

**SOUTH COTABATO II ELECTRIC COOPERATIVE
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 PSSP 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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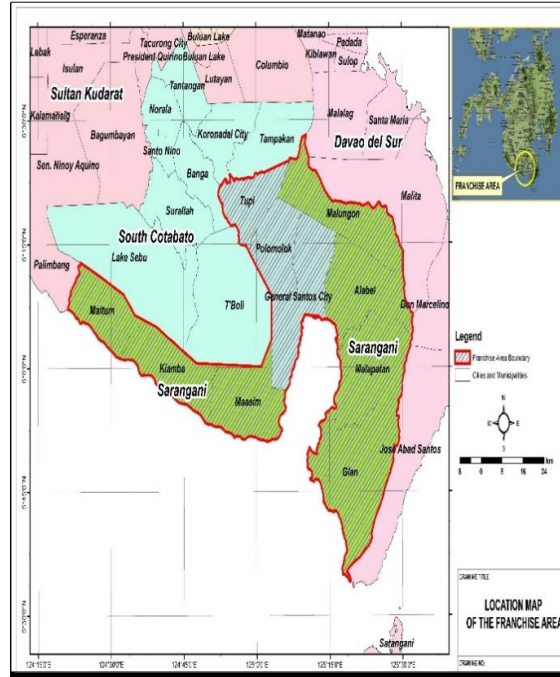
INTRODUCTION

DISTRIBUTION UTILITIES PROFILE

The South Cotabato II Electric Cooperative, Inc. (SOCOTECO II) is the electric distribution utility tasked to distribute power throughout SOCSARGEN. It was organized & registered with National Electrification Administration on May 7, 1977 as the 84th electric cooperative by virtue of Presidential Decree No. 269, whose primary objective is to make electric service available throughout its coverage area.

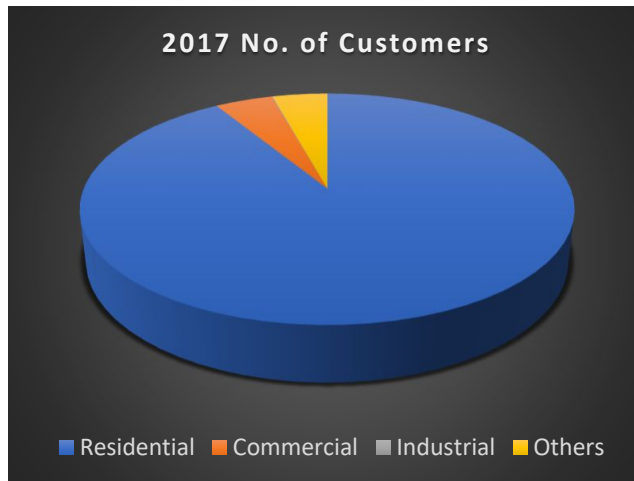
SOCOTECO II Franchise area comprises Maasim, Kiamba, Maitum, Alabel, Malungon, Malapatan, Glan, Tupi, Polomolok and General Santos City.

DU's Franchise MAP



Number of Customer	ACTUAL		FORECAST								
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Residential	169,304	177,043	184,782	192,522	200,261	208,000	215,739	223,748	231,218	238,957	245,957
Commercial	8299	8395	8490	8586	8681	8777	8872	8968	9063	9159	9259
Industrial	132	134	136	138	140	142	144	146	148	150	160
Others	7887	8057	8227	8397	8567	8737	8907	9077	9247	9417	9417
Contestable Customers served by RES											
Total (Captive Customers)											

SOCSARGEN is the region of the Philippines located in Southern Mindanao, and is a part of Region XII. The name is an acronym which stands for South Cotabato, Sarangani, and General Santos City. According to Hazel Glenda C. Guerrero in her Article "SOCSARGEN: An Emerging Giant in Southern Mindanao", says that South Cotabato, Sarangani and General Santos City have a population growth rate per annum of about 3.43%, 2.89% and 6.76 % respectively. On the other hand, Region XII got a record high of 8.4 % on economic growth rate in 2013 after reaching 8 % mark in 2012 MindaNews, (2014). On the similar way, the rising population and economic growth results to increase in demand for power causing unstable power supply. Currently, SOCOTECO II Peak Demand is approximately 167.4 MW with a total of 211,718 connected consumers as of December 31, 2018 as compared to 122,857 total consumers in 2010.



