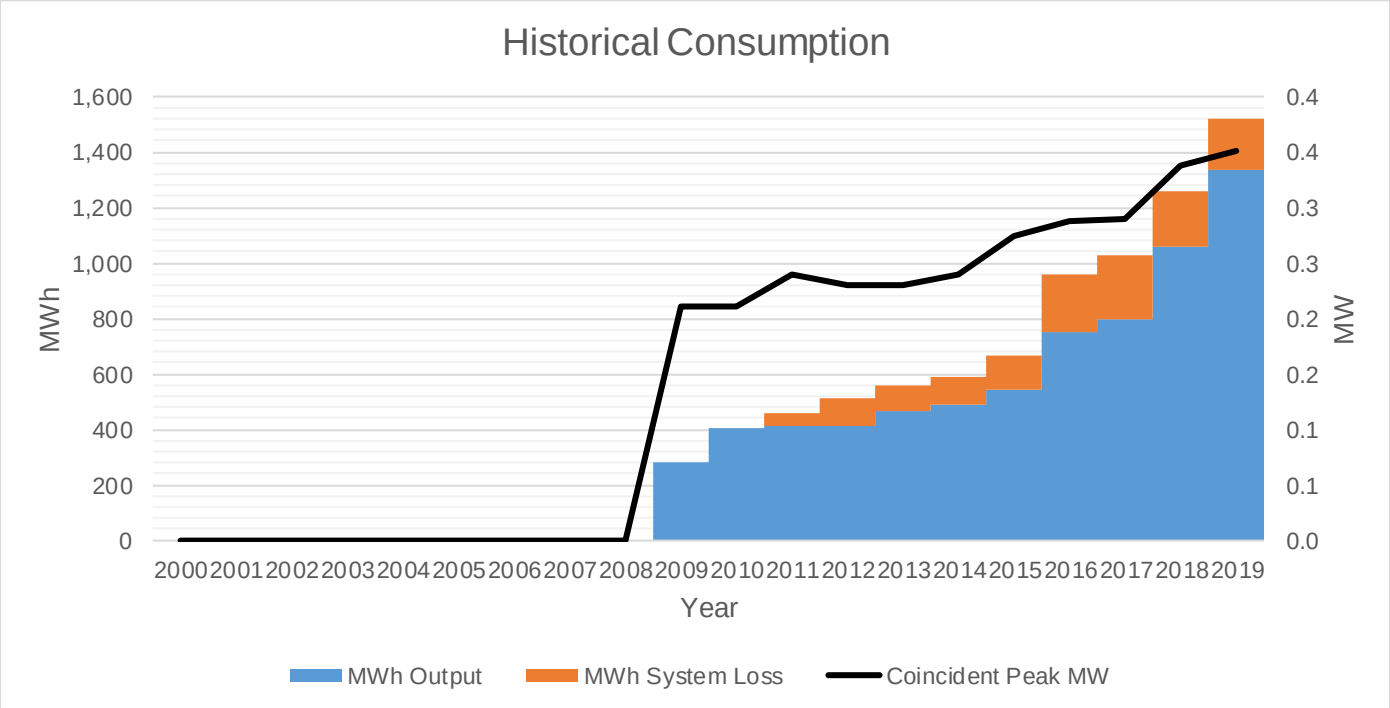
Power Supply Procurement Plan
2020
(Talicud Island)

Davao del Norte Electric Cooperative, Inc.

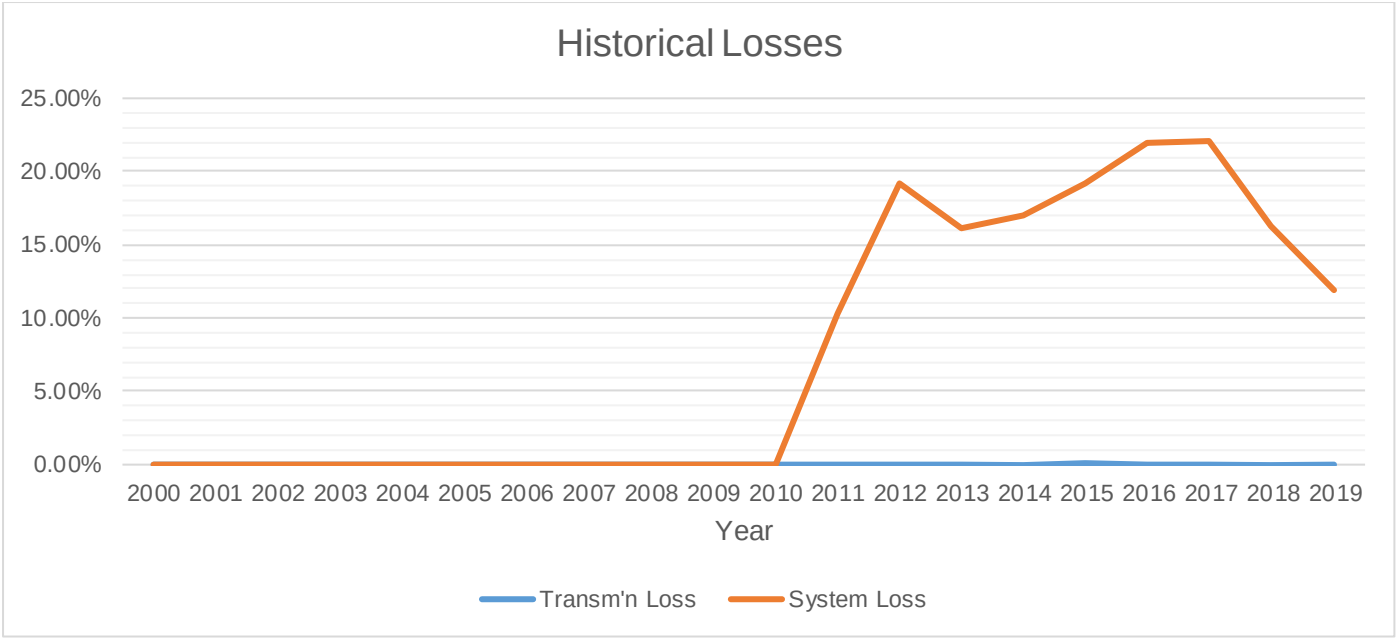
Historical Consumption Data

	Coincident Peak MW	MWh Offtake	MWh Input	MWh Output	MWh System Loss	Load Factor	Discrepancy	Transm'n Loss	System Loss
2009	0.21	430	430	283	0	23%	-34.09%	0.00%	0.00%
2010	0.21	464	464	405	0	25%	-12.65%	0.00%	0.00%
2011	0.24	463	463	415	48	22%	-0.06%	0.00%	10.37%
2012	0.23	515	515	416	99	26%	-0.09%	0.00%	19.22%
2013	0.23	558	558	468	90	28%	0.00%	0.00%	16.13%
2014	0.24	586	586	486	100	28%	0.00%	0.01%	16.98%
2015	0.27	671	670	542	129	28%	0.00%	0.10%	19.21%
2016	0.29	961	961	749	212	38%	0.00%	0.00%	22.03%
2017	0.29	1,027	1,027	800	227	40%	0.00%	0.00%	22.08%
2018	0.34	1,262	1,262	1,056	205	43%	-0.03%	0.00%	16.24%
2019	0.35	1,519	1,519	1,339	180	49%	0.00%	0.00%	11.84%

