

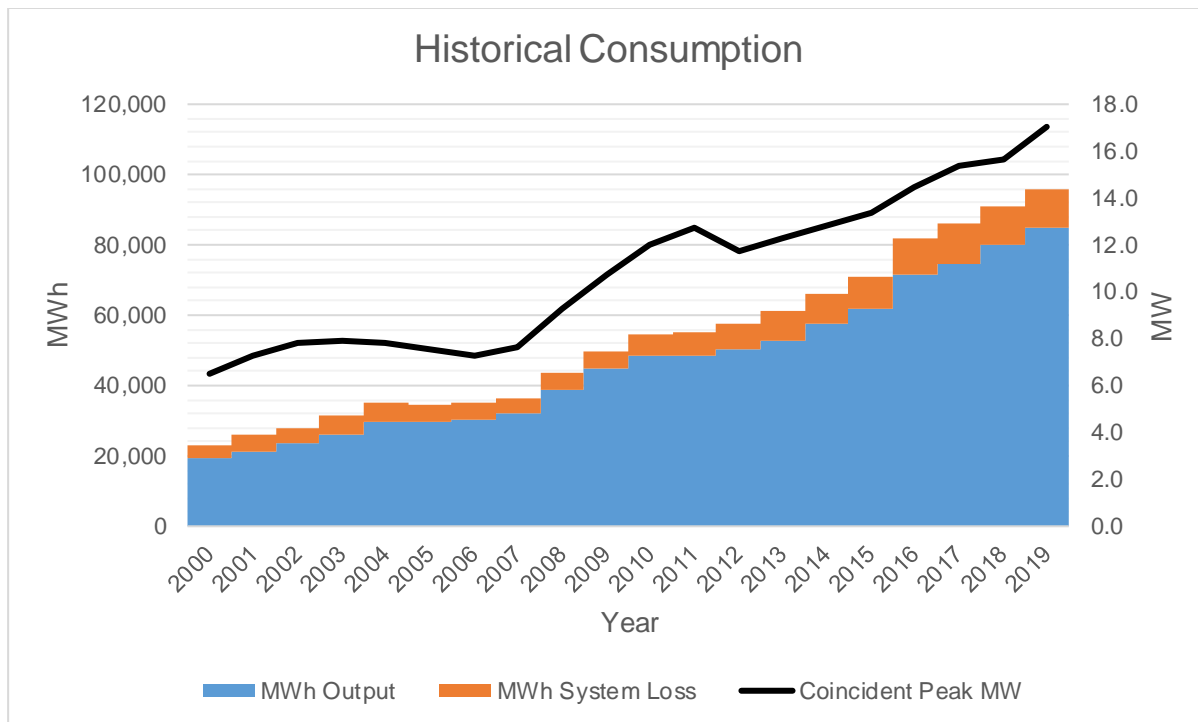
# **Power Supply Procurement Plan 2020-2029**

**Surigao del Sur II Electric Cooperative, Inc.  
(SURSECO II)  
GRID**

## Historical Consumption Data

	Coincident Peak MW	MWh Offtake	WESM	MWh Input	MWh Output	MWh System Loss	Load Factor	Transmission Loss	System Loss
2000	6.51	23,276	0	23,276	19,556	3,720	41%	0.00%	15.98%
2001	7.30	26,037	0	26,037	21,172	4,865	41%	0.00%	18.68%
2002	7.79	28,140	0	28,140	23,411	4,729	41%	0.00%	16.81%
2003	7.88	31,727	0	31,727	26,260	5,466	46%	0.00%	17.23%
2004	7.81	35,082	0	35,082	29,485	5,597	51%	0.00%	15.95%
2005	7.56	34,696	0	34,696	29,469	5,227	52%	0.00%	15.07%
2006	7.30	34,916	0	34,916	30,064	4,852	55%	0.00%	13.90%
2007	7.66	36,302	0	36,302	32,272	4,031	54%	0.00%	11.10%
2008	9.26	43,634	0	43,634	38,879	4,755	54%	0.00%	10.90%
2009	10.70	49,712	0	49,712	44,578	5,135	53%	0.00%	10.33%
2010	11.98	54,598	0	54,598	48,541	6,056	52%	0.00%	11.09%
2011	12.76	54,972	0	54,972	48,502	6,470	49%	0.00%	11.77%
2012	11.77	57,517	0	57,517	50,366	7,151	56%	0.00%	12.43%
2013	12.30	60,939	0	60,939	53,028	7,911	57%	0.00%	12.98%
2014	12.87	65,890	0	65,890	57,502	8,414	58%	0.00%	12.77%
2015	13.39	70,499	0	70,499	61,634	9,049	60%	0.00%	12.84%
2016	14.42	80,200	0	82,072	71,544	10,527	65%	-2.33%	12.83%
2017	15.40	85,497	0	86,018	74,862	11,156	64%	-0.61%	12.97%
2018	15.67	92,972	0	91,147	80,246	10,901	66%	1.96%	11.96%
2019	17.04	94,664	0	95,910	84,714	11,196	64%	-1.32%	11.67%

Peak Demand increased from 6.51 MW in 2000 to 17.04 MW in 2019 at an average rate of 5.41% mostly due only to high annual increase of residential load over commercial and industrial loads. MWh Offtake increased from 23,276 MWh in 2000 to 94,664 MWh in 2019 at an average rate of 7.79%. Within the same period, Load Factor ranged from 41% to 66%. There was an abrupt change in consumption on 2015 due to the significant entry of spot loads, namely: Gaisano Capital, Jollibee, and Prince Hypermart.

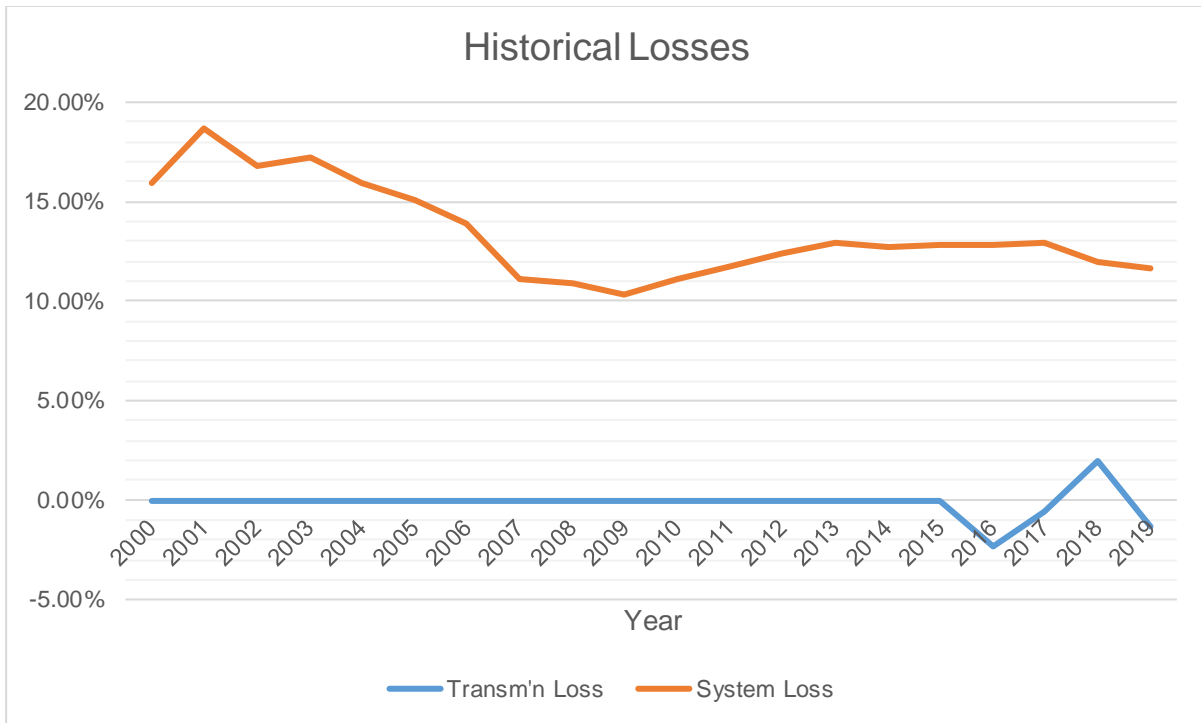


MWh Output increased from year 2000 to year 2019 at an average rate of 8.15%, while MWh System Loss decreased at a rate of 1.33% within the same period.