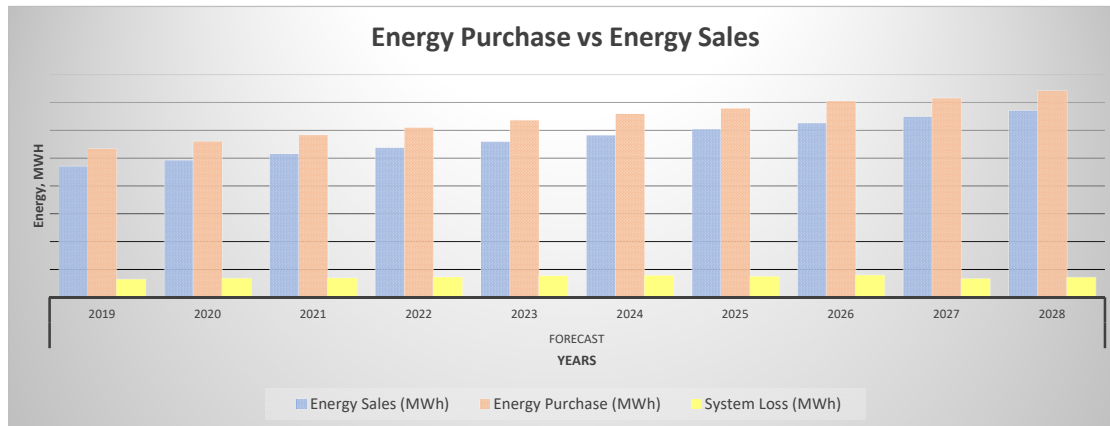
POWER SUPPLY PROCUREMENT PLAN

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ENERGY SALES AND PURCHASE

ENERGY SALES AND PURCHASE	HISTORICAL									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Energy Sales (MWh)	500,760.92	473,540.67	560,000.26	610,428.00	678,901.00	727,105.00	747,992.00	815,491.00	838,817.00	904,199.60
Energy Purchase (MWh)	593,326.22	597,581.29	629,280.40	688,397.00	767,630.00	816,330.00	839,799.00	905,234.00	910,836.00	1,039,193.09
System Loss (MWh)	92,565.30	124,040.63	69,280.14	77,969.00	88,729.00	89,225.00	91,807.00	89,743.00	72,019.00	134,993.49

ENERGY SALES AND PURCHASE	FORECAST									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Energy Sales (MWh)	940,224.92	984,721.71	1,029,219.48	1,073,718.25	1,118,218.08	1,162,719.00	1,207,221.06	1,251,724.30	1,296,228.78	1,340,734.53
Energy Purchase (MWh)	1,068,000.14	1,119,910.05	1,166,291.37	1,218,742.63	1,271,656.32	1,318,000.97	1,356,576.46	1,409,744.84	1,429,979.49	1,482,245.04
System Loss (MWh)	127,775.23	135,188.34	137,071.90	145,024.38	153,438.24	155,281.97	149,355.40	158,020.53	133,750.71	141,510.51