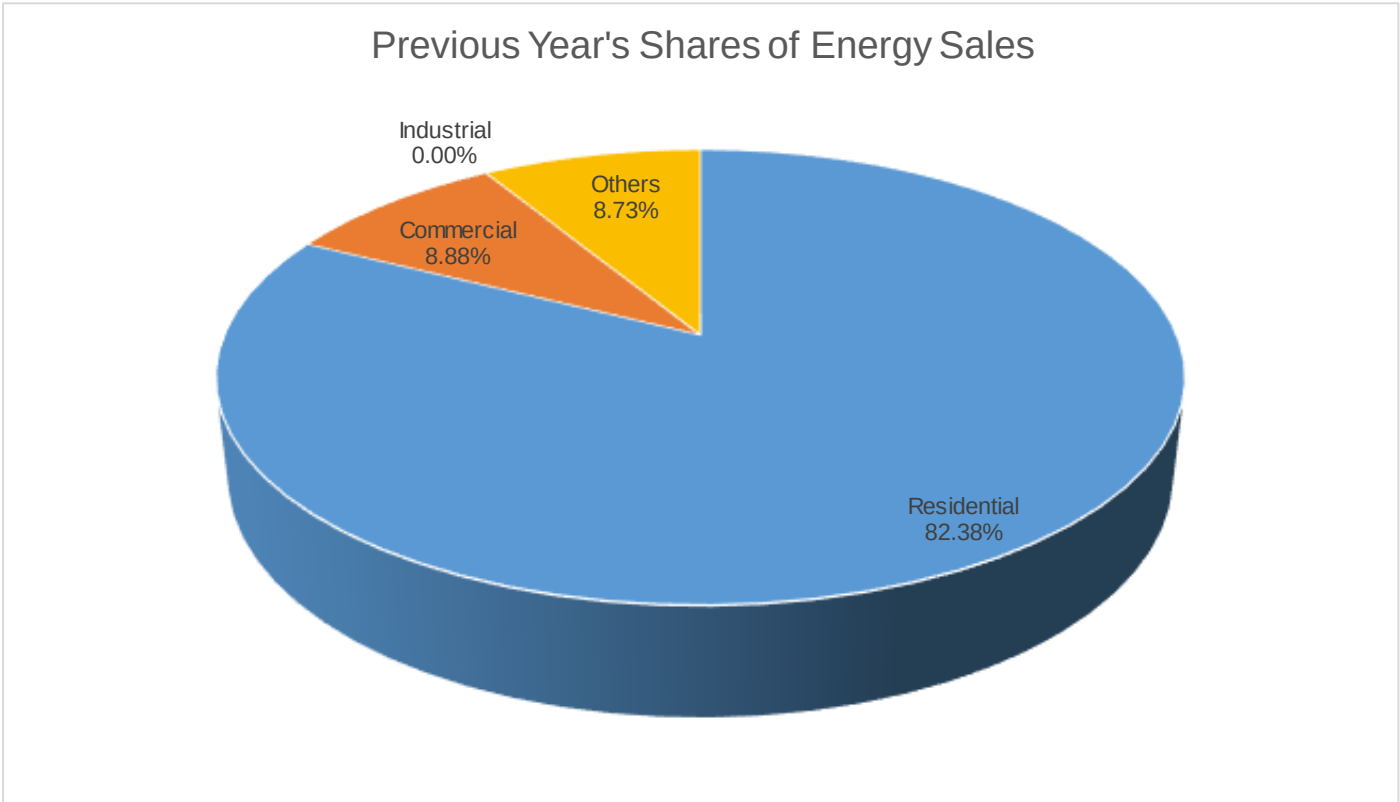
Peak Demand increased from 0.21 MW in 2009 to 0.35 MW in 2019 at an annual rate of 5.46% due to increased population and economic development. MWh Offtake increased from 430 MWh in 2009 to 1,527 MWh in 2019 at a yearly rate of 14.08% due to increased energy consumption and connections in Talicud Island. Within the same period, the Load Factor ranged from 23% to 50%. There was no abrupt change in consumption from 2009 to 2019.



MWh Output increased from the year 2018 to the year 2019 at a rate of 26.80%, while MWh System Loss decreased at 8.29% within the same period.

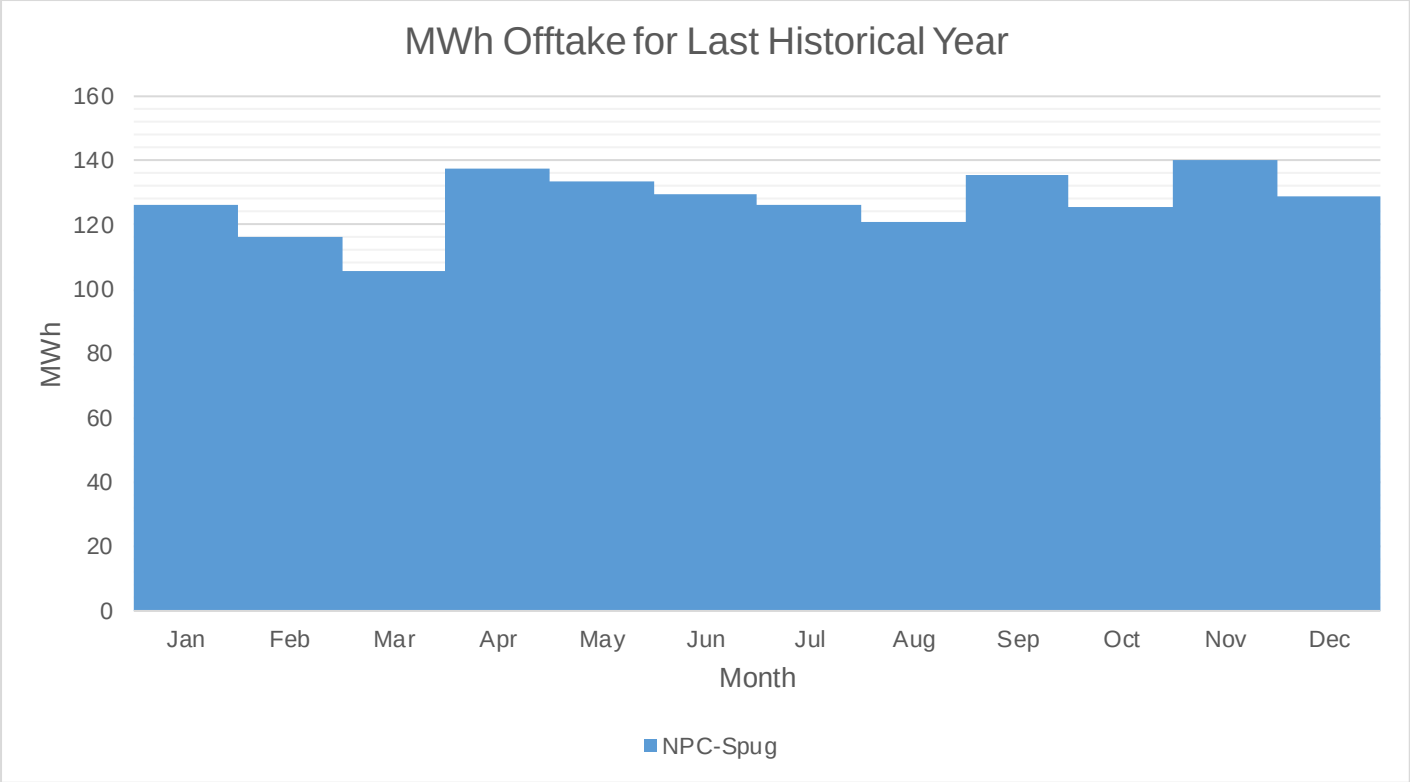


Historically, Transmission Loss is zero, while System Loss ranged from 10.37% to 22.12%. System Loss peaked at 22.12% in 2017 because of power interruptions experienced due to bad weather.



Residential customers account for the bulk of energy sales at 82.38% due to the high number of connections. In contrast, commercial and other customers accounted for only 8.88% and 8.73% of energy sales due to the low number of connections.

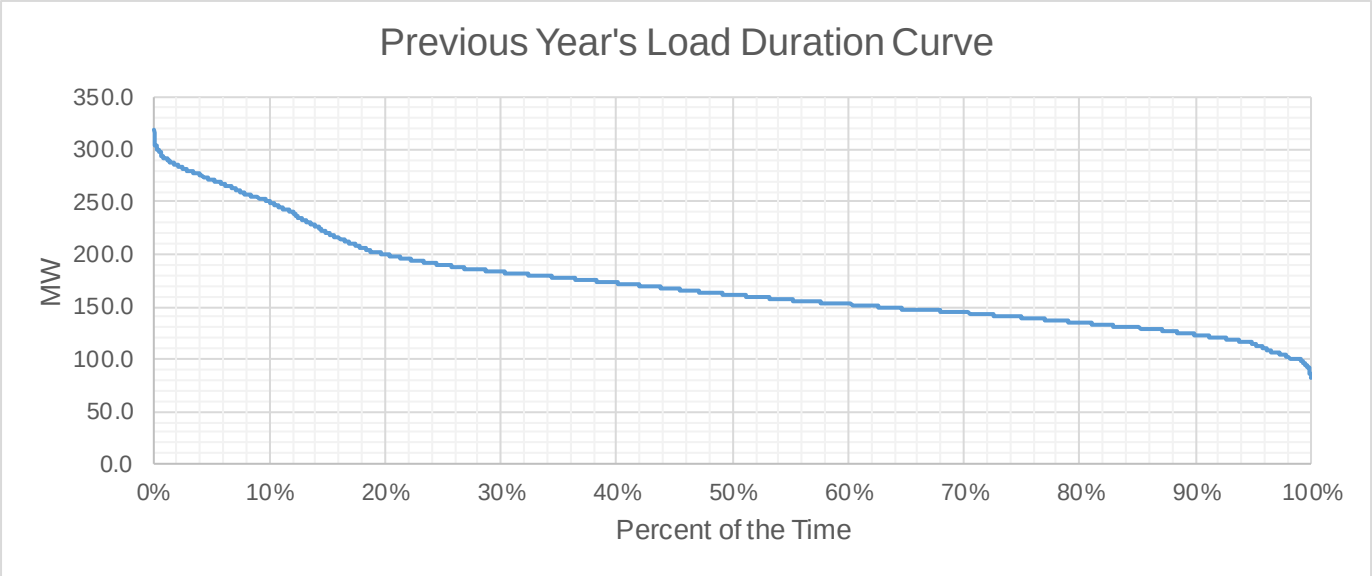
This off-grid is located at Talicud Island, where the only commercial customer is the few beach resort in the area. The only transportation available going to the island is through small boats such as speed boat & launch / lancha.