On previous PSPP submissions, the following erroneous historical data (attributed to human error or oversight) were corrected on this PSPP based on actual records available in the DU,

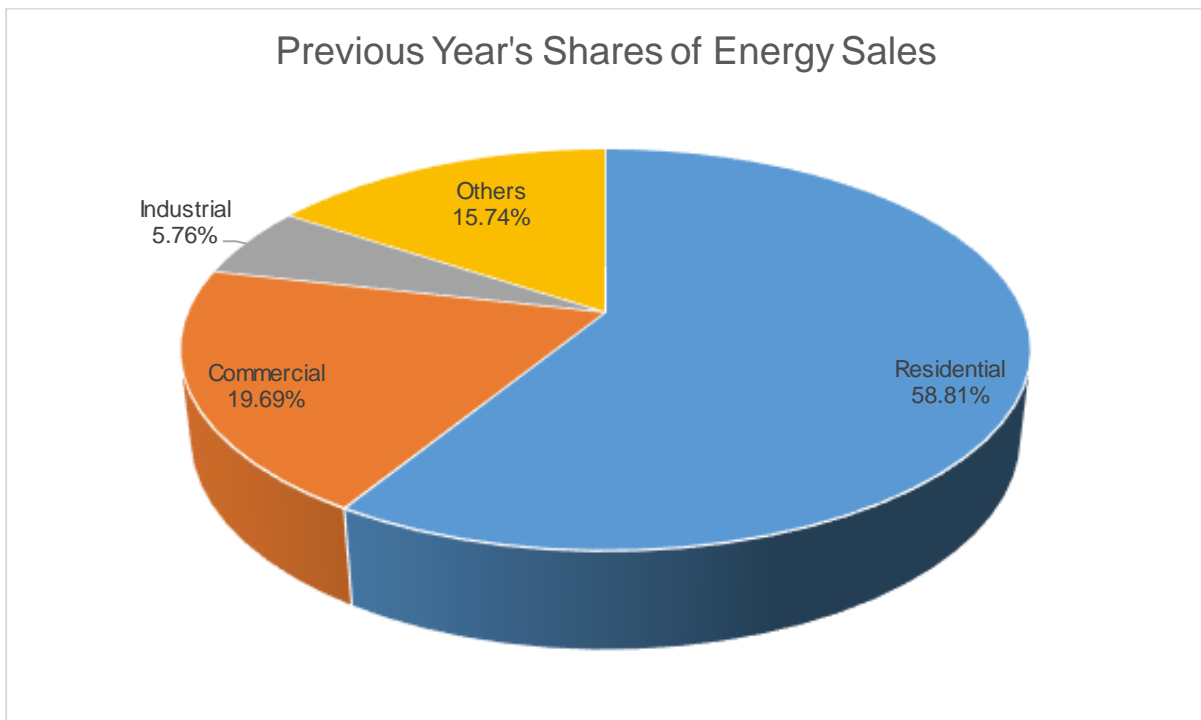
Data	Historical Year	Previous Value Inputted	Actual Value
Coincident Peak MW (Max Demand)	2016	15.298	14.423
MWH Offtake (Electricity Purchased)	2016	82,072	80,200
MWH Offtake (Electricity Purchased)	2017	86,018	85,497
MWH Offtake (Electricity Purchased)	2018	91,147	92,972
MWH Sales – Residential	2014	33,497	33,528
MWH Sales – Residential	2016	40,505	40,747
MWH Sales – Commercial	2014	11,997	12,010
MWH Sales – Commercial	2016	14,556	14,585
MWH Sales – Industrial	2014	2,859	2,878
MWH Sales – Industrial	2016	4,884	4,779
MWH Sales – Others	2014	9,123	8,936
MWH Sales – Others	2016	11,599	11,209

Actuals records or documents from SURSECO II include Monthly Engineering Reports (MER), Monthly Financial and Statistical Reports (MFSR), Coincident Peak 2016, and other supporting documents.

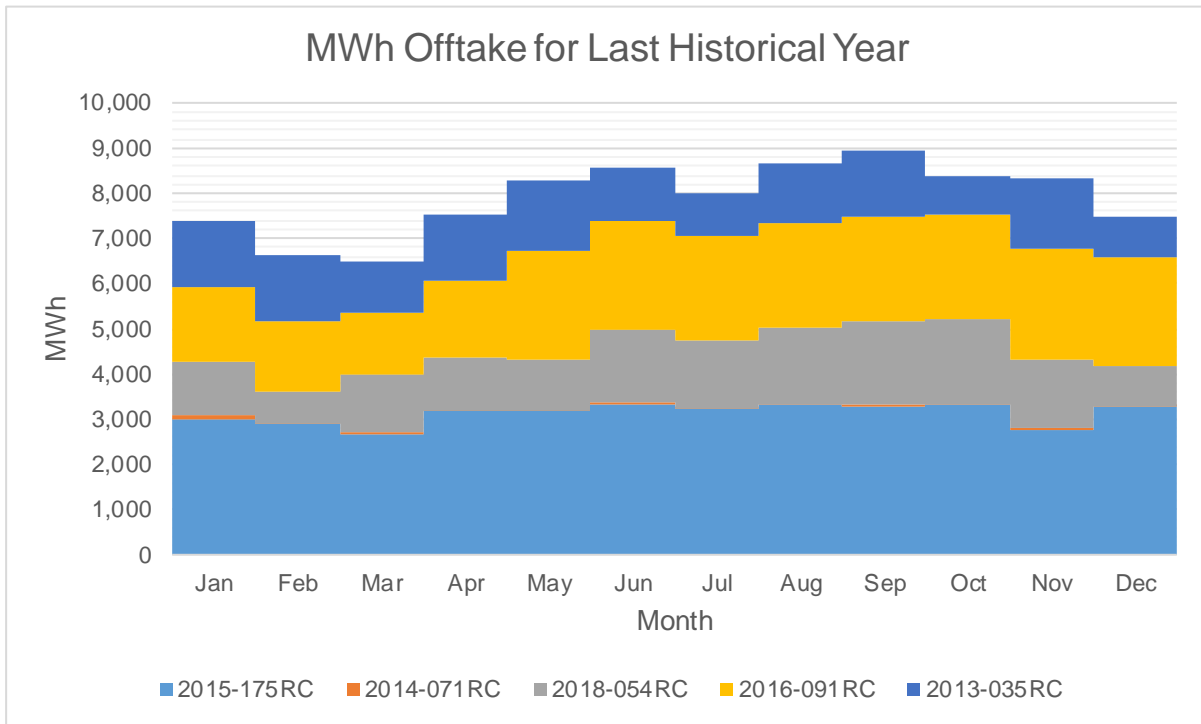


Historically, the DU's actual transmission loss cannot be accurately identified from the MWh offtakes from the PSAs and the metered energy input since most DUs and generating facilities in Mindanao are connected in one grid. Excess nominations by other DUs are taken by DUs with lacking nominations. This is evident as in SURSECO II's case, there are months where the total MWh offtakes from the PSAs are less than the metered energy input.

On SURSECO II's distribution system, System Loss peaked at 18.68% on year 2001 on unidentified causes. As the system improved on proceeding years, the current system loss is now at 11.67%.

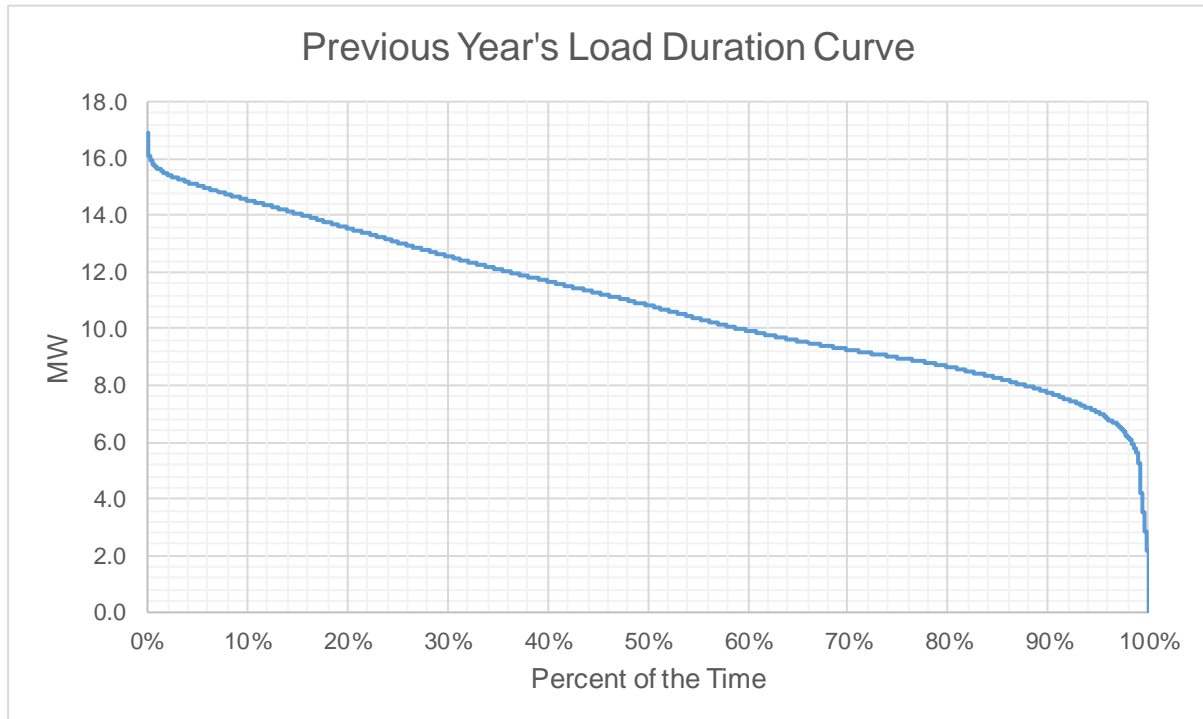


Residential customers account for the bulk of energy sales at 58.81% due to the high number of connections. In contrast, Industrial customers accounted for only 5.76% of energy sales due to the low number of connections despite its high energy consumption per connection.

