

Weekly System Status Report – 2022 Week 12 (21/03/2022 – 27/03/2022)

Introduction

This document is intended to provide a general picture of the Adequacy of the National Electricity Supply System in the medium term. The Report will be updated weekly, on Tuesdays and circulated Wednesdays, thereafter, published on the Eskom website, updated on Wednesdays. The values contained in this report are unverified and not official yet and can change at any time.

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Historic Daily Peak System Capacity/Demand

Date	Available Dispatchable Generation (MW)	Non-commercial Generation (MW)	Residual Load Forecast (MW)	Actual Residual Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (Residual Demand)
Mon 21/Mar/2022	30,176	540	26,368	27,165	11.1%	13.1%	-2.9%
Tue 22/Mar/2022	31,353	646	28,594	28,341	10.6%	12.9%	0.9%
Wed 23/Mar/2022	31,207	626	28,398	28,099	11.1%	13.3%	1.1%
Thu 24/Mar/2022	30,604	725	28,448	27,346	11.9%	14.6%	4.0%
Fri 25/Mar/2022	30,159	728	27,126	26,576	13.5%	16.2%	2.1%
Sat 26/Mar/2022	30,480	726	26,182	25,810	18.1%	20.9%	1.4%
Sun 27/Mar/2022	29,673	725	26,235	25,556	16.1%	18.9%	2.7%

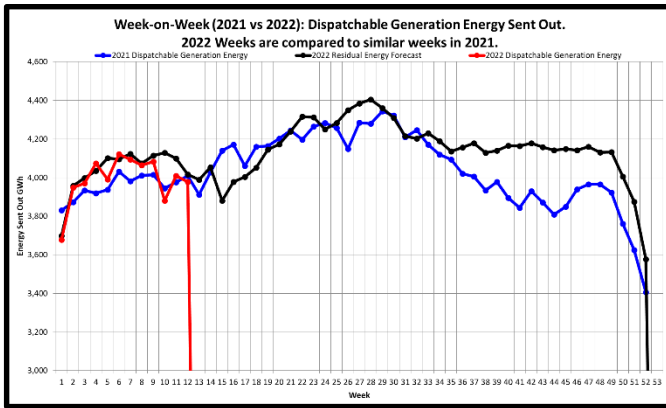
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 21/Mar/2022	31,416	540	27,465	28,404	10.6%	12.5%	-3.3%
Tue 22/Mar/2022	32,804	646	29,883	29,791	10.1%	12.3%	0.3%
Wed 23/Mar/2022	32,518	626	29,664	29,411	10.6%	12.7%	0.9%
Thu 24/Mar/2022	32,697	725	30,221	29,439	11.1%	13.5%	2.7%
Fri 25/Mar/2022	31,797	728	28,774	28,215	12.7%	15.3%	2.0%
Sat 26/Mar/2022	31,759	726	27,509	27,089	17.2%	19.9%	1.5%
Sun 27/Mar/2022	31,045	725	27,575	26,928	15.3%	18.0%	2.4%

Notes:

1. Available Dispatchable Generation means **all generation resources** that can be dispatched by Eskom and includes capacity available from all emergency generation resources.
2. RSA Contracted Load Forecast is the total official day-ahead hourly forecast. Residual Load Forecast excludes the expected generation from renewables.
3. Actual Residual Demand is the aggregated metered hourly sent-out generation and imports from dispatchable resources and includes demand reductions. The Actual RSA Contracted Demand includes renewable generation.
4. Net Maximum Dispatchable Capacity (including imports and emergency generation resources) = 49 590 MW (Incl. non-comm. Kusile units).
5. These figures do not include any demand side products.
6. The peak hours for the residual demand can differ from that of the RSA contracted demand, depending on renewable generation.

Week-on-Week Dispatchable Generation Energy Sent Out

[2022 weeks compared to similar 2021 weeks]



Week 12 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	3,978	GWh
Week-on-Week Growth	-0.78	%
Year-on-Year Growth (Year-to-Date) Annual	0.90	%

Note:

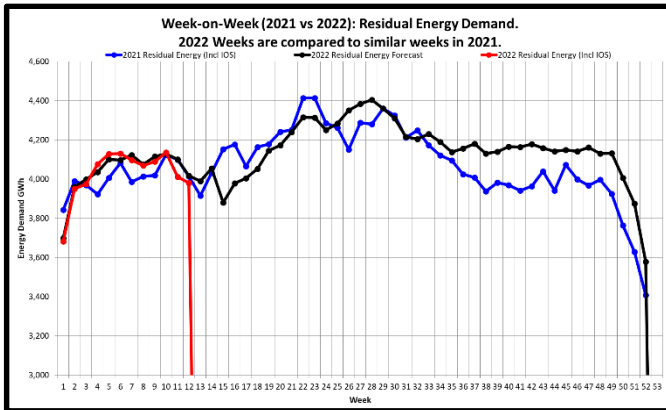
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 27 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	52,040	225,203	GWh
2018	52,175	224,202	GWh
2019	50,842	219,563	GWh
2020	50,911	206,725	GWh
2021	48,404	210,022	GWh
2022 (YTD)	48,838		GWh

