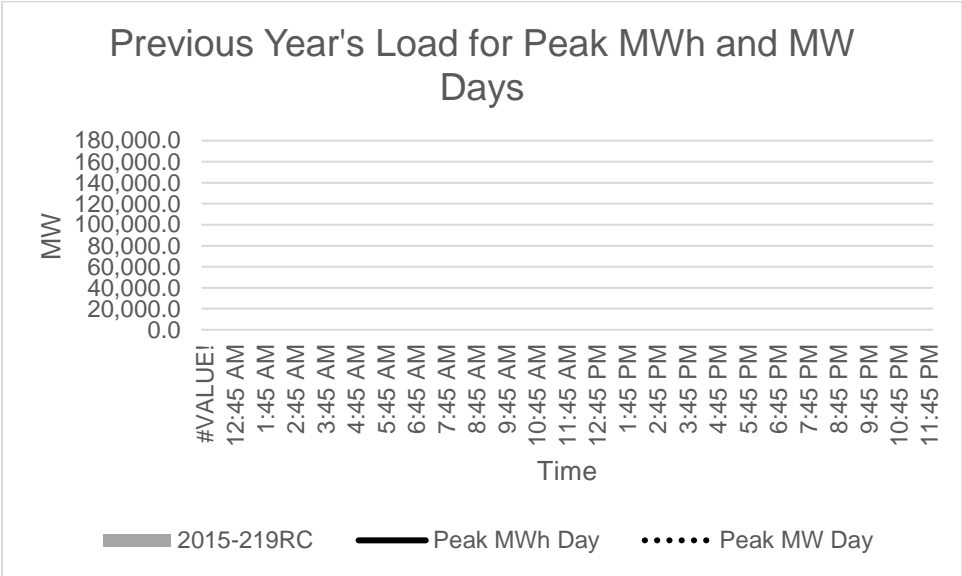


WESM Offtake decreased from 62,126 MWh in 2018 to 14,146 MWh in 2019 at a rate of 77.23 % due to effectivity of the PSA with 2015-219RC. The share of WESM in the total Offtake ranged from 20.1% to 100%.

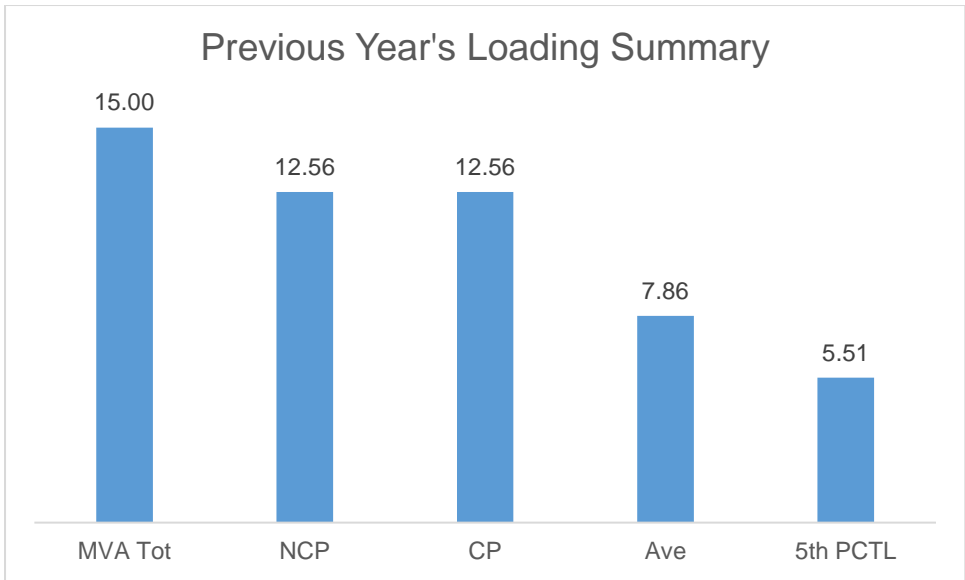
Previous Year's Load Profile



Based on the Load Duration Curve, the minimum load is 0 MW and the maximum load is 12.95 MW for the last historical year.



Peak MW occurred on May 1, 2019 due to summer heat. Peak daily MWh occurred on the same day due to the same reason. As shown in the Load Curves, the available supply is lower than the Peak Demand.



The Non-coincident Peak Demand is 12.56 MW, which is around 83.7% of the total substation capacity of 15 MVA at a power factor of 0.96. The load factor or the ratio between the Average Load of 7.86 MW and the Non-coincident Peak Demand is 62.58%. A safe estimate of the true minimum load is the fifth percentile load of 5.51 MW which is 43.87% of the Non-coincident Peak Demand.

Metering Point	Substation MVA	Substation Peak MW
NGCP San Esteban Substation	15	12.562

The substation is loaded at above 70%. This loading problem will be solved by this year.

