

## POWER SUPPLY PROCUREMENT PLAN

**NAME OF DU**

### 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](mailto: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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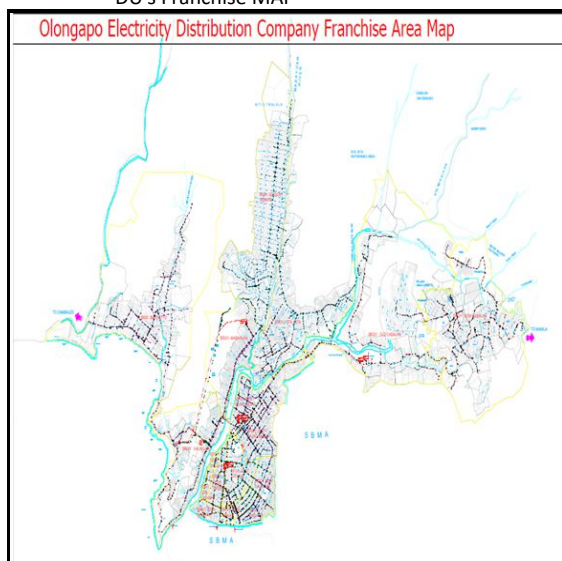
## INTRODUCTION

### DISTRIBUTION UTILITIES PROFILE

Olongapo Electricity Distribution Company, Inc. (OEDC) is a corporation duly organized under the Philippine law, with office address at 1170 Rizal Avenue, East Tapinac, Olongapo City.

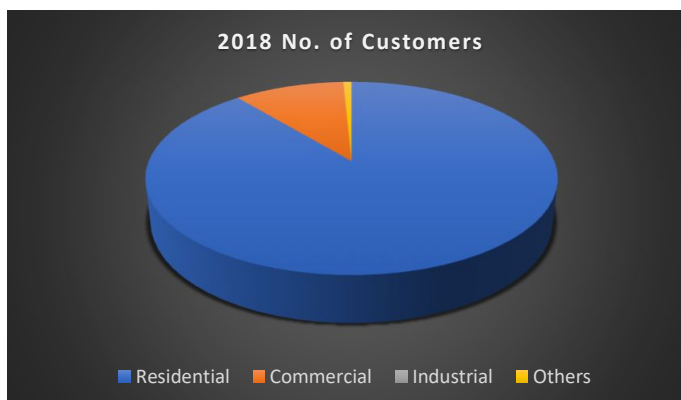
OEDC was incorporated on 04 September 2012 for a term of 50 years. Its is a grantee, under RA 10373 that was signed into law on 01 March 2013, of a legislative franchise to construct, operate and maintain a distribution system for the conveyance of electric power to the end-users in the city of Olongapo and its suburbs.

DU's Franchise MAP



Number of Customer Connections	ACTUAL	FORECAST									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Residential	46,150	47,189	48,135	49,081	50,027	50,973	51,919	52,865	53,811	54,757	55,703
Commercial	5,318	5,420	5,529	5,638	5,746	5,855	5,964	6,072	6,181	6,290	6,398
Industrial	3	3	3	3	3	3	3	3	3	3	3
Others	395	395	395	395	395	395	395	395	395	395	395
Contestable	1	1	2	2	2	2	2	2	2	2	2
Total (Captive)	51,866	53,007	54,062	55,117	56,171	57,226	58,281	59,335	60,390	61,445	62,499