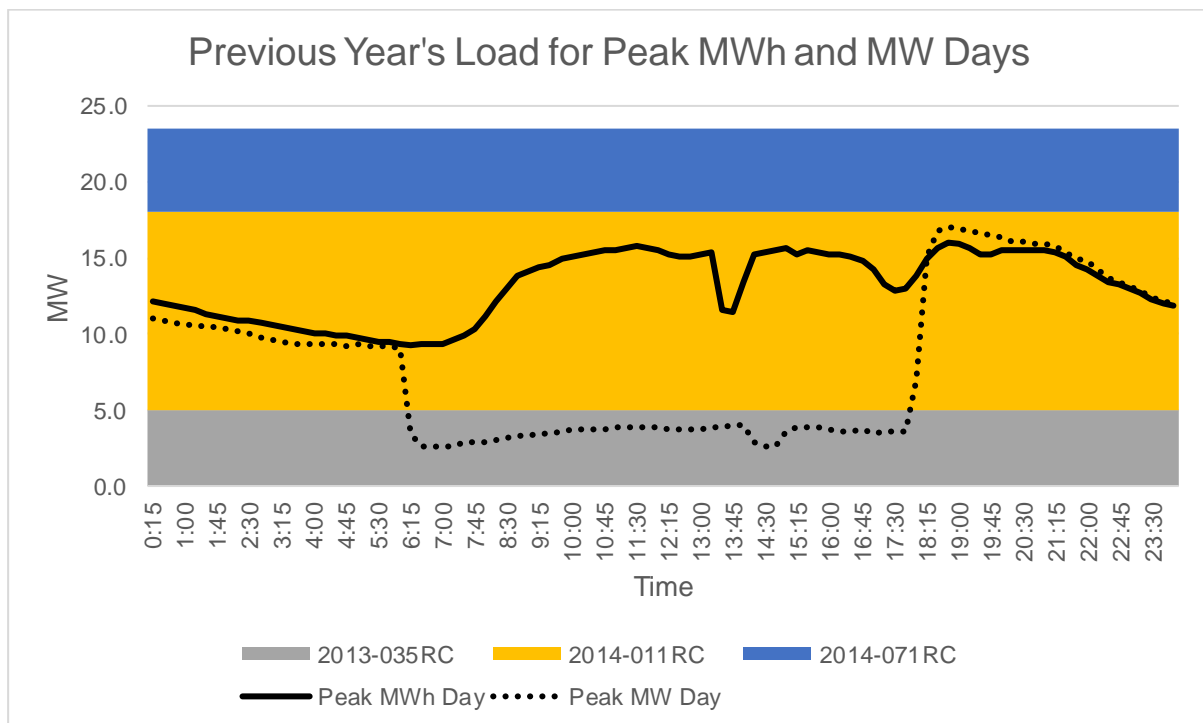


For 2019, the total Offtake for the last historical year is lower than the quantity stipulated in the PSA. The PSA with FDC Misamis Power Corporation (base plant) accounts for the bulk of MWh Offtake.

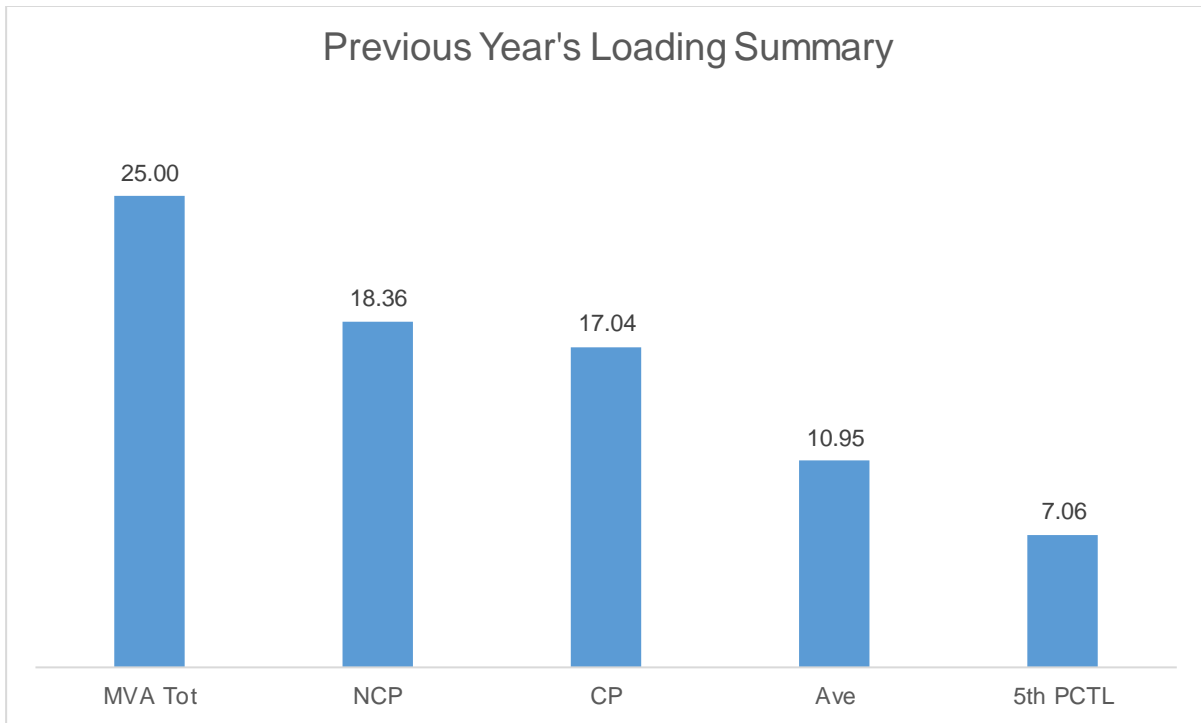
## Previous Year's Load Profile



Based on the Load Duration Curve, the minimum load is 7.06 MW (fifth percentile load) and the maximum load is 17.04 MW for the last historical year.



Peak MW occurred on 8/17/2019, usually due to hot season. Peak daily MWh would occur around 6:00 PM, peak hour for largely residential loads. As shown in the Load Curves, the available supply is higher than the Peak Demand.



The Non-coincident Peak Demand is 18.36 MW, which is around 75.94% of the total substation capacity of 25 MVA at an average overall power factor of 96.70%. The load factor or the ratio between the Average Load of 10.95 MW and the Non-coincident Peak Demand is 60% of. A safe estimate of the true minimum load is the fifth percentile load of 7.06 MW which is 38.45% of the Non-coincident Peak Demand.

Metering Point	Substation MVA	Substation Peak MW
Madrid (M1)	5	5.127
Cagwait (M2)	5	3.469
Tandag (M3)	10	7.672
Lianga (M4)	5	2.092

The substations loaded at above 70% are Madrid SS (M1) and Tandag SS (M3). This loading problem will be solved by construction of additional substation to transfer load from the existing substations (as is the actual case for both Madrid SS and Tandag SS).

## 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	15.98	23.46	0.00	0.000		147%	147%	7.48
	Feb	14.03	23.46	0.00	0.000		167%	167%	9.43
	Mar	14.48	23.46	0.00	0.000		162%	162%	8.99
	Apr	15.45	23.46	0.00	0.000		152%	152%	8.01
	May	16.92	23.46	0.00	0.000		139%	139%	6.54
	Jun	17.05	23.46	0.00	0.000		138%	138%	6.41
	Jul	16.16	23.46	0.00	0.000		145%	145%	7.30
	Aug	17.84	23.46	0.00	0.000		131%	131%	5.62
	Sep	16.98	23.46	0.00	0.000		138%	138%	6.48
	Oct	16.81	23.46	0.00	0.000		140%	140%	6.65
	Nov	17.56	23.46	0.00	0.000		134%	134%	5.90
	Dec	17.32	23.46	0.00	0.000		135%	135%	6.14
2021	Jan	16.86	23.46	0.00	0.000		139%	139%	6.60
	Feb	14.81	23.46	0.00	0.000		158%	158%	8.65
	Mar	15.28	23.46	0.00	0.000		154%	154%	8.18
	Apr	16.30	23.46	0.00	0.000		144%	144%	7.16
	May	17.85	23.46	0.00	0.000		131%	131%	5.61
	Jun	17.99	23.46	0.00	0.000		130%	130%	5.47
	Jul	17.05	23.46	0.00	0.000		138%	138%	6.41
	Aug	18.83	23.46	0.00	0.000		125%	125%	4.63
	Sep	17.92	23.46	0.00	0.000		131%	131%	5.54
	Oct	17.74	23.46	0.00	0.000		132%	132%	5.72
	Nov	18.54	23.46	0.00	0.000		127%	127%	4.93
	Dec	18.28	23.46	0.00	0.000		128%	128%	5.18



		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Retail Electricity Suppliers MW	Existing Contracting Level	Target Contracting Level	MW Surplus/Deficit
2022	Jan	17.74	23.46	0.00	0.000		132%	132%	5.72
	Feb	15.58	23.46	0.00	0.000		151%	151%	7.88
	Mar	16.07	23.46	0.00	0.000		146%	146%	7.39
	Apr	17.15	23.46	0.00	0.000		137%	137%	6.31
	May	18.78	23.46	0.00	0.000		125%	125%	4.68
	Jun	18.93	23.46	0.00	0.000		124%	124%	4.53
	Jul	17.94	23.46	0.00	0.000		131%	131%	5.52
	Aug	19.81	23.46	0.00	0.000		118%	118%	3.65
	Sep	18.85	23.46	0.00	0.000		124%	124%	4.61
	Oct	18.67	23.46	0.00	0.000		126%	126%	4.79
	Nov	19.50	23.46	0.00	0.000		120%	120%	3.96
	Dec	19.23	23.46	0.00	0.000		122%	122%	4.23
2023	Jan	18.61	23.46	0.00	0.000		126%	126%	4.85
	Feb	16.34	23.46	0.00	0.000		144%	144%	7.12
	Mar	16.86	23.46	0.00	0.000		139%	139%	6.60
	Apr	17.99	23.46	0.00	0.000		130%	130%	5.47
	May	19.70	23.46	0.00	0.000		119%	119%	3.76
	Jun	19.86	23.46	0.00	0.000		118%	118%	3.60
	Jul	18.82	23.46	0.00	0.000		125%	125%	4.64
	Aug	20.78	23.46	0.00	0.000		113%	113%	2.68
	Sep	19.77	23.46	0.00	0.000		119%	119%	3.69
	Oct	19.58	23.46	0.00	0.000		120%	120%	3.88
	Nov	20.45	23.46	0.00	0.000		115%	115%	3.01
	Dec	20.17	23.46	0.00	0.000		116%	116%	3.29
2024	Jan	19.47	23.46	0.00	0.000		121%	121%	3.99
	Feb	17.09	23.46	0.00	0.000		137%	137%	6.37
	Mar	17.63	23.46	0.00	0.000		133%	133%	5.83