Forecasted Consumption Data

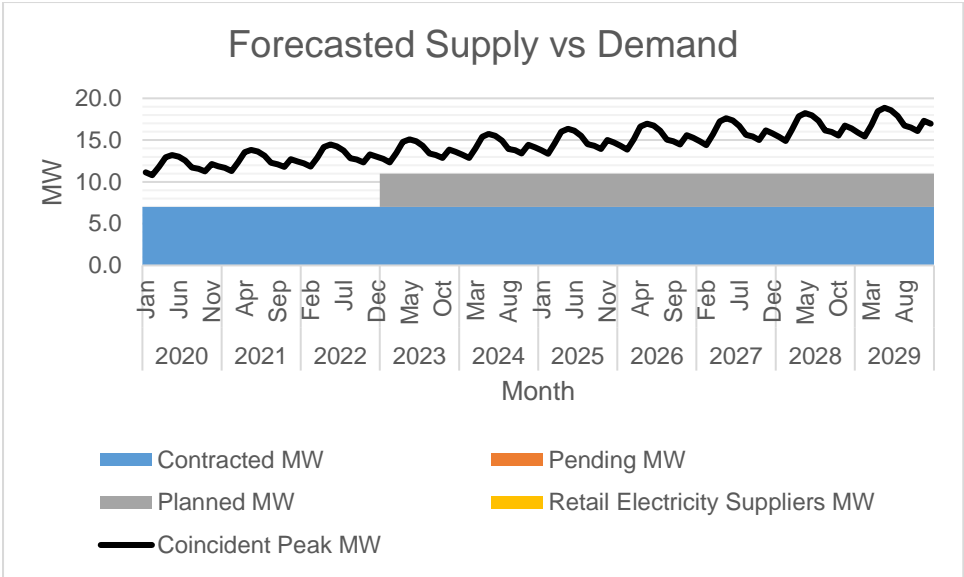
		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Retail Electricity Suppliers MW	Existing Contracting Level	Target Contracting Level	MW Surplus / Deficit
2020	Jan	11.15	7.00	0.00	0.000		63%	63%	-4.15
	Feb	10.80	7.00	0.00	0.000		65%	65%	-3.80
	Mar	11.79	7.00	0.00	0.000		59%	59%	-4.79
	Apr	12.94	7.00	0.00	0.000		54%	54%	-5.94
	May	13.22	7.00	0.00	0.000		53%	53%	-6.22
	Jun	13.02	7.00	0.00	0.000		54%	54%	-6.02
	Jul	12.54	7.00	0.00	0.000		56%	56%	-5.54
	Aug	11.72	7.00	0.00	0.000		60%	60%	-4.72
	Sep	11.57	7.00	0.00	0.000		61%	61%	-4.57
	Oct	11.27	7.00	0.00	0.000		62%	62%	-4.27
	Nov	12.12	7.00	0.00	0.000		58%	58%	-5.12
	Dec	11.88	7.00	0.00	0.000		59%	59%	-4.88
2021	Jan	11.68	7.00	0.00	0.000		60%	60%	-4.68
	Feb	11.31	7.00	0.00	0.000		62%	62%	-4.31
	Mar	12.34	7.00	0.00	0.000		57%	57%	-5.34
	Apr	13.56	7.00	0.00	0.000		52%	52%	-6.56
	May	13.84	7.00	0.00	0.000		51%	51%	-6.84
	Jun	13.64	7.00	0.00	0.000		51%	51%	-6.64
	Jul	13.14	7.00	0.00	0.000		53%	53%	-6.14
	Aug	12.27	7.00	0.00	0.000		57%	57%	-5.27
	Sep	12.12	7.00	0.00	0.000		58%	58%	-5.12
	Oct	11.81	7.00	0.00	0.000		59%	59%	-4.81
	Nov	12.70	7.00	0.00	0.000		55%	55%	-5.70
	Dec	12.45	7.00	0.00	0.000		56%	56%	-5.45
2022	Jan	12.20	7.00	0.00	0.000		57%	57%	-5.20
	Feb	11.83	7.00	0.00	0.000		59%	59%	-4.83
	Mar	12.90	7.00	0.00	0.000		54%	54%	-5.90
	Apr	14.17	7.00	0.00	0.000		49%	49%	-7.17