Week-on-Week Residual Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 12 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	3,981	GWh
Week-on-Week Growth	-0.81	%
Year-on-Year Growth (Year-to-Date) Annual	0.54	%

Note:

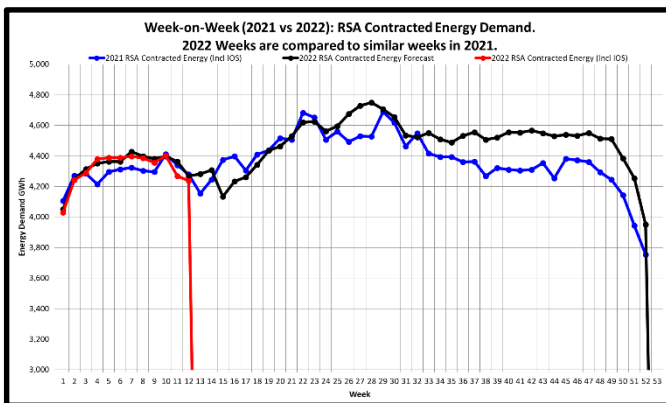
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 27 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	52,038	225,248	GWh
2018	52,203	224,594	GWh
2019	51,486	220,924	GWh
2020	51,760	208,151	GWh
2021	49,005	211,958	GWh
2022 (YTD)	49,271		GWh

Week-on-Week RSA Contracted Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 12 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,239	GWh
Week-on-Week Growth	-0.93	%
Year-on-Year Growth (Year-to-Date) Annual	0.65	%

Note:

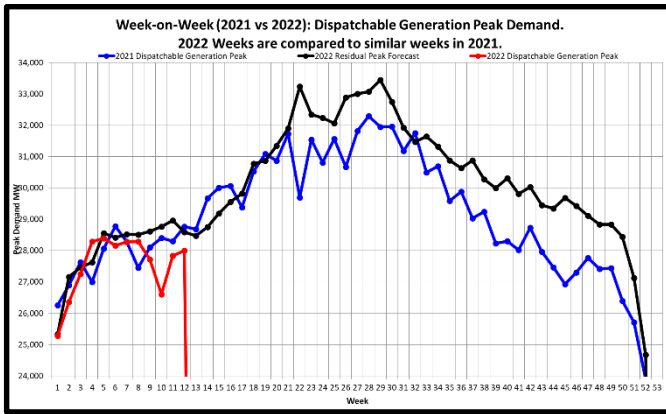
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 27 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	55,048	235,426	GWh
2018	54,876	235,482	GWh
2019	54,393	232,511	GWh
2020	54,574	220,630	GWh
2021	52,459	227,166	GWh
2022 (YTD)	52,816		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2022 weeks compared to similar 2021 weeks]



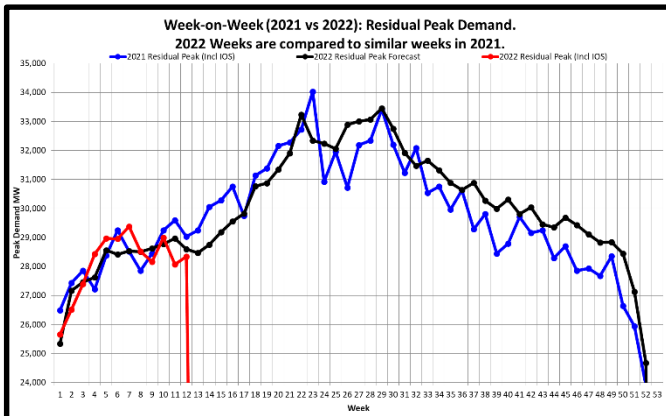
Week 12 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	27,999	MW
Week-on-Week Growth	-2.66	%
Year-on-Year Growth (Year-to-Date) Annual	-1.33	%

Note:
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Dispatchable Generation Peak Demand Statistics			
Year	Peak Date	Annual Peak	Unit
2017	Tue 30-May-2017	35,457	MW
2018	Mon 16-Jul-2018	34,256	MW
2019	Thu 30-May-2019	33,066	MW
2020	Wed 17-Jun-2020	32,384	MW
2021	Thu 15-Jul-2021	32,292	MW
2022 (YTD)	Tue 01-Feb-2022	28,398	MW

Week-on-Week Residual Peak Demand

[2022 weeks compared to similar 2021 weeks]



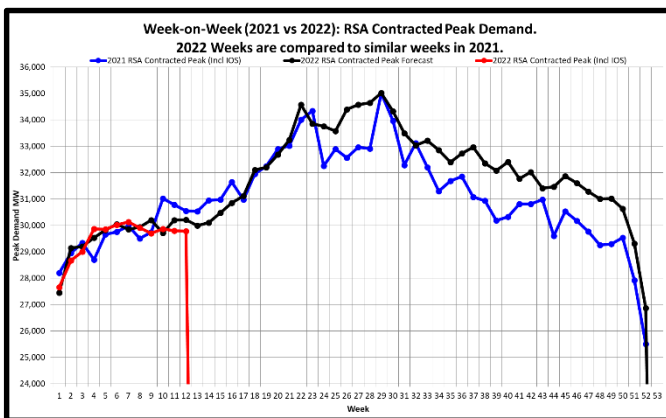
Week 12 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	28,341	MW
Week-on-Week Growth	-2.37	%
Year-on-Year Growth (Year-to-Date) Annual	-0.72	%

