

POWER SUPPLY PROCUREMENT PLAN

NEECO II - AREA 1

POWER SUPPLY PROCUREMENT PLAN

In compliance with the Department of Energy's (DOE) Department Circular No. DC 2018-02-0003, "Adopting and Prescribing the Policy for the Competitive Selection Process in the Procurement by the Distribution Utilities of Power Supply Agreement for the Captive Market" or the Competitive Selection process (CSP) Policy, the Power Supply Procurement Plan (PSPP) Report is hereby created, pursuant to the Section 4 of the said Circular.

The PSPP refers to the DUs' plan for the acquisition of a variety of demand-side and supply-side resources to cost-effectively meet the electricity needs of its customers. The PSPP is an integral part of the Distribution Utilities' Distribution Development Plan (DDP) and must be submitted to the Department of Energy with supported Board Resolution and/or notarized Secretary's Certificate.

The Third-Party Bids and Awards Committee (TPBAC), Joint TPBAC or Third Party Auctioneer (TPA) shall submit to the DOE and in the case of Electric Cooperatives (ECs), through the National Electrification Administration (NEA) the following:

- a. Power Supply Procurement Plan;
- b. Distribution Impact Study/ Load Flow Analysis conducted that served as the basis of the Terms of Reference; and
- c. Due diligence report of the existing generation plant

All Distribution Utilities' shall follow and submit the attached report to the Department of Energy for posting on the DOE CSP Portal. For ECs such reports shall be submitted to DOE and NEA. The NEA shall review the submitted report within ten (10) working days upon receipt prior to its submission to DOE for posting at the DOE CSP Portal.

The content of the PSPP shall be consistent with the DDP. The tables and graph format to be use on the PSPP report is provided on the following sheets. Further, the PSPP shall contain the following sections:

- I. Table of Contents
- II. Introduction
- III. Energy and Demand Forecast (10 year historical and forecast)
- IV. Energy Sales and Purchase
- V. Daily Load Profile and Load Duration Curve
- VI. Existing Contracts & Existing GenCos due diligence report
- VII. Currently approved SAGR for Off-Grid ECs to be passed-on to consumers;
- VIII. DU's Current Supply and Demand
- IX. Distribution Impact Study
- X. Schedule of Power Supply Procurement
- XI. Timeline of the CSP

For inquiries, you may send it at doe.csp@gmail.com or you may contact us through telephone numbers (02) 840-2173 and (02) 479-2900 local 202.

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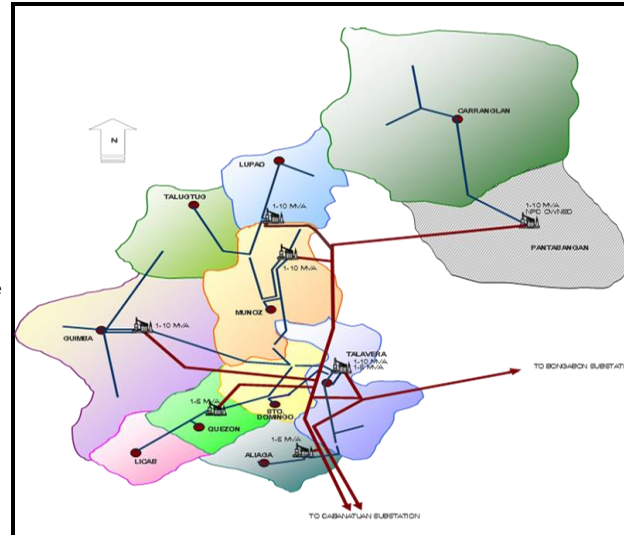
INTRODUCTION