	May	14.47	7.00	0.00	0.000		48%	48%	-7.47
	Jun	14.26	7.00	0.00	0.000		49%	49%	-7.26
	Jul	13.73	7.00	0.00	0.000		51%	51%	-6.73
	Aug	12.83	7.00	0.00	0.000		55%	55%	-5.83
	Sep	12.67	7.00	0.00	0.000		55%	55%	-5.67
	Oct	12.34	7.00	0.00	0.000		57%	57%	-5.34
	Nov	13.27	7.00	0.00	0.000		53%	53%	-6.27
	Dec	13.01	7.00	0.00	0.000		54%	54%	-6.01
2023	Jan	12.73	7.00	0.00	4.000		55%	86%	-1.73
	Feb	12.34	7.00	0.00	4.000		57%	89%	-1.34
	Mar	13.46	7.00	0.00	4.000		52%	82%	-2.46
	Apr	14.79	7.00	0.00	4.000		47%	74%	-3.79
	May	15.10	7.00	0.00	4.000		46%	73%	-4.10
	Jun	14.88	7.00	0.00	4.000		47%	74%	-3.88
	Jul	14.33	7.00	0.00	4.000		49%	77%	-3.33
	Aug	13.39	7.00	0.00	4.000		52%	82%	-2.39
	Sep	13.22	7.00	0.00	4.000		53%	83%	-2.22
	Oct	12.88	7.00	0.00	4.000		54%	85%	-1.88
	Nov	13.85	7.00	0.00	4.000		51%	79%	-2.85
	Dec	13.58	7.00	0.00	4.000		52%	81%	-2.58
2024	Jan	13.26	7.00	0.00	4.000		53%	83%	-2.26
	Feb	12.85	7.00	0.00	4.000		54%	86%	-1.85
	Mar	14.02	7.00	0.00	4.000		50%	78%	-3.02
	Apr	15.40	7.00	0.00	4.000		45%	71%	-4.40
	May	15.73	7.00	0.00	4.000		45%	70%	-4.73
	Jun	15.50	7.00	0.00	4.000		45%	71%	-4.50
	Jul	14.93	7.00	0.00	4.000		47%	74%	-3.93
	Aug	13.94	7.00	0.00	4.000		50%	79%	-2.94
	Sep	13.77	7.00	0.00	4.000		51%	80%	-2.77
	Oct	13.41	7.00	0.00	4.000		52%	82%	-2.41
	Nov	14.43	7.00	0.00	4.000		49%	76%	-3.43
	Dec	14.14	7.00	0.00	4.000		49%	78%	-3.14
2025	Jan	13.79	7.00	0.00	4.000		51%	80%	-2.79

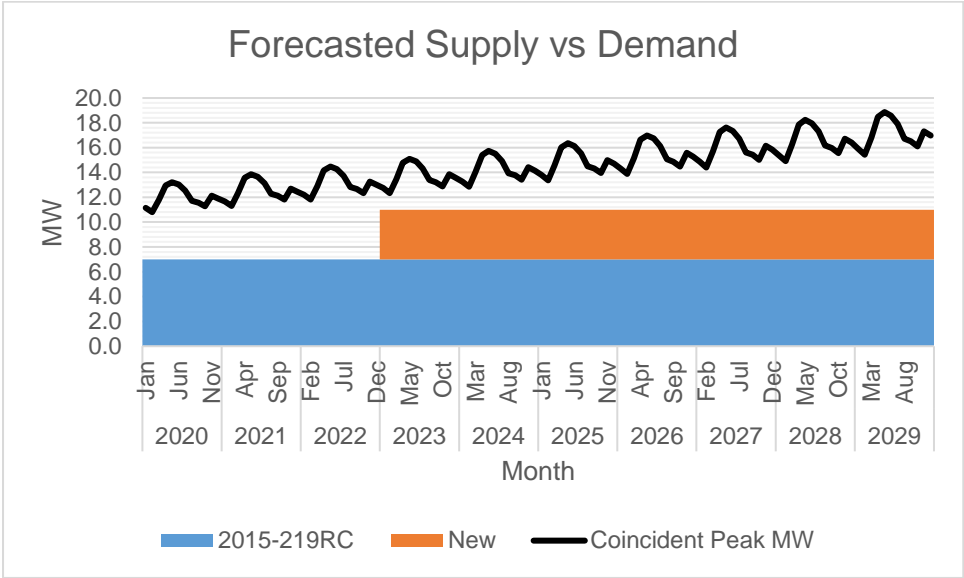
	Feb	13.36	7.00	0.00	4.000		52%	82%	-2.36
	Mar	14.58	7.00	0.00	4.000		48%	75%	-3.58
	Apr	16.02	7.00	0.00	4.000		44%	69%	-5.02
	May	16.35	7.00	0.00	4.000		43%	67%	-5.35
	Jun	16.11	7.00	0.00	4.000		43%	68%	-5.11
	Jul	15.52	7.00	0.00	4.000		45%	71%	-4.52
	Aug	14.50	7.00	0.00	4.000		48%	76%	-3.50
	Sep	14.32	7.00	0.00	4.000		49%	77%	-3.32
	Oct	13.95	7.00	0.00	4.000		50%	79%	-2.95
	Nov	15.00	7.00	0.00	4.000		47%	73%	-4.00
	Dec	14.71	7.00	0.00	4.000		48%	75%	-3.71
2026	Jan	14.32	7.00	0.00	4.000		49%	77%	-3.32
	Feb	13.88	7.00	0.00	4.000		50%	79%	-2.88
	Mar	15.14	7.00	0.00	4.000		46%	73%	-4.14
	Apr	16.63	7.00	0.00	4.000		42%	66%	-5.63
	May	16.98	7.00	0.00	4.000		41%	65%	-5.98
	Jun	16.73	7.00	0.00	4.000		42%	66%	-5.73
	Jul	16.12	7.00	0.00	4.000		43%	68%	-5.12
	Aug	15.06	7.00	0.00	4.000		46%	73%	-4.06
	Sep	14.87	7.00	0.00	4.000		47%	74%	-3.87
	Oct	14.49	7.00	0.00	4.000		48%	76%	-3.49
	Nov	15.58	7.00	0.00	4.000		45%	71%	-4.58
	Dec	15.27	7.00	0.00	4.000		46%	72%	-4.27
2027	Jan	14.85	7.00	0.00	4.000		47%	74%	-3.85
	Feb	14.39	7.00	0.00	4.000		49%	76%	-3.39
	Mar	15.70	7.00	0.00	4.000		45%	70%	-4.70
	Apr	17.25	7.00	0.00	4.000		41%	64%	-6.25
	May	17.61	7.00	0.00	4.000		40%	62%	-6.61
	Jun	17.35	7.00	0.00	4.000		40%	63%	-6.35
	Jul	16.71	7.00	0.00	4.000		42%	66%	-5.71
	Aug	15.61	7.00	0.00	4.000		45%	70%	-4.61
	Sep	15.42	7.00	0.00	4.000		45%	71%	-4.42
	Oct	15.02	7.00	0.00	4.000		47%	73%	-4.02

