

Power Supply Procurement Plan 2020

Misamis Oriental 1 Rural Electric Services Cooperative Inc. (MORESCO-1)

Prepared By:

Fatima D. Alemania-Tan
Energy Trading Chief

Noted by:

Engr. Agustin Noriel B. Gabule
OIC-CPD Manager

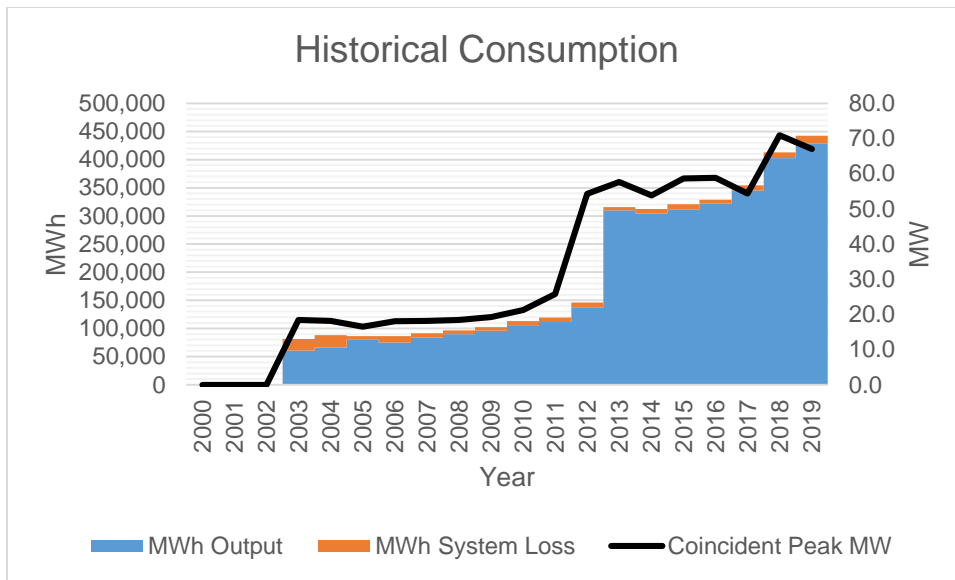
Approved by:

Engr. Jovel B. Ubayubay, PEE
General Manager

Historical Consumption Data

	Coincident Peak MW	MWh Offtake	MWh Input	MWh Output	MWh System Loss	Load Factor	Discrepancy	Transm'n Loss	System Loss
2003	18.47	81,604	81,604	61,123	20,480	50%	0.00%	0.00%	25.10%
2004	18.12	88,177	88,177	65,693	22,484	56%	0.00%	0.00%	25.50%
2005	16.55	86,186	86,186	80,821	5,743	59%	0.44%	0.00%	6.66%
2006	18.07	85,841	85,841	74,866	11,333	54%	0.42%	0.00%	13.20%
2007	18.13	91,313	91,313	84,149	7,647	58%	0.53%	0.00%	8.37%
2008	18.46	96,299	96,299	89,779	6,624	60%	0.11%	0.00%	6.88%
2009	19.22	102,205	102,205	95,924	6,409	61%	0.13%	0.00%	6.27%
2010	21.22	112,679	112,679	104,540	8,359	61%	0.19%	0.00%	7.42%
2011	25.84	118,837	118,837	111,435	7,914	52%	0.43%	0.00%	6.66%
2012	54.29	145,583	145,583	137,768	8,362	31%	0.38%	0.00%	5.74%
2013	57.66	315,181	315,181	309,890	5,885	62%	0.19%	0.00%	1.87%
2014	53.83	311,945	311,945	304,048	8,208	66%	0.10%	0.00%	2.63%
2015	58.69	320,452	320,719	311,580	9,449	62%	0.10%	-0.08%	2.95%
2016	58.82	334,175	328,337	321,888	7,013	64%	0.17%	1.75%	2.14%
2017	54.40	349,512	353,264	345,273	9,260	74%	0.36%	-1.07%	2.62%
2018	70.89	412,516	411,953	402,531	10,201	66%	0.19%	0.14%	2.48%
2019	67.00	442,986	441,011	428,962	13,719	75%	0.38%	0.45%	3.11%

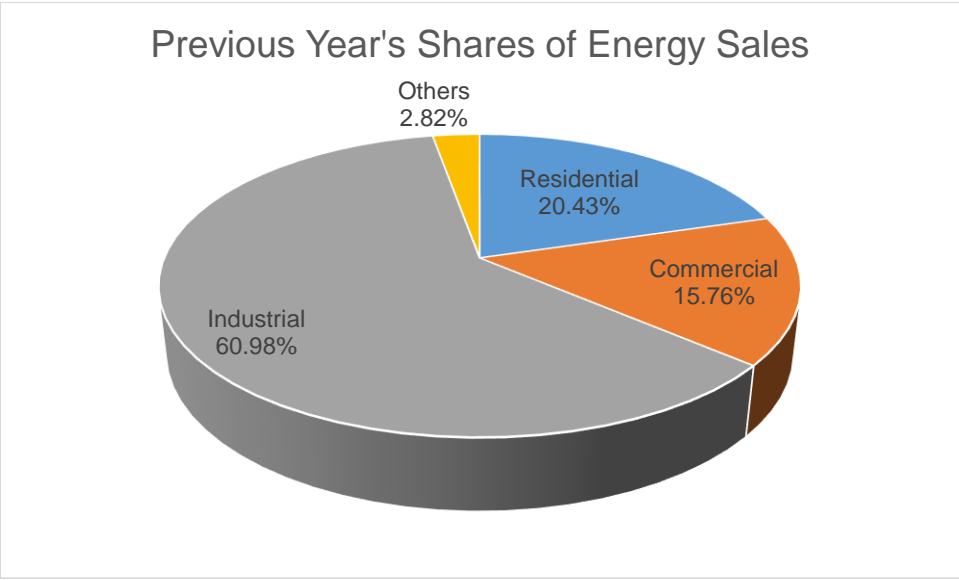
Peak Demand increased from 25.84 MW in 2011 to 54.29 MW in 2012 at a rate of 110% due to the Industrial load (HOLCIM) as new customer. MWh Offtake increased from 145,583 MWh in 2012 to 315,181 MWh in 2013 at a rate of 116% due to new industrial load is in full operation. Within the same period, Load Factor ranged from 31% to 62%.



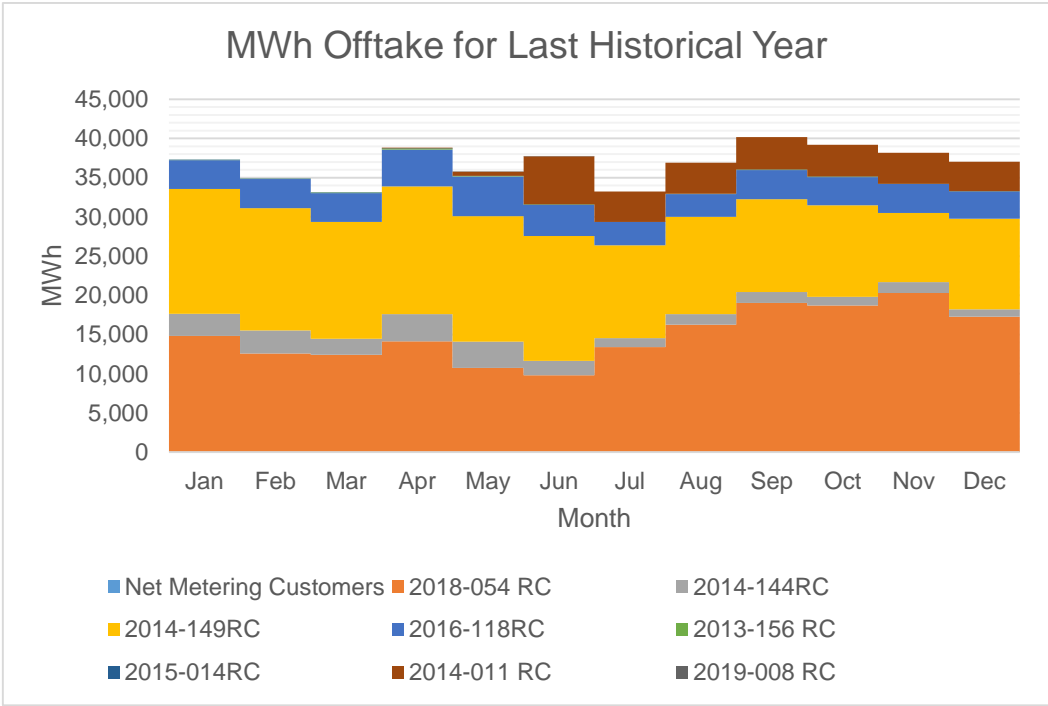
MWh Output increased from year 2012 to year 2013 at a rate of 110%, while MWh System Loss decreased at a rate of 100% within the same period.