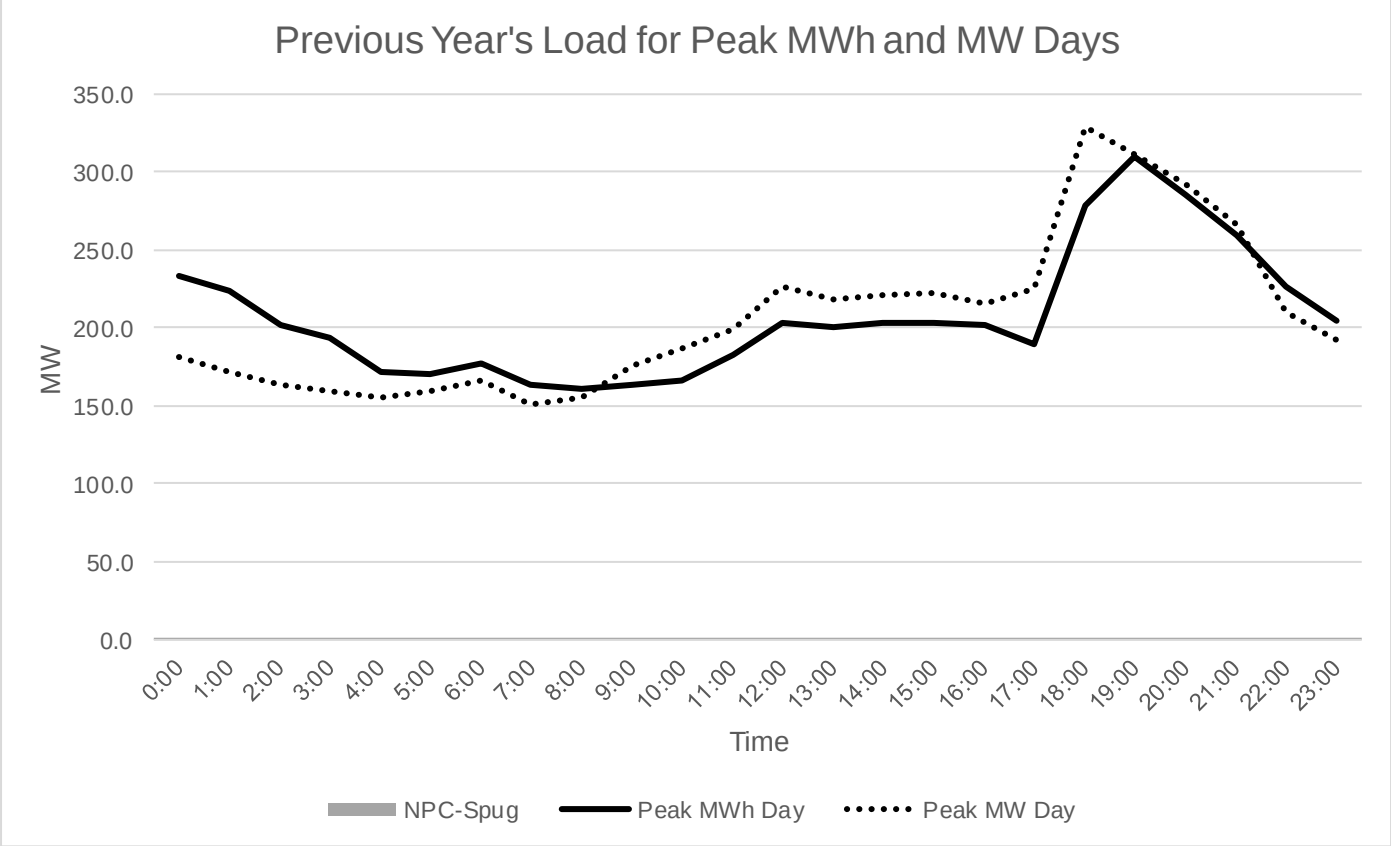
For March, the total Offtake for the last historical year is lower than the PSA's quantity.

The NPC-Spug directly supplies the power to the island. There is no substation or feeder connected to the distribution lines, only a recloser.

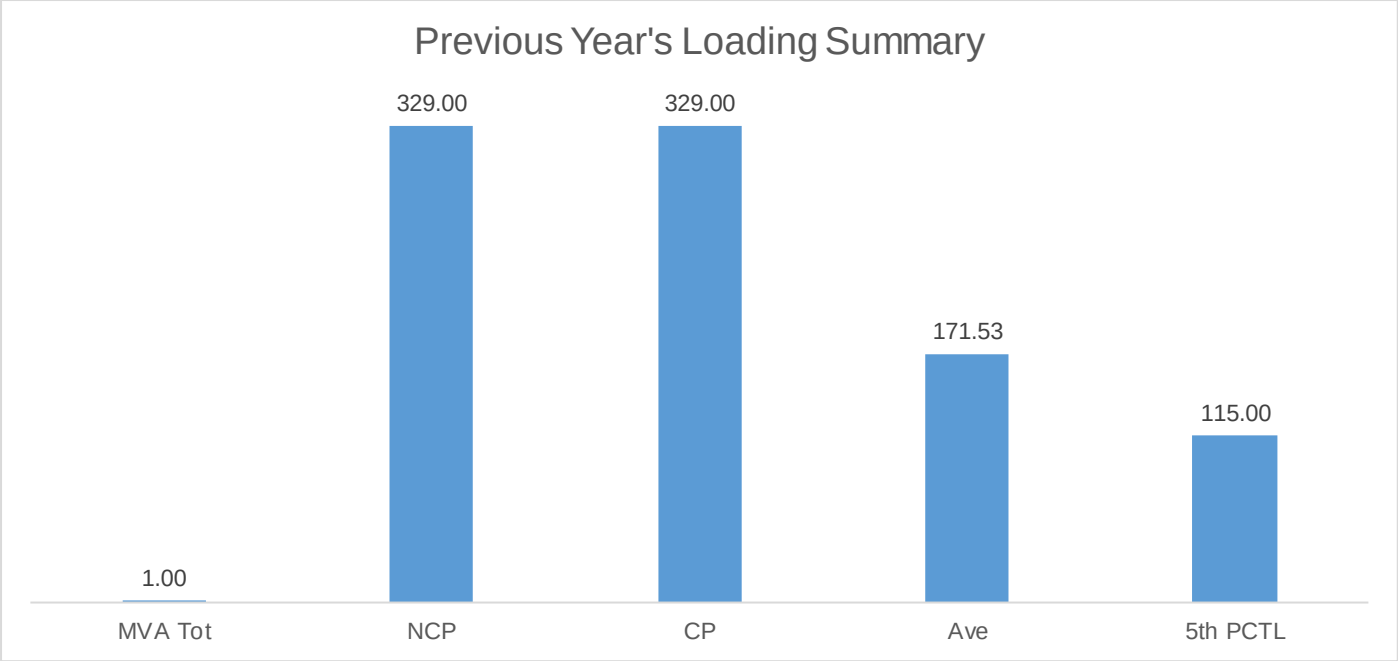
Previous Year's Load Profile



Based on the Load Duration Curve, the minimum load is 82 KW and the maximum load is 329 KW for the last historical year. The island always experienced terrible weather, which is the leading cause of power interruption.



Peak MW occurred at interval 1900 due to the high power demand of residential consumers during dinner time. Peak daily MWh occurred at interval 1800 due to increased energy consumption. As shown in the Load Curves, the available supply is higher than the Peak Demand.