	Nov	16.15	7.00	0.00	4.000		43%	68%	-5.15
	Dec	15.84	7.00	0.00	4.000		44%	69%	-4.84
2028	Jan	15.38	7.00	0.00	4.000		46%	72%	-4.38
	Feb	14.90	7.00	0.00	4.000		47%	74%	-3.90
	Mar	16.26	7.00	0.00	4.000		43%	68%	-5.26
	Apr	17.86	7.00	0.00	4.000		39%	62%	-6.86
	May	18.24	7.00	0.00	4.000		38%	60%	-7.24
	Jun	17.97	7.00	0.00	4.000		39%	61%	-6.97
	Jul	17.31	7.00	0.00	4.000		40%	64%	-6.31
	Aug	16.17	7.00	0.00	4.000		43%	68%	-5.17
	Sep	15.97	7.00	0.00	4.000		44%	69%	-4.97
	Oct	15.56	7.00	0.00	4.000		45%	71%	-4.56
	Nov	16.73	7.00	0.00	4.000		42%	66%	-5.73
	Dec	16.40	7.00	0.00	4.000		43%	67%	-5.40
2029	Jan	15.91	7.00	0.00	4.000		44%	69%	-4.91
	Feb	15.42	7.00	0.00	4.000		45%	71%	-4.42
	Mar	16.82	7.00	0.00	4.000		42%	65%	-5.82
	Apr	18.48	7.00	0.00	4.000		38%	60%	-7.48
	May	18.87	7.00	0.00	4.000		37%	58%	-7.87
	Jun	18.59	7.00	0.00	4.000		38%	59%	-7.59
	Jul	17.90	7.00	0.00	4.000		39%	61%	-6.90
	Aug	16.73	7.00	0.00	4.000		42%	66%	-5.73
	Sep	16.52	7.00	0.00	4.000		42%	67%	-5.52
	Oct	16.09	7.00	0.00	4.000		44%	68%	-5.09
	Nov	17.31	7.00	0.00	4.000		40%	64%	-6.31
	Dec	16.96	7.00	0.00	4.000		41%	65%	-5.96

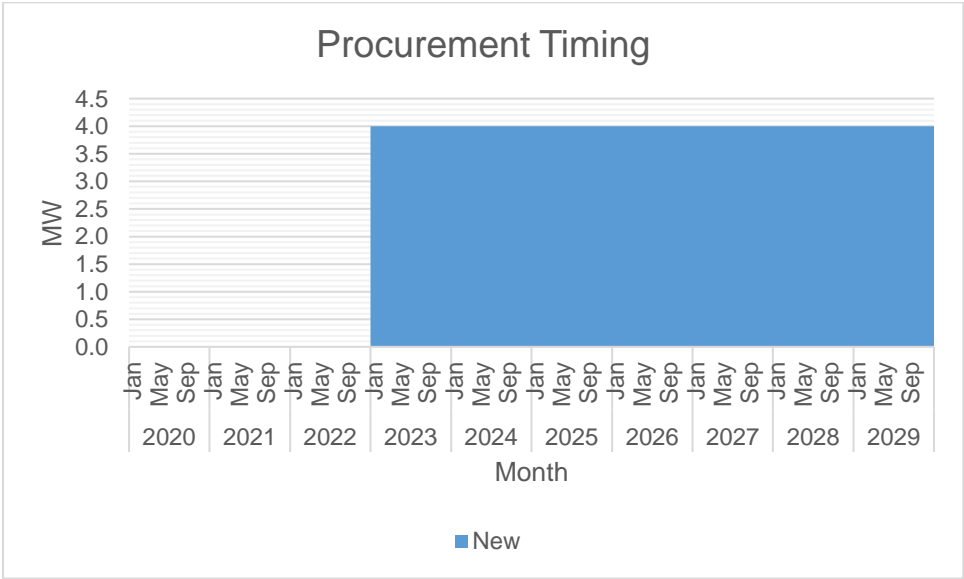
The Peak Demand was forecasted using linear equation and was assumed to occur on the month of May due to summer heat. Monthly Peak Demand is at its lowest on the month of February due to cool weather. In general, Peak Demand is expected to grow at a rate of 6.17% annually.