Historically, Transmission Loss ranged from -1.17% to 1.45% while System Loss ranged from -1.87% to 25.50%. Transmission Loss peaked at 1.45% on year 2015 because during that year PSALM experience low power generation output which affected the total energy available for the Mindanao Energy requirement hence MORESCO – 1 opted to purchase energy from other IPPs thus resulting into the difference on the Plant Gate billing and NGCP Meter Quantity. System Loss peaked at 25.50% on year 2004 because during that time there is a limitation in technology making it difficult to bill customers on the proper billing cycle and during that time also meter reading is prone to error and the kWh meter is prone to tampering.

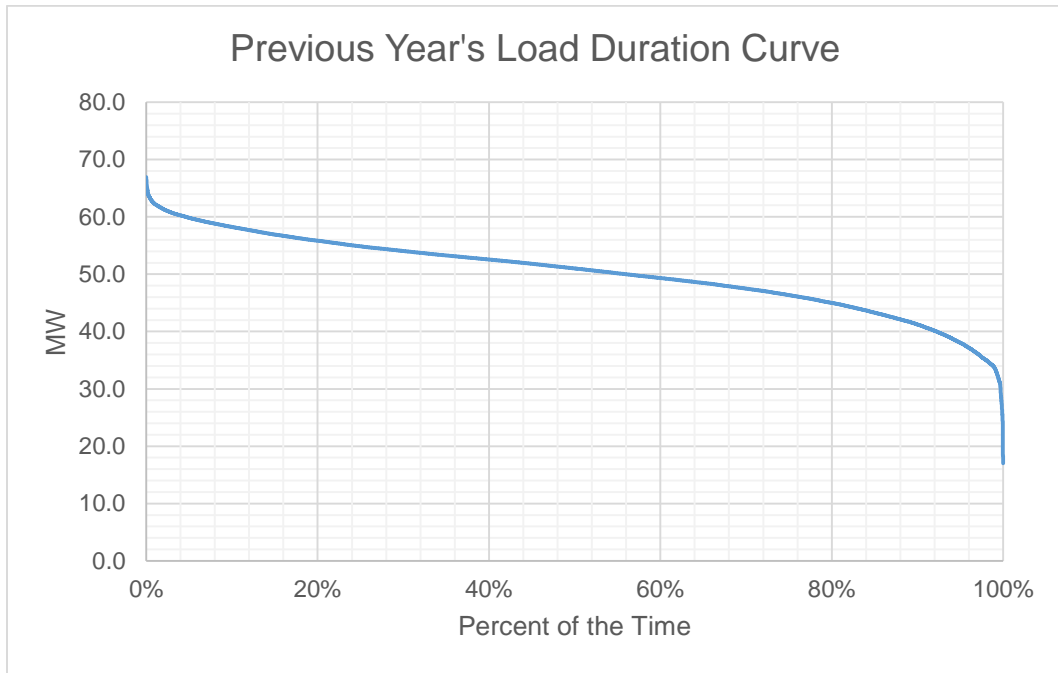


Industrial customers account for the bulk of energy sales at 60.98 % despite of the low number of connections. In contrast, Residential customers accounted for only 20.43% of energy sales despite of the high number of connections. These figures are expected to drastically change in the following years due to rapid development within the franchise particularly on the Cagayan de Oro – Iligan Industrial Corridor.

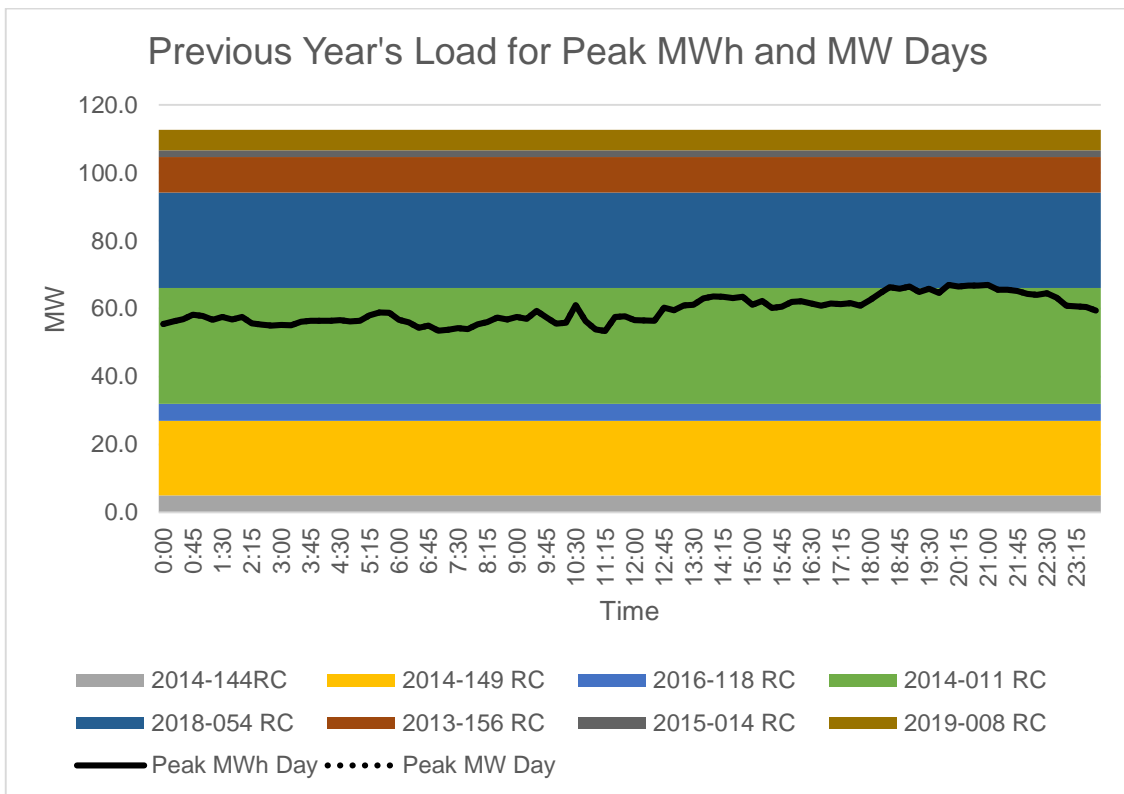


The total Offtake for the last historical year (2019) is lower than the quantity stipulated in the PSA. The PSA with 2018-054 RC (National Power Corporation) and 2014-149 RC (FDC Misamis Power Corporation) accounts for the bulk of MWh Offtake.