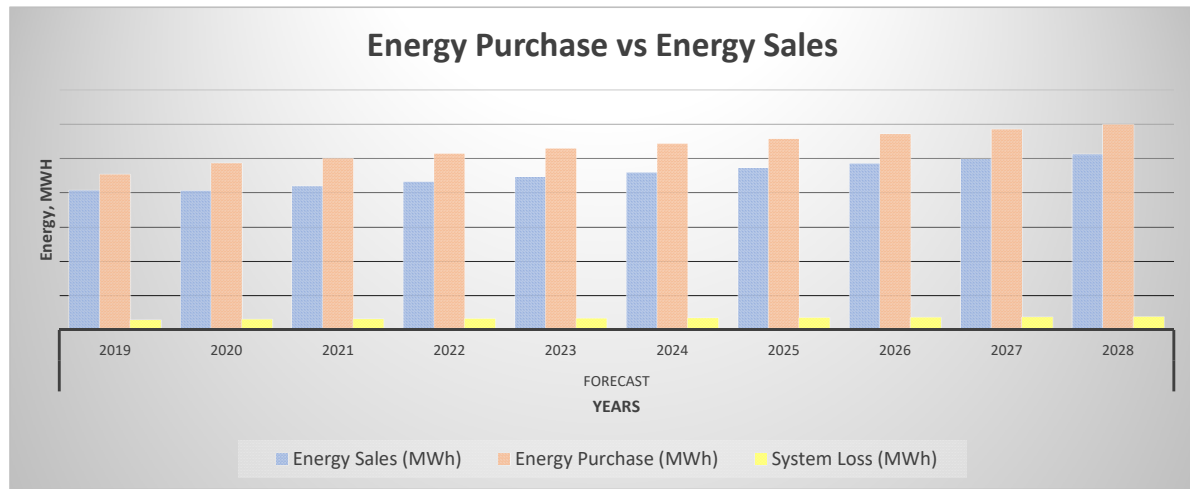
Indicatives loads are SM City Olongapo Expansion (Condos, Convention center and sports complex) a 3.6 MW load which is currently build by this year and load growth of OEDC was about 4 %.



## ENERGY SALES AND PURCHASE

ENERGY SALES AND PURCHASE	HISTORICAL									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Energy Sales (MWh)					154,957	162,287	175,968	184,912	188,586	189,210
Energy Purchase (MWh)					212,808	191,449	189,740	198,109	207,679	210,682
System Loss (MWh)					56,004	16,244	13,772	13,198	13,468	13,344

ENERGY SALES AND PURCHASE	FORECAST									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Energy Sales (MWh)	203,479	203,049	209,662	216,276	222,889	229,502	236,115	242,729	249,342	255,955
Energy Purchase (MWh)	226,553	243,202	250,262	257,322	264,383	271,443	278,504	285,564	292,625	299,685
System Loss (MWh)	14,350	15,404	15,851	16,298	16,746	17,193	17,640	18,087	18,534	18,982

