

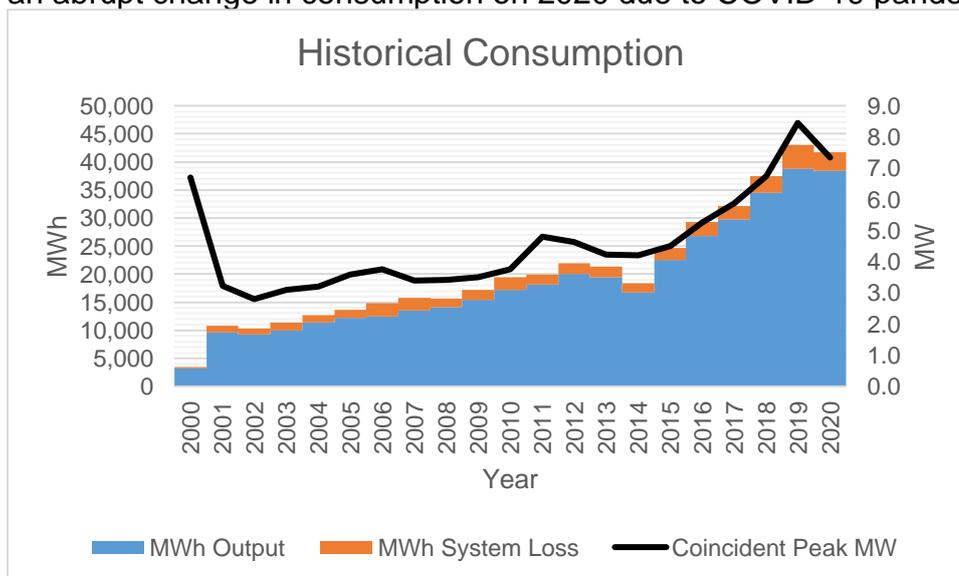
# **Power Supply Procurement Plan [2021]**

**[BANELCO Mainland]**

## Historical Consumption Data

	Coincident Peak MW	MWh Offtake	MWh Input	MWh Output	MWh System Loss	Load Factor	System Loss
2000	6.70	3,477	3,477	3,187	291	6%	8.36%
2001	3.23	10,815	10,815	9,611	1,203	38%	11.13%
2002	2.80	10,342	10,342	9,275	1,067	42%	10.32%
2003	3.10	11,401	11,401	9,979	1,422	42%	12.48%
2004	3.21	12,700	12,700	11,338	1,362	45%	10.72%
2005	3.59	13,691	13,691	12,193	1,498	44%	10.94%
2006	3.75	14,786	14,786	12,504	2,282	45%	15.43%
2007	3.40	15,804	15,804	13,546	2,258	53%	14.29%
2008	3.42	15,614	15,614	14,137	1,477	52%	9.46%
2009	3.50	17,248	17,248	15,451	1,797	56%	10.42%
2010	3.76	19,392	19,392	17,248	2,143	59%	11.05%
2011	4.80	19,867	19,867	18,158	1,709	47%	8.60%
2012	4.63	21,890	21,890	20,036	1,854	54%	8.47%
2013	4.23	21,290	21,290	19,493	1,797	58%	8.44%
2014	4.20	18,331	18,331	16,759	1,572	50%	8.58%
2015	4.50	24,635	24,635	22,541	2,094	62%	8.50%
2016	5.26	29,323	29,323	26,815	2,508	64%	8.55%
2017	5.87	32,187	32,187	29,736	2,451	63%	7.61%
2018	6.75	37,429	37,429	34,468	2,961	63%	7.91%
2019	8.45	43,027	43,027	38,763	4,264	58%	9.91%
2020	7.35	41,690	41,690	38,361	3,328	65%	7.98%

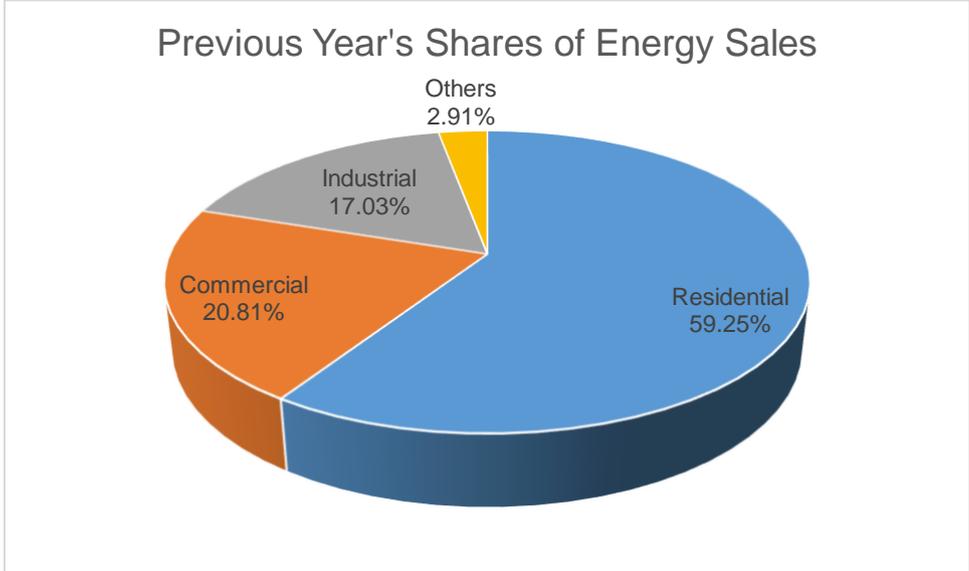
Peak Demand decreased from 8.45 MW in 2019 to 7.35 MW in 2020 at a rate of 9.09% due to pandemic. MWh Offtake decreased from 43,027 MWh in 2019 to 41,690 MWh in 2020 at a rate of 9.16% due to pandemic. Within the same period, Load Factor ranged from 58% to 65%. There was an abrupt change in consumption on 2020 due to COVID-19 pandemic