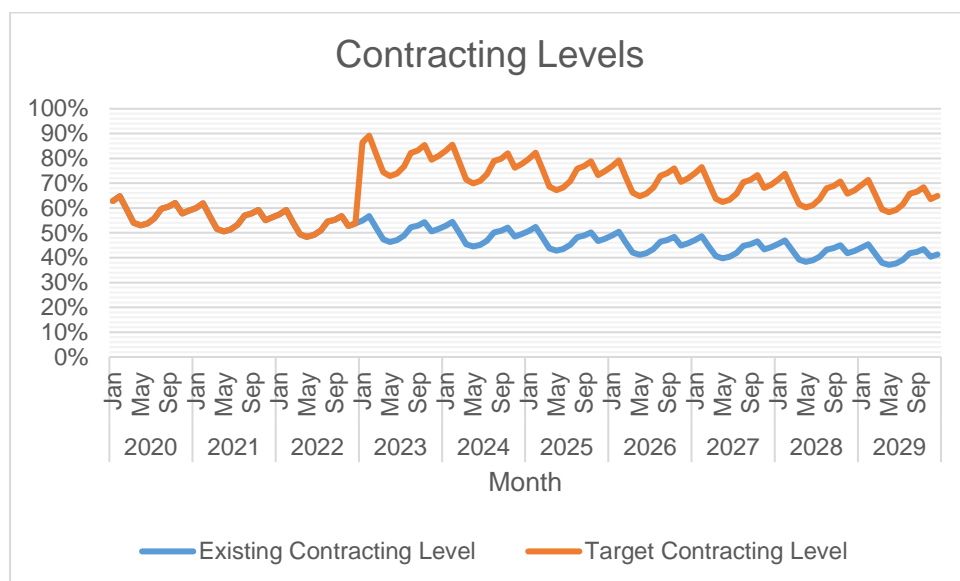
The available supply is generally below the Peak Demand. This is because of under-contracting.



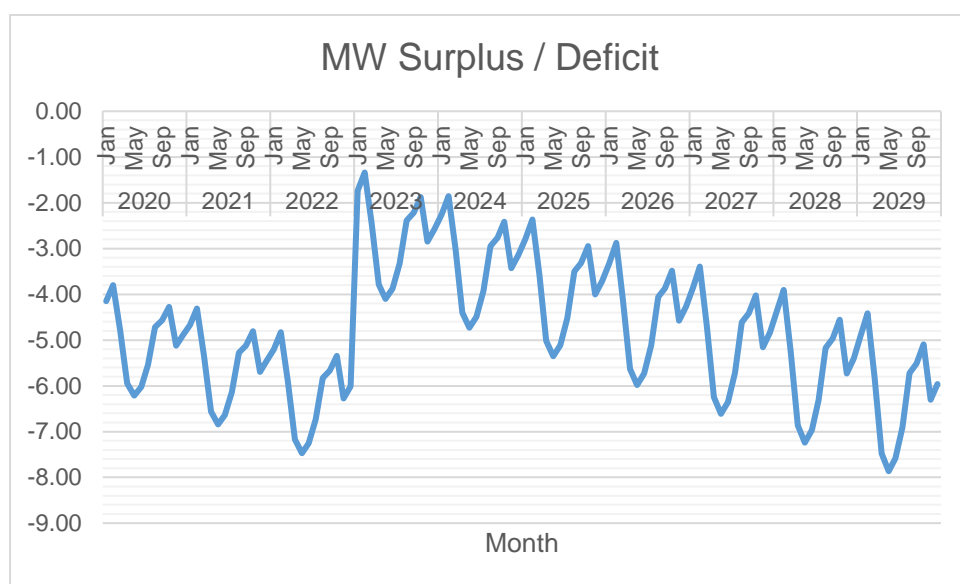
Of the available supply, the largest is 7.0 MW from 2015-219RC.



The first wave of supply procurement will be for 4 MW planned to be available by the month of January 2023.



Currently, there is under-contracting by 40%. The highest target contracting level is 40% which is expected to occur on January 2023.



Currently, there is [under-contracting/over-contracting] by 2.84 MW. The highest deficit is 7.47 MW which is expected to occur on the month of May, 2022. The lowest [surplus/deficit] is 3.8 MW which is expected to occur on the month of February, 2020.