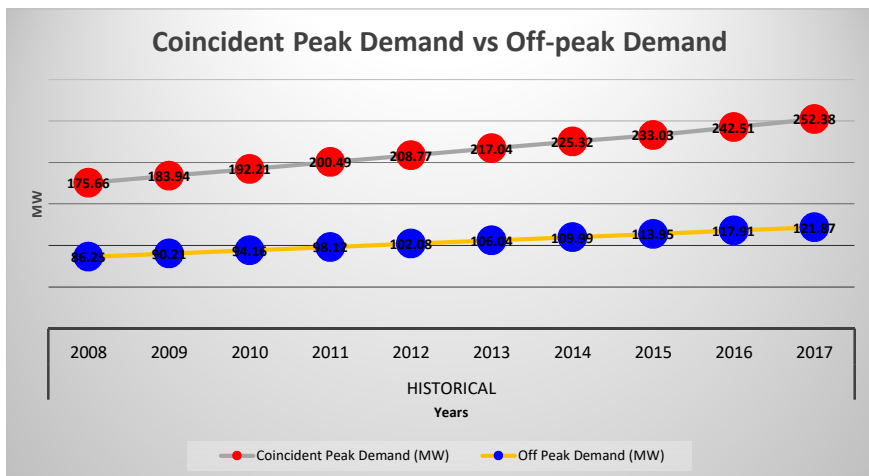


ERAL SANTOS CITY. ONE OF THE HIGHLIGHTS IS THE COMMISSIONING OF THE NEW 35 MVA POWER SUBSTATION FOR THE DAMALERIO EXCLUSIVE ECONOMIC ZONE

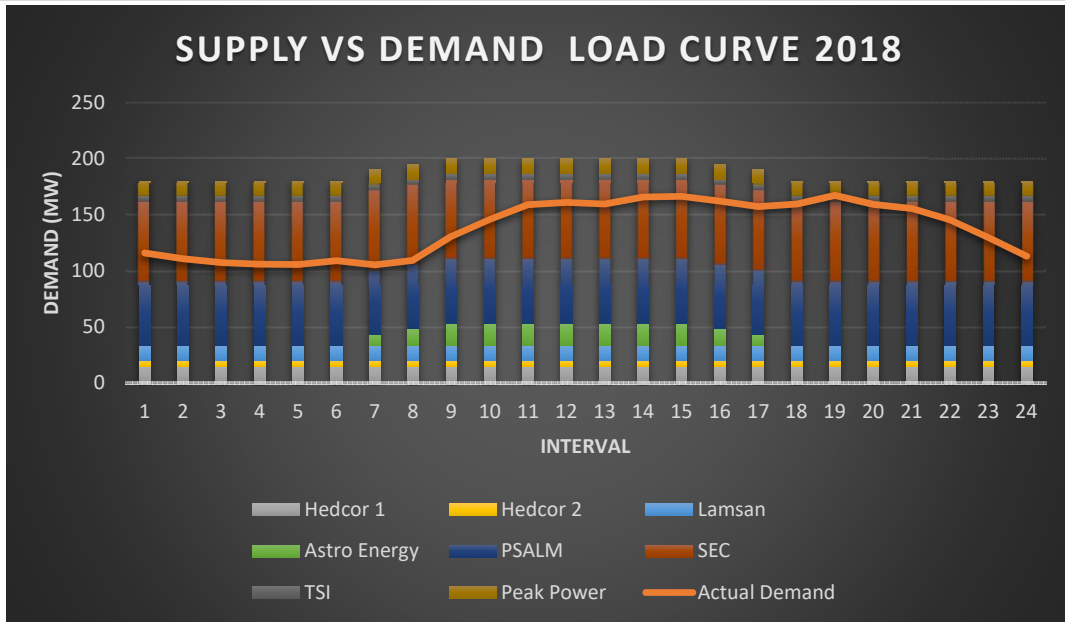
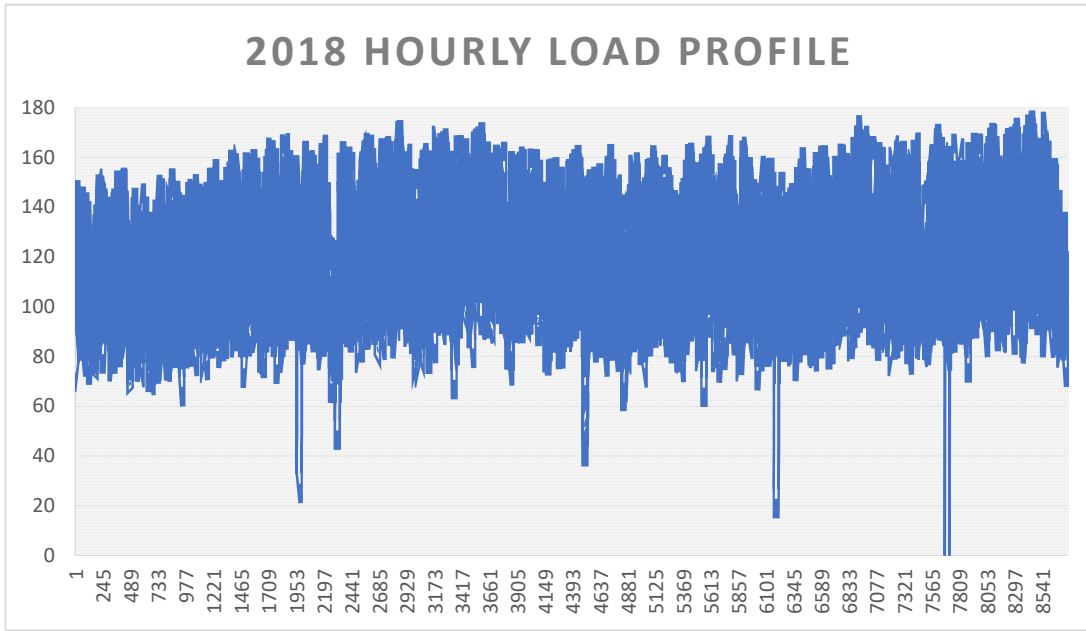
DEMAND