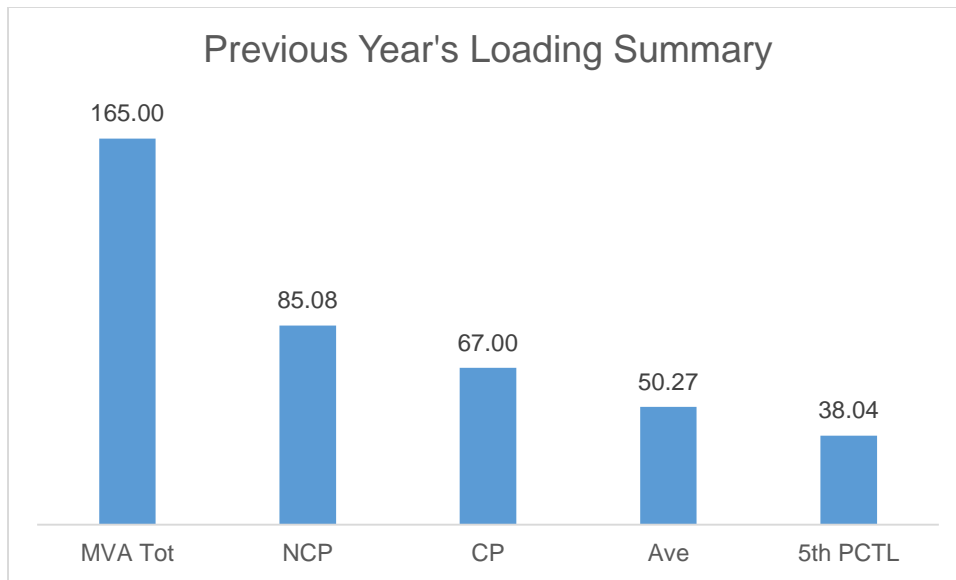
Previous Year's Load Profile



Based on the Load Duration Curve, the minimum load is 17 MW and the maximum load is 67 MW for the last historical year.



Peak MW occurred on interval 20-21. Peak daily MWh occurred on the same interval due to high consumption of the residential customers. As shown in the Load Curves, the available supply is higher than the Peak Demand.



The Non-coincident Peak Demand is 85.08 MW, which is around 51.5% of the total substation capacity of 165 MVA at a power factor of .98%. The load factor or the ratio between the Average Load of 50.27 MW and the Non-coincident Peak Demand is 60%. A safe estimate of the true minimum load is the fifth percentile load of 38.04 MW which is 44.7% of the Non-coincident Peak Demand.

Metering Point	Substation MVA	Substation Peak MW
M13	10	3.350
M2	10	5.342
M6	10	6.224
M10	20	5.878
M11	35	21.526
M15	10	4.253
M17	40	18.925
M18	10	8.028
M19	10	6.855
M20	10	4.702

The substation loaded at above 70% is only M18. This loading problem will be solved by the construction of 69/34.5/13.2kV 30/37.5 MVA Substation at Landing, Talakag which would start its construction within the year of 2020. This substation project is applied to the ERC by the cooperative through its Unplanned CAPEX 2019 application.

Forecasted Consumption Data

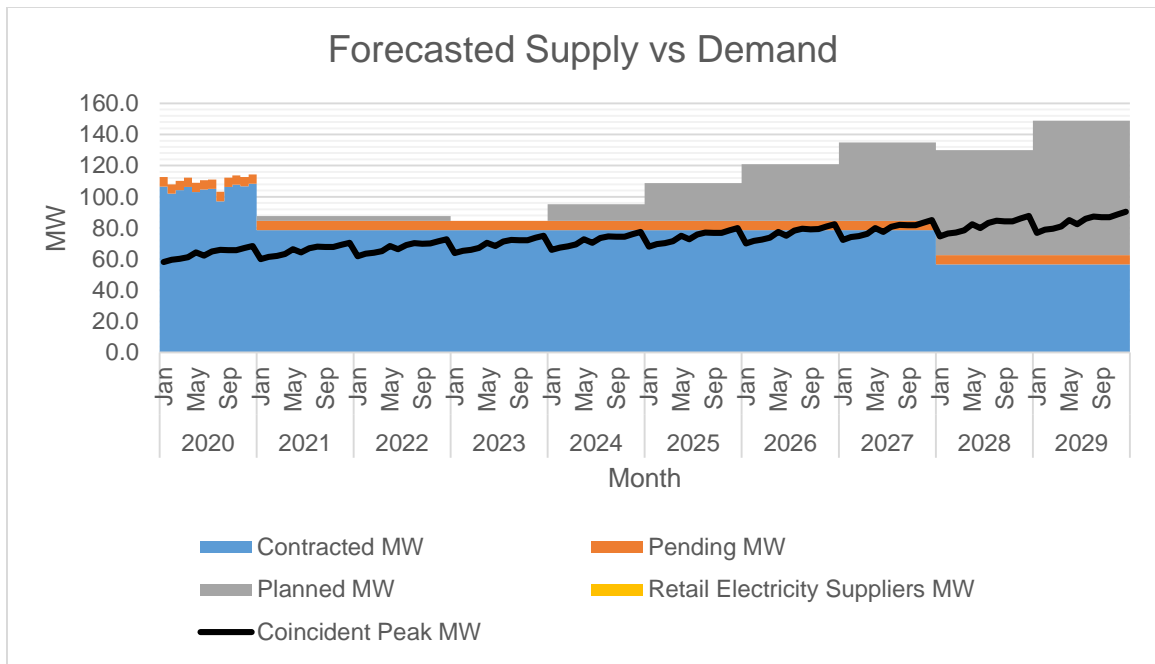
		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Existing Contracting Level	Target Contracting Level	MW Surplus / Deficit
2020	Jan	58.11	106.60	6.00	0.000	183%	194%	54.49
	Feb	59.55	101.92	6.00	0.000	171%	181%	48.37
	Mar	60.11	104.17	6.00	0.000	173%	183%	50.06
	Apr	61.23	106.28	6.00	0.000	174%	183%	51.05
	May	64.24	102.98	6.00	0.000	160%	170%	44.74
	Jun	62.26	104.65	6.00	0.000	168%	178%	48.39
	Jul	64.87	105.03	6.00	0.000	162%	171%	46.16
	Aug	65.91	97.15	6.00	0.000	147%	157%	37.24
	Sep	65.69	106.32	6.00	0.000	162%	171%	46.64
	Oct	65.72	107.72	6.00	0.000	164%	173%	48.00
	Nov	67.12	106.72	6.00	0.000	159%	168%	45.60
	Dec	68.34	108.32	6.00	0.000	159%	167%	45.98
2021	Jan	59.95	78.55	6.00	3.000	131%	146%	27.60
	Feb	61.43	78.55	6.00	3.000	128%	143%	26.12
	Mar	62.01	78.55	6.00	3.000	127%	141%	25.54
	Apr	63.16	78.55	6.00	3.000	124%	139%	24.39
	May	66.27	78.55	6.00	3.000	119%	132%	21.28
	Jun	64.23	78.55	6.00	3.000	122%	136%	23.32
	Jul	66.92	78.55	6.00	3.000	117%	131%	20.63
	Aug	67.99	78.55	6.00	3.000	116%	129%	19.56
	Sep	67.76	78.55	6.00	3.000	116%	129%	19.79
	Oct	67.80	78.55	6.00	3.000	116%	129%	19.75
	Nov	69.24	78.55	6.00	3.000	113%	126%	18.31
	Dec	70.50	78.55	6.00	3.000	111%	124%	17.05
2022	Jan	61.84	78.55	6.00	3.000	127%	142%	25.71
	Feb	63.37	78.55	6.00	3.000	124%	138%	24.18
	Mar	63.96	78.55	6.00	3.000	123%	137%	23.59
	Apr	65.16	78.55	6.00	3.000	121%	134%	22.39