DISTRIBUTION UTILITIES PROFILE

BACKGROUND OF NEECO II-AREA 1

NEECO II-Area 1 is the franchise holder granted by the National Electrification Administration (NEA) to operate an electric light and power services in the municipalities and city of the province of Nueva Ecija, namely: Talavera, Lupao, Carranglan, Aliaga, Quezon, Licab, Sto. Domingo, Science City of Muñoz, Guimba, and Talugtug; The nine (9) municipalities and one (1) City it covers is composed of 301 barangays, however, under the Accelerated Barangay Energization Program, ten (10) barangays were waived in favor of Tarelco I to electrify these areas due to the proximity of the areas to the tapping point which happened to be within the franchise area of TARELCO I. The 291 barangays under NEECO II-Area 1 all of which are already energized or 100% accomplished. NEECO II-Area 1 currently get its 95% power requirement under the Power Supply Agreement (PSA) between NEECO II-Area 1 and AP Renewables, Inc. (APRI), that will expire on December 25, 2019 while the remaining 5% is source from Wholesale Electricity Spot Market (WESM).

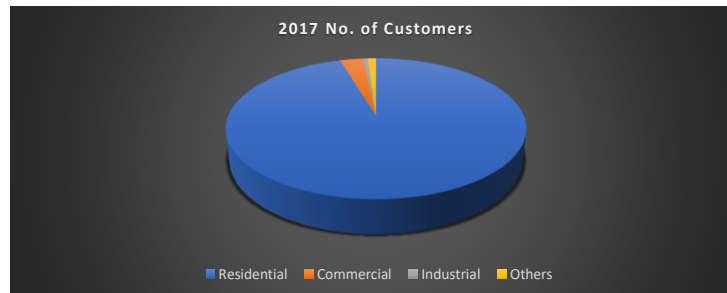
DU's Franchise MAP



Number of Customer Connections in	ACTUAL		FORECAST								
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Residential	119,263	124,520	130,405	136,710	143,478	150,759	158,595	167,037	176,126	185,913	196,442
Commercial	3,680	4,079	4,269	4,470	4,688	4,917	5,166	5,432	5,720	6,027	6357
Industrial	767	817	854	897	942	991	1040	1093	1154	1215	1285
Others	1,311	1,389	1456	1529	1602	1683	1773	1866	1971	2077	2196
Contestable Customers se	-	-	-	-	-	-	-	-	-	-	-
Total (Captive Customers)	125,021	130,805	136,984	143,606	150,710	158,350	166,574	175,428	184,971	195,232	206,280

UTILITY STATISTICS AND OPERATIONAL PERFORMANCE OF THE EC (SUMMARY)

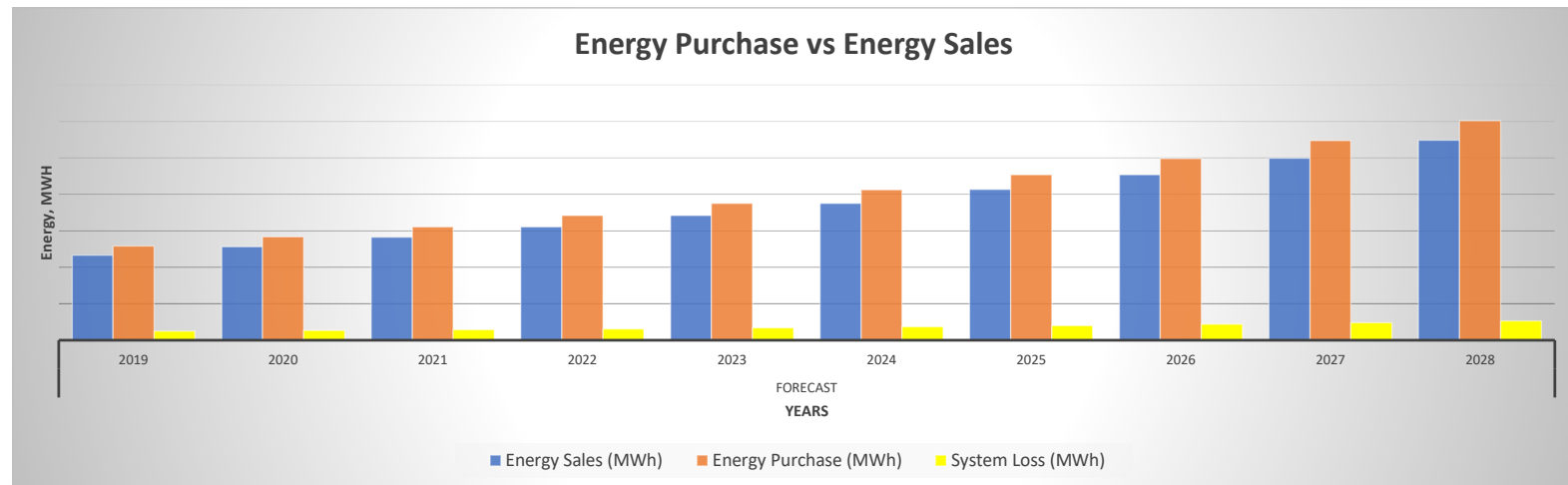
NEECO II-Area 1 has 119,263 Residential, 3,680 Commercial and 767 Industrial and 1,311 Others customers as of December 31, 2018 with an aggregated Coincident Peak Demand of 38.4MW. It is supplied from the High Voltage Transmission Grid (NGCP) thru six (6) Substations with a total capacity of 57 MVA.