Demand	HISTORICAL									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Coincident Peak Demand (MW)	106.241	111.563	117.866	126.052	139.790	151.319	155.252	166.640	167.289	167.381
Off Peak Demand (MW)	47.809	50.203	51.861	56.723	69.897	73.677	79.026	83.626	80.254	79.097

Demand	FORECAST									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Coincident Peak Demand (MW)	175.66	183.94	192.21	200.49	208.77	217.04	225.32	233.03	242.51	252.38
Off Peak Demand (MW)	86.25	90.21	94.16	98.12	102.08	106.04	109.99	113.95	117.91	121.87



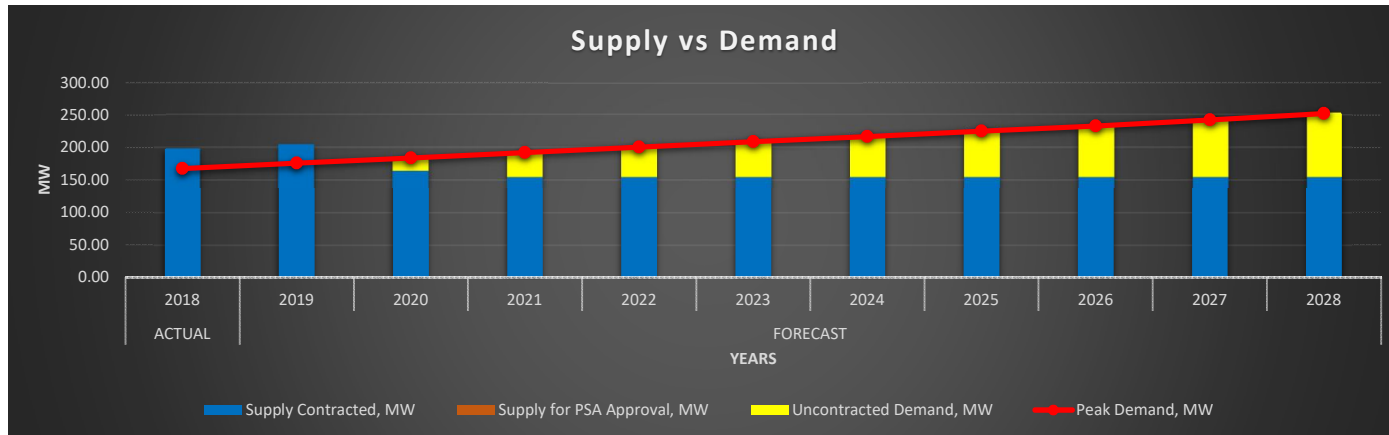
Total peak recorded by SOCOTECO II in the year 2018 is 167.38 MW in which the off peak is 79.10 MW is 47.26 percent



SOCOTECO II'S COINCIDENTAL PEAK DEMAND IS APPROXIMATELY 167.4 MW AS OF 2018 AND RELATIVELY INCREASING AT A SIGNIFICANT RATE. HOWEVER, ON THE YEAR 2018 THE GROWTH IN TERMS OF ENERGY DEMAND IS LESSER COMPARED TO THE OTHER YEARS MAINLY BECAUSE OF THE DECREASE OF METERING POINTS DUE TO INSTALLATION OF LINE TOTALIZERS IN CONNECTION POINT OF NGCPAND SOCOTECO II AND NOT ON PER SUBSTATION BASIS.