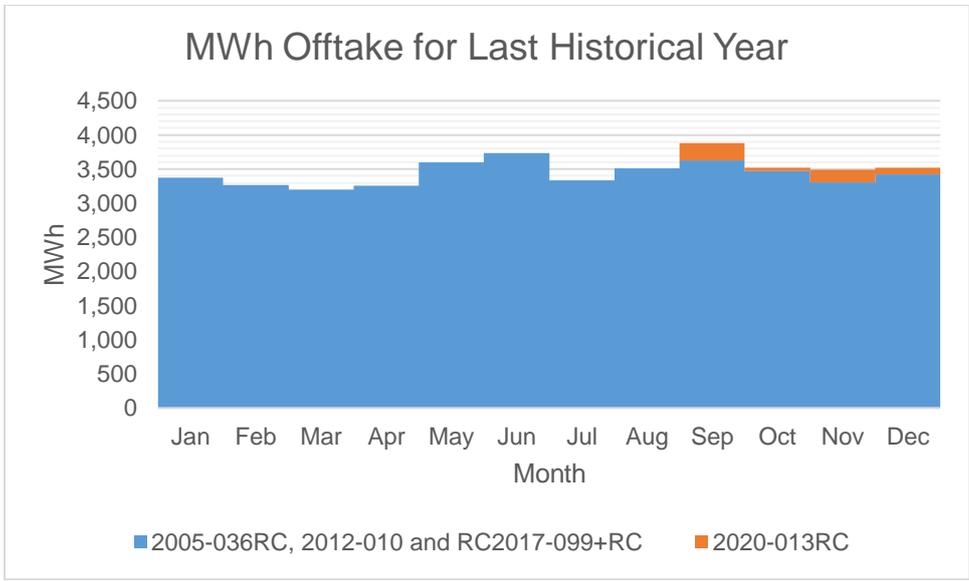
MWh Output decreased from year 2019 to year 2020 at a rate of 1.034%, while MWh System Loss decreased at a rate of 1.52% within the same period



System Loss ranged from 7.61% to 15.43%. System Loss peaked at 15.43% on year 2006 because of Non-Technical Losses caused by pilferage

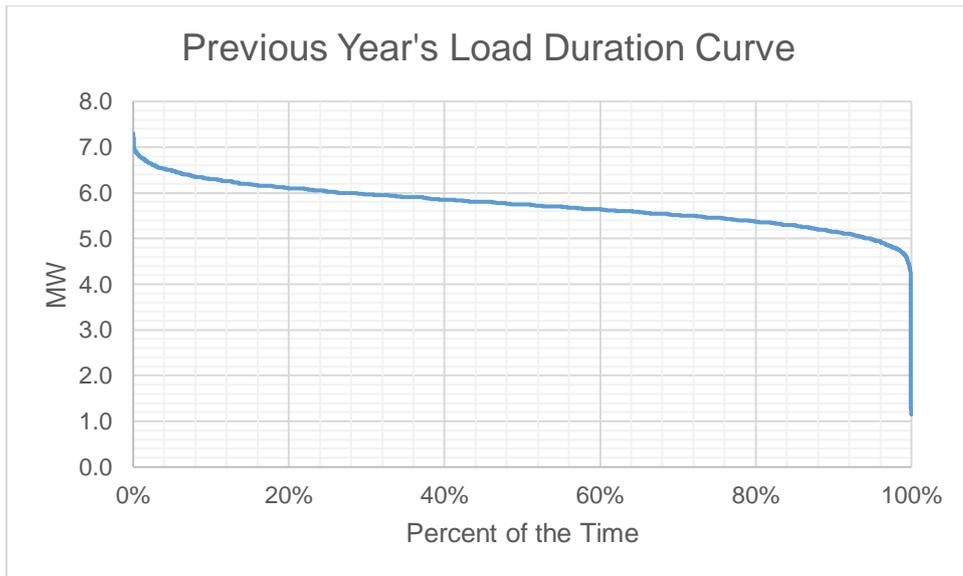


Residential customers account for the bulk of energy sales at 59.25% due to the high number of connections. In contrast, Other customers (streetlights and Public Building) accounted for only 2.91% of energy sales due to the low number of connections.

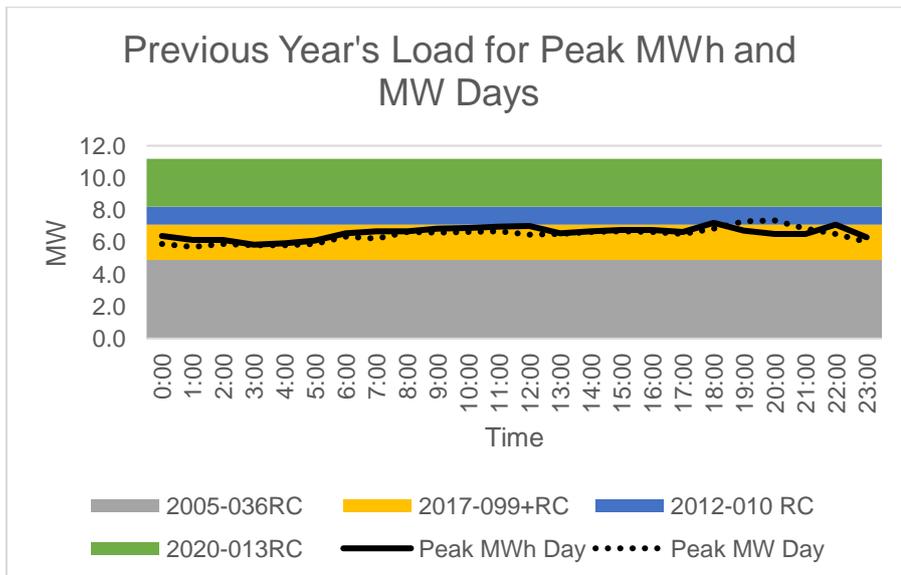


For Mainland, the total Offtake for the last historical year is higher than the quantity stipulated in the PSA. The PSA with 2005-036RC accounts for the bulk of MWh Offtake.