The Non-coincident Peak Demand is 329 KW, which is around 32.9% of the total substation capacity of 1 MVA at a power factor of 0.33. The load factor or the ratio between the Average Load of 171.53 MW and the Non-coincident Peak Demand is 52.14%. A safe estimate of the accurate minimum load is the fifth percentile load of 115 MW which is 34.95% of the Non-coincident Peak Demand.

Metering Point	Substation MVA	Substation Peak MW
NPC SPUG	1	329.000

There is only one metering point on DANECO's off-grid and the load is only 33% of the generator plant's available capacity. The generator's functional capacity is 1 MVA which is enough to supply the island's power demand.

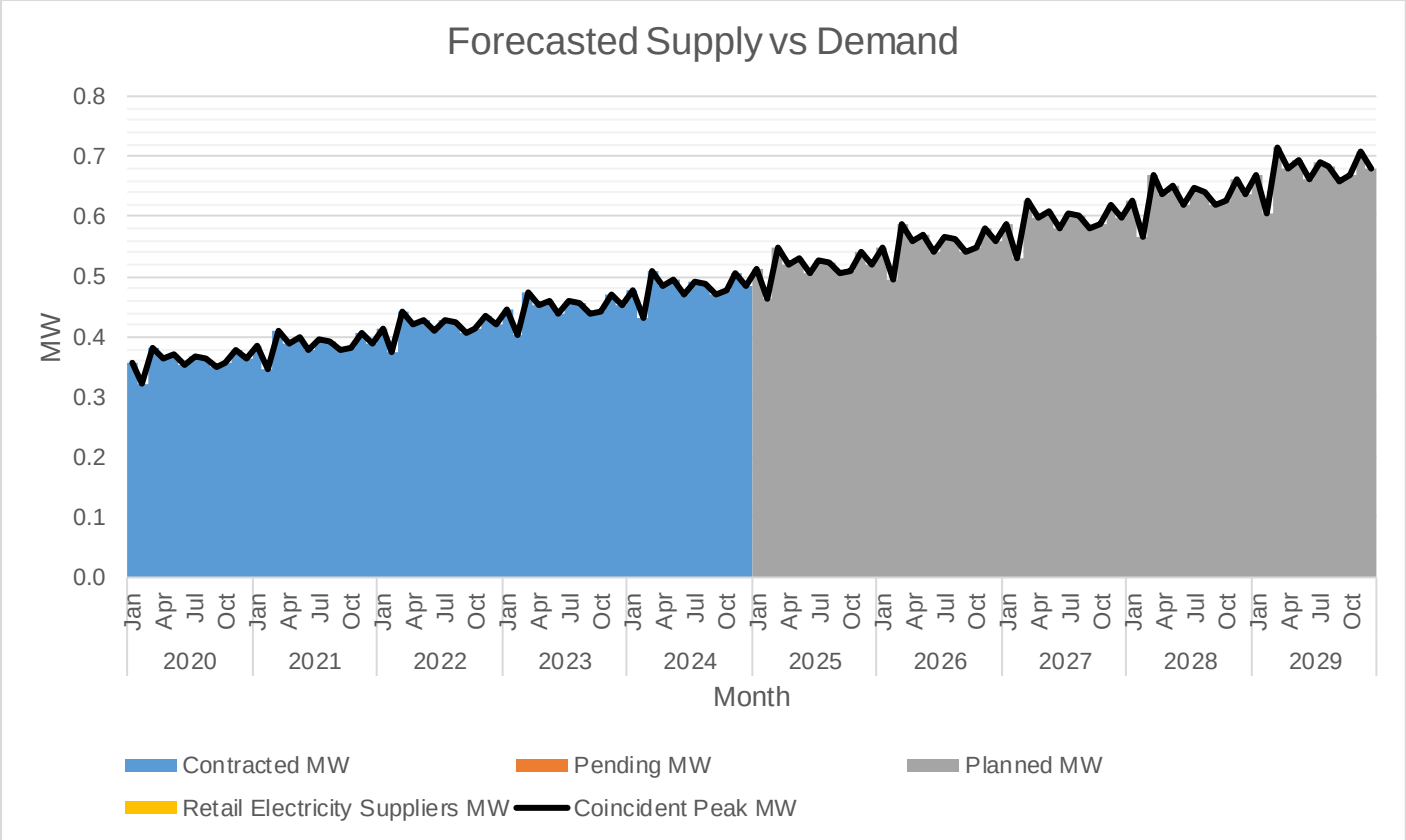
Forecasted Consumption Data

		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Existing Contracting Level	Target Contracting Level	MW Surplus / Deficit
2020	Jan	0.36	0.36	0.00	0.000	100%	100%	0.00
	Feb	0.32	0.32	0.00	0.000	100%	100%	0.00
	Mar	0.38	0.38	0.00	0.000	100%	100%	0.00
	Apr	0.36	0.36	0.00	0.000	100%	100%	0.00
	May	0.37	0.37	0.00	0.000	100%	100%	0.00
	Jun	0.35	0.35	0.00	0.000	100%	100%	0.00
	Jul	0.37	0.37	0.00	0.000	100%	100%	0.00
	Aug	0.36	0.36	0.00	0.000	100%	100%	0.00
	Sep	0.35	0.35	0.00	0.000	100%	100%	0.00
	Oct	0.36	0.36	0.00	0.000	100%	100%	0.00
	Nov	0.38	0.38	0.00	0.000	100%	100%	0.00
	Dec	0.36	0.36	0.00	0.000	100%	100%	0.00
2021	Jan	0.38	0.38	0.00	0.000	100%	100%	0.00
	Feb	0.35	0.35	0.00	0.000	100%	100%	0.00
	Mar	0.41	0.41	0.00	0.000	100%	100%	0.00
	Apr	0.39	0.39	0.00	0.000	100%	100%	0.00
	May	0.40	0.40	0.00	0.000	100%	100%	0.00
	Jun	0.38	0.38	0.00	0.000	100%	100%	0.00
	Jul	0.40	0.40	0.00	0.000	100%	100%	0.00
	Aug	0.39	0.39	0.00	0.000	100%	100%	0.00
	Sep	0.38	0.38	0.00	0.000	100%	100%	0.00
	Oct	0.38	0.38	0.00	0.000	100%	100%	0.00
	Nov	0.41	0.41	0.00	0.000	100%	100%	0.00
	Dec	0.39	0.39	0.00	0.000	100%	100%	0.00
2022	Jan	0.41	0.41	0.00	0.000	100%	100%	0.00
	Feb	0.37	0.37	0.00	0.000	100%	100%	0.00
	Mar	0.44	0.44	0.00	0.000	100%	100%	0.00
	Apr	0.42	0.42	0.00	0.000	100%	100%	0.00
	May	0.43	0.43	0.00	0.000	100%	100%	0.00
	Jun	0.41	0.41	0.00	0.000	100%	100%	0.00
	Jul	0.43	0.43	0.00	0.000	100%	100%	0.00
	Aug	0.42	0.42	0.00	0.000	100%	100%	0.00
	Sep	0.41	0.41	0.00	0.000	100%	100%	0.00
	Oct	0.41	0.41	0.00	0.000	100%	100%	0.00
	Nov	0.44	0.44	0.00	0.000	100%	100%	0.00
	Dec	0.42	0.42	0.00	0.000	100%	100%	0.00
2023	Jan	0.45	0.45	0.00	0.000	100%	100%	0.00
	Feb	0.40	0.40	0.00	0.000	100%	100%	0.00
	Mar	0.47	0.47	0.00	0.000	100%	100%	0.00
	Apr	0.45	0.45	0.00	0.000	100%	100%	0.00
	May	0.46	0.46	0.00	0.000	100%	100%	0.00
	Jun	0.44	0.44	0.00	0.000	100%	100%	0.00
	Jul	0.46	0.46	0.00	0.000	100%	100%	0.00
	Aug	0.45	0.45	0.00	0.000	100%	100%	0.00
	Sep	0.44	0.44	0.00	0.000	100%	100%	0.00