MIXSUPPLY VS DEMAND AND THE OPTIMAL SUPPLY

Supply Demand	ACTUAL	FORECAST									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Peak Demand, MW	167.38	175.66	183.94	192.21	200.49	208.77	217.04	225.32	233.03	242.51	252.38
Supply Contracted, MW	198.16	204.65	164.04	154.60	154.60	154.60	154.60	154.60	154.60	154.60	154.60
PSALM-NPC	57.00	63.49	69.45	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
SEC (Coal)	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00
TSI (Coal)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
HEDCOR	20.00	20.00									
LAMSAN	13.50	13.50									
PEI 1	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
PEI 2	13.06	13.06									
Supply for PSA Approval, MW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uncontracted Demand, MW	0	0	19.89154	37.61674	45.89394	54.17113	62.44833	70.72553	78.43181	87.91662	97.78749
Supply for CSP	0.00	0.00	0.00	0.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
GENERATING PLANT FOR RPS					15.00	15.00	15.00	15.00	15.00	15.00	15.00



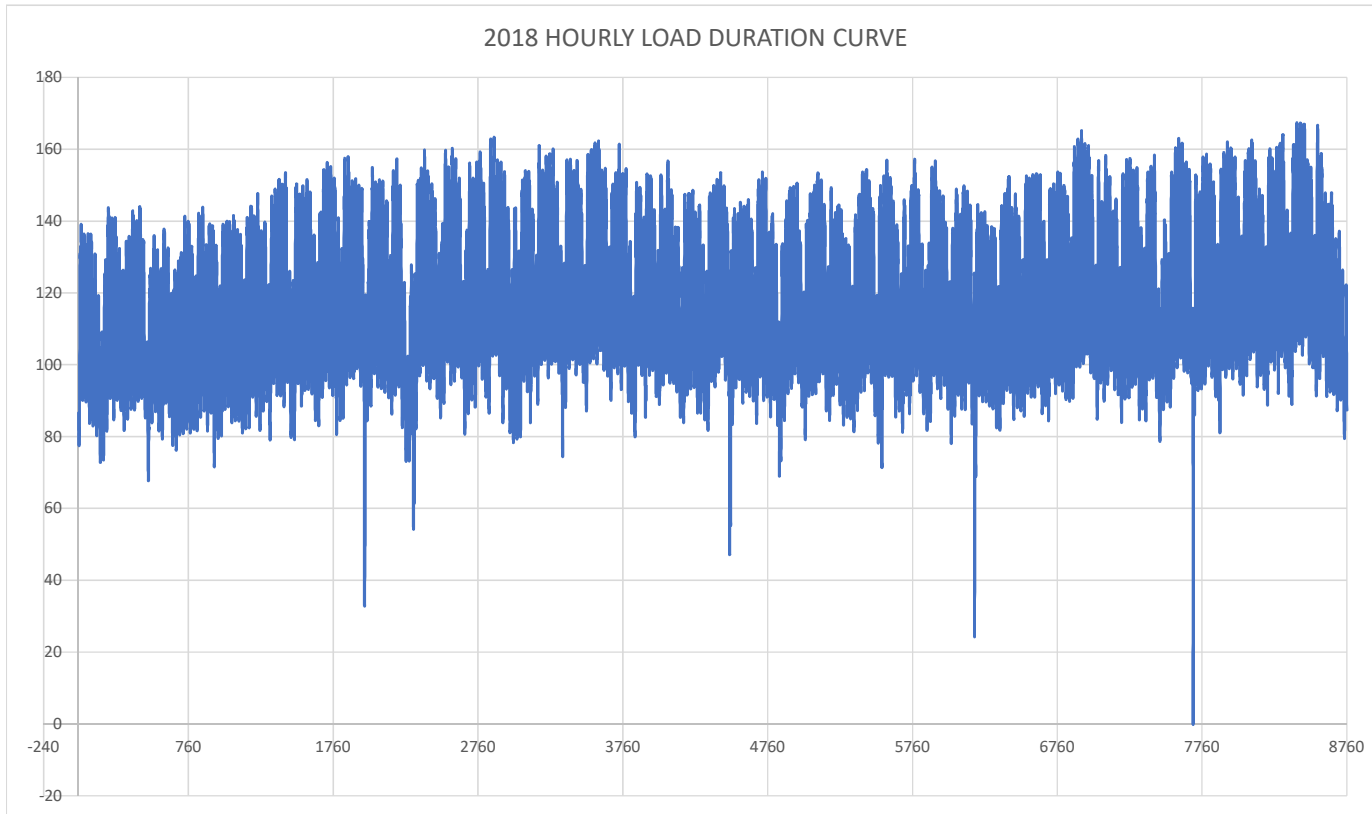
POWER SUPPLY PROCUREMENT PLAN

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)
South	South Inc.		Jan 1, 2015	Jan-40	5	38400	base	grid connected	IPP	Operational	Coal		5
SEC	Energy		Dec 2015	Dec-40	70	544320	base	embedded	IPP	Operational	Coal		70
NPC-PSALM	Sector		Jan 2018	Dec-20	63.4	500,000	base	grid connected	NPC	Operational			63.4
Aboitiz Hedcor Bukidnon	Aboitiz		Feb. 2018	When WESM enters	20	113880	base	grid connected	IPP	Operational	Run off river		20
Biomass	Inc.		2018	WESM	13.5	110000	base	grid connected	IPP	Operational	Biomass		13.5
PEI			2015	2030	32.66	241995	peaking	embedded	BOT	Operational	Diesel	32.66	32.66