ENERGY SALES AND PURCHASE

ENERGY SALES AND PURCHASE	HISTORICAL									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Energy Sales (MWh)	97,369	107,979	108,499	117,316	128,318	139,149	152,533	179,077	196,433	210,833
Energy Purchase (MWh)	112,730	123,155	122,770	132,634	145,171	156,392	170,564	197,530	217,316	233,966
System Loss (MWh)	14,287	15,176	14,271	15,018	16,853	17,243	18,031	18,453	20,884	23,133

ENERGY SALES AND PURCHASE	FORECAST									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Energy Sales (MWh)	233,435	256,704	282,300	310,481	341,505	375,632	413,120	454,227	499,212	548,333
Energy Purchase (MWh)	258,132	283,307	311,023	341,579	374,885	412,281	453,355	498,388	547,664	601,462
System Loss (MWh)	24,697	26,603	28,723	31,098	33,379	36,649	40,235	44,161	48,452	53,130

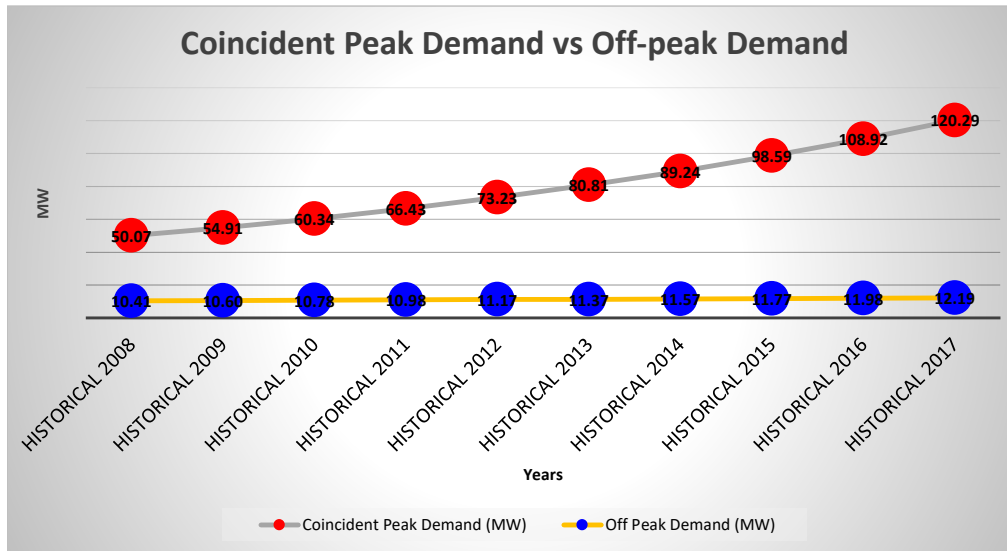