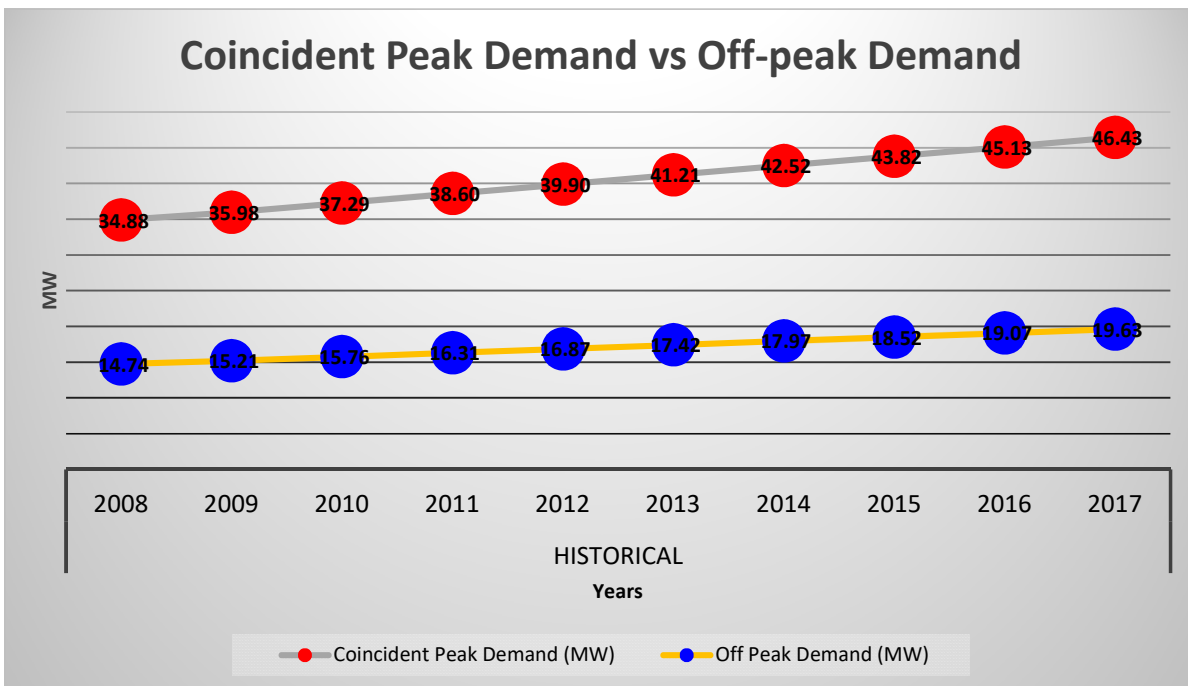


Upcoming energization of Indicatives Load (SM2) will affect the OEDC forecast of Purchase and Sales for 2019 and 2020. There were about 5.4 % growth on the energy purchase of the OEDC for the Captive and will decrease for about 0.29% with the assumption of SM2 will be a Contestable for 2020.