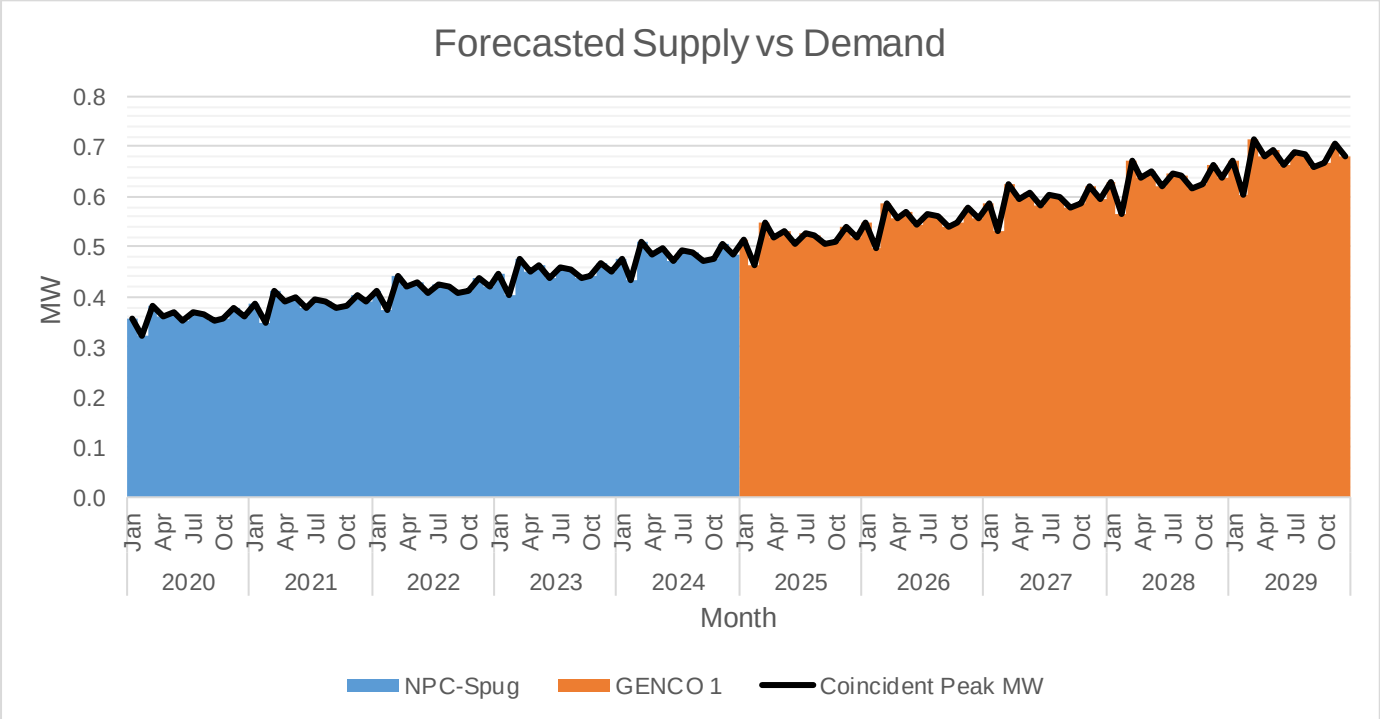
		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Existing Contracting Level	Target Contracting Level	MW Surplus / Deficit
	Oct	0.44	0.44	0.00	0.000	100%	100%	0.00
	Nov	0.47	0.47	0.00	0.000	100%	100%	0.00
	Dec	0.45	0.45	0.00	0.000	100%	100%	0.00
2024	Jan	0.48	0.48	0.00	0.000	100%	100%	0.00
	Feb	0.43	0.43	0.00	0.000	100%	100%	0.00
	Mar	0.51	0.51	0.00	0.000	100%	100%	0.00
	Apr	0.49	0.49	0.00	0.000	100%	100%	0.00
	May	0.50	0.50	0.00	0.000	100%	100%	0.00
	Jun	0.47	0.47	0.00	0.000	100%	100%	0.00
	Jul	0.49	0.49	0.00	0.000	100%	100%	0.00
	Aug	0.49	0.49	0.00	0.000	100%	100%	0.00
	Sep	0.47	0.47	0.00	0.000	100%	100%	0.00
	Oct	0.48	0.48	0.00	0.000	100%	100%	0.00
	Nov	0.50	0.50	0.00	0.000	100%	100%	0.00
	Dec	0.49	0.49	0.00	0.000	100%	100%	0.00
2025	Jan	0.51	0.00	0.00	0.513	0%	100%	0.00
	Feb	0.46	0.00	0.00	0.463	0%	100%	0.00
	Mar	0.55	0.00	0.00	0.547	0%	100%	0.00
	Apr	0.52	0.00	0.00	0.521	0%	100%	0.00
	May	0.53	0.00	0.00	0.532	0%	100%	0.00
	Jun	0.51	0.00	0.00	0.507	0%	100%	0.00
	Jul	0.53	0.00	0.00	0.528	0%	100%	0.00
	Aug	0.52	0.00	0.00	0.524	0%	100%	0.00
	Sep	0.51	0.00	0.00	0.505	0%	100%	0.00
	Oct	0.51	0.00	0.00	0.511	0%	100%	0.00
	Nov	0.54	0.00	0.00	0.541	0%	100%	0.00
	Dec	0.52	0.00	0.00	0.521	0%	100%	0.00
2026	Jan	0.55	0.00	0.00	0.549	0%	100%	0.00
	Feb	0.50	0.00	0.00	0.496	0%	100%	0.00
	Mar	0.59	0.00	0.00	0.586	0%	100%	0.00
	Apr	0.56	0.00	0.00	0.558	0%	100%	0.00
	May	0.57	0.00	0.00	0.569	0%	100%	0.00
	Jun	0.54	0.00	0.00	0.543	0%	100%	0.00
	Jul	0.57	0.00	0.00	0.566	0%	100%	0.00
	Aug	0.56	0.00	0.00	0.561	0%	100%	0.00
	Sep	0.54	0.00	0.00	0.541	0%	100%	0.00
	Oct	0.55	0.00	0.00	0.548	0%	100%	0.00
	Nov	0.58	0.00	0.00	0.579	0%	100%	0.00
	Dec	0.56	0.00	0.00	0.558	0%	100%	0.00
2027	Jan	0.59	0.00	0.00	0.588	0%	100%	0.00
	Feb	0.53	0.00	0.00	0.531	0%	100%	0.00
	Mar	0.63	0.00	0.00	0.627	0%	100%	0.00
	Apr	0.60	0.00	0.00	0.597	0%	100%	0.00
	May	0.61	0.00	0.00	0.609	0%	100%	0.00
	Jun	0.58	0.00	0.00	0.581	0%	100%	0.00
	Jul	0.61	0.00	0.00	0.606	0%	100%	0.00
	Aug	0.60	0.00	0.00	0.600	0%	100%	0.00

		Coincident Peak MW	Contracted MW	Pending MW	Planned MW	Existing Contracting Level	Target Contracting Level	MW Surplus / Deficit
	Sep	0.58	0.00	0.00	0.579	0%	100%	0.00
	Oct	0.59	0.00	0.00	0.586	0%	100%	0.00
	Nov	0.62	0.00	0.00	0.620	0%	100%	0.00
	Dec	0.60	0.00	0.00	0.597	0%	100%	0.00
2028	Jan	0.63	0.00	0.00	0.628	0%	100%	0.00
	Feb	0.57	0.00	0.00	0.567	0%	100%	0.00
	Mar	0.67	0.00	0.00	0.670	0%	100%	0.00
	Apr	0.64	0.00	0.00	0.638	0%	100%	0.00
	May	0.65	0.00	0.00	0.651	0%	100%	0.00
	Jun	0.62	0.00	0.00	0.620	0%	100%	0.00
	Jul	0.65	0.00	0.00	0.647	0%	100%	0.00
	Aug	0.64	0.00	0.00	0.641	0%	100%	0.00
	Sep	0.62	0.00	0.00	0.618	0%	100%	0.00
	Oct	0.63	0.00	0.00	0.626	0%	100%	0.00
	Nov	0.66	0.00	0.00	0.662	0%	100%	0.00
	Dec	0.64	0.00	0.00	0.638	0%	100%	0.00
2029	Jan	0.67	0.00	0.00	0.670	0%	100%	0.00
	Feb	0.60	0.00	0.00	0.605	0%	100%	0.00
	Mar	0.71	0.00	0.00	0.715	0%	100%	0.00
	Apr	0.68	0.00	0.00	0.680	0%	100%	0.00
	May	0.69	0.00	0.00	0.694	0%	100%	0.00
	Jun	0.66	0.00	0.00	0.662	0%	100%	0.00
	Jul	0.69	0.00	0.00	0.690	0%	100%	0.00
	Aug	0.68	0.00	0.00	0.684	0%	100%	0.00
	Sep	0.66	0.00	0.00	0.660	0%	100%	0.00
	Oct	0.67	0.00	0.00	0.668	0%	100%	0.00
	Nov	0.71	0.00	0.00	0.707	0%	100%	0.00
	Dec	0.68	0.00	0.00	0.680	0%	100%	0.00