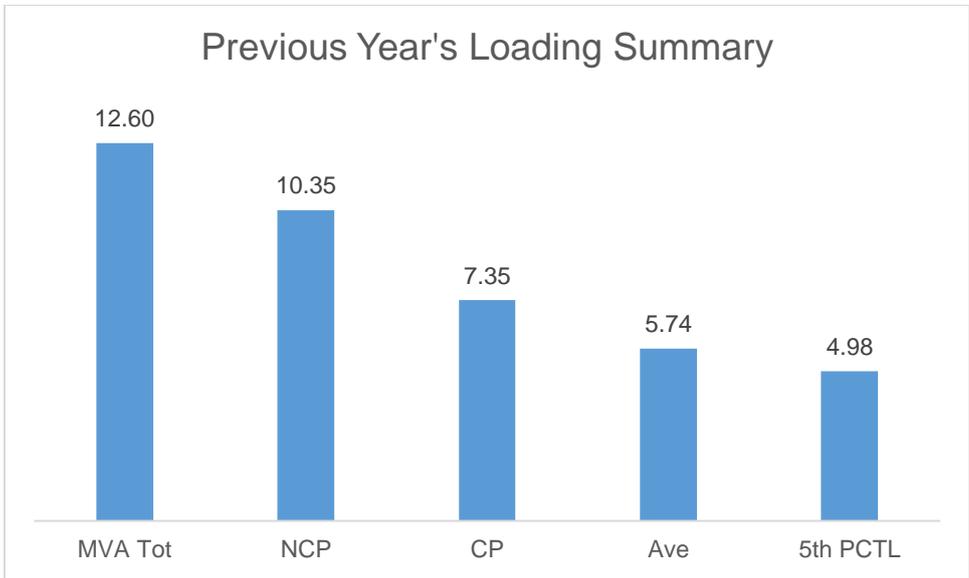
# Previous Year's Load Profile



Based on the Load Duration Curve, the minimum load is 6.2 MW and the maximum load is 7.35 MW for the last historical year.



Peak MW & Peak daily MWh occurred on 5/18/2020 8:00:00 PM due to summer season. As shown in the Load Curves, the available supply is higher than the Peak Demand but however there is no more Cold Reserved. There is a load shedding when one of the biggest units is under maintenance or repair prior to the operation of emergency power on last August 11, 2020.



The Non-coincident Peak Demand is 7.35 MW, which is around 76.56% of the total substation capacity of 9.6 MVA at a power factor of 0.95. The load factor or the ratio between the Average Load of 5.74 MW and the Non-coincident Peak Demand is 78.10% of. A safe estimate of the true minimum load is the fifth percentile load of 4.98 MW which is 67.76% of the Non-coincident Peak Demand.

Metering Point	Substation MVA	Substation Peak MW
BIPCOR	9.6	7.350
INEC	25	8.3000

By November 8, 2021, INEC will be our new sole power provider as BIPCOR will end their 15years contract with BANELCO. The substation loaded at below 70%.

## Forecasted Consumption Data

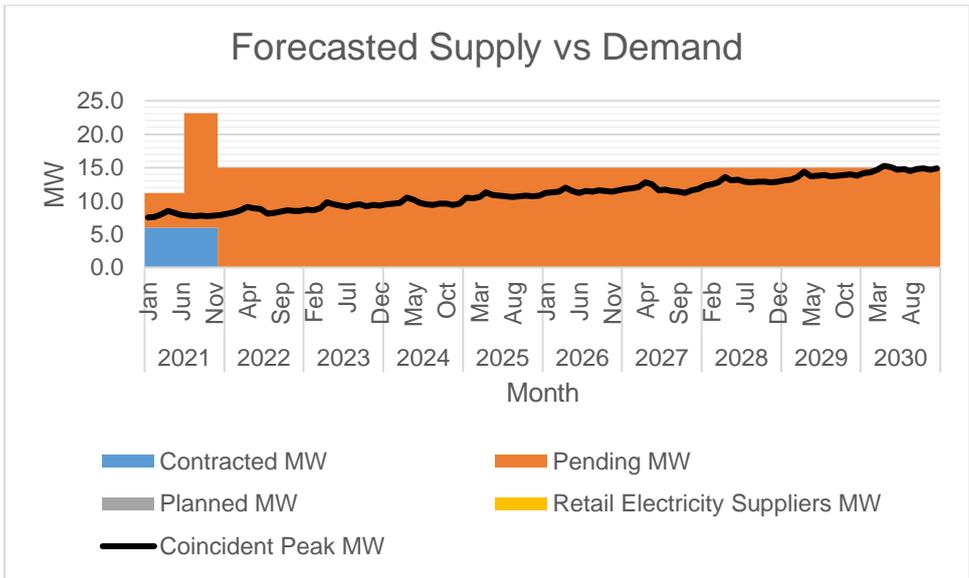
		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Retail Electricity Suppliers MW	Existing Contracting Level	Target Contracting Level	MW Surplus / Deficit
2021	Jan	7.50	5.99	5.20	0.000		80%	149%	3.69
	Feb	7.60	5.99	5.20	0.000		79%	147%	3.59
	Mar	8.00	5.99	5.20	0.000		75%	140%	3.19
	Apr	8.44	5.99	5.20	0.000		71%	133%	2.75
	May	8.20	5.99	5.20	0.000		73%	136%	2.99
	Jun	7.90	5.99	5.20	0.000		76%	142%	3.29
	Jul	7.80	5.99	17.20	0.000		77%	297%	15.39
	Aug	7.70	5.99	17.20	0.000		78%	301%	15.49
	Sep	7.80	5.99	17.20	0.000		77%	297%	15.39
	Oct	7.70	5.99	17.20	0.000		78%	301%	15.49
	Nov	7.80	5.99	17.20	0.000		77%	297%	15.39
	Dec	7.90	0.00	15.00	0.000		0%	190%	7.10
2022	Jan	8.10	0.00	15.00	0.000		0%	185%	6.90
	Feb	8.30	0.00	15.00	0.000		0%	181%	6.70
	Mar	8.60	0.00	15.00	0.000		0%	174%	6.40
	Apr	9.12	0.00	15.00	0.000		0%	165%	5.88
	May	8.90	0.00	15.00	0.000		0%	169%	6.10
	Jun	8.80	0.00	15.00	0.000		0%	170%	6.20
	Jul	8.10	0.00	15.00	0.000		0%	185%	6.90
	Aug	8.20	0.00	15.00	0.000		0%	183%	6.80
	Sep	8.40	0.00	15.00	0.000		0%	179%	6.60
	Oct	8.60	0.00	15.00	0.000		0%	174%	6.40
	Nov	8.50	0.00	15.00	0.000		0%	176%	6.50
	Dec	8.50	0.00	15.00	0.000		0%	176%	6.50
2023	Jan	8.70	0.00	15.00	0.000		0%	172%	6.30
	Feb	8.60	0.00	15.00	0.000		0%	174%	6.40
	Mar	8.90	0.00	15.00	0.000		0%	169%	6.10
	Apr	9.81	0.00	15.00	0.000		0%	153%	5.19