## DEMAND

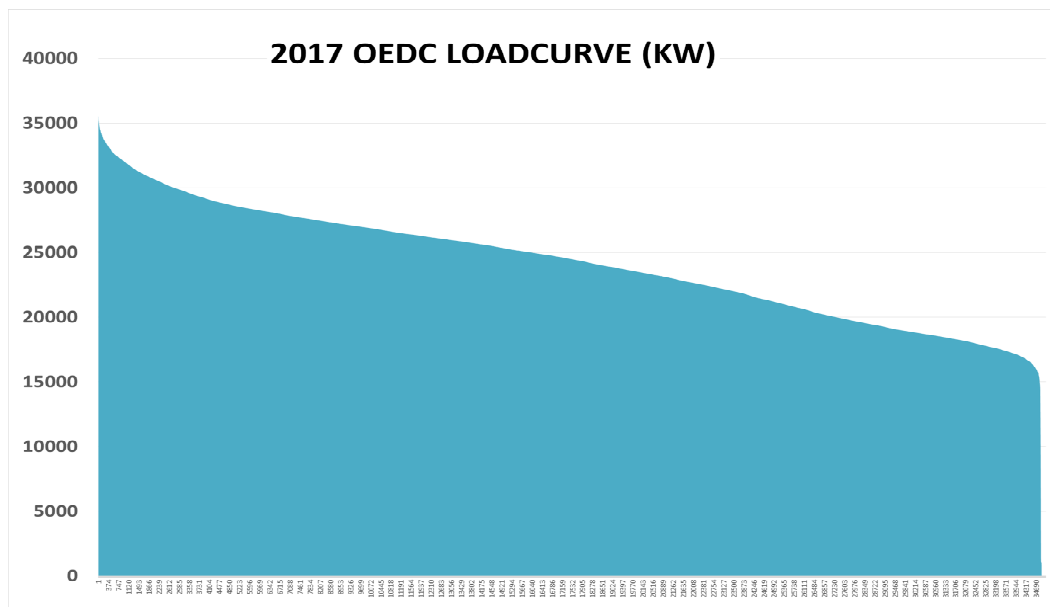
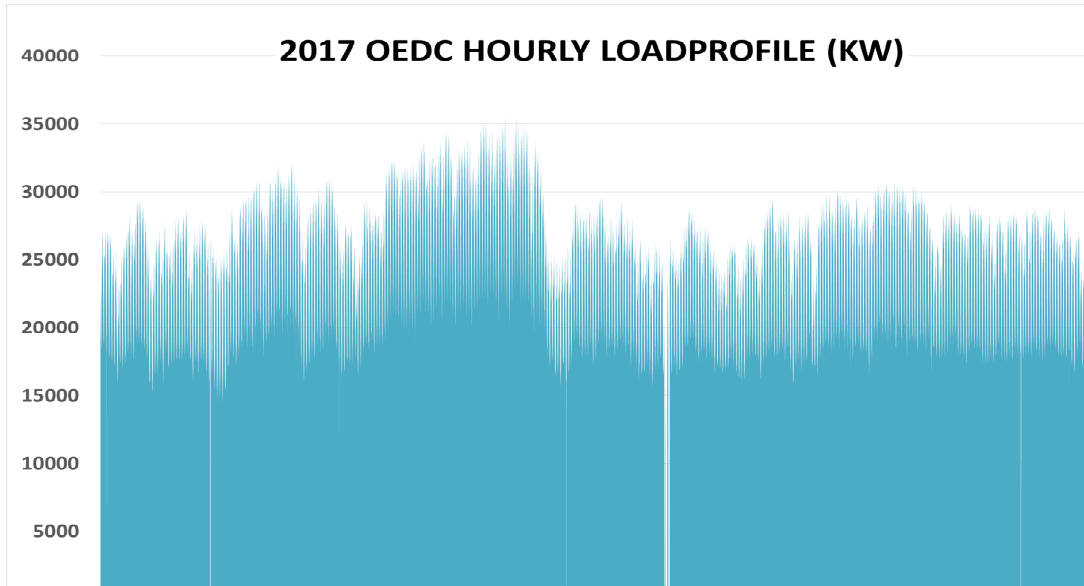
Demand	HISTORICAL									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Coincident Peak Demand (MW)					36.88	34.98	32.38	32.90	32.22	34.40
Off Peak Demand (MW)					-	-	-	-	12.44	14.54