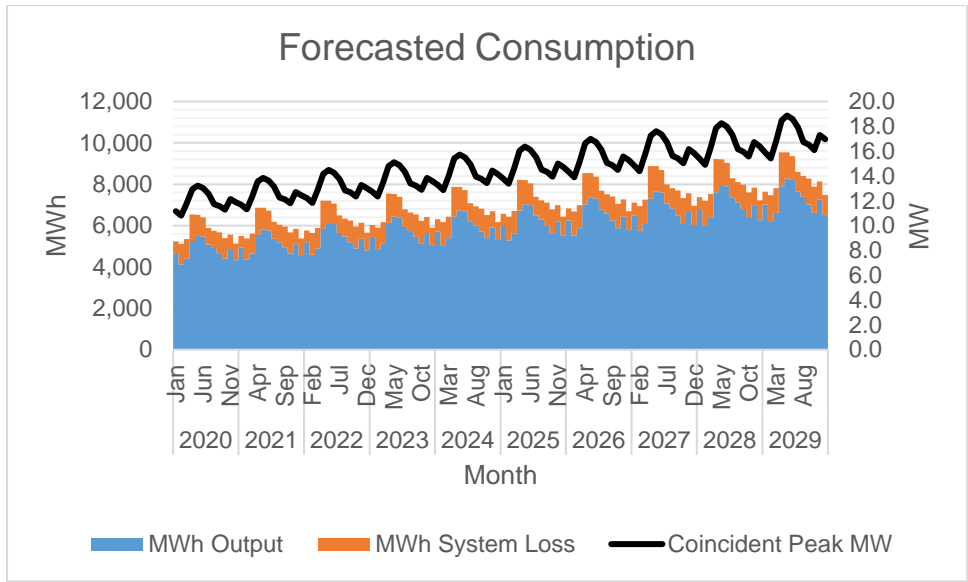
		MWh Offtake	MWh Output	MWh System Loss	Transm'n Loss	System Loss
2020	Jan	5,284	4,670	561	1.00%	10.72%
	Feb	5,165	4,122	991	1.00%	19.38%
	Mar	5,395	4,398	943	1.00%	17.66%
	Apr	6,601	5,256	1,279	1.00%	19.57%
	May	6,596	5,507	1,023	1.00%	15.66%
	Jun	6,467	5,466	936	1.00%	14.62%
	Jul	5,944	5,079	806	1.00%	13.69%
	Aug	5,804	4,918	828	1.00%	14.41%

	Sep	5,722	4,673	992	1.00%	17.51%
	Oct	5,452	4,404	994	1.00%	18.41%
	Nov	5,619	4,827	736	1.00%	13.23%
	Dec	5,176	4,325	799	1.00%	15.60%
2021	Jan	5,553	4,931	567	1.00%	10.31%
	Feb	5,428	4,355	1,019	1.00%	18.97%
	Mar	5,670	4,645	969	1.00%	17.25%
	Apr	6,937	5,550	1,318	1.00%	19.19%
	May	6,932	5,814	1,049	1.00%	15.29%
	Jun	6,796	5,771	957	1.00%	14.23%
	Jul	6,247	5,363	822	1.00%	13.29%
	Aug	6,100	5,192	847	1.00%	14.02%
	Sep	6,013	4,933	1,020	1.00%	17.13%
	Oct	5,730	4,650	1,023	1.00%	18.04%
	Nov	5,905	5,096	750	1.00%	12.83%
	Dec	5,440	4,567	818	1.00%	15.19%
2022	Jan	5,826	5,193	575	1.00%	9.97%
	Feb	5,695	4,587	1,051	1.00%	18.64%
	Mar	5,949	4,892	997	1.00%	16.93%
	Apr	7,277	5,845	1,360	1.00%	18.87%
	May	7,272	6,121	1,079	1.00%	14.98%
	Jun	7,129	6,076	982	1.00%	13.91%
	Jul	6,553	5,646	842	1.00%	12.98%
	Aug	6,399	5,467	868	1.00%	13.71%
	Sep	6,308	5,194	1,051	1.00%	16.83%
	Oct	6,012	4,895	1,056	1.00%	17.74%
	Nov	6,195	5,366	767	1.00%	12.50%
	Dec	5,707	4,809	840	1.00%	14.87%
2023	Jan	6,096	5,454	581	1.00%	9.63%
	Feb	5,958	4,820	1,079	1.00%	18.29%
	Mar	6,224	5,139	1,023	1.00%	16.60%
	Apr	7,614	6,139	1,399	1.00%	18.55%
	May	7,608	6,427	1,105	1.00%	14.67%
	Jun	7,459	6,382	1,003	1.00%	13.58%
	Jul	6,856	5,929	859	1.00%	12.65%
	Aug	6,695	5,741	887	1.00%	13.38%
	Sep	6,600	5,455	1,079	1.00%	16.52%
	Oct	6,290	5,141	1,086	1.00%	17.44%
	Nov	6,482	5,636	781	1.00%	12.17%
	Dec	5,971	5,052	859	1.00%	14.53%
2024	Jan	6,365	5,715	587	1.00%	9.31%
	Feb	6,222	5,052	1,108	1.00%	17.98%
	Mar	6,499	5,386	1,048	1.00%	16.29%
	Apr	7,951	6,434	1,437	1.00%	18.26%
	May	7,945	6,734	1,131	1.00%	14.38%
	Jun	7,789	6,687	1,024	1.00%	13.28%
	Jul	7,160	6,213	875	1.00%	12.35%
	Aug	6,991	6,016	906	1.00%	13.09%
	Sep	6,892	5,716	1,108	1.00%	16.23%