	May	9.50	0.00	15.00	0.000		0%	158%	5.50
	Jun	9.30	0.00	15.00	0.000		0%	161%	5.70
	Jul	9.10	0.00	15.00	0.000		0%	165%	5.90
	Aug	9.40	0.00	15.00	0.000		0%	160%	5.60
	Sep	9.50	0.00	15.00	0.000		0%	158%	5.50
	Oct	9.20	0.00	15.00	0.000		0%	163%	5.80
	Nov	9.40	0.00	15.00	0.000		0%	160%	5.60
	Dec	9.30	0.00	15.00	0.000		0%	161%	5.70
2024	Jan	9.50	0.00	15.00	0.000		0%	158%	5.50
	Feb	9.60	0.00	15.00	0.000		0%	156%	5.40
	Mar	9.70	0.00	15.00	0.000		0%	155%	5.30
	Apr	10.52	0.00	15.00	0.000		0%	143%	4.48
	May	10.20	0.00	15.00	0.000		0%	147%	4.80
	Jun	9.70	0.00	15.00	0.000		0%	155%	5.30
	Jul	9.50	0.00	15.00	0.000		0%	158%	5.50
	Aug	9.40	0.00	15.00	0.000		0%	160%	5.60
	Sep	9.60	0.00	15.00	0.000		0%	156%	5.40
	Oct	9.60	0.00	15.00	0.000		0%	156%	5.40
	Nov	9.40	0.00	15.00	0.000		0%	160%	5.60
	Dec	9.60	0.00	15.00	0.000		0%	156%	5.40
2025	Jan	10.50	0.00	15.00	0.000		0%	143%	4.50
	Feb	10.40	0.00	15.00	0.000		0%	144%	4.60
	Mar	10.60	0.00	15.00	0.000		0%	142%	4.40
	Apr	11.25	0.00	15.00	0.000		0%	133%	3.76
	May	10.90	0.00	15.00	0.000		0%	138%	4.10
	Jun	10.80	0.00	15.00	0.000		0%	139%	4.20
	Jul	10.70	0.00	15.00	0.000		0%	140%	4.30
	Aug	10.60	0.00	15.00	0.000		0%	142%	4.40
	Sep	10.70	0.00	15.00	0.000		0%	140%	4.30
	Oct	10.80	0.00	15.00	0.000		0%	139%	4.20
	Nov	10.70	0.00	15.00	0.000		0%	140%	4.30
	Dec	10.80	0.00	15.00	0.000		0%	139%	4.20
2026	Jan	11.20	0.00	15.00	0.000		0%	134%	3.80

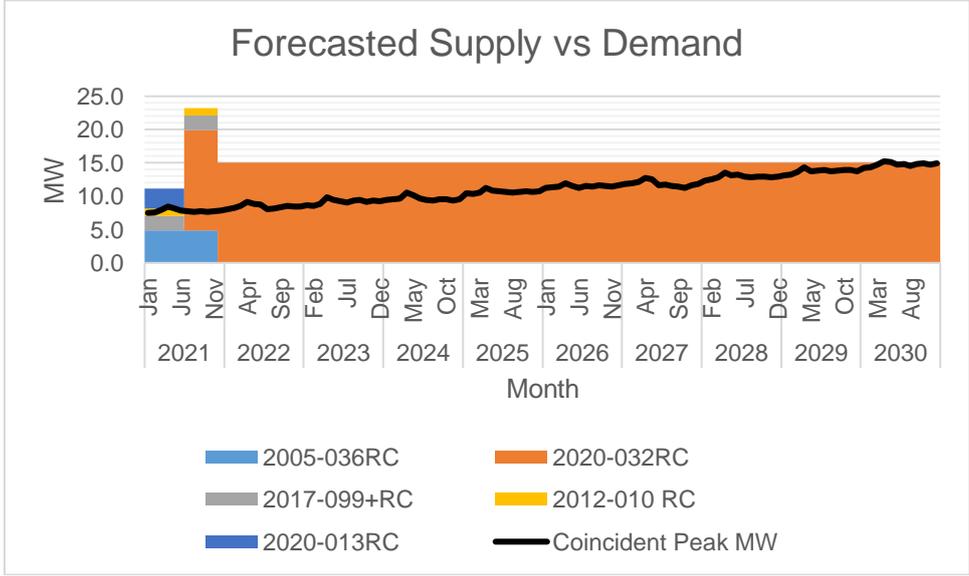
	Feb	11.30	0.00	15.00	0.000		0%	133%	3.70
	Mar	11.40	0.00	15.00	0.000		0%	132%	3.60
	Apr	12.00	0.00	15.00	0.000		0%	125%	3.01
	May	11.50	0.00	15.00	0.000		0%	130%	3.50
	Jun	11.20	0.00	15.00	0.000		0%	134%	3.80
	Jul	11.50	0.00	15.00	0.000		0%	130%	3.50
	Aug	11.40	0.00	15.00	0.000		0%	132%	3.60
	Sep	11.60	0.00	15.00	0.000		0%	129%	3.40
	Oct	11.50	0.00	15.00	0.000		0%	130%	3.50
	Nov	11.40	0.00	15.00	0.000		0%	132%	3.60
	Dec	11.60	0.00	15.00	0.000		0%	129%	3.40
2027	Jan	11.80	0.00	15.00	0.000		0%	127%	3.20
	Feb	11.90	0.00	15.00	0.000		0%	126%	3.10
	Mar	12.10	0.00	15.00	0.000		0%	124%	2.90
	Apr	12.77	0.00	15.00	0.000		0%	117%	2.23
	May	12.50	0.00	15.00	0.000		0%	120%	2.50
	Jun	11.60	0.00	15.00	0.000		0%	129%	3.40
	Jul	11.70	0.00	15.00	0.000		0%	128%	3.30
	Aug	11.50	0.00	15.00	0.000		0%	130%	3.50
	Sep	11.40	0.00	15.00	0.000		0%	132%	3.60
	Oct	11.20	0.00	15.00	0.000		0%	134%	3.80
	Nov	11.60	0.00	15.00	0.000		0%	129%	3.40
	Dec	11.80	0.00	15.00	0.000		0%	127%	3.20
2028	Jan	12.30	0.00	15.00	0.000		0%	122%	2.70
	Feb	12.50	0.00	15.00	0.000		0%	120%	2.50
	Mar	12.80	0.00	15.00	0.000		0%	117%	2.20
	Apr	13.57	0.00	15.00	0.000		0%	111%	1.44
	May	13.10	0.00	15.00	0.000		0%	115%	1.90
	Jun	13.20	0.00	15.00	0.000		0%	114%	1.80
	Jul	12.90	0.00	15.00	0.000		0%	116%	2.10
	Aug	12.80	0.00	15.00	0.000		0%	117%	2.20
	Sep	12.90	0.00	15.00	0.000		0%	116%	2.10
	Oct	12.90	0.00	15.00	0.000		0%	116%	2.10