The existing Power supply contracts as of the year 2018 meets the actual demand of SOCTECO II, however, the minimum off take in terms of energy exceeds the base power requirement during off-peak. Which leads to higher losses in terms of energy. Hedcor and Lamsan will automatically end its contract when WESM enters. FDC (Coal) and Astronergy (Solar) has been removed from the list of entering Generation Plant since it has been affected by the supreme court decision to defer all PSA after June 30, 2015. A Deficit of 6.82 MW will be sourced out from WESM.

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DISTRIBUTION IMPACT STUDY

VII. DISTRIBUTION IMPACT STUDY

Below are the summary findings of the recently conducted DIS by SOCOTECO 2 for the upcoming supply based on the CSP schedule.

7.1. Fault Current Assessment

Short Circuit calculations of three-phase fault current with all generating plants in service were still within the rated interrupting capacity of existing power circuit breakers at selected 69 substations. The Fault Current contribution of the Project to the system will not significantly affect the existing circuit breakers in the monitored substations.

7.2. Load Flow Assessment (Thermal and Voltage Assessments)

Load flow simulations were made to determine the adequacy of SOCOTECO II system in accommodating additional supply of power for normal condition during peak conditions. All the monitored system transmission facilities exhibit thermal adequacy and no voltage violations during normal condition, in both 2020 and 2025 study years, and for both peak and off-peak loading conditions. Needless to say, entry of the Project will not cause any system degradation to the SOCOTECO II 69kV transmission system.