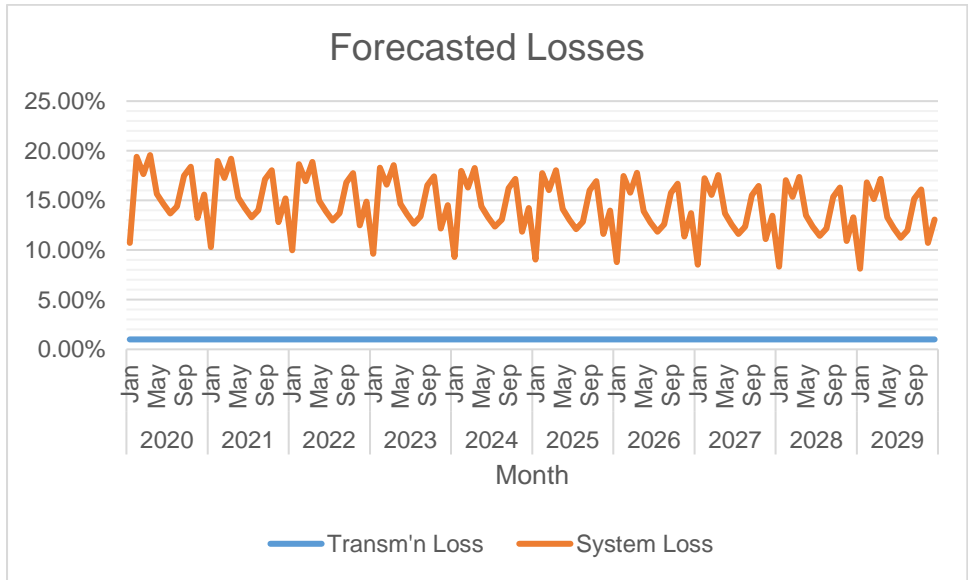
	Oct	6,568	5,387	1,115	1.00%	17.15%
	Nov	6,768	5,906	795	1.00%	11.86%
	Dec	6,234	5,294	878	1.00%	14.22%
2025	Jan	6,638	5,976	595	1.00%	9.06%
	Feb	6,488	5,284	1,139	1.00%	17.73%
	Mar	6,777	5,633	1,076	1.00%	16.04%
	Apr	8,290	6,728	1,479	1.00%	18.03%
	May	8,284	7,041	1,161	1.00%	14.15%
	Jun	8,122	6,992	1,049	1.00%	13.04%
	Jul	7,466	6,496	895	1.00%	12.11%
	Aug	7,290	6,290	927	1.00%	12.85%
	Sep	7,187	5,976	1,139	1.00%	16.00%
	Oct	6,849	5,633	1,148	1.00%	16.93%
	Nov	7,058	6,176	812	1.00%	11.62%
	Dec	6,501	5,537	900	1.00%	13.98%
2026	Jan	6,907	6,238	601	1.00%	8.79%
	Feb	6,752	5,517	1,168	1.00%	17.47%
	Mar	7,052	5,880	1,102	1.00%	15.78%
	Apr	8,627	7,023	1,518	1.00%	17.78%
	May	8,621	7,348	1,187	1.00%	13.91%
	Jun	8,452	7,297	1,070	1.00%	12.79%
	Jul	7,769	6,780	912	1.00%	11.85%
	Aug	7,586	6,564	946	1.00%	12.60%
	Sep	7,479	6,237	1,167	1.00%	15.76%
	Oct	7,127	5,878	1,178	1.00%	16.69%
	Nov	7,344	6,445	826	1.00%	11.36%
	Dec	6,765	5,779	919	1.00%	13.72%
2027	Jan	7,177	6,499	606	1.00%	8.54%
	Feb	7,015	5,749	1,196	1.00%	17.22%
	Mar	7,327	6,127	1,127	1.00%	15.54%
	Apr	8,964	7,317	1,557	1.00%	17.55%
	May	8,958	7,655	1,213	1.00%	13.68%
	Jun	8,782	7,603	1,091	1.00%	12.55%
	Jul	8,072	7,063	928	1.00%	11.62%
	Aug	7,882	6,839	965	1.00%	12.36%
	Sep	7,771	6,498	1,195	1.00%	15.54%
	Oct	7,406	6,124	1,208	1.00%	16.47%
	Nov	7,631	6,715	840	1.00%	11.11%
	Dec	7,029	6,021	938	1.00%	13.48%
2028	Jan	7,450	6,760	615	1.00%	8.34%
	Feb	7,282	5,982	1,227	1.00%	17.03%
	Mar	7,605	6,373	1,156	1.00%	15.35%
	Apr	9,304	7,611	1,599	1.00%	17.36%
	May	9,297	7,962	1,243	1.00%	13.50%
	Jun	9,115	7,908	1,116	1.00%	12.36%
	Jul	8,378	7,346	948	1.00%	11.43%
	Aug	8,182	7,113	987	1.00%	12.18%
	Sep	8,065	6,758	1,226	1.00%	15.36%
	Oct	7,687	6,370	1,240	1.00%	16.30%

	Nov	7,921	6,985	857	1.00%	10.92%
	Dec	7,296	6,264	960	1.00%	13.29%
2029	Jan	7,719	7,021	621	1.00%	8.12%
	Feb	7,545	6,214	1,256	1.00%	16.81%
	Mar	7,880	6,620	1,181	1.00%	15.14%
	Apr	9,641	7,906	1,638	1.00%	17.16%
	May	9,634	8,269	1,269	1.00%	13.30%
	Jun	9,445	8,213	1,137	1.00%	12.16%
	Jul	8,681	7,630	965	1.00%	11.22%
	Aug	8,478	7,388	1,005	1.00%	11.98%
	Sep	8,357	7,019	1,255	1.00%	15.16%
	Oct	7,965	6,615	1,270	1.00%	16.11%
	Nov	8,207	7,255	871	1.00%	10.71%
	Dec	7,560	6,506	979	1.00%	13.07%

MWh Offtake was forecasted using linear equation. The assumed load factor is 60%.