Demand	HISTORICAL									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Coincident Peak Demand (MW)	34.88	35.98	37.29	38.60	39.90	41.21	42.52	43.82	45.13	46.43
Off Peak Demand (MW)	14.74	15.21	15.76	16.31	16.87	17.42	17.97	18.52	19.07	19.63



OEDC annual percentage growth is at 3 % for 2015 - 2017 with an actual demand of 34.4 MW for 2017. To determine the forecast values of peak demand, the forecasting model used is Cubic and Logarithmic Trend Horizon, Auto Regressive Integrated Moving Average, Energy Utilization Index and Seasonal Forecast. The forecasted Demand will have an annual average growth rate of 3% for year 2019 to 2028.

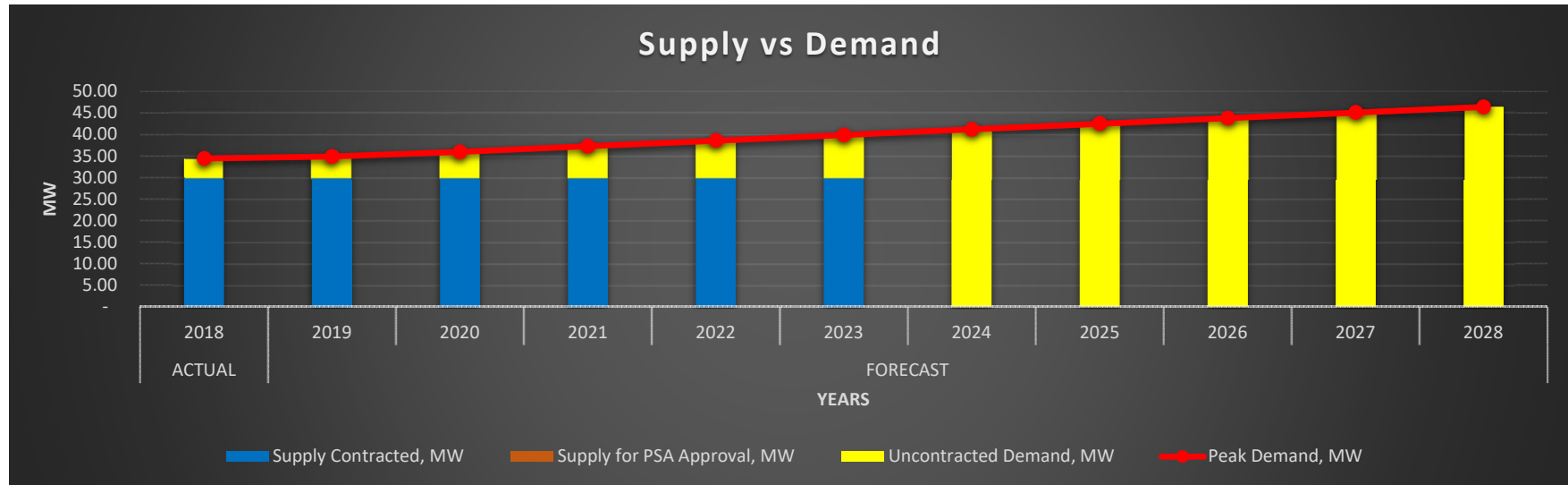
## LOAD PROFILE AND LOAD DURATION CURVE



Based on the 2017 load curve of OEDC, the based load is 45%, 39% is med-merit load and 16% is peaking load. Based on the 2018 peak demand data which is 34.4 MW, the equivalent peak demand is 15.48 MW for the baseload, 13.4 MW is the med-merit load and 5.5 MW for the peak load.

## 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	34.40	34.88	35.98	37.29	38.60	39.90	41.21	42.52	43.82	45.13	46.43
Supply Contracted, MW	30.00	30.00	30.00	30.00	30.00	30.00	-	-	-	-	-
SMEC - Sual Power Plant	30.00	30.00	30.00	30.00	30.00	30.00					
Supply for PSA Approval, MW	-	-	-	-	-	-	-	-	-	-	-
Generation Plant Name 1											
Generation Plant Name 2											
Generation Plant Name 3											
Uncontracted Demand, MW	4.40	4.88	5.98	7.29	8.60	9.90	41.21	42.52	43.82	45.13	46.43



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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)
Sual Power Plant	SMEC		Jun-18	Dec-23	30		Base / Mid-merit / Peaking				Coal		

RC Case No. 2015-001 RC - In the Matter of Application for Approval of the Power Supply Contract (PSC) between Olongapo Electricity Distribution Corporation (OEDC) and San Miguel Energy Corporation . For the update of the PSC Application, last year June 2018 ERC approves the PSC between Olongapo Electricity Distribution Corporation (OEDC)and San Miguel Energy Corporation for about 30 MW Capacity due to transfer of SM as Constestable served by RES.



## **DISTRIBUTION IMPACT STUDY**

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OEDC as of to date currently has total substation capacity of 65MVA distributed among three (3) substations. 7MVA of the said 65MVA capacity is not being fully utilized, having only an effective capacity of 58MVA, this is due to power quality issues currently being experienced by one (1) of OEDC's three (3) substations, the Kale substation. The single power transformer of the said substation has issues with its tap changer due to old age, stucked at 12.77kV setting, far from OEDC's 13.8kV nominal. Still, with this scheme of the system, the N-1 capacity of the system is still adequate until around late 2019 but with the new SM Olongapo Central (SM Marikit Park), having a projected indicative demand of 4.5MW which will be commissioned on March 2019, the said N-1 capacity would be enough only on the last quarter of 2018. With issues in both capacity shortage and power quality, OEDC has planned to upgrade the said Kale substation and will have its power transformer replaced by 15MVA, the CAPEX project has already the green light of ERC and works will start by first quarter of 2019 and projected to be finished by fourth quarter of 2019, just in time to meet OEDC's demand requirements and also will be fully compliant under power quality criteria. Other projects are already laid out be OEDC, such as the new Mercurio Feeder 1 project, in order to address unbalanced loading among the two (2) Power Tranformers of Mercurio substation and reliability improvement, new circuit recloser installations, and capacitor installation and relocation in order to address power quality issues on far reaches of feeders and for power factor correction.