		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Retail Electricity Suppliers MW	Existing Contracting Level	Target Contracting Level	MW Surplus/Deficit
	Apr	18.82	23.46	0.00	0.000		125%	125%	4.64
	May	20.61	23.46	0.00	0.000		114%	114%	2.85
	Jun	20.77	23.46	0.00	0.000		113%	113%	2.69
	Jul	19.68	23.46	0.00	0.000		119%	119%	3.78
	Aug	21.74	23.46	0.00	0.000		108%	108%	1.72
	Sep	20.68	23.46	0.00	0.000		113%	113%	2.78
	Oct	20.48	18.00	0.00	10.000		88%	137%	7.52
	Nov	21.40	18.00	0.00	10.000		84%	131%	6.60
	Dec	21.10	18.00	0.00	10.000		85%	133%	6.90
2025	Jan	20.31	18.00	0.00	10.000		89%	138%	7.69
	Feb	17.84	18.00	0.00	10.000		101%	157%	10.16
	Mar	18.40	18.00	0.00	10.000		98%	152%	9.60
	Apr	19.64	18.00	0.00	10.000		92%	143%	8.36
	May	21.50	18.00	0.00	10.000		84%	130%	6.50
	Jun	21.67	18.00	0.00	10.000		83%	129%	6.33
	Jul	20.54	18.00	0.00	10.000		88%	136%	7.46
	Aug	22.68	18.00	0.00	10.000		79%	123%	5.32
	Sep	21.58	18.00	0.00	10.000		83%	130%	6.42
	Oct	21.37	18.00	0.00	10.000		84%	131%	6.63
	Nov	22.33	18.00	0.00	10.000		81%	125%	5.67
	Dec	22.02	18.00	0.00	10.000		82%	127%	5.98
2026	Jan	21.15	18.00	0.00	10.000		85%	132%	6.85
	Feb	18.57	18.00	0.00	10.000		97%	151%	9.43
	Mar	19.16	18.00	0.00	10.000		94%	146%	8.84
	Apr	20.44	18.00	0.00	10.000		88%	137%	7.56
	May	22.39	18.00	0.00	10.000		80%	125%	5.61
	Jun	22.56	18.00	0.00	10.000		80%	124%	5.44

		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Retail Electricity Suppliers MW	Existing Contracting Level	Target Contracting Level	MW Surplus/Deficit
	Jul	21.38	18.00	0.00	10.000		84%	131%	6.62
	Aug	23.61	18.00	0.00	10.000		76%	119%	4.39
	Sep	22.47	18.00	0.00	10.000		80%	125%	5.53
	Oct	22.25	18.00	0.00	10.000		81%	126%	5.75
	Nov	23.24	18.00	0.00	10.000		77%	120%	4.76
	Dec	22.92	18.00	0.00	10.000		79%	122%	5.08
2027	Jan	21.97	18.00	0.00	10.000		82%	127%	6.03
	Feb	19.29	18.00	0.00	10.000		93%	145%	8.71
	Mar	19.90	18.00	0.00	10.000		90%	141%	8.10
	Apr	21.24	18.00	0.00	10.000		85%	132%	6.76
	May	23.26	18.00	0.00	10.000		77%	120%	4.74
	Jun	23.44	18.00	0.00	10.000		77%	119%	4.56
	Jul	22.21	18.00	0.00	10.000		81%	126%	5.79
	Aug	24.53	18.00	0.00	10.000		73%	114%	3.47
	Sep	23.34	18.00	0.00	10.000		77%	120%	4.66
	Oct	23.12	18.00	0.00	10.000		78%	121%	4.88
	Nov	24.15	18.00	0.00	10.000		75%	116%	3.85
	Dec	23.81	18.00	0.00	10.000		76%	118%	4.19
2028	Jan	22.78	18.00	0.00	10.000		79%	123%	5.22
	Feb	20.00	18.00	0.00	10.000		90%	140%	8.00
	Mar	20.63	18.00	0.00	10.000		87%	136%	7.37
	Apr	22.02	18.00	0.00	10.000		82%	127%	5.98
	May	24.11	18.00	0.00	10.000		75%	116%	3.89
	Jun	24.30	18.00	0.00	10.000		74%	115%	3.70
	Jul	23.03	18.00	0.00	10.000		78%	122%	4.97
	Aug	25.43	18.00	0.00	10.000		71%	110%	2.57
	Sep	24.20	18.00	0.00	10.000		74%	116%	3.80

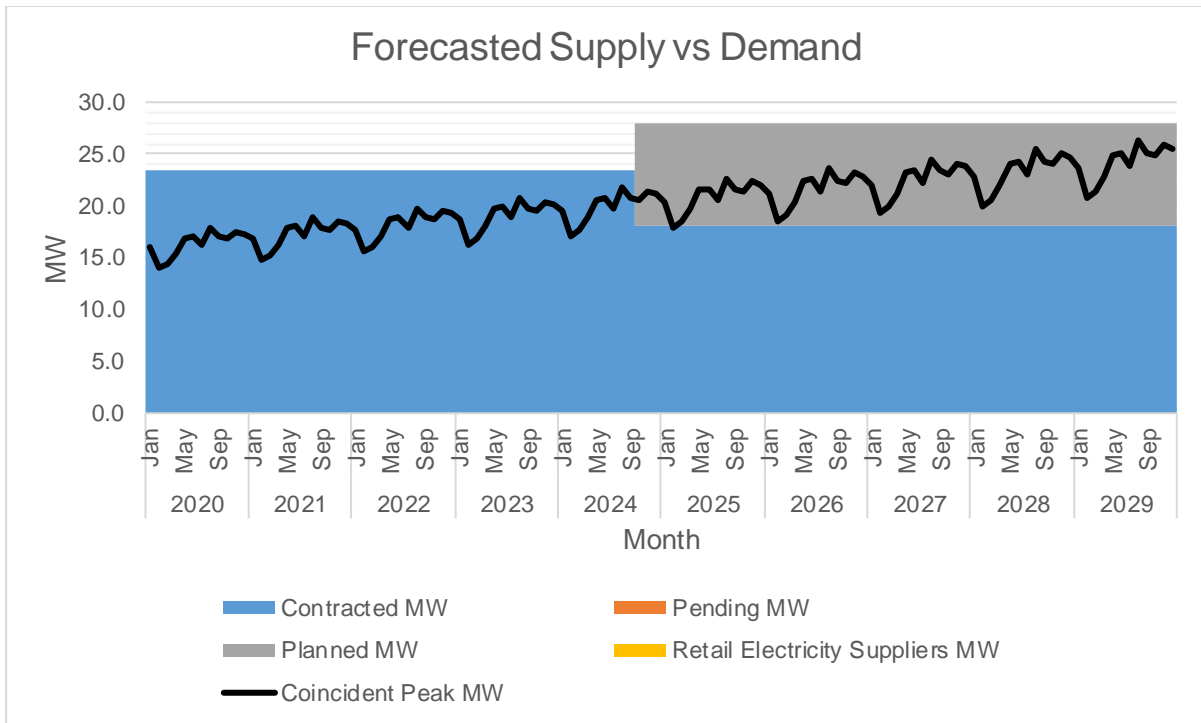
		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Retail Electricity Suppliers MW	Existing Contracting Level	Target Contracting Level	MW Surplus/Deficit
	Oct	23.97	18.00	0.00	10.000		75%	117%	4.03
	Nov	25.03	18.00	0.00	10.000		72%	112%	2.97
	Dec	24.69	18.00	0.00	10.000		73%	113%	3.31
2029	Jan	23.57	18.00	0.00	10.000		76%	119%	4.43
	Feb	20.70	18.00	0.00	10.000		87%	135%	7.30
	Mar	21.35	18.00	0.00	10.000		84%	131%	6.65
	Apr	22.79	18.00	0.00	10.000		79%	123%	5.21
	May	24.95	18.00	0.00	10.000		72%	112%	3.05
	Jun	25.15	18.00	0.00	10.000		72%	111%	2.85
	Jul	23.84	18.00	0.00	10.000		76%	117%	4.16
	Aug	26.32	18.00	0.00	10.000		68%	106%	1.68
	Sep	25.04	18.00	0.00	10.000		72%	112%	2.96
	Oct	24.80	18.00	0.00	10.000		73%	113%	3.20
	Nov	25.91	18.00	0.00	10.000		69%	108%	2.09
	Dec	25.55	18.00	0.00	10.000		70%	110%	2.45

For SURSECO II, in general, there is no trend on Monthly Peak Demand for any historical year. It is observed that the Monthly Peak Demand would rise and fall within the 12 months of a year. Forecasting the peak demand using monthly data would result in a monthly increasing or decreasing trend (at a fast rate), which is unlikely in SURSECO II's case. The Annual Peak Demand, however, has a general increasing trend for each proceeding year which is suitable for forecasting. The Annual Peak Demand was forecasted using Cubic & Logarithmic Trending Model (best fit among 56 forecasting models tested, see results on next page).