	Nov	12.80	0.00	15.00	0.000		0%	117%	2.20
	Dec	12.90	0.00	15.00	0.000		0%	116%	2.10
2029	Jan	13.10	0.00	15.00	0.000		0%	115%	1.90
	Feb	13.20	0.00	15.00	0.000		0%	114%	1.80
	Mar	13.60	0.00	15.00	0.000		0%	110%	1.40
	Apr	14.39	0.00	15.00	0.000		0%	104%	0.61
	May	13.70	0.00	15.00	0.000		0%	109%	1.30
	Jun	13.80	0.00	15.00	0.000		0%	109%	1.20
	Jul	13.90	0.00	15.00	0.000		0%	108%	1.10
	Aug	13.70	0.00	15.00	0.000		0%	109%	1.30
	Sep	13.80	0.00	15.00	0.000		0%	109%	1.20
	Oct	13.90	0.00	15.00	0.000		0%	108%	1.10
	Nov	13.98	0.00	15.00	0.000		0%	107%	1.02
	Dec	13.78	0.00	15.00	0.000		0%	109%	1.22
2030	Jan	14.20	0.00	15.00	0.000		0%	106%	0.80
	Feb	14.30	0.00	15.00	0.000		0%	105%	0.70
	Mar	14.70	0.00	15.00	0.000		0%	102%	0.30
	Apr	15.24	0.00	15.00	0.000		0%	98%	-0.24
	May	15.10	0.00	15.00	0.000		0%	99%	-0.10
	Jun	14.70	0.00	15.00	0.000		0%	102%	0.30
	Jul	14.80	0.00	15.00	0.000		0%	101%	0.20
	Aug	14.50	0.00	15.00	0.000		0%	103%	0.50
	Sep	14.80	0.00	15.00	0.000		0%	101%	0.20
	Oct	14.90	0.00	15.00	0.000		0%	101%	0.10
	Nov	14.70	0.00	15.00	0.000		0%	102%	0.30
	Dec	14.90	0.00	15.00	0.000		0%	101%	0.10

The Peak Demand was forecasted using Cubic :  $Y = d(t)^3 + b(t) + a$ , and was assumed to occur on the month of April due to Hot Season of summer. Monthly Peak Demand is at its lowest on the month of March due to Lockdown cause by COVID-19 Pandemic . In general, Peak Demand is expected to grow at a rate of 6.96% annually.



The available supply is generally above the Peak Demand. This is because of the new power supplier that will be operational on the 2<sup>nd</sup> quarter of 2021.



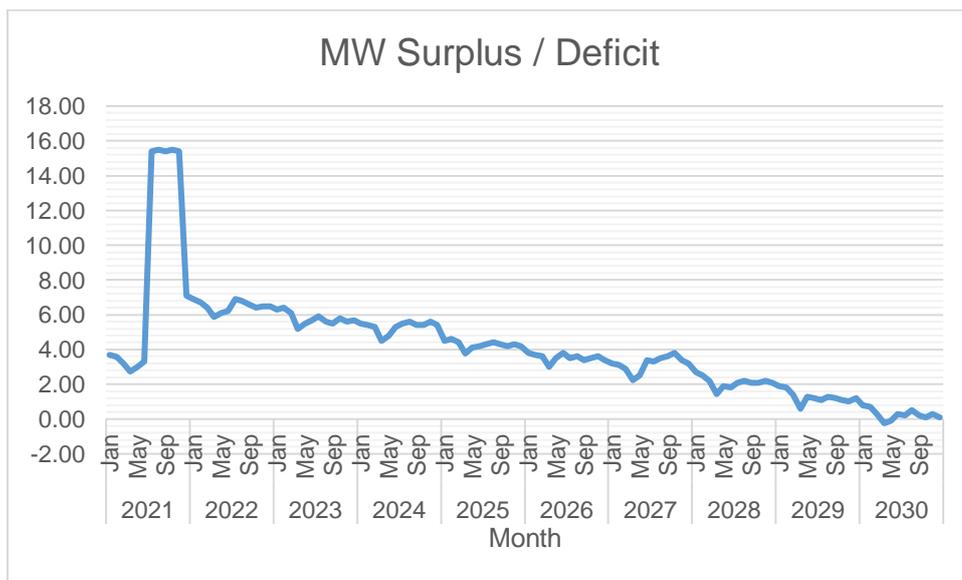
Of the available supply, the largest is 15 MW from INEC (New Power Supplier). This is followed by (9.6 MW from BIPCOR).