## POWER SUPPLY PROCUREMENT PLAN

## SCHEDULE OF CSP

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## 10 Year Monthly Data

Year	Forecast			Contracted and For PSA Approval Demand and Energy		Contracted Demand and Energy		Committed for CSP	
	Coinciden t Peak Demand (MW)	Off Peak Demand (MW)	Energy Requirement (MWh)	Demand (MW)	Energy (MWh)	Uncontrac ted Demand (MW)	Uncontrac ted Energy (MWh)	Demand (MW)	Energy (MWh)
2019									
Jan	29.03	12.39	16,172.95	30.00		16.64			
Feb	29.42	12.56	16,278.67	30.00		16.86			
Mar	30.62	13.07	16,222.04	30.00		17.55			
Apr	33.25	14.19	19,030.39	30.00		19.06			
May	34.54	14.74	19,860.09	30.00		19.80			
Jun	34.83	14.87	19,419.22	30.00		19.96			
Jul	34.25	14.62	17,425.45	30.00		19.63			
Aug	34.85	14.87	18,195.23	30.00		19.97			
Sep	34.79	14.85	19,174.67	30.00		19.94			
Oct	34.79	14.85	18,604.01	30.00		19.94			
Nov	34.88	14.89	19,163.56	30.00		19.99			
Dec	33.49	14.30	18,282.04	30.00		19.20			
2020		-	-			-			
Jan	30.34	12.95	16,761.32	30.00		17.39			
Feb	30.73	13.12	16,867.04	30.00		17.61			
Mar	31.92	13.63	16,810.41	30.00		18.30			
Apr	34.51	14.73	19,600.21	30.00		19.78			
May	35.80	15.28	20,429.91	30.00		20.52			
Jun	35.98	15.36	19,951.96	30.00		20.62			
Jul	34.66	14.79	17,679.99	30.00		19.86			
Aug	34.35	14.66	18,115.94	30.00		19.69			
Sep	32.50	13.87	18,427.70	30.00		18.63			
Oct	32.49	13.87	17,857.04	30.00		18.62			
Nov	32.59	13.91	18,416.59	30.00		18.68			
Dec	31.20	13.32	17,535.07	30.00		17.88			
2021		-	-			-			
Jan	31.64	13.51	17,349.69	30.00		18.13			
Feb	32.03	13.67	17,455.41	30.00		18.36			
Mar	33.23	14.18	17,398.79	30.00		19.05			
Apr	35.81	15.29	20,188.59	30.00		20.53			
May	37.10	15.84	21,018.29	30.00		21.26			
Jun	37.29	15.92	20,540.33	30.00		21.37			
Jul	35.96	15.35	18,268.36	30.00		20.61			
Aug	35.66	15.22	18,704.31	30.00		20.44			
Sep	33.80	14.43	19,016.07	30.00		19.37			
Oct	33.80	14.43	18,445.41	30.00		19.37			
Nov	33.89	14.47	19,004.97	30.00		19.43			
Dec	32.51	13.88	18,123.45	30.00		18.63			
2022		-	-			-			
Jan	32.95	14.06	17,938.07	30.00		18.88			
Feb	33.34	14.23	18,043.79	30.00		19.11			
Mar	34.54	14.74	17,987.16	30.00		19.79			
Apr	37.12	15.84	20,776.96	30.00		21.27			
May	38.41	16.40	21,606.66	30.00		22.01			
Jun	38.60	16.48	21,128.70	30.00		22.12			
Jul	37.27	15.91	18,856.74	30.00		21.36			