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 Requireme nt (MWh)	Demand (MW)	Energy (MWh)	Uncontrac ted Demand (MW)	Uncontrac ted Energy (MWh)	Demand (MW)	Energy (MWh)
2019									
Jan	166.0488	78.04	85,156	204.6	135,133				
Feb	167.2396	78.60	85,836	204.6	135,133				
Mar	168.4304	79.16	86,522	204.6	135,133				
Apr	169.6212	79.72	87,214	204.6	135,133				
May	170.812	80.28	87,911	204.6	135,133				
Jun	172.1936	80.93	88,613	204.6	135,133				
Jul	173.1936	81.40	89,321	204.6	135,133				
Aug	173.3844	81.49	90,035	204.6	135,133				
Sep	174.5752	82.05	90,755	204.6	135,133				
Oct	175.466	82.47	91,480	204.6	135,133				
Nov	175.466	82.47	92,211	204.6	135,133				
Dec	175.658	82.56	92,948	204.6	135,133				
2020									
Jan	177.89	83.61	89,295	177.1	119,104	0.78		SOURCED OUT TO WESM	
Feb	178.16	83.74	90,008	177.1	119,104	1.05			
Mar	179.64	84.43	90,727	177.1	119,104	2.54			
Apr	180.04	84.62	91,453	177.1	119,104	2.93			
May	180.44	84.81	92,183	177.1	119,104	3.34			
Jun	180.96	85.05	92,920	177.1	119,104	3.85			
Jul	181.28	85.20	93,663	177.1	119,104	4.17			
Aug	181.72	85.41	94,411	177.1	119,104	4.61			
Sep	182.17	85.62	95,166	177.1	119,104	5.06			
Oct	182.56	85.80	95,926	177.1	119,104	5.45			
Nov	182.93	85.98	96,693	177.1	119,104	5.82			
Dec	183.94	86.45	97,465	177.1	119,104	6.83			
2021									
Jan	184.22	86.58	92,993	167.7	119,104	16.56		SOURCED OUT TO WESM	
Feb	185.68	87.27	93,736	167.7	119,104	18.02			
Mar	185.99	87.41	94,485	167.7	119,104	18.33			
Apr	186.15	87.49	95,240	167.7	119,104	18.49			
May	187.15	87.96	96,001	167.7	119,104	19.49			
Jun	187.70	88.22	96,768	167.7	119,104	20.04			
Jul	188.26	88.48	97,542	167.7	119,104	20.60			
Aug	188.84	88.75	98,321	167.7	119,104	21.18			
Sep	189.42	89.03	99,107	167.7	119,104	21.76			
Oct	190.02	89.31	99,899	167.7	119,104	22.36			
Nov	191.63	90.06	100,697	167.7	119,104	23.97			
Dec	192.21	90.34	101,502	167.7	119,104	24.55			
2022									
Jan	192.15	90.31	97,175	182.66	126,188	9.49		15	7083.33

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Feb	193.67	91.03	97,951	182.66	126,188	11.01		15	7083.33
Mar	194.00	91.18	98,734	182.66	126,188	11.34		15	7083.33
Apr	194.17	91.26	99,523	182.66	126,188	11.51		15	7083.33
May	195.21	91.75	100,319	182.66	126,188	12.55		15	7083.33
Jun	195.78	92.02	101,120	182.66	126,188	13.12		15	7083.33
Jul	196.37	92.29	101,928	182.66	126,188	13.71		15	7083.33
Aug	196.97	92.57	102,743	182.66	126,188	14.31		15	7083.33
Sep	197.58	92.86	103,564	182.66	126,188	14.92		15	7083.33
Oct	198.20	93.15	104,392	182.66	126,188	15.54		15	7083.33
Nov	199.88	93.94	105,226	182.66	126,188	17.22		15	7083.33
Dec	200.49	94.23	106,067	182.66	126,188	17.83		15	7083.33
2023									
Jan	200.09	94.04	101,394	182.66	126,188	17.43			
Feb	201.67	94.78	102,204	182.66	126,188	19.01			
Mar	202.01	94.94	103,021	182.66	126,188	19.35			
Apr	202.18	95.03	103,844	182.66	126,188	19.52			
May	203.27	95.54	104,674	182.66	126,188	20.61			
Jun	203.87	95.82	105,511	182.66	126,188	21.21			
Jul	204.48	96.10	106,354	182.66	126,188	21.82			
Aug	205.10	96.40	107,204	182.66	126,188	22.44			
Sep	205.73	96.69	108,060	182.66	126,188	23.07			
Oct	206.38	97.00	108,924	182.66	126,188	23.72			
Nov	208.13	97.82	109,794	182.66	126,188	25.47			
Dec	208.77	98.12	110,672	182.66	126,188	26.11			
2024									
Jan	208.02	97.77	105,089	202.66	138,836	5.36		20.00	12,648
Feb	209.66	98.54	105,929	202.66	138,836	7.00		20.00	12,648
Mar	210.02	98.71	106,775	202.66	138,836	7.36		20.00	12,648
Apr	210.20	98.79	107,629	202.66	138,836	7.54		20.00	12,648
May	211.33	99.33	108,489	202.66	138,836	8.67		20.00	12,648
Jun	211.95	99.62	109,356	202.66	138,836	9.29		20.00	12,648
Jul	212.58	99.91	110,230	202.66	138,836	9.92		20.00	12,648
Aug	213.23	100.22	111,111	202.66	138,836	10.57		20.00	12,648
Sep	213.89	100.53	111,999	202.66	138,836	11.23		20.00	12,648
Oct	214.56	100.85	112,894	202.66	138,836	11.90		20.00	12,648
Nov	216.38	101.70	113,796	202.66	138,836	13.72		20.00	12,648
Dec	217.04	102.01	114,705	202.66	138,836	14.38		20.00	12,648
2025									
Jan	215.95	101.50	108,165	202.66	138,836	13.29			
Feb	217.66	102.30	109,029	202.66	138,836	15.00			
Mar	218.03	102.47	109,901	202.66	138,836	15.37			
Apr	218.22	102.56	110,779	202.66	138,836	15.56			
May	219.39	103.11	111,664	202.66	138,836	16.73			
Jun	220.03	103.42	112,557	202.66	138,836	17.37			
Jul	220.69	103.72	113,456	202.66	138,836	18.03			
Aug	221.36	104.04	114,363	202.66	138,836	18.70			
Sep	222.05	104.36	115,277	202.66	138,836	19.39			
Oct	222.75	104.69	116,198	202.66	138,836	20.09			
Nov	224.63	105.58	117,126	202.66	138,836	21.97			
Dec	225.32	105.90	118,062	202.66	138,836	22.66			