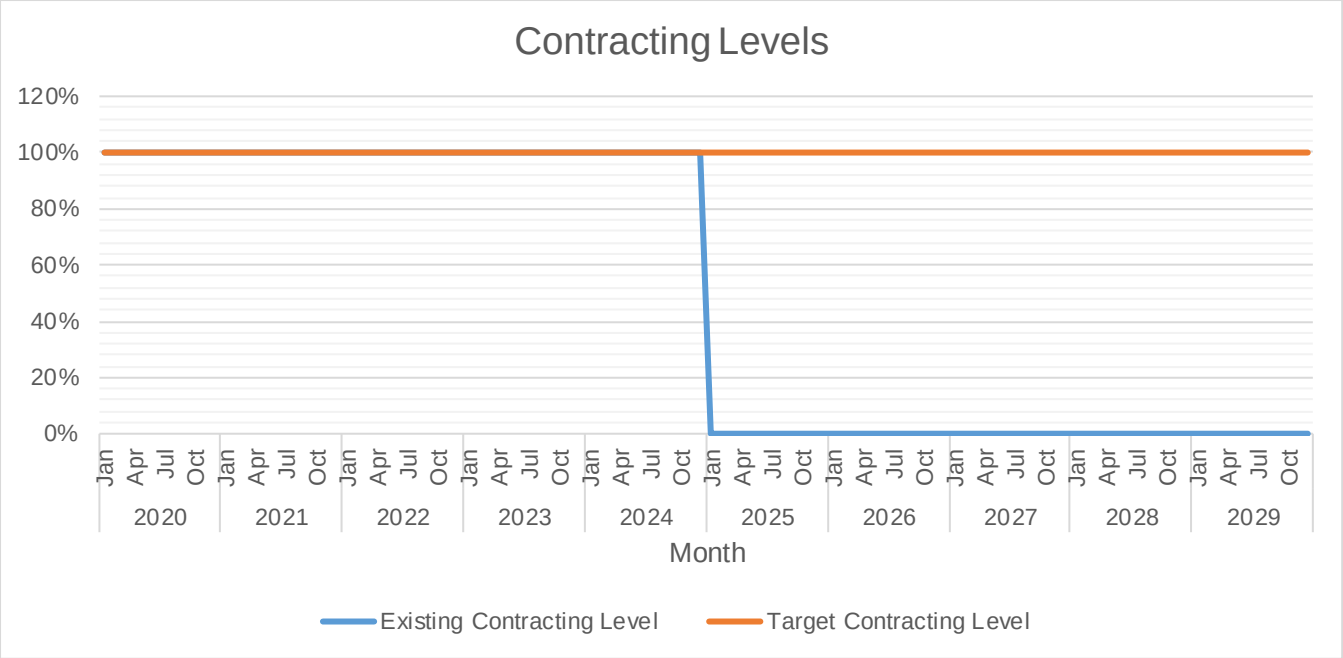
The Peak Demand was forecasted using the 50K Forecasting Model. It is assumed to occur in March due to high power demand because of different beach activities during summer break. Monthly Peak Demand is lowest in February due to the cold weather and fewer tourist visits during this month. In general, Peak Demand is expected to grow at a rate of 6.69% annually.



The available supply is generally above the Peak Demand. Talicud is just a tiny island, and the economic development is not as progressive as the main island.



NPC-Spug is the only generator supply power on the Talicud island, which PSA will expire in 2024. Hence, to secure the island's power supply, DANECO will either renew the PSA with NPC-Spug or scout cheaper power suppliers that will undergo CSP. The selections will depend on the future status of the island.



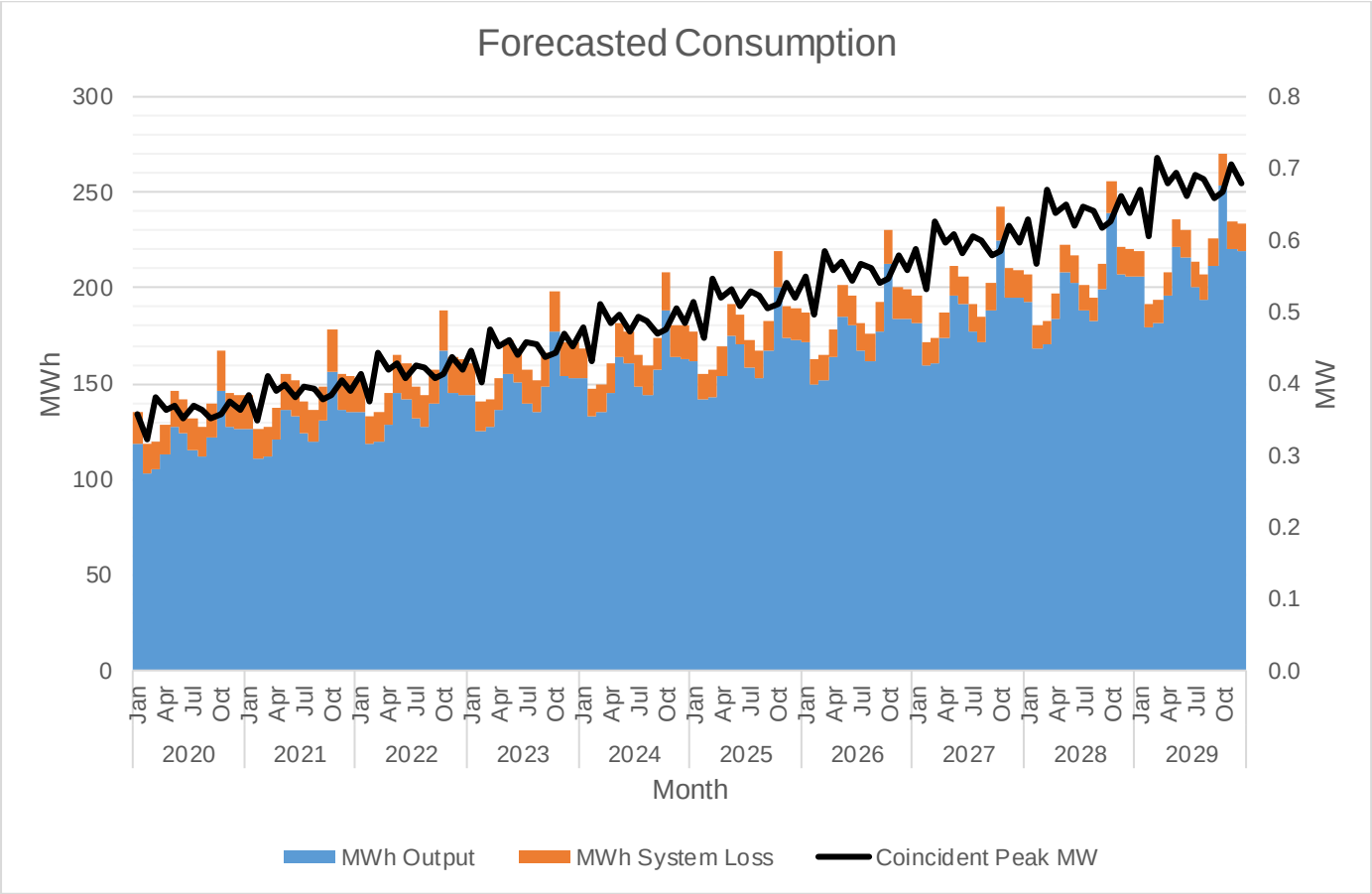
Currently, there is over-contracting by an average of 65%. The lowest and the highest target contracting level is 100% which is expected to occur starting January 2025, considering that the NPC-Spug PSA will expire in December 2024. As of now, there will be a 0% target contracting level needed up to the year 2024 since NPC-Spug doubled the capacity of the island's power demand.