	May	68.37	78.55	6.00	3.000	115%	128%	19.18
	Jun	66.26	78.55	6.00	3.000	119%	132%	21.29
	Jul	69.04	78.55	6.00	3.000	114%	127%	18.51
	Aug	70.14	78.55	6.00	3.000	112%	125%	17.41
	Sep	69.90	78.55	6.00	3.000	112%	125%	17.65
	Oct	69.94	78.55	6.00	3.000	112%	125%	17.61
	Nov	71.43	78.55	6.00	3.000	110%	123%	16.12
	Dec	72.73	78.55	6.00	3.000	108%	120%	14.82
2023	Jan	63.80	78.55	6.00	0.000	123%	133%	20.75
	Feb	65.37	78.55	6.00	0.000	120%	129%	19.18
	Mar	65.99	78.55	6.00	0.000	119%	128%	18.56
	Apr	67.22	78.55	6.00	0.000	117%	126%	17.33
	May	70.53	78.55	6.00	0.000	111%	120%	14.02
	Jun	68.35	78.55	6.00	0.000	115%	124%	16.20
	Jul	71.22	78.55	6.00	0.000	110%	119%	13.33
	Aug	72.35	78.55	6.00	0.000	109%	117%	12.20
	Sep	72.11	78.55	6.00	0.000	109%	117%	12.44
	Oct	72.15	78.55	6.00	0.000	109%	117%	12.40
	Nov	73.69	78.55	6.00	0.000	107%	115%	10.86
	Dec	75.02	78.55	6.00	0.000	105%	113%	9.53
2024	Jan	65.81	78.55	6.00	10.600	119%	145%	29.34
	Feb	67.44	78.55	6.00	10.600	116%	141%	27.71
	Mar	68.07	78.55	6.00	10.600	115%	140%	27.08
	Apr	69.34	78.55	6.00	10.600	113%	137%	25.81
	May	72.75	78.55	6.00	10.600	108%	131%	22.40
	Jun	70.51	78.55	6.00	10.600	111%	135%	24.64
	Jul	73.47	78.55	6.00	10.600	107%	130%	21.68
	Aug	74.64	78.55	6.00	10.600	105%	127%	20.51
	Sep	74.39	78.55	6.00	10.600	106%	128%	20.76
	Oct	74.43	78.55	6.00	10.600	106%	128%	20.72
	Nov	76.01	78.55	6.00	10.600	103%	125%	19.14
	Dec	77.39	78.55	6.00	10.600	101%	123%	17.76
2025	Jan	67.89	78.55	6.00	24.300	116%	160%	40.96

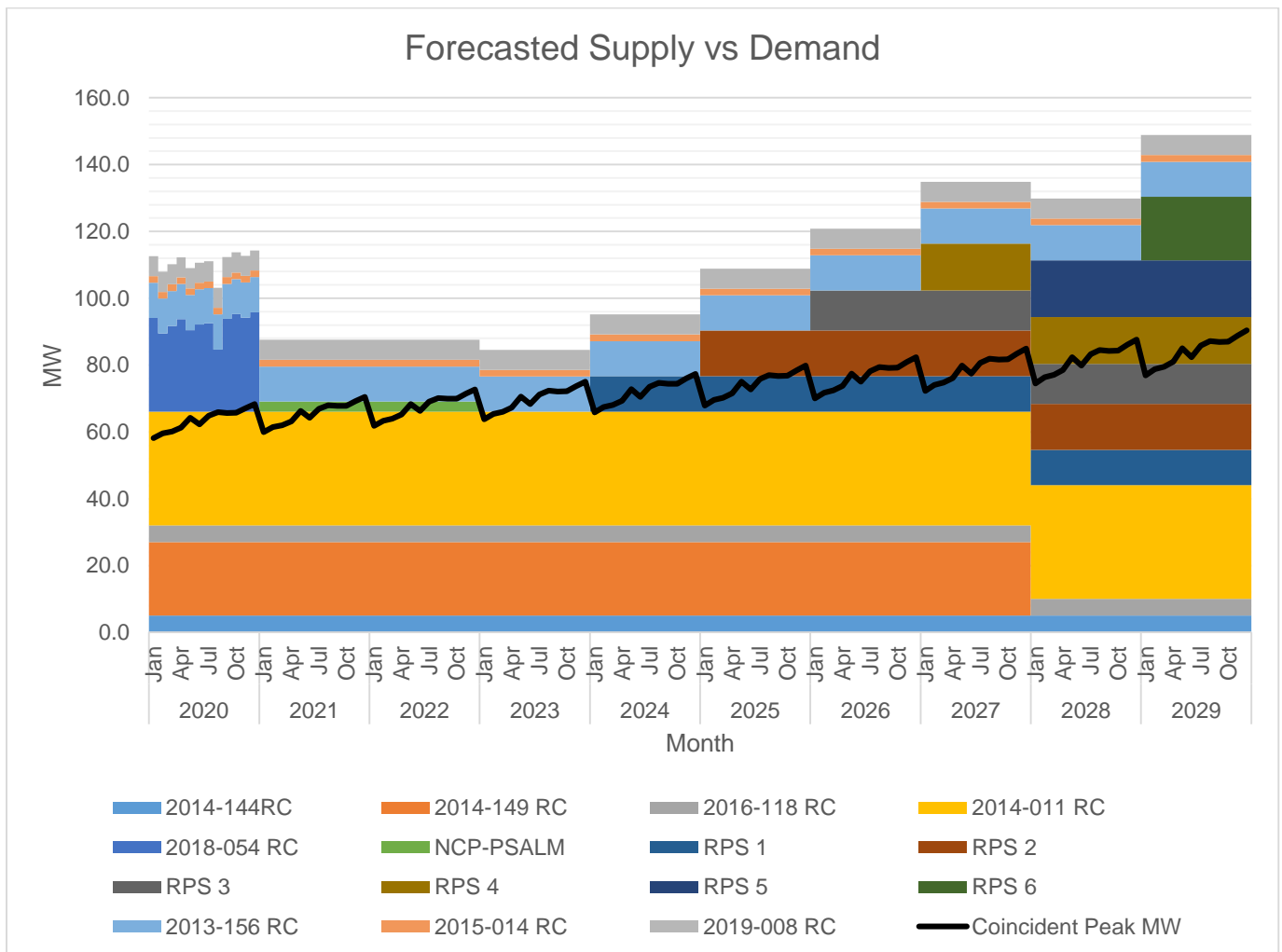
	Feb	69.57	78.55	6.00	24.300	113%	156%	39.28
	Mar	70.22	78.55	6.00	24.300	112%	155%	38.63
	Apr	71.53	78.55	6.00	24.300	110%	152%	37.32
	May	75.05	78.55	6.00	24.300	105%	145%	33.80
	Jun	72.74	78.55	6.00	24.300	108%	150%	36.11
	Jul	75.79	78.55	6.00	24.300	104%	144%	33.06
	Aug	77.00	78.55	6.00	24.300	102%	141%	31.85
	Sep	76.74	78.55	6.00	24.300	102%	142%	32.11
	Oct	76.78	78.55	6.00	24.300	102%	142%	32.07
	Nov	78.42	78.55	6.00	24.300	100%	139%	30.43
	Dec	79.84	78.55	6.00	24.300	98%	136%	29.01
2026	Jan	70.04	78.55	6.00	36.300	112%	173%	50.81
	Feb	71.77	78.55	6.00	36.300	109%	168%	49.08
	Mar	72.44	78.55	6.00	36.300	108%	167%	48.41
	Apr	73.79	78.55	6.00	36.300	106%	164%	47.06
	May	77.42	78.55	6.00	36.300	101%	156%	43.43
	Jun	75.04	78.55	6.00	36.300	105%	161%	45.81
	Jul	78.19	78.55	6.00	36.300	100%	155%	42.66
	Aug	79.43	78.55	6.00	36.300	99%	152%	41.42
	Sep	79.16	78.55	6.00	36.300	99%	153%	41.69
	Oct	79.21	78.55	6.00	36.300	99%	153%	41.64
	Nov	80.89	78.55	6.00	36.300	97%	149%	39.96
	Dec	82.36	78.55	6.00	36.300	95%	147%	38.49
2027	Jan	72.25	78.55	6.00	50.300	109%	187%	62.60
	Feb	74.03	78.55	6.00	50.300	106%	182%	60.82
	Mar	74.73	78.55	6.00	50.300	105%	180%	60.12
	Apr	76.12	78.55	6.00	50.300	103%	177%	58.73
	May	79.87	78.55	6.00	50.300	98%	169%	54.98
	Jun	77.41	78.55	6.00	50.300	101%	174%	57.44
	Jul	80.66	78.55	6.00	50.300	97%	167%	54.19
	Aug	81.94	78.55	6.00	50.300	96%	165%	52.91
	Sep	81.67	78.55	6.00	50.300	96%	165%	53.18
	Oct	81.71	78.55	6.00	50.300	96%	165%	53.14