The 5-year average annual growth in the historical energy sales and energy purchased are 11% and 10.6%, respectively. The 10-year average annual growth in the forecast energy sales and energy purchased are 10.1% and 9.9%, respectively. The high percentage increase in the energy sales is due to the construction of new establishment with big loads mostly industrial customer and commercial and the continuous application of new consumers in the coverage area. Further, NEECO II-Area 1 is able to minimize the total system loss in its distribution system. **In 2018, the total system loss is 9.89%.**

DEMAND

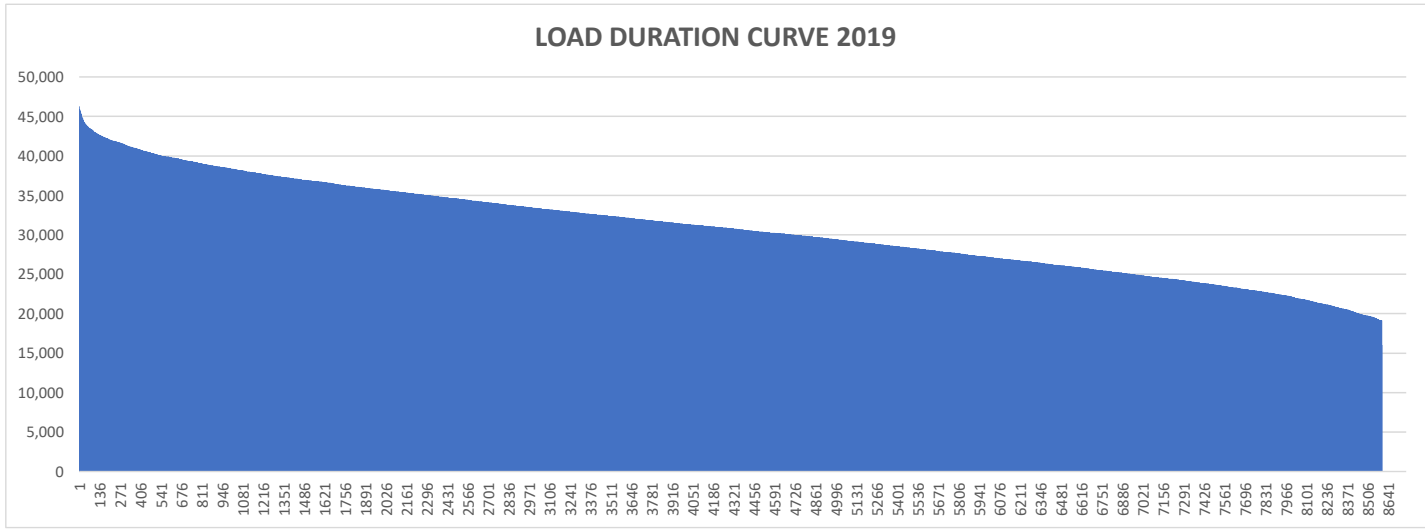
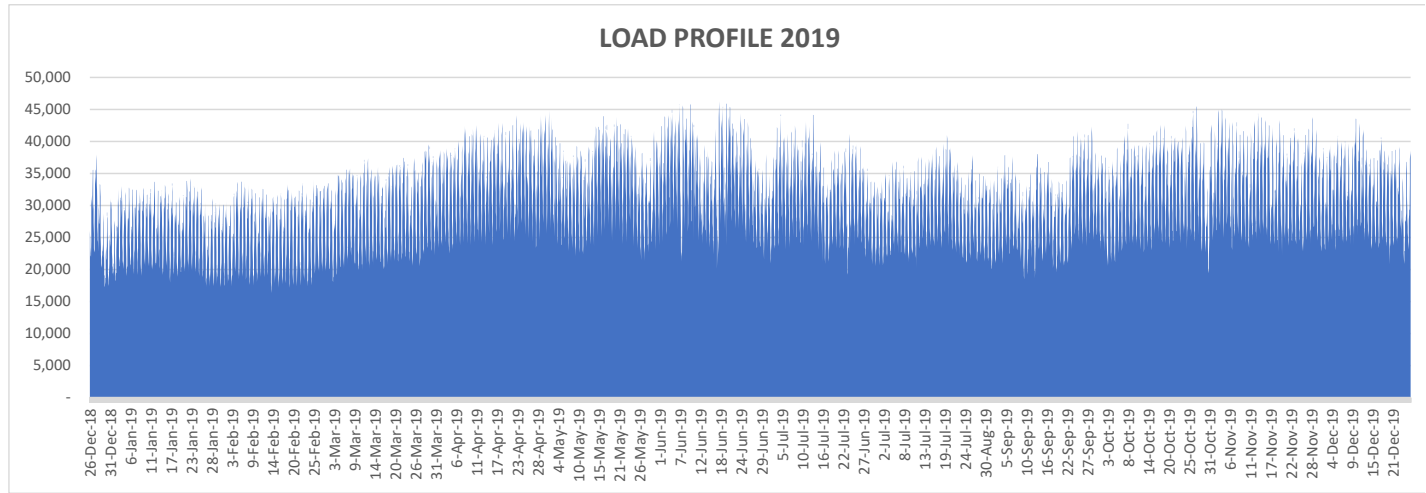
Demand	HISTORICAL									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Coincident Peak Demand (MW)	26.24	24.95	24.20	25.76	28.32	31.22	33.41	37.04	39.72	42.63
Off Peak Demand (MW)			4.28	3.61	0.55	5.25	1.24	5.65	10.23	6.80