		MWh Offtake	MWh Output	MWh System Loss	Transm'n Loss	System Loss
2020	Jan	135	118	17	0.00%	12.51%
	Feb	118	103	15	0.00%	12.51%
	Mar	120	105	15	0.00%	12.51%
	Apr	129	113	16	0.00%	12.51%
	May	146	128	18	0.00%	12.51%
	Jun	142	125	18	0.00%	12.51%
	Jul	132	116	17	0.00%	12.51%
	Aug	128	112	16	0.00%	12.51%
	Sep	140	122	17	0.00%	12.51%
	Oct	167	146	21	0.00%	12.51%
	Nov	145	127	18	0.00%	12.51%
	Dec	144	126	18	0.00%	12.51%
2021	Jan	144	127	18	0.00%	12.22%
	Feb	126	111	15	0.00%	12.22%
	Mar	128	112	16	0.00%	12.22%
	Apr	137	121	17	0.00%	12.22%
	May	156	137	19	0.00%	12.22%
	Jun	152	133	19	0.00%	12.22%
	Jul	141	124	17	0.00%	12.22%
	Aug	136	120	17	0.00%	12.22%
	Sep	149	131	18	0.00%	12.22%
	Oct	178	157	22	0.00%	12.22%
	Nov	155	136	19	0.00%	12.22%
	Dec	154	135	19	0.00%	12.22%

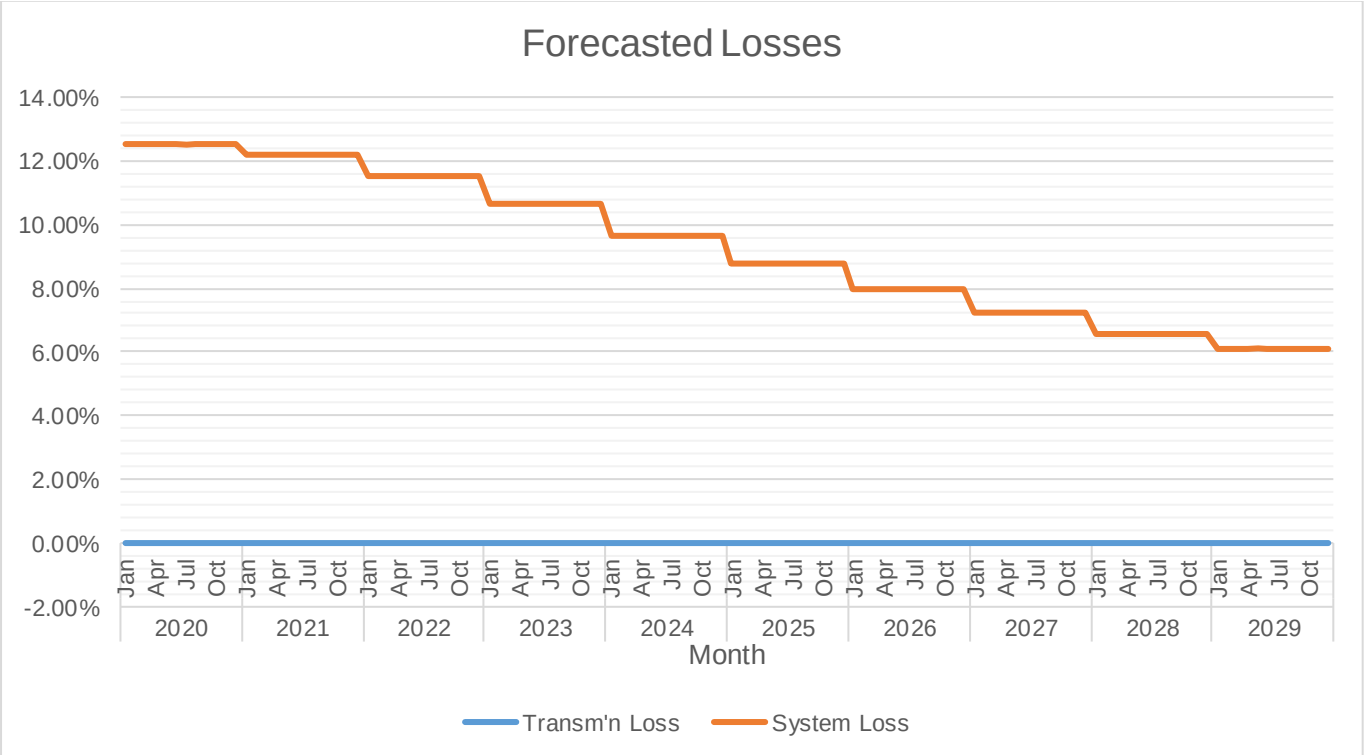
		MWh Offtake	MWh Output	MWh System Loss	Transm'n Loss	System Loss
2022	Jan	153	135	18	0.00%	11.55%
	Feb	133	118	15	0.00%	11.55%
	Mar	135	119	16	0.00%	11.55%
	Apr	145	129	17	0.00%	11.55%
	May	165	146	19	0.00%	11.55%
	Jun	161	142	19	0.00%	11.55%
	Jul	149	132	17	0.00%	11.55%
	Aug	144	127	17	0.00%	11.55%
	Sep	158	139	18	0.00%	11.55%
	Oct	189	167	22	0.00%	11.55%
	Nov	164	145	19	0.00%	11.55%
	Dec	163	144	19	0.00%	11.55%
2023	Jan	161	144	17	0.00%	10.63%
	Feb	140	125	15	0.00%	10.63%
	Mar	142	127	15	0.00%	10.63%
	Apr	153	137	16	0.00%	10.63%
	May	173	155	18	0.00%	10.63%
	Jun	169	151	18	0.00%	10.63%
	Jul	157	140	17	0.00%	10.63%
	Aug	152	136	16	0.00%	10.63%
	Sep	166	148	18	0.00%	10.63%
	Oct	199	178	21	0.00%	10.63%
	Nov	172	154	18	0.00%	10.63%
	Dec	171	153	18	0.00%	10.63%
2024	Jan	169	152	16	0.00%	9.67%
	Feb	147	133	14	0.00%	9.67%
	Mar	149	135	14	0.00%	9.67%
	Apr	161	145	16	0.00%	9.67%
	May	182	164	18	0.00%	9.67%
	Jun	177	160	17	0.00%	9.67%
	Jul	165	149	16	0.00%	9.67%
	Aug	159	144	15	0.00%	9.67%
	Sep	174	157	17	0.00%	9.67%
	Oct	209	188	20	0.00%	9.67%
	Nov	181	163	17	0.00%	9.67%
	Dec	180	163	17	0.00%	9.67%
2025	Jan	177	162	16	0.00%	8.80%
	Feb	155	141	14	0.00%	8.80%
	Mar	157	143	14	0.00%	8.80%
	Apr	169	154	15	0.00%	8.80%
	May	191	174	17	0.00%	8.80%
	Jun	187	170	16	0.00%	8.80%
	Jul	173	158	15	0.00%	8.80%
	Aug	168	153	15	0.00%	8.80%
	Sep	183	167	16	0.00%	8.80%
	Oct	219	200	19	0.00%	8.80%
	Nov	190	174	17	0.00%	8.80%
	Dec	189	173	17	0.00%	8.80%

		MWh Offtake	MWh Output	MWh System Loss	Transm'n Loss	System Loss
2026	Jan	187	172	15	0.00%	8.00%
	Feb	163	150	13	0.00%	8.00%
	Mar	165	152	13	0.00%	8.00%
	Apr	178	164	14	0.00%	8.00%
	May	201	185	16	0.00%	8.00%
	Jun	196	181	16	0.00%	8.00%
	Jul	182	168	15	0.00%	8.00%
	Aug	176	162	14	0.00%	8.00%
	Sep	193	177	15	0.00%	8.00%
	Oct	231	212	18	0.00%	8.00%
	Nov	200	184	16	0.00%	8.00%
	Dec	199	183	16	0.00%	8.00%
2027	Jan	196	182	14	0.00%	7.24%
	Feb	172	159	12	0.00%	7.24%
	Mar	174	161	13	0.00%	7.24%
	Apr	187	173	14	0.00%	7.24%
	May	212	196	15	0.00%	7.24%
	Jun	206	192	15	0.00%	7.24%
	Jul	192	178	14	0.00%	7.24%
	Aug	185	172	13	0.00%	7.24%
	Sep	203	188	15	0.00%	7.24%
	Oct	243	225	18	0.00%	7.24%
	Nov	211	195	15	0.00%	7.24%
	Dec	210	194	15	0.00%	7.24%
2028	Jan	207	193	14	0.00%	6.56%
	Feb	181	169	12	0.00%	6.56%
	Mar	183	171	12	0.00%	6.56%
	Apr	197	184	13	0.00%	6.56%
	May	223	208	15	0.00%	6.56%
	Jun	217	203	14	0.00%	6.56%
	Jul	202	188	13	0.00%	6.56%
	Aug	195	182	13	0.00%	6.56%
	Sep	213	199	14	0.00%	6.56%
	Oct	255	239	17	0.00%	6.56%
	Nov	222	207	15	0.00%	6.56%
	Dec	221	206	14	0.00%	6.56%
2029	Jan	219	205	13	0.00%	6.11%
	Feb	191	180	12	0.00%	6.11%
	Mar	194	182	12	0.00%	6.11%
	Apr	208	196	13	0.00%	6.11%
	May	236	222	14	0.00%	6.11%
	Jun	230	216	14	0.00%	6.11%
	Jul	214	201	13	0.00%	6.11%
	Aug	207	194	13	0.00%	6.11%
	Sep	226	212	14	0.00%	6.11%
	Oct	271	254	17	0.00%	6.11%
	Nov	235	220	14	0.00%	6.11%
	Dec	234	219	14	0.00%	6.11%

MWh Offtake was forecasted using 50K Forecasting Model.