	Nov	83.45	78.55	6.00	50.300	94%	162%	51.40
	Dec	84.96	78.55	6.00	50.300	92%	159%	49.89
2028	Jan	74.54	56.55	6.00	67.300	76%	174%	55.31
	Feb	76.37	56.55	6.00	67.300	74%	170%	53.48
	Mar	77.09	56.55	6.00	67.300	73%	168%	52.76
	Apr	78.53	56.55	6.00	67.300	72%	165%	51.32
	May	82.39	56.55	6.00	67.300	69%	158%	47.46
	Jun	79.86	56.55	6.00	67.300	71%	163%	49.99
	Jul	83.21	56.55	6.00	67.300	68%	156%	46.64
	Aug	84.53	56.55	6.00	67.300	67%	154%	45.32
	Sep	84.25	56.55	6.00	67.300	67%	154%	45.60
	Oct	84.29	56.55	6.00	67.300	67%	154%	45.56
	Nov	86.09	56.55	6.00	67.300	66%	151%	43.76
	Dec	87.65	56.55	6.00	67.300	65%	148%	42.20
2029	Jan	76.89	56.55	6.00	86.300	74%	194%	71.96
	Feb	78.79	56.55	6.00	86.300	72%	189%	70.06
	Mar	79.53	56.55	6.00	86.300	71%	187%	69.32
	Apr	81.01	56.55	6.00	86.300	70%	184%	67.84
	May	85.00	56.55	6.00	86.300	67%	175%	63.85
	Jun	82.38	56.55	6.00	86.300	69%	181%	66.47
	Jul	85.83	56.55	6.00	86.300	66%	173%	63.02
	Aug	87.20	56.55	6.00	86.300	65%	171%	61.65
	Sep	86.91	56.55	6.00	86.300	65%	171%	61.94
	Oct	86.95	56.55	6.00	86.300	65%	171%	61.90
	Nov	88.81	56.55	6.00	86.300	64%	168%	60.04
	Dec	90.42	56.55	6.00	86.300	63%	165%	58.43

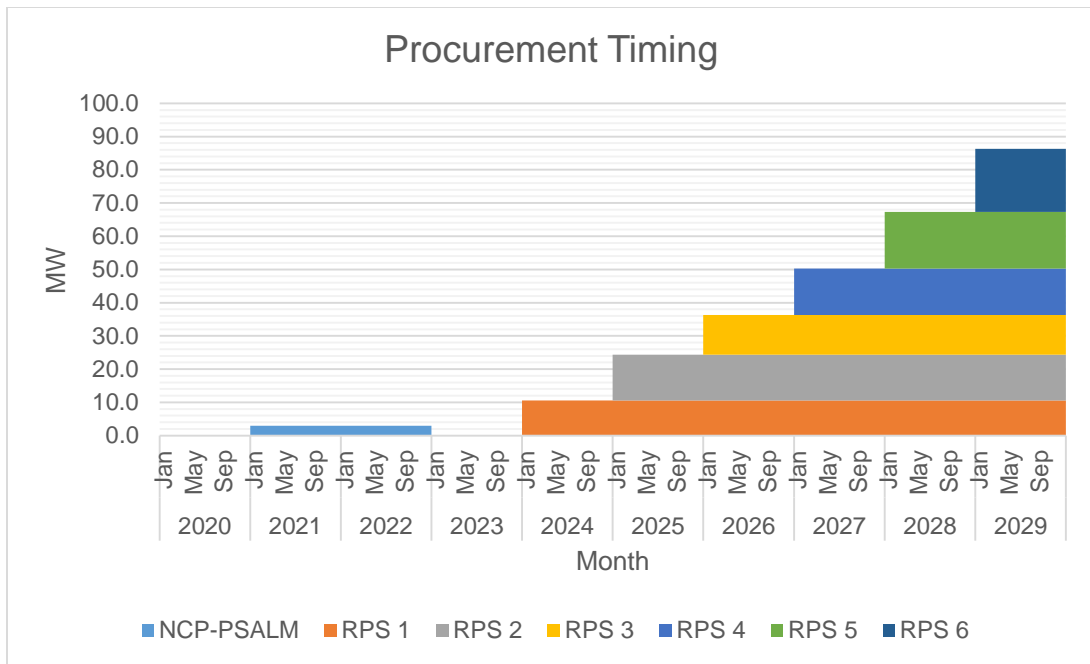
The Peak Demand was forecasted using annual demand/load forecast of per customer class per substation then using the 8760 metering load profiles of the cooperative to derive the monthly peak demand forecast and was assumed to occur on the month of December due to 8760 load profile of the cooperative. Monthly Peak Demand is at its lowest on the month of January due to the 8760 load profile of the cooperative. In general, Peak Demand is expected to grow at a rate of 3.16% annually.



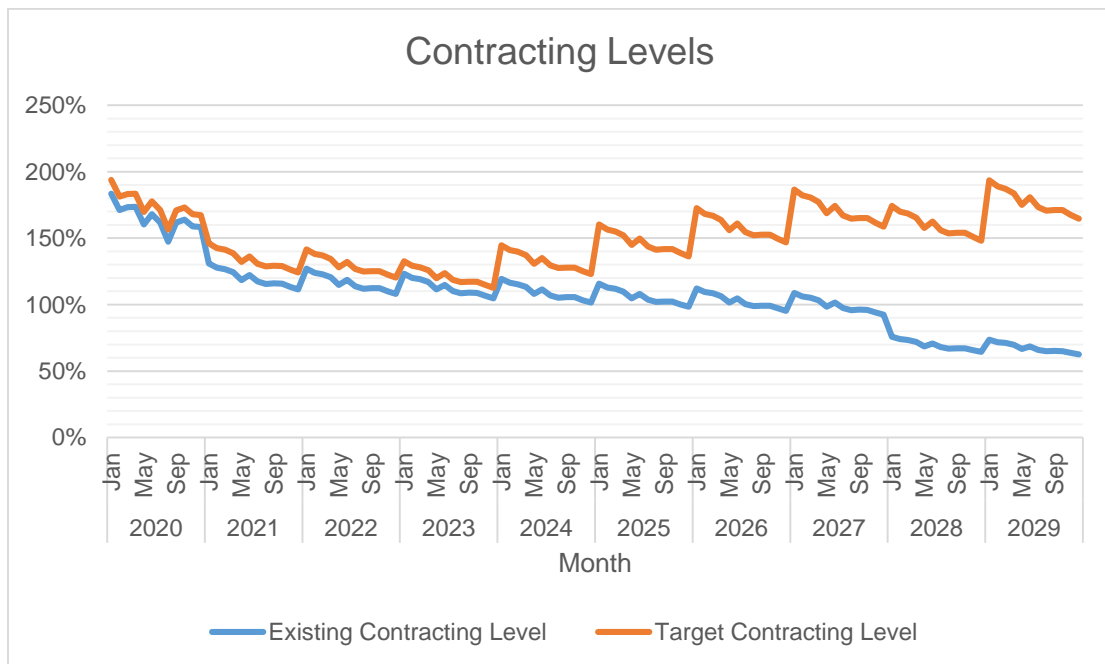
The available supply is generally above the Peak Demand. This is because of the procurement of the renewable energy supply to comply for the RPS requirement growth of 1% annually.