As of now there is no New Procurement of Supply since we have just finished our recent CSP



Currently, there is no under-contacting/over-contacting. The highest target contracting level is 300% which is expected to occur on July 11 to November 8, 2021. The lowest target contracting level is 98% which is expected to occur on April 2030.



Currently, there is no over and under contracting in terms of MW since our contract with BIPCOR is Load Following and Demand. Our Emergency power with INEC is for back-up power only if BIPCOR will conduct their engine maintenance.

		MWh Offtake	MWh Output	MWh System Loss	Transm'n Loss	System Loss
2021	Jan	3,834	3,511	323	0.00%	8.41%
	Feb	3,798	3,492	306	0.00%	8.06%
	Mar	3,860	3,563	296	0.00%	7.67%
	Apr	3,849	3,525	324	0.00%	8.41%
	May	4,324	3,967	357	0.00%	8.25%
	Jun	4,214	3,865	349	0.00%	8.29%

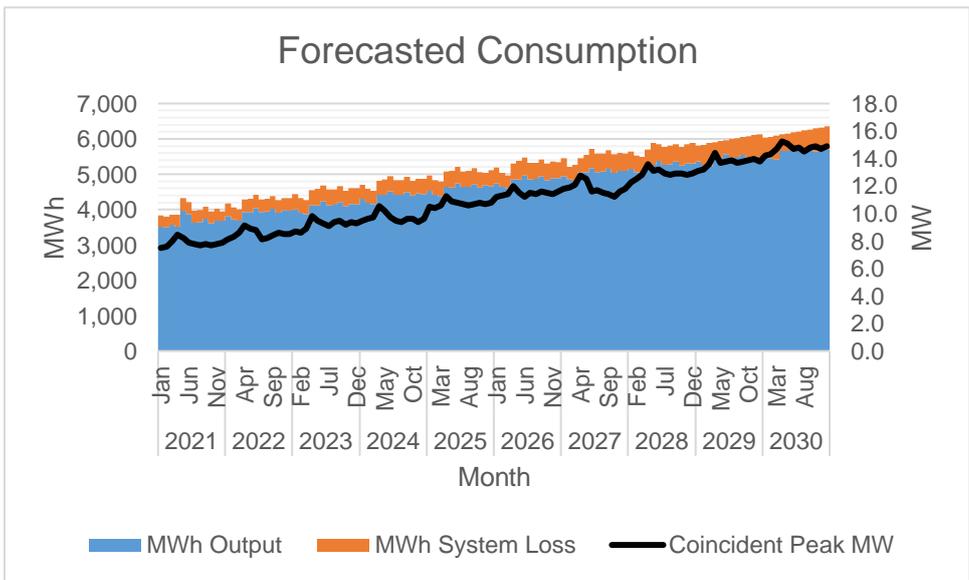
	Jul	3,970	3,638	332	0.00%	8.36%
	Aug	3,986	3,653	333	0.00%	8.36%
	Sep	4,072	3,733	339	0.00%	8.33%
	Oct	3,946	3,615	330	0.00%	8.37%
	Nov	4,015	3,680	335	0.00%	8.35%
	Dec	3,949	3,681	268	0.00%	6.78%
2022	Jan	4,169	3,825	344	0.00%	8.26%
	Feb	4,054	3,726	328	0.00%	8.08%
	Mar	4,004	3,686	318	0.00%	7.94%
	Apr	4,282	3,937	345	0.00%	8.06%
	May	4,315	3,936	379	0.00%	8.77%
	Jun	4,415	4,044	371	0.00%	8.40%
	Jul	4,293	3,939	354	0.00%	8.24%
	Aug	4,307	3,952	355	0.00%	8.24%
	Sep	4,386	4,025	361	0.00%	8.23%
	Oct	4,271	3,919	352	0.00%	8.24%
	Nov	4,334	3,977	357	0.00%	8.24%
	Dec	4,330	3,966	364	0.00%	8.40%
2023	Jan	4,437	4,007	430	0.00%	9.69%
	Feb	4,322	3,909	414	0.00%	9.57%
	Mar	4,273	3,869	404	0.00%	9.45%
	Apr	4,551	4,120	431	0.00%	9.48%
	May	4,584	4,119	465	0.00%	10.14%
	Jun	4,684	4,227	457	0.00%	9.75%
	Jul	4,561	4,122	440	0.00%	9.64%
	Aug	4,575	4,134	441	0.00%	9.64%
	Sep	4,654	4,207	447	0.00%	9.60%
	Oct	4,539	4,101	438	0.00%	9.65%
	Nov	4,603	4,160	443	0.00%	9.62%
	Dec	4,599	4,149	450	0.00%	9.78%
2024	Jan	4,704	4,298	405	0.00%	8.62%
	Feb	4,589	4,200	389	0.00%	8.48%
	Mar	4,539	4,160	379	0.00%	8.35%
	Apr	4,817	4,411	407	0.00%	8.44%
	May	4,850	4,410	440	0.00%	9.07%
	Jun	4,950	4,518	432	0.00%	8.73%
	Jul	4,828	4,413	415	0.00%	8.60%
	Aug	4,842	4,426	416	0.00%	8.60%
	Sep	4,921	4,499	422	0.00%	8.58%
	Oct	4,806	4,392	413	0.00%	8.60%
	Nov	4,869	4,451	418	0.00%	8.59%
	Dec	4,865	4,440	425	0.00%	8.74%
2025	Jan	4,955	4,523	432	0.00%	8.72%
	Feb	4,840	4,424	416	0.00%	8.59%
	Mar	4,790	4,385	406	0.00%	8.47%
	Apr	5,069	4,635	433	0.00%	8.55%
	May	5,101	4,635	467	0.00%	9.15%
	Jun	5,202	4,743	459	0.00%	8.82%
	Jul	5,079	4,637	442	0.00%	8.70%