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Aug	36.97	15.78	19,292.68	30.00		21.19			
Sep	35.11	14.99	19,604.45	30.00		20.12			
Oct	35.11	14.99	19,033.79	30.00		20.12			
Nov	35.20	15.03	19,593.34	30.00		20.17			
Dec	33.81	14.43	18,711.82	30.00		19.38			
2023		-	-			-			
Jan	34.25	14.62	18,526.44	30.00		19.63			
Feb	34.64	14.79	18,632.16	30.00		19.86			
Mar	35.84	15.30	18,575.53	30.00		20.54			
Apr	38.43	16.40	21,365.33	30.00		22.02			
May	39.71	16.95	22,195.03	30.00		22.76			
Jun	39.90	17.03	21,717.08	30.00		22.87			
Jul	38.57	16.47	19,445.11	30.00		22.11			
Aug	38.27	16.34	19,881.06	30.00		21.93			
Sep	36.42	15.55	20,192.82	30.00		20.87			
Oct	36.41	15.54	19,622.16	30.00		20.87			
Nov	36.51	15.58	20,181.71	30.00		20.92			
Dec	35.12	14.99	19,300.19	30.00		20.13			
2024		-	-			-			
Jan	35.56	15.18	19,114.81			20.38			
Feb	35.95	15.35	19,220.53			20.60			
Mar	37.15	15.86	19,163.91			21.29			
Apr	39.73	16.96	21,953.71			22.77			
May	41.02	17.51	22,783.41			23.51			
Jun	41.21	17.59	22,305.45			23.62			
Jul	39.88	17.02	20,033.48			22.86			
Aug	39.58	16.89	20,469.43			22.68			
Sep	37.72	16.10	20,781.19			21.62			
Oct	37.72	16.10	20,210.53			21.62			
Nov	37.81	16.14	20,770.08			21.67			
Dec	36.42	15.55	19,888.56			20.88			
2025		-	-			-			
Jan	36.87	15.74	19,703.19			21.13			
Feb	37.26	15.90	19,808.91			21.35			
Mar	38.45	16.41	19,752.28			22.04			
Apr	41.04	17.52	22,542.08			23.52			
May	42.33	18.07	23,371.78			24.26			
Jun	42.52	18.15	22,893.82			24.37			
Jul	41.19	17.58	20,621.86			23.61			
Aug	40.88	17.45	21,057.80			23.43			
Sep	39.03	16.66	21,369.57			22.37			
Oct	39.02	16.66	20,798.91			22.37			
Nov	39.12	16.70	21,358.46			22.42			
Dec	37.73	16.11	20,476.94			21.62			
2026		-	-			-			
Jan	38.17	16.29	20,291.56			21.88			
Feb	38.56	16.46	20,397.28			22.10			
Mar	39.76	16.97	20,340.65			22.79			
Apr	42.34	18.08	23,130.45			24.27			
May	43.63	18.63	23,960.15			25.01			
Jun	43.82	18.71	23,482.19			25.12			
Jul	42.49	18.14	21,210.23			24.35			
Aug	42.19	18.01	21,646.18			24.18			
Sep	40.34	17.22	21,957.94			23.12			
Oct	40.33	17.22	21,387.28			23.12			
Nov	40.42	17.26	21,946.83			23.17			

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Dec	39.04	16.66	21,065.31			22.37			
2027		-	-			-			
Jan	39.48	16.85	20,879.93			22.63			
Feb	39.87	17.02	20,985.65			22.85			
Mar	41.07	17.53	20,929.03			23.54			
Apr	43.65	18.63	23,718.83			25.02			
May	44.94	19.18	24,548.52			25.76			
Jun	45.13	19.26	24,070.57			25.86			
Jul	43.80	18.70	21,798.60			25.10			
Aug	43.50	18.57	22,234.55			24.93			
Sep	41.64	17.78	22,546.31			23.87			
Oct	41.64	17.77	21,975.65			23.86			
Nov	41.73	17.81	22,535.20			23.92			
Dec	40.34	17.22	21,653.68			23.12			
2028		-	-			-			
Jan	40.78	17.41	21,468.31			23.37			
Feb	41.17	17.58	21,574.03			23.60			
Mar	42.37	18.09	21,517.40			24.29			
Apr	44.96	19.19	24,307.20			25.77			
May	46.25	19.74	25,136.90			26.50			
Jun	46.43	19.82	24,658.94			26.61			
Jul	45.11	19.25	22,386.98			25.85			
Aug	44.80	19.12	22,822.92			25.68			
Sep	42.95	18.33	23,134.69			24.61			
Oct	42.94	18.33	22,564.03			24.61			
Nov	43.04	18.37	23,123.58			24.67			
Dec	41.65	17.78	22,242.06			23.87			