Demand	FORECAST									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Coincident Peak Demand (MW)	50.07	54.91	60.34	66.43	73.23	80.81	89.24	98.59	108.92	120.29
Off Peak Demand (MW)	10.41	10.60	10.78	10.98	11.17	11.37	11.57	11.77	11.98	12.19



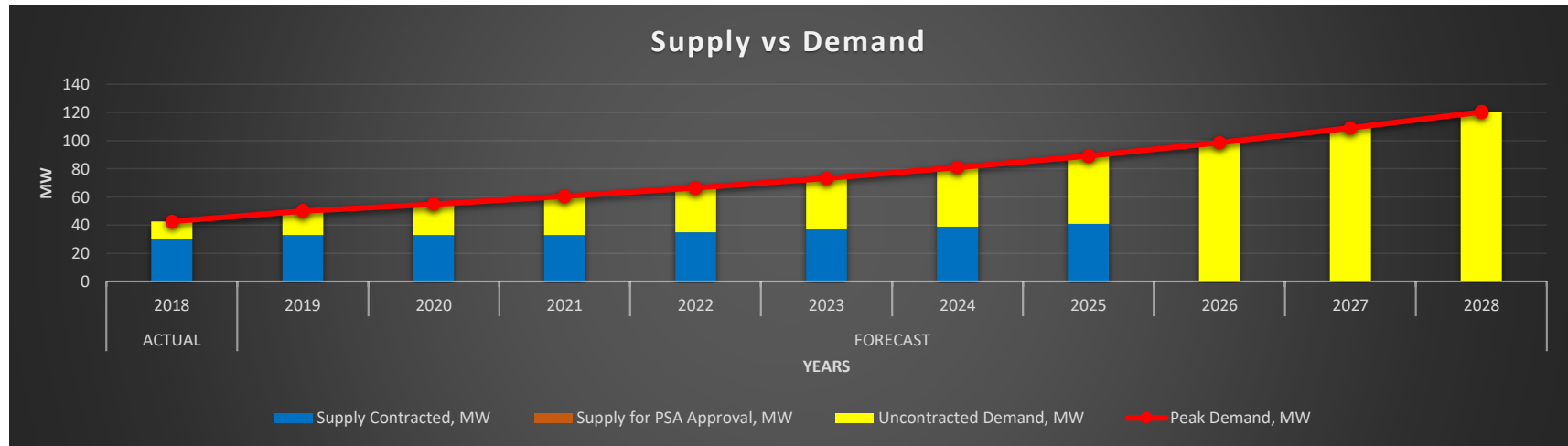
The 5-year average annual growth in the historical kW demand is 8.1%. The 10-year average annual growth in the forecast kW demand is 11%. The high percentage increase in the historical kW demand is due to the influx of some big load commercial and industrial customers.