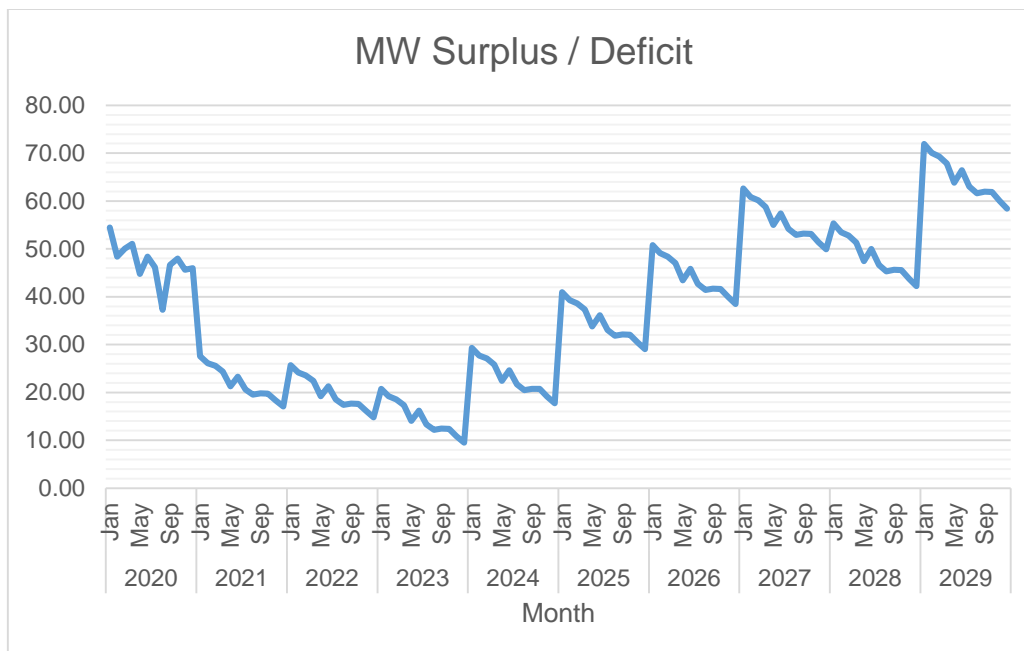
Of the available supply, the largest is 34.05 MW from 2014-011 RC (GN Power Kauswagan Ltd.). This is followed by 22 MW from 2014-149 RC (FDC Misamis Power Corporation).



The first wave of supply procurement will be for 3 MW planned to be available by the month of January 2021 billing period. This will be followed by contracting supply of renewable energy for the RPS requirement of 10.6 MW (solar technology), 13.70MW (solar technology), 12 MW (hydro technology), 14 MW (hydro technology), 17 MW (hydro technology), 19 MW (hydro technology) that is expected to be delivered on year 2024, 2025, 2026, 2027, 2028 and 2029 respectively.



Currently, there is over-contracting by 21%. The highest target contracting level is 94% which is expected to occur on January 2020. The lowest target contracting level is 23% which is expected to occur on December 2024.



Currently, there is over-contracting 58 MW. The highest surplus is 71.96 MW which is expected to occur on the month of January 2029. The lowest surplus is 9.53 MW which is expected to occur on the month of December 2023. Over contracting is due to the RPS compliance that there is a need to source out for RE technology.

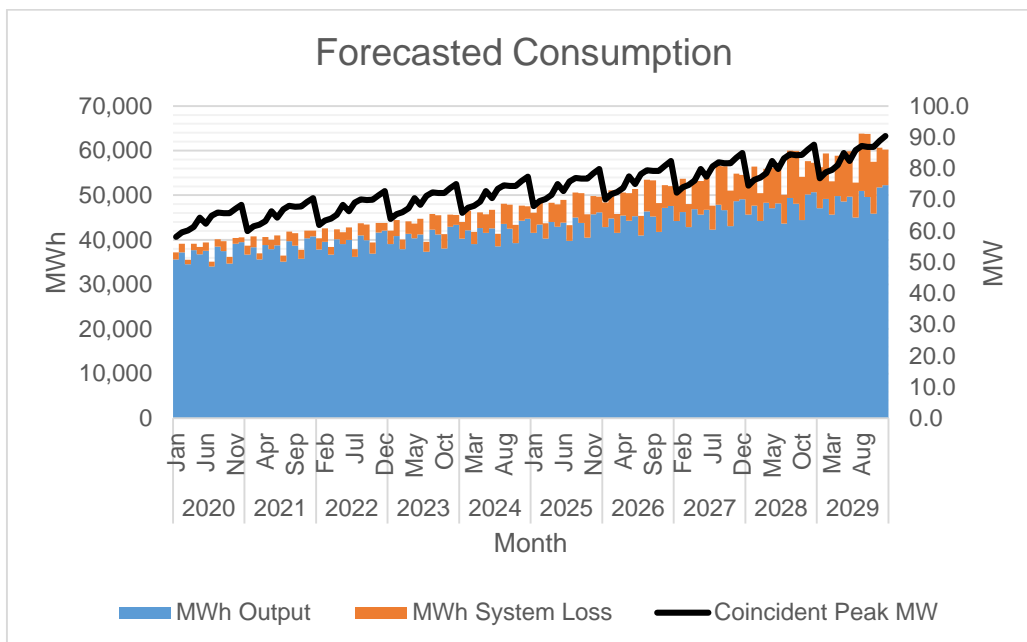
		MWh Offtake	MWh Output	MWh System Loss	Transm'n Loss	System Loss
2020	Jan	37,155	35,571	1,584	0.00%	4.26%
	Feb	39,157	37,179	1,978	0.00%	5.05%
	Mar	35,563	34,493	1,070	0.00%	3.01%
	Apr	39,102	37,678	1,423	0.00%	3.64%
	May	38,385	36,723	1,662	0.00%	4.33%
	Jun	39,392	37,563	1,829	0.00%	4.64%
	Jul	35,085	34,029	1,056	0.00%	3.01%
	Aug	40,156	38,505	1,651	0.00%	4.11%
	Sep	39,712	37,506	2,206	0.00%	5.55%
	Oct	36,214	34,642	1,571	0.00%	4.34%
	Nov	40,450	39,118	1,332	0.00%	3.29%
	Dec	40,549	39,510	1,039	0.00%	2.56%
2021	Jan	38,669	36,694	1,974	0.00%	5.11%
	Feb	40,795	38,354	2,441	0.00%	5.98%
	Mar	36,938	35,583	1,355	0.00%	3.67%
	Apr	40,654	38,868	1,786	0.00%	4.39%
	May	39,974	37,883	2,090	0.00%	5.23%
	Jun	41,021	38,750	2,271	0.00%	5.54%
	Jul	36,449	35,104	1,345	0.00%	3.69%
	Aug	41,836	39,721	2,115	0.00%	5.06%
	Sep	41,461	38,691	2,770	0.00%	6.68%
	Oct	37,739	35,737	2,003	0.00%	5.31%
	Nov	42,034	40,354	1,680	0.00%	4.00%
	Dec	42,087	40,758	1,329	0.00%	3.16%
2022	Jan	40,307	37,854	2,454	0.00%	6.09%