MWh Output was expected to grow at a rate of 7.62% annually.



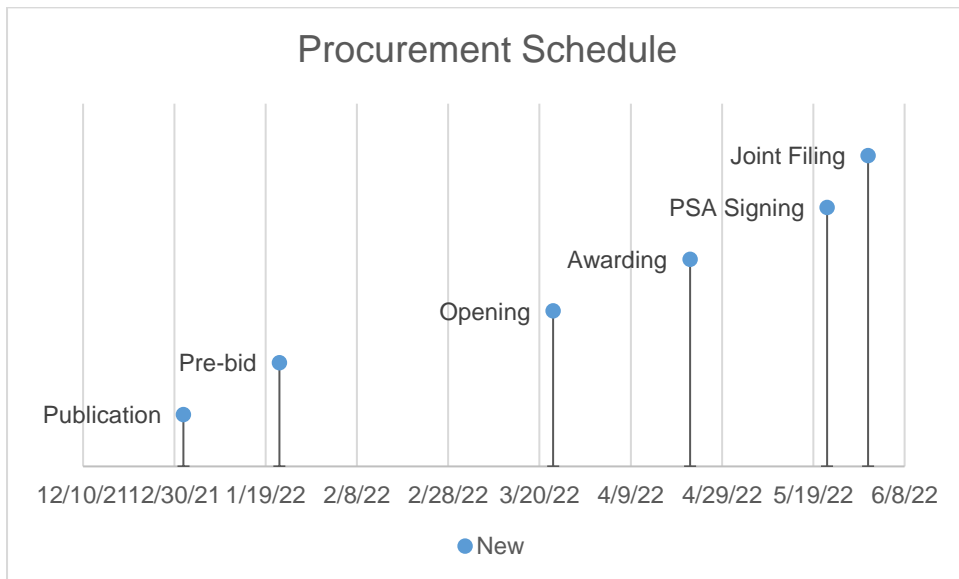
Transmission Loss is expected to range from 1% to 1.1% while System Loss is expected to range from 9% to 17%.

Power Supply

Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
2015-219RC	Base	Masinloc Power Partners Company, Ltd.	7.00	62,496	12/26/2018	12/25/2038

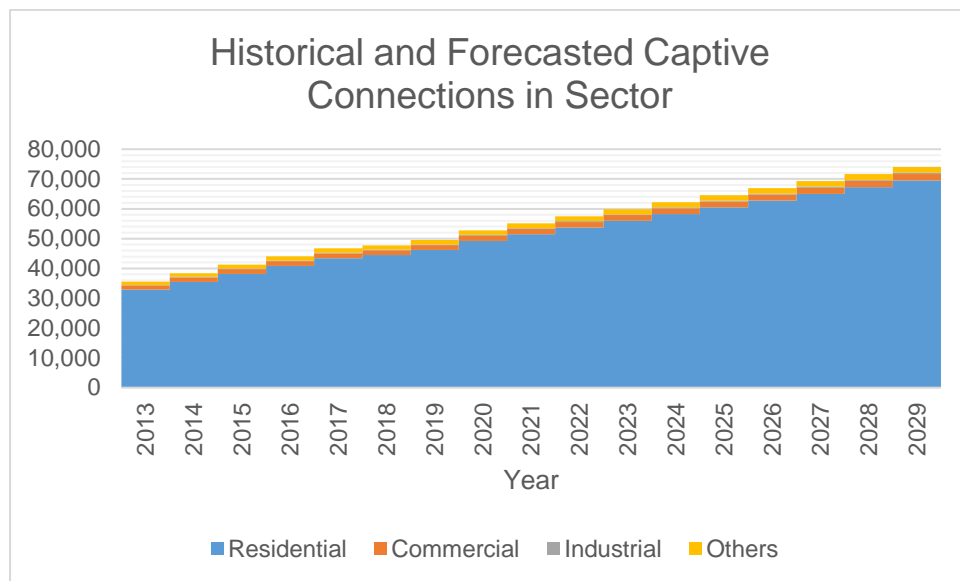
The PSA with 2015-219RC filed with ERC under Case No. 2015-219RC was procured through public bidding. It was selected to provide for base requirements. Historically, the utilization of the PSA is 100%.

	New
Type	Base
Minimum MW	4.00
Minimum MWh/yr	2,880
PSA Start	1/1/2023
PSA End	1/1/2038
Publication	1/1/2022
Pre-bid	1/22/2022
Opening	3/23/2022
Awarding	4/22/2022
PSA Signing	5/22/2022
Joint Filing	5/31/2022



For the procurement of 4 MW of supply which is planned to be available on January 2023, the first publication or launch of CSP will be on January 2022. Joint filing is planned on May 31, 2022, 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 5.85% annually. Said customer class is expected to account for 92.82% of the total consumption.