	LP	LD
26-Dec-18	26,460	46,277
26-Dec-18	26,047	46,268
26-Dec-18	24,598	45,915
26-Dec-18	23,444	45,869
26-Dec-18	22,509	45,841
26-Dec-18	21,872	45,777
26-Dec-18	22,198	45,712
26-Dec-18	22,011	45,677
26-Dec-18	21,689	45,619
26-Dec-18	24,502	45,516
26-Dec-18	27,751	45,415
26-Dec-18	30,125	45,403
26-Dec-18	30,911	45,310
26-Dec-18	30,732	45,302
26-Dec-18	31,610	45,301
26-Dec-18	31,538	45,211
26-Dec-18	30,800	45,010
26-Dec-18	29,081	44,933
26-Dec-18	31,808	44,928
26-Dec-18	35,043	44,778
26-Dec-18	35,537	44,773
26-Dec-18	35,586	44,769
26-Dec-18	32,387	44,751
26-Dec-18	30,195	44,726
27-Dec-18	29,402	44,592
27-Dec-18	27,356	44,511
27-Dec-18	25,584	44,498
27-Dec-18	24,381	44,450
27-Dec-18	23,342	44,429
27-Dec-18	22,601	44,362
27-Dec-18	23,023	44,302
27-Dec-18	22,704	44,258
27-Dec-18	22,160	44,235
27-Dec-18	27,128	44,217
27-Dec-18	30,570	44,212
27-Dec-18	33,354	44,167
27-Dec-18	34,402	44,160
27-Dec-18	34,744	44,109
27-Dec-18	35,654	44,091
27-Dec-18	35,428	44,087



MIX - SUPPLY VS DEMAND AND THE OPTIMAL SUPPLY

Supply Demand	ACTUAL	FORECAST									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Peak Demand, MW	42.63	50.07	54.91	60.34	66.43	73.23	80.81	89.24	98.59	108.92	120.29
Supply Contracted, MW	30	33	33	33	35	37	39	41	0	0	0
FGHPC (Jan26-Aug 25, 2019)	30										
APRI (Aug. 26, 2018-Dec. 25, 2019)	30	33	33	33	35	37	39	41			
WESM											
Supply for PSA Approval, MW	0	0	0	0	0	0	0	0	0	0	0
Uncontracted Demand, MW	12.63	17.07	21.91	27.34	31.43	36.23	41.81	48.24	98.59	108.92	120.29



POWER SUPPLY PROCUREMENT PLAN

List of Existing Contracts and Details

Supply Contracted	Plant Owner/ Operator	Capacity Factor	PSA Effectivity (MM/YR)	PSA Expiration (MM/YR)	Contracted Capacity, MW	Contracted Energy, MWH	Base / Mid-merit / Peaking	Embedded/ Grid Connected	Utility-owned/ NPC/ IPP/ NPC-IPP	Status	Fuel Type	Installed Capacity (MW)	Net Dependable Capacity (MW)
APRI	ABOITIZ	97%	Aug-18	Dec-19	33		BaseLoad/Intermediate	n/a	n/a	Active	Geothermal Steam	682	682

The PSA between NEECO II-Area 1 and APRI commenced on August 26, 2018 up to December 25, 2019 and/or until such time that the Long Term Contract between NEECO II-Area 1 and a new Power Generator commence (maximum of 1 year extension). The PSA is CAPACITY BASED Contract and has a Flexible Maximum Demand up to 33MW. Further, NEECO II-Area 1 is a Direct WESM Member since August 2009, any excess energy beyond the contract level is purchase to WESM.