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2026									
Jan	223.34	104.97	112,404	222.66	151,484	0.68		20.00	12,648
Feb	225.10	105.80	113,302	222.66	151,484	2.44		20.00	12,648
Mar	225.48	105.98	114,208	222.66	151,484	2.82		20.00	12,648
Apr	225.68	106.07	115,121	222.66	151,484	3.02		20.00	12,648
May	226.89	106.64	116,041	222.66	151,484	4.23		20.00	12,648
Jun	227.56	106.95	116,968	222.66	151,484	4.90		20.00	12,648
Jul	228.24	107.27	117,903	222.66	151,484	5.58		20.00	12,648
Aug	228.93	107.60	118,845	222.66	151,484	6.27		20.00	12,648
Sep	229.64	107.93	119,795	222.66	151,484	6.98		20.00	12,648
Oct	230.37	108.27	120,752	222.66	151,484	7.71		20.00	12,648
Nov	232.32	109.19	121,717	222.66	151,484	9.66		20.00	12,648
Dec	233.03	109.52	122,690	222.66	151,484	10.37		20.00	12,648
2027									
Jan	232.43	109.24	114,018	242.66	151,484				
Feb	234.27	110.11	114,929	242.66	151,484				
Mar	234.66	110.29	115,847	242.66	151,484				
Apr	234.86	110.39	116,773	242.66	151,484				
May	236.13	110.98	117,706	242.66	151,484				
Jun	236.82	111.31	118,647	242.66	151,484				
Jul	237.53	111.64	119,595	242.66	151,484				
Aug	238.25	111.98	120,551	242.66	151,484				
Sep	238.99	112.32	121,514	242.66	151,484				
Oct	239.74	112.68	122,485	242.66	151,484				
Nov	241.77	113.63	123,464	242.66	151,484				
Dec	242.51	113.98	124,451	242.66	151,484				
2028									
Jan	241.89	113.69	118,185	262.66	164,132				
Feb	243.80	114.59	119,129	262.66	164,132				
Mar	244.21	114.78	120,081	262.66	164,132				
Apr	244.42	114.88	121,041	262.66	164,132				
May	245.74	115.50	122,008	262.66	164,132				
Jun	246.46	115.84	122,983	262.66	164,132				
Jul	247.20	116.18	123,966	262.66	164,132				
Aug	247.95	116.54	124,957	262.66	164,132				
Sep	248.72	116.90	125,955	262.66	164,132				
Oct	249.50	117.26	126,962	262.66	164,132				
Nov	251.61	118.26	127,977	262.66	164,132				
Dec	252.38	118.62	128,999	262.66	164,132				

NOTE : ALL DEFICIT WILL BE SOURCED THROUGH WESM