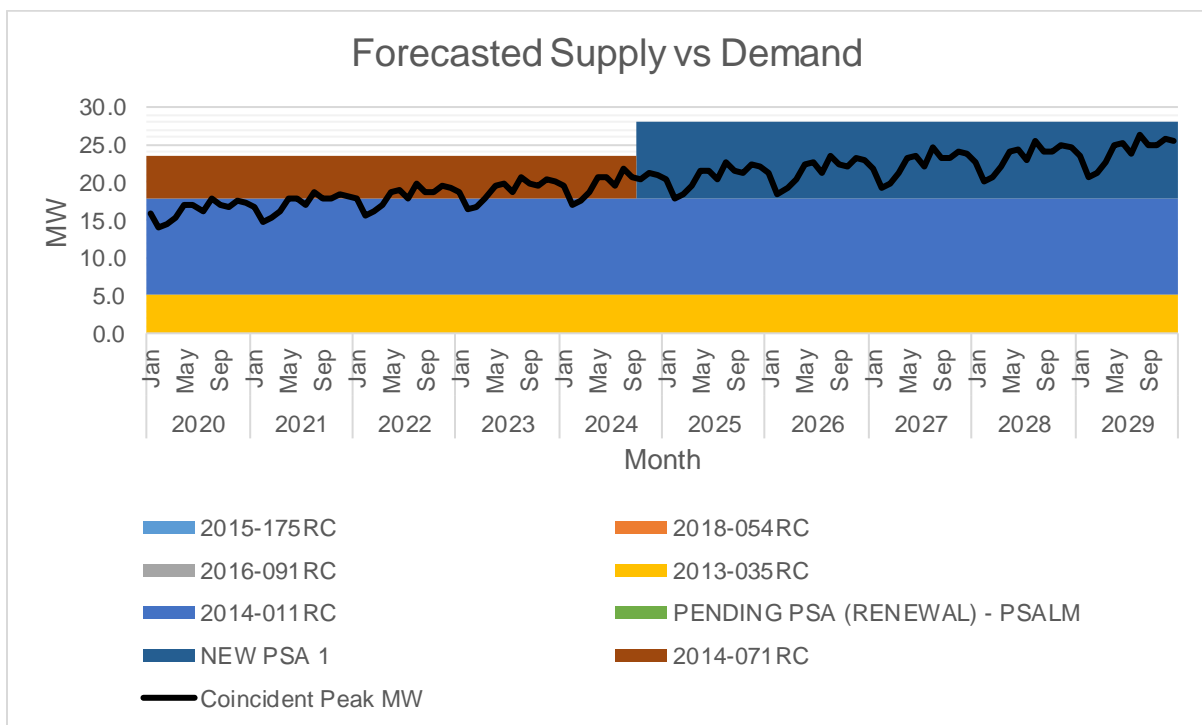
Data	Forecasting Model	Model Description	VALIDITY TEST					ACCURACY TEST	Annual Average Growth Rate				
			R <sup>2</sup> (>0.99)	Adjusted R <sup>2</sup> (>0.99)	Coefficient Value		T-Statistic (>2 or <-2)	P-Value (<0.1)	MAPE (<5%)	Actual Data	1st 5 Year Forecast		6th-15th Year Forecast
Coincident Peak	$Y = d(\ln t)^3 + b \ln t + a$	Cubic & Logarithmic Trending	0.995	0.994	d	0.6598	17.04	0.000	0.56%	4.86%	5.22%	3.47%	Passed
					b	(0.6560)	(3.58)	0.016					
					a	12.2868	91.10	0.000					

Peak Demand is expected to grow at an average rate of 4.05% annually on a 15-year forecast.

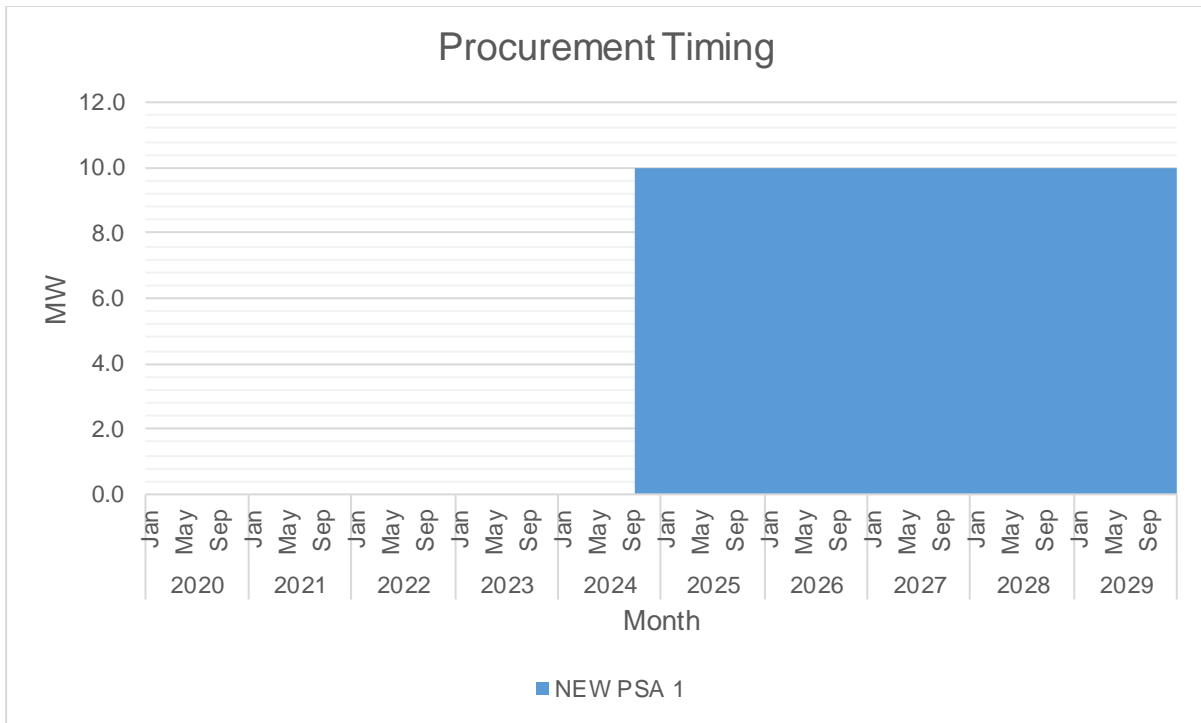
From the historical data, as similar pattern was observed, the Peak Demand is assumed to occur on the month of August due to hot season. Monthly Peak Demand is at its lowest on the month of February due to rainy season.



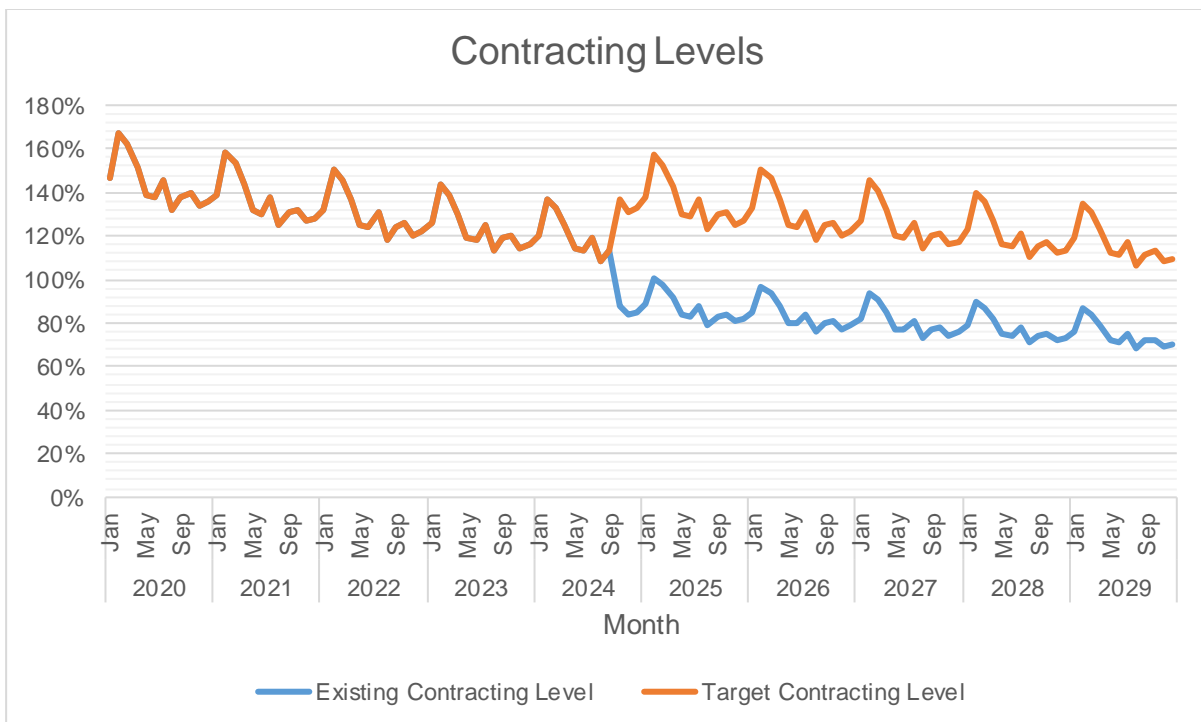
The available supply is generally above the Peak Demand in preparation to forecasted future loads and with consideration to the long procurement period of new Power Supply.