DISTRIBUTION IMPACT STUDY

With the new challenges in the power industry brought about by the EPIRA and the requirements of the concern government agencies and the regulator, NEECO II Area 1 must maintain a sufficient, reliable, efficient, affordable rate and safe power supply to its member consumers as well as to all the captive customer. Rehabilitation, Upgrading and Expansion of the distribution system should be the utmost concern of NEECO II Area 1 to sustain the demands, quality of electric service and the delivery of efficient service to its end users. The power reliability depends on how this electric cooperative maintained its distribution facilities such that by not implementing the priority projects the expected impact will be met that will redound to the deterioration of the overall reliability and integrity of the electric distribution system. With all the planned projects that will be implemented, it is projected that the continuous improvement of the system reliability, power quality and safety can be achieved.

NEECO II-Area I has used the SynerGee engineering software for the simulation of load flow analysis. For safety projects, the study shows that the quantities, sizes/ratings and coordination of protection devices are sufficient.

For capacity projects, NEECO II-Area 1 updates the existing capacity of Talavera Substation from 10MVA to 20MVA, Guimba Substation from 10MVA to 20MVA and Aliaga Substation from 5MVA to 10MVA to provide. The forecast data used the 7-year historical data on the various forecast models provided by NEA on its e-ICPM. Also, NEECO II-Area 1 coordinated with the various Municipal Planning Offices within the franchise area to determine the other potential big load consumers who will connect to NEECO II-Area 1's distribution system. NEECO II-Area 1 has included in its multi-year CAPEX projects 2018-2020 the augmentation of capacity of Munoz Substation from 10 MVA to 20MVA.

SCHEDULE OF CSP

Base / mid-merit / peaking	For CSP		Proposed contract		Proposed schedule (MM/YYYY)						
	Demand (MW)	Energy (MWh)	Start Month and Year	End Month and Year	Publication of Invitation to Bid	Pre-bid Conference	Submission and Opening of Bids	Bid Evaluation	Awarding	PSA Signing	Joint Application to ERC
Full Energy Requirements	33	293,370	12/26/2020	12/25/2025	12/22/2019 to 1/2/2019	1/14/2020	01/22/2020	01/24/2020	2/24/2020	04/14/2020	04/23/2020
	35	322,707									
	37	354,977									
	39	390,475									
	41	429,522									

Note: The CSP will cover the Full Energy Requirement demand of NEECO II-Area 1. The Contracted Capacity will be 33MW for the first (1) year and has a 10% increment in energy every year provided however that both parties will agree on the terms and conditions of the PSA during negotiation.