	Feb	42,559	39,566	2,993	0.00%	7.03%
	Mar	38,428	36,707	1,720	0.00%	4.48%
	Apr	42,337	40,096	2,240	0.00%	5.29%
	May	41,712	39,080	2,632	0.00%	6.31%
	Jun	42,782	39,974	2,808	0.00%	6.56%
	Jul	37,935	36,213	1,722	0.00%	4.54%
	Aug	43,703	40,976	2,727	0.00%	6.24%
	Sep	43,393	39,914	3,480	0.00%	8.02%
	Oct	39,431	36,866	2,565	0.00%	6.51%
	Nov	43,752	41,629	2,123	0.00%	4.85%
	Dec	43,755	42,046	1,709	0.00%	3.91%
2023	Jan	42,083	39,050	3,033	0.00%	7.21%
	Feb	44,459	40,816	3,644	0.00%	8.20%
	Mar	40,045	37,867	2,178	0.00%	5.44%
	Apr	44,162	41,363	2,798	0.00%	6.34%
	May	43,615	40,315	3,300	0.00%	7.57%
	Jun	44,688	41,237	3,450	0.00%	7.72%
	Jul	39,556	37,357	2,199	0.00%	5.56%
	Aug	45,778	42,271	3,507	0.00%	7.66%
	Sep	45,528	41,175	4,353	0.00%	9.56%
	Oct	41,309	38,031	3,278	0.00%	7.93%
	Nov	45,618	42,944	2,673	0.00%	5.86%
	Dec	45,568	43,374	2,194	0.00%	4.81%
2024	Jan	44,007	40,284	3,723	0.00%	8.46%
	Feb	46,508	42,105	4,403	0.00%	9.47%
	Mar	41,802	39,064	2,738	0.00%	6.55%
	Apr	46,142	42,670	3,471	0.00%	7.52%
	May	45,699	41,589	4,110	0.00%	8.99%
	Jun	46,751	42,540	4,211	0.00%	9.01%
	Jul	41,324	38,538	2,786	0.00%	6.74%
	Aug	48,082	43,607	4,476	0.00%	9.31%
	Sep	47,884	42,476	5,408	0.00%	11.29%
	Oct	43,389	39,232	4,157	0.00%	9.58%
	Nov	47,645	44,301	3,343	0.00%	7.02%
	Dec	47,539	44,745	2,795	0.00%	5.88%
2025	Jan	46,092	41,557	4,536	0.00%	9.84%
	Feb	48,716	43,436	5,281	0.00%	10.84%
	Mar	43,709	40,298	3,412	0.00%	7.80%
	Apr	48,291	44,019	4,272	0.00%	8.85%
	May	47,979	42,903	5,076	0.00%	10.58%
	Jun	48,984	43,884	5,100	0.00%	10.41%
	Jul	43,252	39,755	3,497	0.00%	8.09%
	Aug	50,638	44,985	5,654	0.00%	11.16%
	Sep	50,482	43,818	6,664	0.00%	13.20%
	Oct	45,693	40,472	5,221	0.00%	11.43%
	Nov	49,846	45,701	4,146	0.00%	8.32%
	Dec	49,682	46,159	3,524	0.00%	7.09%
2026	Jan	48,352	42,870	5,482	0.00%	11.34%
	Feb	51,097	44,808	6,289	0.00%	12.31%

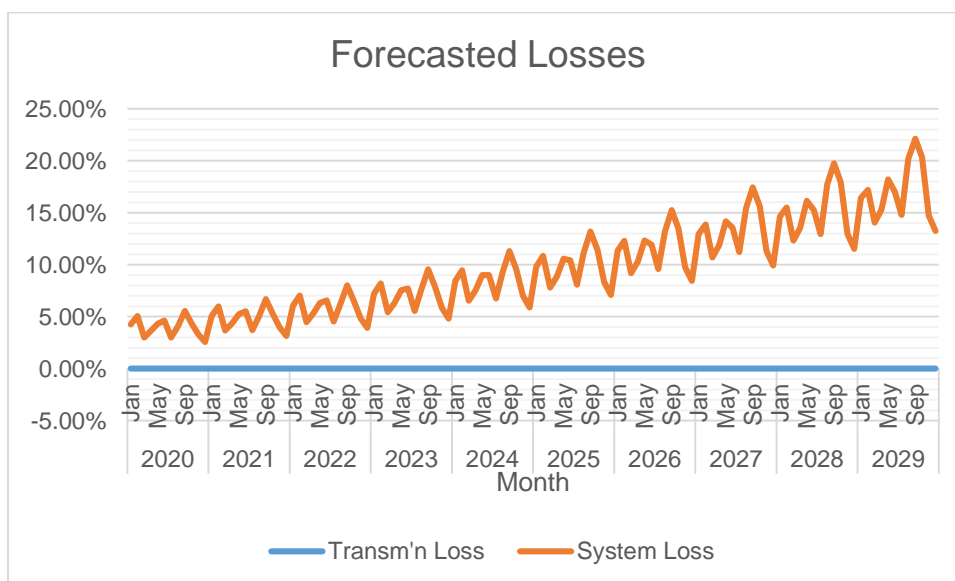
	Mar	45,781	41,571	4,209	0.00%	9.19%
	Apr	50,622	45,409	5,212	0.00%	10.30%
	May	50,472	44,259	6,214	0.00%	12.31%
	Jun	51,401	45,271	6,130	0.00%	11.93%
	Jul	45,355	41,011	4,343	0.00%	9.58%
	Aug	53,467	46,406	7,061	0.00%	13.21%
	Sep	53,343	45,202	8,141	0.00%	15.26%
	Oct	48,240	41,751	6,489	0.00%	13.45%
	Nov	52,238	47,145	5,093	0.00%	9.75%
	Dec	52,011	47,617	4,394	0.00%	8.45%
2027	Jan	50,798	44,224	6,574	0.00%	12.94%
	Feb	53,661	46,224	7,438	0.00%	13.86%
	Mar	48,027	42,885	5,142	0.00%	10.71%
	Apr	53,148	46,844	6,304	0.00%	11.86%
	May	53,195	45,657	7,538	0.00%	14.17%
	Jun	54,015	46,701	7,314	0.00%	13.54%
	Jul	47,644	42,307	5,337	0.00%	11.20%
	Aug	56,591	47,872	8,719	0.00%	15.41%
	Sep	56,488	46,630	9,857	0.00%	17.45%
	Oct	51,047	43,070	7,977	0.00%	15.63%
	Nov	54,832	48,634	6,197	0.00%	11.30%
	Dec	54,540	49,122	5,418	0.00%	9.93%
2028	Jan	53,444	45,621	7,823	0.00%	14.64%
	Feb	56,423	47,684	8,738	0.00%	15.49%
	Mar	50,461	44,240	6,221	0.00%	12.33%
	Apr	55,883	48,324	7,559	0.00%	13.53%
	May	56,163	47,100	9,063	0.00%	16.14%
	Jun	56,840	48,177	8,663	0.00%	15.24%
	Jul	50,133	43,644	6,489	0.00%	12.94%
	Aug	60,032	49,385	10,647	0.00%	17.74%
	Sep	59,936	48,104	11,832	0.00%	19.74%
	Oct	54,135	44,431	9,705	0.00%	17.93%
	Nov	57,643	50,171	7,472	0.00%	12.96%
	Dec	57,282	50,674	6,609	0.00%	11.54%
2029	Jan	56,303	47,063	9,240	0.00%	16.41%
	Feb	59,393	49,191	10,202	0.00%	17.18%
	Mar	53,095	45,638	7,457	0.00%	14.05%
	Apr	58,842	49,851	8,991	0.00%	15.28%
	May	59,392	48,588	10,804	0.00%	18.19%
	Jun	59,889	49,699	10,190	0.00%	17.01%
	Jul	52,836	45,023	7,813	0.00%	14.79%
	Aug	63,810	50,945	12,865	0.00%	20.16%
	Sep	63,708	49,624	14,085	0.00%	22.11%
	Oct	57,523	45,835	11,689	0.00%	20.32%
	Nov	60,686	51,756	8,930	0.00%	14.71%
	Dec	60,252	52,275	7,977	0.00%	13.24%

MWh Offtake was forecasted using the contracted energy capacity of IPP's PSA in consideration to its plant maintenance outages. The assumed load factor is 81.74%.

System Loss was calculated through a Load Flow Study conducted every 27th of the month for the system loss calculation of the previous month which is then compiled for the annual system loss segregation requirement of ERC by Engr. Raff Shawn M. Laput, REE, Distribution Network Section Head and Engr. Christine V. Morales, REE, Power Systems Engineer of MORESCO-1, using Synergy Electric Solution 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% annually.