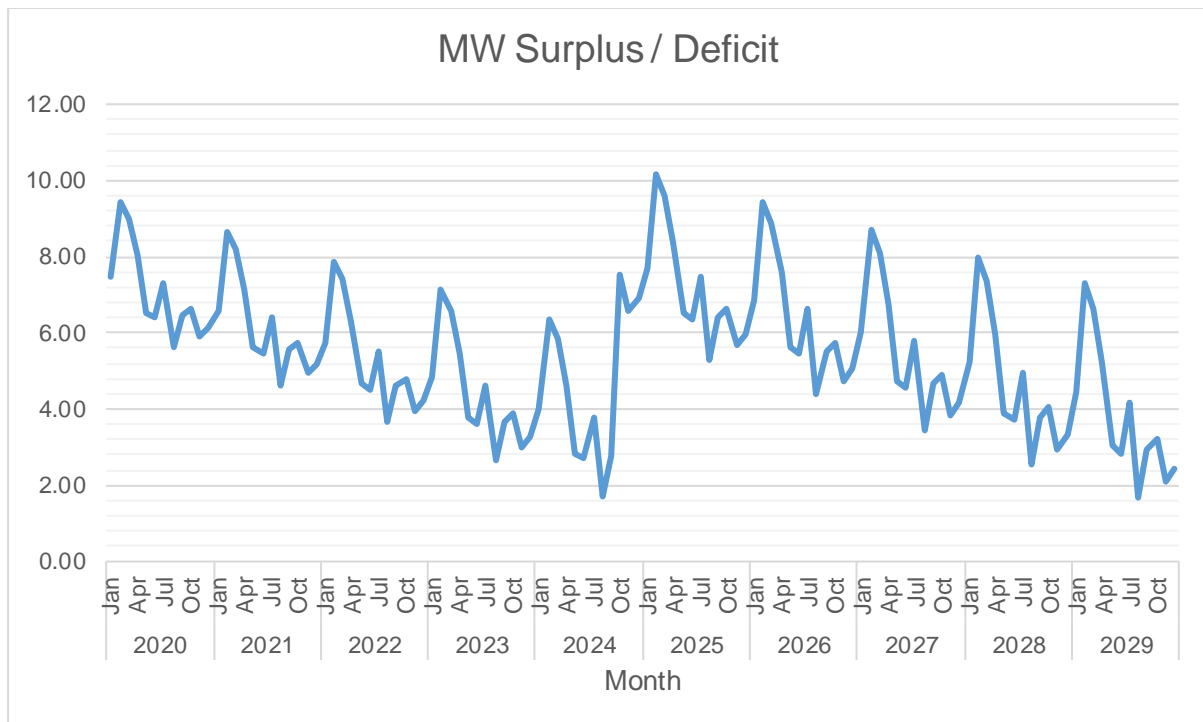
Of the available supply, the largest is 13 MW from GN Power Kauswagan Ltd. This is followed by 5 MW from Therma South, Inc. PSAs between FDC Misamis Power Corporation and SMC Consolidated Power Corporation are suspended (no power drawn) pending approval from ERC for legal termination as per Supreme Court decision on PSAs which did not undergone CSP starting 2015. PSA with PSALM will expire this December 25, 2020, however, due for ERC approval for renewal of contract from December 26, 2020 to December 25, 2023.



The first wave of supply procurement will be for 10 MW planned to be available by the month of October 2024.



Currently, there is surplus of contract demand by 44% on average for 2020. The highest target contracting level is 167% which is expected to occur on February 2020 (lowest peak month). The lowest target contracting level is 106% which is expected to occur on August 2029.



Currently, there is surplus of contract demand by 7.08 MW on average for 2020. The highest surplus is 9.43 MW which is expected to occur on the month of February 2020 (lowest peak month). The lowest surplus (planned PSA included) is 1.68 MW which is expected to occur on the month of August 2029.

		MWh Offtake	MWh Output	MWh System Loss	Transmission Loss	System Loss
2020	Jan	9,866	6,829	946	21.19%	12.17%
	Feb	9,866	6,153	786	29.68%	11.32%
	Mar	8,912	6,045	766	23.58%	11.24%
	Apr	9,866	7,166	902	18.22%	11.18%
	May	9,548	7,943	1,001	6.33%	11.19%
	Jun	9,866	8,362	1,052	4.58%	11.17%
	Jul	9,548	7,806	979	7.99%	11.14%
	Aug	9,866	8,162	1,022	6.91%	11.13%
	Sep	9,866	8,379	1,051	4.43%	11.14%
	Oct	9,548	8,041	992	5.40%	10.98%
	Nov	9,866	7,958	963	9.57%	10.80%
	Dec	9,548	7,444	888	12.74%	10.66%
2021	Jan	9,866	7,241	944	17.03%	11.54%
	Feb	9,866	6,522	782	25.96%	10.71%
	Mar	8,912	6,409	761	19.54%	10.62%
	Apr	9,866	7,602	892	13.91%	10.50%
	May	9,548	8,425	991	1.38%	10.52%
	Jun	10,796	8,870	1,041	8.20%	10.50%
	Jul	9,548	8,280	969	3.13%	10.48%
	Aug	9,866	8,657	1,012	1.99%	10.47%
	Sep	10,796	8,883	1,044	8.05%	10.51%
	Oct	9,548	8,525	984	0.41%	10.35%
	Nov	9,866	8,439	953	4.80%	10.15%
	Dec	9,548	7,894	878	8.13%	10.01%
2022	Jan	9,866	7,649	927	13.07%	10.81%



		MWh Offtake	MWh Output	MWh System Loss	Transmission Loss	System Loss
	Feb	9,866	6,887	766	22.43%	10.00%
	Mar	8,912	6,769	744	15.70%	9.90%
	Apr	9,866	8,033	866	9.80%	9.74%
	May	10,448	8,903	963	5.58%	9.76%
	Jun	10,796	9,372	1,012	3.82%	9.74%
	Jul	10,448	8,748	942	7.25%	9.72%
	Aug	10,796	9,146	985	6.16%	9.72%
	Sep	10,796	9,381	1,019	3.66%	9.80%
	Oct	10,448	9,003	960	4.64%	9.64%
	Nov	9,866	8,915	926	0.26%	9.41%
	Dec	9,548	8,338	852	3.75%	9.27%
2023	Jan	9,866	8,052	897	9.30%	10.02%
	Feb	9,866	7,249	737	19.06%	9.23%
	Mar	8,912	7,124	715	12.04%	9.12%
	Apr	9,866	8,459	826	5.88%	8.90%
	May	11,168	9,375	919	7.82%	8.93%
	Jun	11,540	9,868	967	6.11%	8.92%
	Jul	11,168	9,211	901	9.46%	8.91%
	Aug	11,540	9,630	941	8.40%	8.90%
	Sep	11,540	9,874	979	5.95%	9.02%
	Oct	11,168	9,475	921	6.91%	8.86%
	Nov	10,796	9,385	883	4.89%	8.60%
	Dec	10,448	8,778	811	8.21%	8.46%
2024	Jan	9,866	8,451	854	5.68%	9.18%
	Feb	9,866	7,606	698	15.84%	8.40%
	Mar	8,912	7,475	676	8.54%	8.29%
	Apr	9,866	8,882	774	2.13%	8.01%
	May	11,888	9,842	862	9.96%	8.05%
	Jun	12,284	10,359	908	8.28%	8.06%
	Jul	11,168	9,668	846	5.85%	8.05%
	Aug	11,540	10,109	884	4.75%	8.04%
	Sep	12,284	10,361	924	8.13%	8.19%
	Oct	12,420	9,942	867	12.96%	8.02%
	Nov	12,834	9,850	827	16.81%	7.75%
	Dec	12,420	9,214	758	19.71%	7.60%
2025	Jan	12,834	8,847	800	24.83%	8.29%
	Feb	12,834	7,960	648	32.92%	7.53%
	Mar	11,592	7,823	627	27.10%	7.43%
	Apr	12,834	9,301	710	22.00%	7.09%
	May	12,420	10,306	791	10.65%	7.13%
	Jun	12,834	10,845	835	8.99%	7.15%
	Jul	12,420	10,121	779	12.24%	7.15%
	Aug	12,834	10,583	813	11.21%	7.14%
	Sep	12,834	10,843	857	8.84%	7.32%
	Oct	12,420	10,405	802	9.77%	7.15%
	Nov	12,834	10,310	759	13.75%	6.85%
	Dec	12,420	9,645	693	16.76%	6.70%
2026	Jan	12,834	9,240	735	22.28%	7.37%
	Feb	12,834	8,311	590	30.64%	6.63%
	Mar	11,592	8,168	570	24.62%	6.53%