10 Year Monthly Data

Year	Forecast			Contracted and For PSA Approval Demand and Energy		Uncontracted Demand and Energy		Committed for CSP	
	Coincident Peak Demand (MW)	Off Peak Demand (MW)	Energy Requirement (MWh)	Demand (MW)	Energy (MWh)	Uncontracted Demand (MW)	Uncontracted Energy (MWh)	Demand (MW)	Energy (MWh)
2019									
Jan	42.64			33	19,692	9.64			
Feb	40.18			33	18,282	7.18			
Mar	43.55			33	17,681	10.55			
Apr	49.06			33	21,081	16.06			
May	48.71			33	20,897	15.71			
Jun	50.07			33	21,393	17.07			
Jul	49.23			33	20,409	16.23			
Aug	47.55			33	20,740	14.55			
Sep	48.16			33	20,348	15.16			
Oct	46.48			33	20,105	13.48			
Nov	45.99			33	20,547	12.99			
Dec	46.96			33	21,279	13.96			
2020									
Jan	46.44			33	21,662	13.44			
Feb	44.07			33	20,110	11.07			
Mar	47.76			33	19,449	14.76			
Apr	53.81			33	23,189	20.81			
May	53.41			33	22,987	20.41			
Jun	54.91			33	23,532	21.91			
Jul	53.99			33	22,450	20.99			
Aug	52.14			33	22,814	19.14			
Sep	52.82			33	22,382	19.82			
Oct	50.98			33	22,115	17.98			
Nov	50.44			33	22,601	17.44			
Dec	51.50			33	23,407	18.50			
2021									
Jan	51.03					18.03		33	23,828
Feb	48.42					15.42		33	22,121
Mar	52.48					19.48		33	21,394
Apr	59.13					26.13		33	25,508
May	58.70					25.70		33	25,285
Jun	60.34					27.34		33	25,886
Jul	59.33					26.33		33	24,695
Aug	57.30					24.30		33	25,096
Sep	58.04					25.04		33	24,621
Oct	56.02					23.02		33	24,327
Nov	56.02					23.02		33	24,861
Dec	56.59					23.59		33	25,748
2022									
Jan	56.18					21.18		35	26,211
Feb	53.31					18.31		35	24,333
Mar	57.77					22.77		35	23,534
Apr	65.08					30.08		35	28,059
May	64.61					29.61		35	27,814
Jun	66.43					31.43		35	28,474
Jul	65.31					30.31		35	27,165
Aug	63.08					28.08		35	27,606
Sep	63.89					28.89		35	27,083
Oct	61.66					26.66		35	26,759
Nov	61.02					26.02		35	27,348
Dec	62.29					27.29		35	28,323

POWER SUPPLY PROCUREMENT PLAN

2023									
Jan	61.93					24.93		37	28,832
Feb	58.76					21.76		37	26,766
Mar	63.69					26.69		37	25,887
Apr	71.75					34.75		37	30,865
May	71.23					34.23		37	30,595
Jun	73.23					36.23		37	31,321
Jul	72.00					35.00		37	29,881
Aug	69.53					32.53		37	30,366
Sep	70.43					33.43		37	29,791
Oct	67.98					30.98		37	29,435
Nov	67.26					30.26		37	30,082
Dec	68.67					31.67		37	31,155
2024									
Jan	68.34					29.34		39	31,715
Feb	64.85					25.85		39	29,443
Mar	70.28					31.28		39	28,476
Apr	79.18					40.18		39	33,951
May	78.61					39.61		39	33,655
Jun	80.81					41.81		39	34,454
Jul	79.46					40.46		39	32,869
Aug	76.74					37.74		39	33,403
Sep	77.72					38.72		39	32,770
Oct	75.02					36.02		39	32,379
Nov	74.23					35.23		39	33,091
Dec	75.78					36.78		39	34,271
2025									
Jan	75.48					34.48		41	34,886
Feb	71.62					30.62		41	32,387
Mar	77.62					36.62		41	31,323
Apr	87.44					46.44		41	37,346
May	86.81					45.81		41	37,020
Jun	89.24					48.24		41	37,899
Jul	87.75					46.75		41	36,156
Aug	84.74					43.74		41	36,743
Sep	85.84					44.84		41	36,047
Oct	82.85					41.85		41	35,617
Nov	81.98					40.98		41	36,400
Dec	83.69					42.69		41	37,698

Note: The PSA between NEECO II-Area 1 and APRI commenced on August 26, 2018 up to December 25, 2019 and/or until such time that the Long Term Contract between NEECO II-Area 1 and a new Power Generator commence (maximum of 1 year extension). The PSA is CAPACITY BASED Contract and has a Flexible Demand of up to 33MW. The existing contract between NEECO II-Area 1 and APRI has a provision of one (1) extension which is being exercise and all the government regulatory agencies are already inform on this actions to have ample time in the preparation for the conduct of Competitive Selection Process (CSP) as provided in DOE Circular No. DC208-02-0003.

POWER SUPPLY PROCUREMENT PLAN

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