MWh Output was expected to grow at a rate of 5.83% annually.



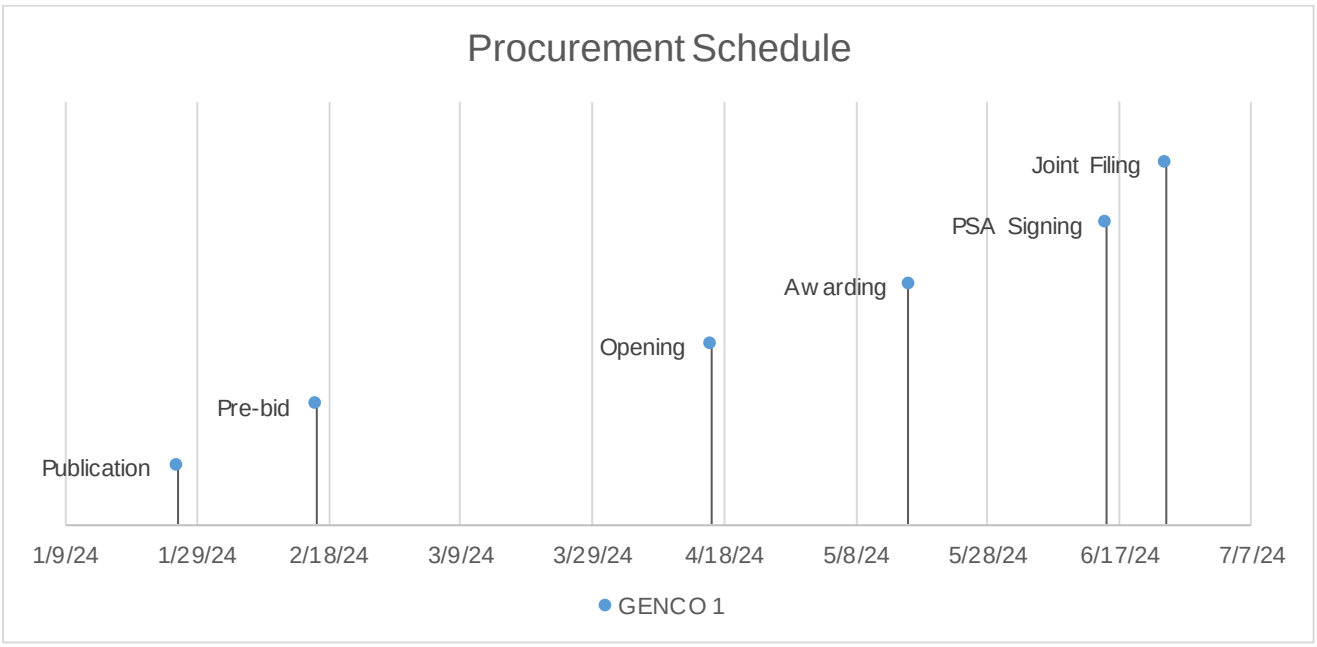
Transmission Loss is forecasted zero while System Loss is expected to range from 6.11% to 12.51%.

Power Supply

Case No.	Type	GenCo	Minimum MW	Minimum MWh/yr	PSA Start	PSA End
NPC-Spug	Base	National Power Corporation	0.30	876	1/26/2018	12/25/2024

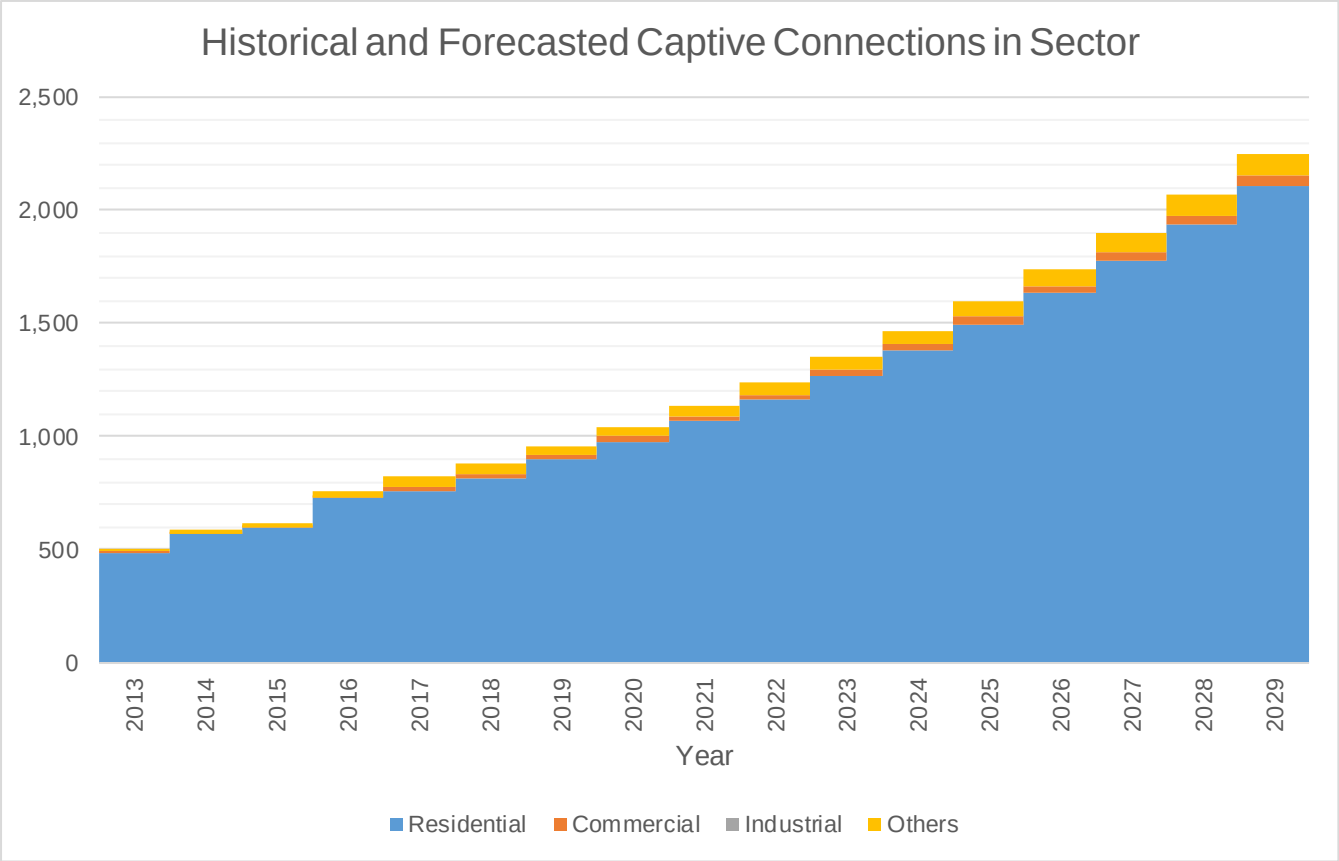
The PSA with ___ filed with ERC under Case No. ___ was procured through ___. It was selected to provide for [base/intermediate/peaking] requirements due to ___. Historically, the utilization of the PSA is ___%. Outages of the plant led to unserved energy of around ___ MWh in the past year. The actual billed overall monthly charge under the PSA ranged from ___ P/kWh to ___ P/KWh in the same period.

	GENCO 1
Type	Base
Minimum MW	0.30
Minimum MWh/yr	876
PSA Start	12/26/2024
PSA End	12/25/2034
Publication	1/26/2024
Pre-bid	2/16/2024
Opening	4/16/2024
Awarding	5/16/2024
PSA Signing	6/15/2024
Joint Filing	6/24/2024



For the procurement of 1 MW of supply which is planned to be available on December 26, 2024, the first publication or launch of CSP will be on January 26, 2024. Joint filing is planned on January 24, 2024, 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 8.87% annually. Said customer class is expected to account for 93.65% of the total consumption.