	Aug	5,093	4,650	443	0.00%	8.69%
	Sep	5,172	4,723	449	0.00%	8.68%
	Oct	5,057	4,617	440	0.00%	8.70%
	Nov	5,035	4,675	359	0.00%	7.14%
	Dec	5,116	4,664	452	0.00%	8.83%
2026	Jan	5,190	4,740	450	0.00%	8.67%
	Feb	5,030	4,642	389	0.00%	7.73%
	Mar	4,960	4,602	358	0.00%	7.23%
	Apr	5,300	4,853	448	0.00%	8.45%
	May	5,380	4,852	528	0.00%	9.82%
	Jun	5,480	4,960	520	0.00%	9.49%
	Jul	5,320	4,855	466	0.00%	8.75%
	Aug	5,330	4,868	463	0.00%	8.68%
	Sep	5,420	4,941	480	0.00%	8.85%
	Oct	5,310	4,835	476	0.00%	8.96%
	Nov	5,363	4,893	471	0.00%	8.78%
	Dec	5,340	4,882	459	0.00%	8.59%
2027	Jan	5,451	4,951	500	0.00%	9.17%
	Feb	5,211	4,853	358	0.00%	6.88%
	Mar	5,271	4,813	458	0.00%	8.69%
	Apr	5,451	5,064	387	0.00%	7.11%
	May	5,551	5,063	488	0.00%	8.79%
	Jun	5,721	5,171	550	0.00%	9.61%
	Jul	5,581	5,066	516	0.00%	9.24%
	Aug	5,591	5,079	513	0.00%	9.17%
	Sep	5,671	5,152	520	0.00%	9.16%
	Oct	5,571	5,045	526	0.00%	9.44%
	Nov	5,601	5,104	498	0.00%	8.88%
	Dec	5,591	5,093	498	0.00%	8.92%
2028	Jan	5,639	5,156	483	0.00%	8.56%
	Feb	5,537	5,058	479	0.00%	8.66%
	Mar	5,495	5,018	477	0.00%	8.69%
	Apr	5,696	5,269	427	0.00%	7.50%
	May	5,885	5,268	617	0.00%	10.48%
	Jun	5,846	5,376	470	0.00%	8.03%
	Jul	5,780	5,270	509	0.00%	8.81%
	Aug	5,807	5,283	523	0.00%	9.01%
	Sep	5,849	5,356	493	0.00%	8.43%
	Oct	5,767	5,250	517	0.00%	8.97%
	Nov	5,841	5,308	533	0.00%	9.12%
	Dec	5,879	5,298	581	0.00%	9.89%
2029	Jan	5,810	5,355	455	0.00%	7.83%
	Feb	5,839	5,257	582	0.00%	9.97%
	Mar	5,877	5,217	660	0.00%	11.23%
	Apr	5,906	5,468	438	0.00%	7.42%
	May	5,934	5,467	467	0.00%	7.87%
	Jun	5,963	5,575	388	0.00%	6.50%
	Jul	5,991	5,470	522	0.00%	8.71%
	Aug	6,020	5,483	537	0.00%	8.92%

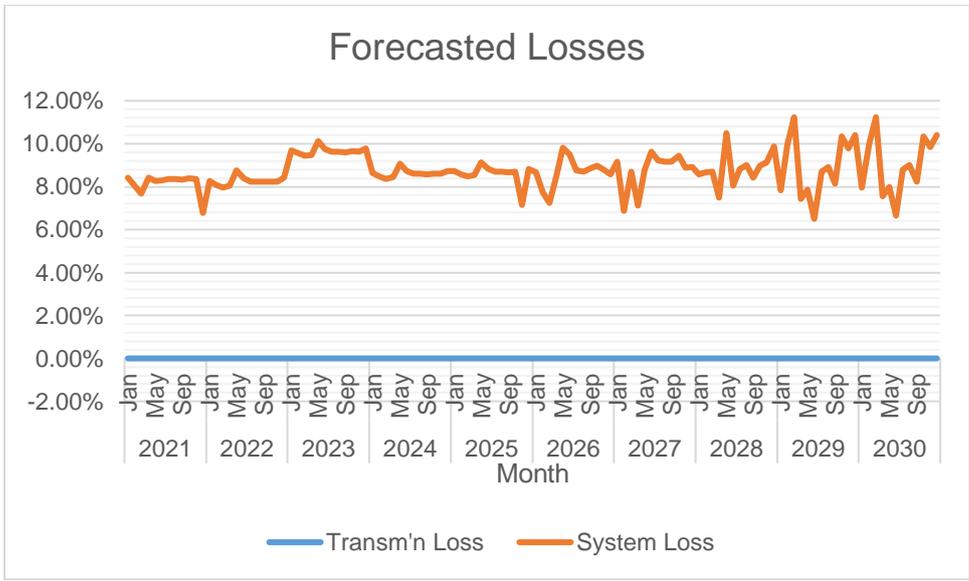
	Sep	6,048	5,556	493	0.00%	8.15%
	Oct	6,077	5,449	627	0.00%	10.32%
	Nov	6,105	5,508	598	0.00%	9.79%
	Dec	6,134	5,497	637	0.00%	10.39%
2030	Jan	6,028	5,549	479	0.00%	7.94%
	Feb	6,056	5,451	606	0.00%	10.00%
	Mar	6,095	5,411	684	0.00%	11.22%
	Apr	6,123	5,662	462	0.00%	7.54%
	May	6,152	5,661	491	0.00%	7.98%
	Jun	6,181	5,769	411	0.00%	6.66%
	Jul	6,209	5,663	546	0.00%	8.79%
	Aug	6,238	5,676	561	0.00%	9.00%
	Sep	6,266	5,749	517	0.00%	8.25%
	Oct	6,295	5,643	651	0.00%	10.35%
	Nov	6,323	5,702	622	0.00%	9.83%
	Dec	6,352	5,691	661	0.00%	10.41%

MWh Offtake was forecasted using Cubic Logarithmic with Horizon:  $Y = \ln(t)^3 + \ln(t) + a$ . The assumed load factor is 70%.