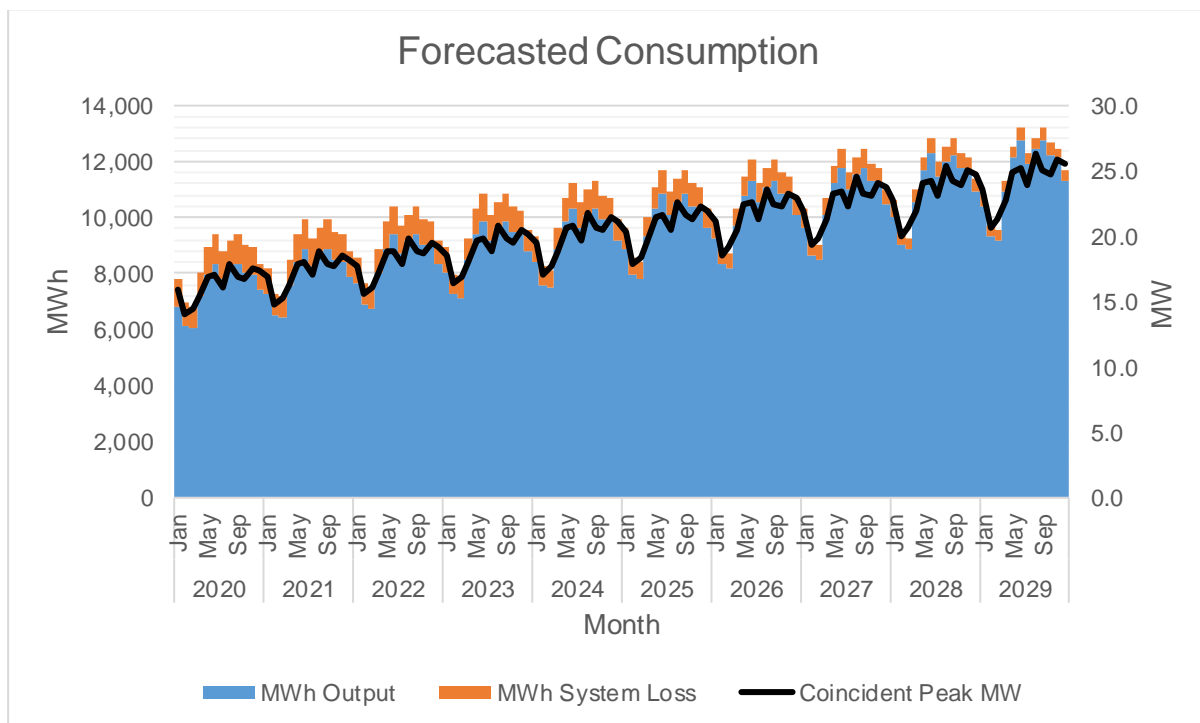
		MWh Offtake	MWh Output	MWh System Loss	Transmission Loss	System Loss
	Apr	12,834	9,716	635	19.35%	6.13%
	May	12,420	10,765	709	7.61%	6.18%
	Jun	13,578	11,326	751	11.05%	6.22%
	Jul	12,420	10,569	702	9.25%	6.23%
	Aug	12,834	11,053	731	8.19%	6.20%
	Sep	13,578	11,320	777	10.91%	6.42%
	Oct	13,140	10,864	724	11.81%	6.25%
	Nov	12,834	10,767	679	10.82%	5.93%
	Dec	12,420	10,073	616	13.93%	5.77%
2027	Jan	12,834	9,629	661	19.82%	6.43%
	Feb	12,834	8,659	524	28.45%	5.70%
	Mar	11,592	8,509	505	22.24%	5.60%
	Apr	12,834	10,128	551	16.80%	5.16%
	May	13,140	11,221	617	9.91%	5.21%
	Jun	13,578	11,804	656	8.24%	5.26%
	Jul	13,140	11,014	614	11.51%	5.28%
	Aug	13,578	11,519	638	10.47%	5.25%
	Sep	13,578	11,794	686	8.09%	5.50%
	Oct	13,140	11,318	637	9.02%	5.33%
	Nov	13,578	11,219	589	13.04%	4.99%
	Dec	12,420	10,497	530	11.21%	4.81%
2028	Jan	12,834	10,016	579	17.45%	5.46%
	Feb	12,834	9,005	449	26.33%	4.75%
	Mar	11,592	8,848	433	19.94%	4.66%
	Apr	12,834	10,536	457	14.34%	4.16%
	May	13,140	11,673	514	7.25%	4.22%
	Jun	14,322	12,277	550	10.43%	4.29%
	Jul	13,140	11,455	516	8.89%	4.31%
	Aug	13,578	11,981	535	7.82%	4.27%
	Sep	14,322	12,264	586	10.28%	4.56%
	Oct	13,860	11,769	539	11.20%	4.38%
	Nov	13,578	11,668	489	10.47%	4.02%
	Dec	12,420	10,919	435	8.59%	3.83%
2029	Jan	12,834	10,401	488	15.16%	4.48%
	Feb	12,834	9,349	368	24.29%	3.79%
	Mar	11,592	9,185	353	17.72%	3.70%
	Apr	12,834	10,943	356	11.96%	3.15%
	May	13,860	12,123	402	9.63%	3.21%
	Jun	14,322	12,748	436	7.95%	3.30%
	Jul	13,860	11,893	411	11.23%	3.34%
	Aug	14,322	12,440	422	10.19%	3.28%
	Sep	14,322	12,730	475	7.80%	3.60%
	Oct	13,860	12,217	433	8.74%	3.42%
	Nov	13,578	12,114	380	7.99%	3.04%
	Dec	13,140	11,337	331	11.20%	2.84%

MWh Input was forecasted using Quadratic & Logarithmic Trending (best fit among 56 forecasting models tested)

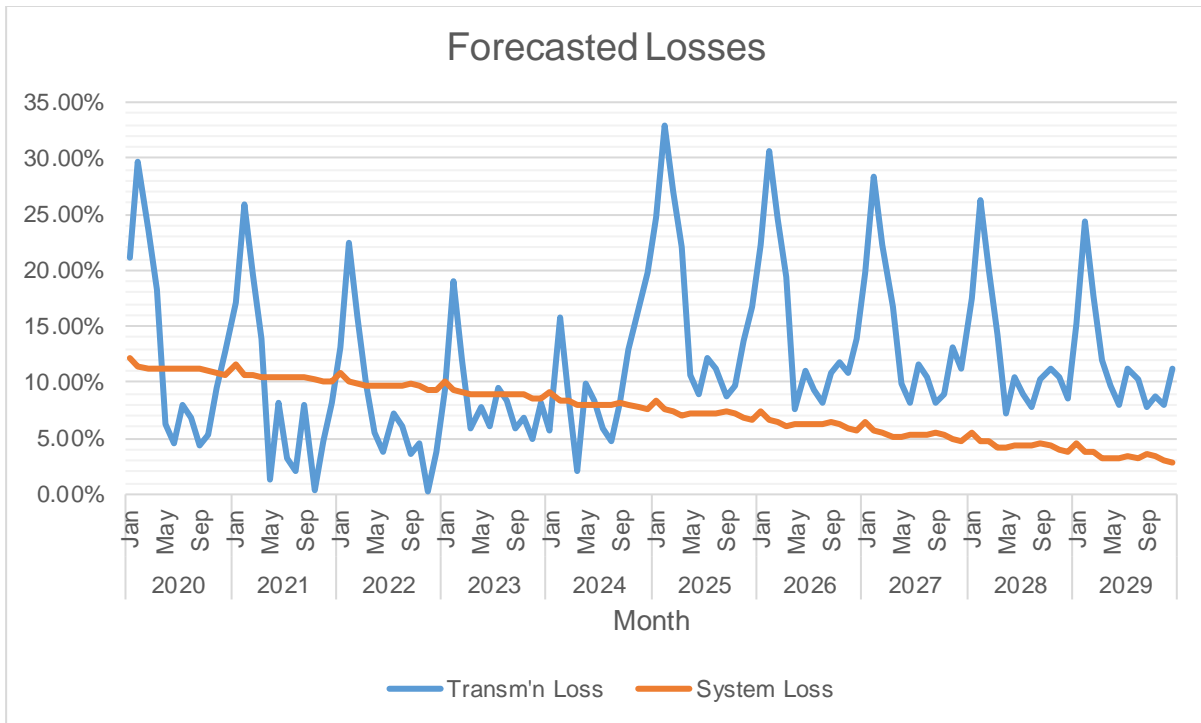
Data	Forecasting Model	Model Description	VALIDITY TEST					ACCURACY TEST	Annual Average Growth Rate				
			R <sup>2</sup> >0.99	Adjusted R <sup>2</sup> >0.99	Coefficient Value		T-Statistic (>2 or <-2)	P-Value (<0.1)	MAPE (<5%)	Actual Data	1st 5 Year Forecast		6th-15th Year Forecast
MWh Input	$Y = c(\ln t)^2 + b \ln t + a$	Quadratic & Logarithmic Trending	0.993	0.990	d	13,273.8155	10.47	0.000	1.33%	7.95 %	4.85 %	2.77 %	Passed
					b	(8,818.0999)	(3.13)	0.026					
					a	56,927.0701	40.20	0.000					

The assumed average load factor is 65.32%. MWh Offtake was calculated such that it is greater than MWh Input, considering Minimum Energy Offtake (MEOT) from PSAs. In here, transmission loss is the difference of MWh Offtake from PSAs and MWh Input.

System Loss was calculated from forecasted MWh Input and forecasted MWh Output. Due to incomplete distribution system loss segregation (DSLS) data, the system loss cannot be segregated further to technical and non-technical losses. Based on the forecasted data, the Distribution System can adequately convey electricity to customers.