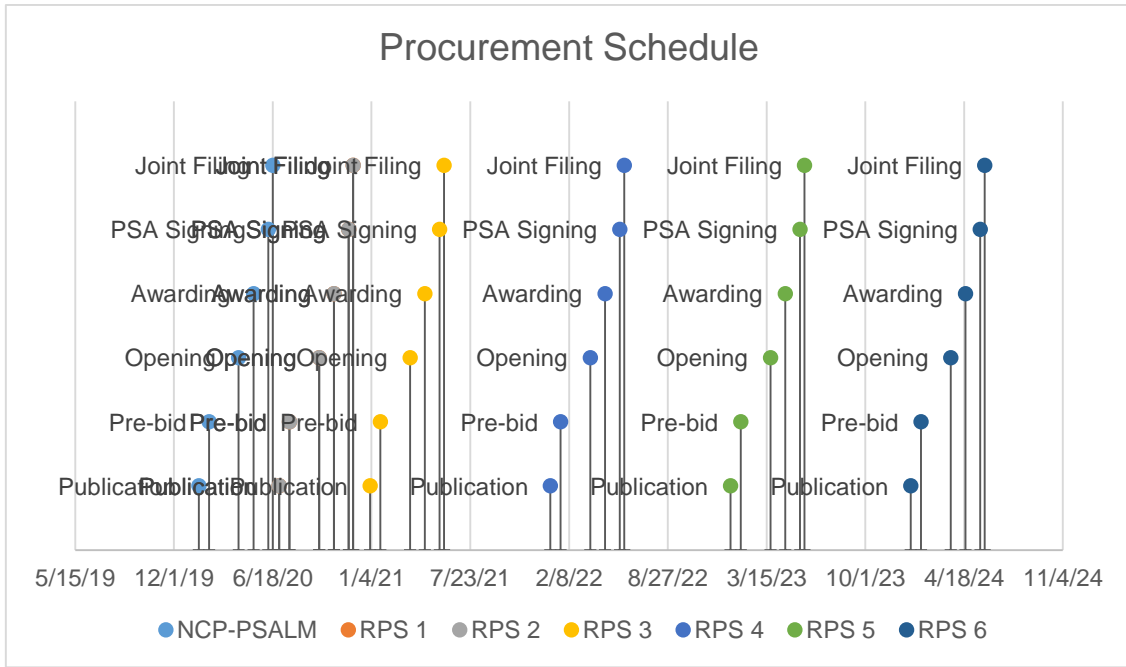
Transmission Loss ranged from -1.39% to 17.76% while the overall System Loss ranged from 1.88% to 26.6%.

Power Supply

Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
2018-054 RC	Intermediate	National Power Corporation	2.00	17,520	12/26/2017	12/25/2020
2014-144RC	Base	Therma South, Inc.	2.00	17,520	09/18/2015	09/18/2040
2014-149RC	Base	FDC Misamis Power Corporation	8.80	77,088	10/14/2016	10/25/2041
2016-118RC	Base	San Miguel Consolidated Power Corporation	2.00	17,520	09/26/2017	09/25/2027
2013-156 RC	Peaking	PACERM 1 Energy Corporation	0.00	0	7/1/2017	7/1/2032
2015-014RC	Peaking	DU-owned	0.00	0	06/13/2016	6/13/2031
2014-011 RC	Base	GN Power Kauswagan Ltd.	17.03	192,389	6/26/2019	6/25/2049

The PSA with PACERM-1 Energy Corporation filed with ERC under Case No. 2013-156RC was procured through competitive bidding under the NEA Procurement Guidelines. It was selected to provide for peaking requirements due to supply deficiency experience by Mindanao since starting 2010 until 2015 because there was no new plant operating yet in Mindanao during that time and PSALM is curtailed. Historically, the utilization of the PSA is 76% for baseload coal technology. Outages of the plant led to unserved energy of around 10,800MWh in the past year. However with the sufficient supply in Mindanao, MORESCO-1 has able to negotiate with the existing Power Suppliers where it can accommodate for excess energy provision. The actual billed overall monthly charge under the PSA ranged from 4.4155P/kWh to 5.0424P/KWh exclusive of VAT in the same period of year 2019.

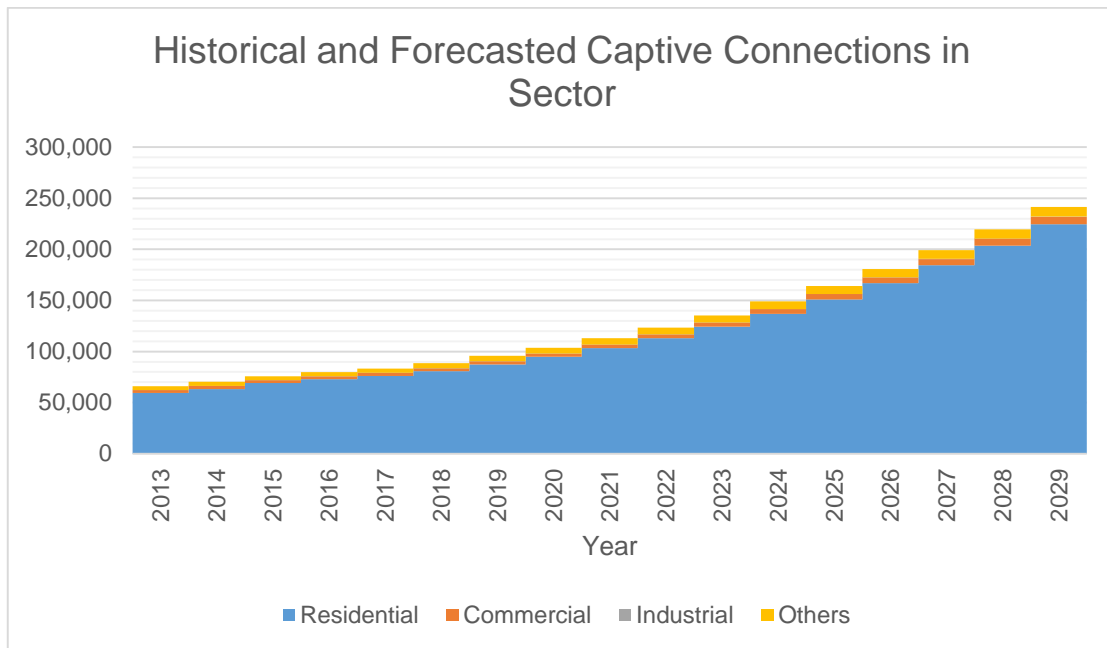
	NCP-PSALM	RPS 1	RPS 2	RPS 3	RPS 4	RPS 5	RPS 6
Type	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
Minimum MW	3.00	10.60	13.70	12.00	14.00	17.00	19.00
Minimum MWh/yr	21,024	23,214	30,003	37,843	44,150	53,611	59,918
PSA Start	12/26/2020	1/1/2024	1/1/2025	1/1/2026	1/1/2027	1/1/2028	1/1/2029
PSA End	12/25/2022	1/1/2039	1/1/2040	1/1/2046	1/1/2047	1/1/2048	1/1/2049
Publication	1/20/2020	7/1/2020	7/1/2020	1/1/2021	1/1/2022	1/1/2023	1/1/2024
Pre-bid	2/10/2020	7/22/2020	7/22/2020	1/22/2021	1/22/2022	1/22/2023	1/22/2024
Opening	4/10/2020	9/20/2020	9/20/2020	3/23/2021	3/23/2022	3/23/2023	3/22/2024
Awarding	5/10/2020	10/20/2020	10/20/2020	4/22/2021	4/22/2022	4/22/2023	4/21/2024
PSA Signing	6/9/2020	11/19/2020	11/19/2020	5/22/2021	5/22/2022	5/22/2023	5/21/2024
Joint Filing	6/18/2020	11/28/2020	11/28/2020	5/31/2021	5/31/2022	5/31/2023	5/30/2024



For the procurement of 3 MW of supply which is planned to be available on January 2021, there will be no need for the publication under CSP since we plan to secure through the renewal of our CSEE to NPC/PSALM. Hence, a certificate of exemption will be needed only in accordance with DOE's 2018 CSP Policy.

For the procurement of 10 MW of supply which is planned to be available on January 2024 intended for the RPS compliance, the first publication of launch of CSP will be on July 2020. Joint filing is planned on last week of December 2020, accordance with DOE's 2018 CSP Policy.

Captive Customer Connections



The number of Residential connections is expected to grow at a rate of 8% annually. Said customer class is expected to account for 20-30 % of the total energy consumption.