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



MWh Output was expected to grow at a rate of 5.14% annually.



System Loss is expected to range from 6.5% to 11.22%.

## Power Supply

Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
2005-036RC	Base	Bantayan Island Power Corporation	4.89	36,000	11/1/2005	11/8/2021
2012-010 RC	Peaking	Bantayan Island Power Corporation	1.70	2,500	7/11/2012	11/8/2021

The PSA with BIPCOR filed with ERC under Case No. 2005-036RC was procured through Swiss Challenge. It was selected to provide for base requirements due to power crisis. Historically, the utilization of the PSA is more than 100%. Outages of the plant led to unserved energy of around 2,230,304.48MWh in the past year. The actual billed overall monthly charge under the PSA ranged from 6.0208 P/kWh to 8.8785 P/kWh in the same period. Under ERC Case 2012-0-10 RC our Minimum Contracted demand is 1.7MW but due to its de-rated engine its currently Maximum Dependable Capacity or MDC was downgraded to 1.1MW only.

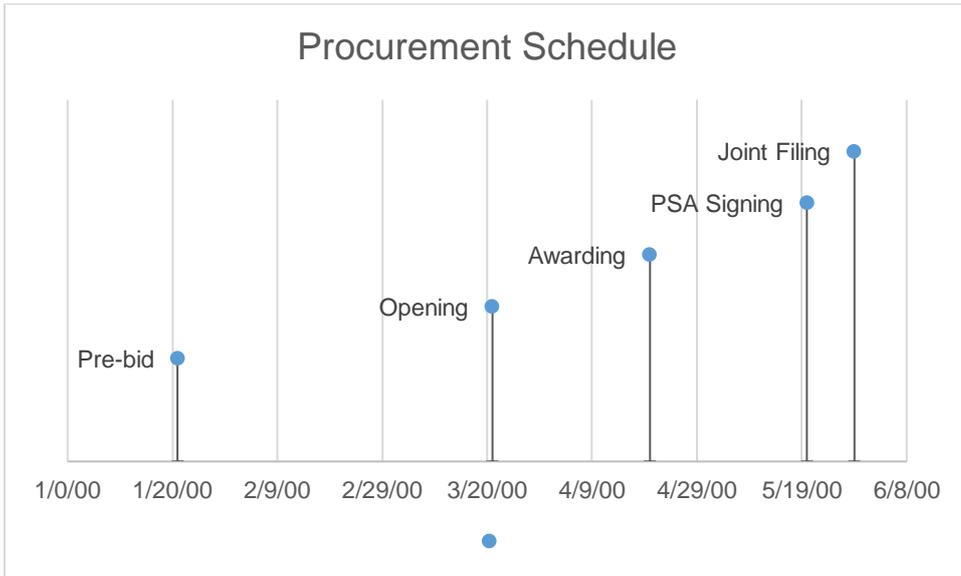
Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
2017-099+RC	Intermediate	Bantayan Island Power Corporation	3.00	5,000	10/11/2018	11/8/2021
2020-032RC	Base	Other	15.00	45,000	7/1/2021	7/1/2036
2020-013RC	Peaking	Other	3.00	2,820	8/11/2020	8/11/2021

The PSA with BIPCOR filed with ERC under Case No. 2017-099+RC was an amendment from the previous PSAs. It was a pending application by BANELCO and BIPCOR still waiting for approval of ERC but due to necessity BIPCOR's additional of 3MW generator set is already operational. But however this 3MW engine was already de-rated and currently has a Maximum Dependable Capacity or MDC of 2.2MW only.

The PSA with INEC filed with ERC under Case No. 2020-032RC was procured through CSP. It was selected to provide for base requirements due to end of contract with BIPCOR. On the other hand, ERC Case No. 2020-013C is also a joint application of BANELCO and INEC which was approved by DOE through COE as an emergency power or cold reserve.

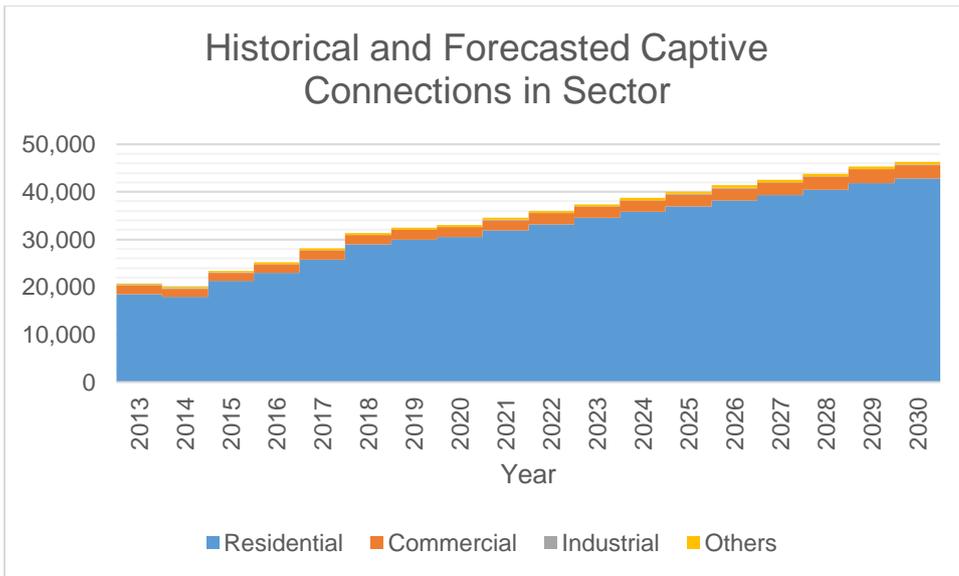
Type
Minimum MW
Minimum MWh/yr
PSA Start
PSA End
Publication

Pre-bid	21
Opening	81
Awarding	111
PSA Signing	141
Joint Filing	150



As to date, there is no scheduled CSP for the next five to ten years.

# Captive Customer Connections



The number of Residential connections is expected to grow at a rate of 3.14% annually. Said customer class is expected to account for 59.25% of the total consumption.