MWh Output was expected to grow at an average rate of 4.42% or 5,142.13MWh annually.



In here, transmission loss is the difference of MWh Offtake from PSAs (considering MEOT) and MWh Input. System Loss is expected to range from 12.17% to 2.84% over the 10-year forecast.

## Power Supply

Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
2015-175RC	Base	FDC Misamis Power Corporation	4.00	35,040	10/14/2016	10/13/2026
2014-071RC	Peaking	King Energy Generation, Inc.	3.00	96	9/26/2014	9/25/2024
2018-054RC	Base	Power Sector Assets and Liabilities Management Corporation	0.00	0	12/26/2019	12/25/2020
2016-091RC	Base	SMC Consolidated Power Corporation	2.00	17,520	12/26/2016	12/25/2026
2013-035RC	Base	Therma South, Inc.	2.00	17,520	9/18/2015	9/17/2040
2014-011RC	Base	GN Power Kauswagan Ltd.	9.75	85,410	12/26/2019	12/25/2039

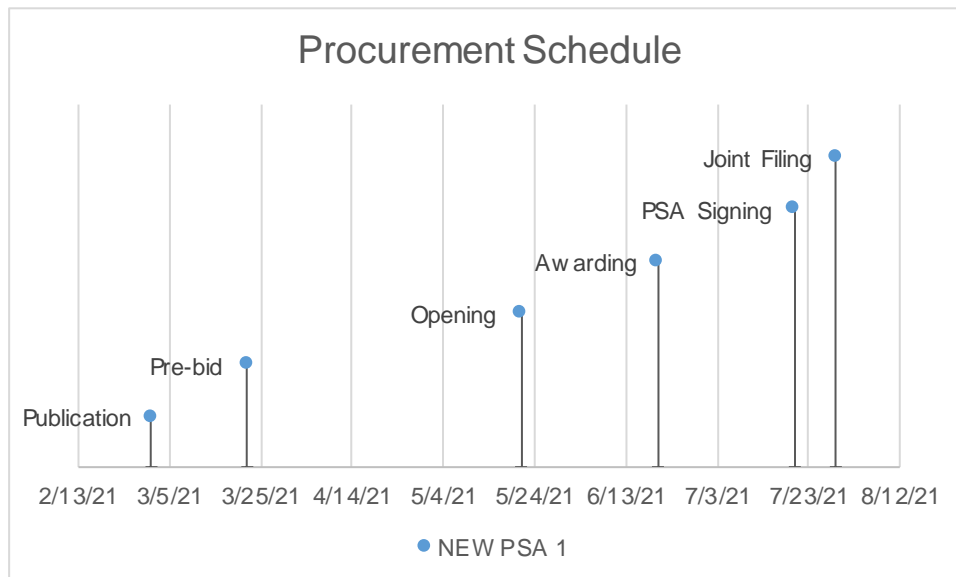
1. The PSA with FDC Misamis Power Corporation filed with ERC under Case No. 2015-175RC was procured through Direct Negotiation. It was selected to provide for base requirements due to power supply deficiency. Historically, the utilization of the PSA is 42.83% for CY 2019. The actual billed overall monthly charge under the PSA ranged from 6.4565 P/kWh to 7.4477 P/KWh (VAT inclusive) in the same period.
2. The PSA with King Energy Generation, Inc. filed with ERC under Case No. 2014-071RC was procured through Direct Negotiation. It was selected to provide for peaking requirements due to power supply deficiency. Historically, the utilization of the PSA is 1.50% for CY 2019. The actual billed overall monthly charge under the PSA ranged from 134.6886 P/kWh to 1,030.7251 P/KWh (VAT inclusive) in the same period.
3. The PSA with SMC Consolidated Power Corporation filed with ERC under Case No. 2016-091RC was procured through Direct Negotiation. It was selected to provide for base requirements due to power supply deficiency. Historically, the utilization of the PSA is 57.52% for CY 2019. The actual billed overall monthly charge under the PSA ranged from 7.0018 P/kWh to 10.5117 P/KWh (VAT inclusive) in the same period.
4. The PSA with Therma South, Inc. filed with ERC under Case No. 2013-035RC was procured through Direct Negotiation. It was selected to provide for base requirements due to power supply deficiency. Historically, the utilization of the PSA is 35.08% for CY 2019. The actual billed overall monthly charge under the PSA ranged from 6.1315 P/kWh to 8.3997 P/KWh (VAT inclusive) in the same period.
5. The PSA with GN Power Kauswagan Ltd. filed with ERC under Case No. 2014-011RC was procured through CSP. It was selected to provide for base requirements due to power supply deficiency. The actual billed overall monthly charge under the PSA is 6.0140 P/kWh (VAT inclusive) for the Month of January 2020.

6. The PSA with Power Sector Assets and Liabilities Management Corporation filed with ERC under Case No. 2018-054RC is a non-firm contract based on the CSEE provided. It is renewed annually with new CSEE pending approval by the ERC. Currently, a renewal of the contract is being filed under new ERC case number, for supply of energy this 2020.

Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
PENDING PSA (RENEWAL) - PSALM	Base	Power Sector Assets and Liabilities Management Corporation	0.00	0	12/26/2020	12/25/2023

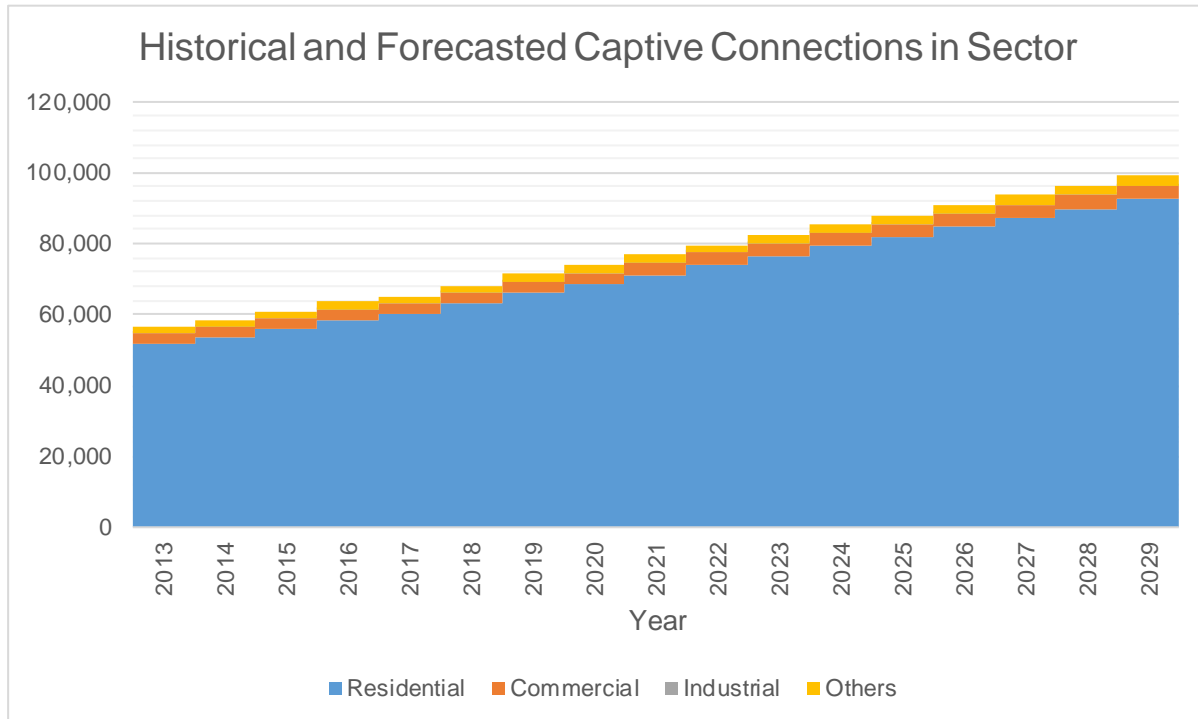
The PSA with Power Sector Assets and Liabilities Management Corporation filed with ERC under Case No. 2018-054RC is a non-firm contract based on the CSEE provided which will expire this December 25, 2020. A new CSEE renewal is being filed to ERC for MW supply from December 26, 2020 to December 25, 2023.

	NEW PSA 1
Type	Base
Minimum MW	4.00
Minimum MWh/yr	35,040
PSA Start	10/26/2024
PSA End	10/25/2034
Publication	3/1/2021
Pre-bid	3/22/2021
Opening	5/21/2021
Awarding	6/20/2021
PSA Signing	7/20/2021
Joint Filing	7/29/2021



For the procurement of 10 MW of Renewable Energy Supply, to supplement forecasted future demand and RPS (Renewable Portfolio Standard) requirements, is planned to be available on October 2024. The first publication or launch of CSP will be on March 2021. Joint Filing is planned on July 2021, 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 an average rate of 3.10% annually. Said customer class is expected to account for the bulk of energy consumption, 60.55% on average of the total consumption annually.

On previous PSPP submissions, the following erroneous historical data (attributed to human error or oversight) were corrected on this PSPP based on actual records available in the DU,

Data	Historical Year	Previous Value Inputted	Actual Value
Number of Captive Customer Connections - Residential	2016	58,595	58,599
Number of Captive Customer Connections - Commercial	2016	2,975	2,970
Number of Captive Customer Connections - Others	2016	1,876	1,883

Actuals values were based on record from SURSECO II Monthly Financial and Statistical Reports (MFSR) 2016.