Note:
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Residual Peak Demand Statistics (Incl IOS)			
Year	Peak Date	Annual Peak	Unit
2017	Tue 30-May-2017	35,517	MW
2018	Tue 29-May-2018	34,907	MW
2019	Thu 30-May-2019	33,746	MW
2020	Wed 15-Jul-2020	32,756	MW
2021	Tue 08-Jun-2021	34,029	MW
2022 (YTD)	Tue 15-Feb-2022	29,375	MW

Week-on-Week RSA Contracted Peak Demand

[2022 weeks compared to similar 2021 weeks]



Week 12 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	29,791	MW
Week-on-Week Growth	-2.48	%
Year-on-Year Growth (Year-to-Date) Annual	-2.87	%

Note:
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual RSA Contracted Peak Demand Statistics (Incl IOS)			
Year	Peak Date	Annual Peak	Unit
2017	Tue 30-May-2017	35,769	MW
2018	Tue 29-May-2018	35,345	MW
2019	Thu 30-May-2019	34,510	MW
2020	Tue 01-Sep-2020	34,155	MW
2021	Thu 22-Jul-2021	35,005	MW
2022 (YTD)	Tue 15-Feb-2022	30,132	MW

Weekly Generation Availability

	Week												Annual (Jan - Dec)			
	51	52	1	2	3	4	5	6	7	8	9	10	11	12	2022	2021
Energy Availability Factor (Eskom EAF)	56.20	54.57	57.83	58.61	59.57	59.23	57.28	59.10	60.08	60.71	59.07	56.68	60.34	60.30	58.98	61.79
Planned Outage Factor	13.61	13.88	10.07	10.71	14.70	14.19	11.95	12.76	11.05	11.63	11.80	13.86	11.83	12.70	12.35	10.81
Unplanned Outage Factor	28.53	29.93	30.19	28.70	24.33	24.67	29.21	26.41	27.37	26.22	27.90	28.11	26.64	25.71	27.13	24.53
Other Outage Factor	1.66	1.62	1.91	1.98	1.40	1.91	1.56	1.73	1.50	1.44	1.23	1.35	1.19	1.29	1.54	2.87

EAF: Ratio of the available energy generation over a given time period to the maximum amount of energy which could be produced over the same time period.

Outage Factors: Ratio of energy losses over a given time period to the maximum amount of energy which could be produced over the same time period.

YTD: Year-to-Date (01 January of current year to current week)

Three Month Outlook

This is the forecast demand vs. available generating capacity for each week for 3 months ahead. Colour codes ranging from Green (no shortage) to Red (worst case) are used to indicate the absence or presence of a capacity constraint.

Week Start	Week	MW RSA Contracted Forecast	MW Residual Forecast	MW Available Dispatchable Capacity	MW Available Capacity (Less OR and UA)	MW Planned Maintenance	MW Unplanned Outage Assumption (UA)	MW Planned Risk Level (-14200 MW)	MW Likely Risk Scenario (-16200 MW)
28-Mar-22	13	2995	28473	42165	27965	7425	12000		
04-Apr-22	14	30106	28750	42940	28740	6650	12000		
11-Apr-22	15	30479	29186	43136	28936	6454	12000		
18-Apr-22	16	30851	29558	44226	30026	5364	12000		
25-Apr-22	17	31118	29824	44266	30066	5324	12000		
02-May-22	18	32110	30771	44651	30451	4939	12000		
09-May-22	19	32204	30865	45261	31061	4329	12000		
16-May-22	20	32686	31347	45386	31186	4204	12000		
23-May-22	21	33244	31905	46051	31851	3539	12000		
30-May-22	22	34575	33236	46092	31892	3498	12000		
06-Jun-22	23	33852	32337	45762	31562	3828	12000		
13-Jun-22	24	33755	32240	45910	31710	3680	12000		
20-Jun-22	25	33577	32063	46135	31935	3455	12000		
27-Jun-22	26	34399	32884	46109	31909	3481	12000		
04-Jul-22	27	34574	33000	46166	31966	3424	12000		
11-Jul-22	28	34644	33071	46109	31909	3481	12000		
18-Jul-22	29	35023	33450	46352	32152	3238	12000		
25-Jul-22	30	34323	32750	46542	32342	3048	12000		
01-Aug-22	31	33489	31924	45258	31058	4332	12000		
08-Aug-22	32	33039	31474	44517	30317	5073	12000		
15-Aug-22	33	33212	31647	44518	30318	5072	12000		
22-Aug-22	34	32861	31323	44855	30655	4735	12000		
29-Aug-22	35	32397	30878	44098	29898	5492	12000		
05-Sep-22	36	32729	30641	44158	28958	5432	13000		
12-Sep-22	37	32971	30883	43830	28630	5760	13000		
19-Sep-22	38	32359	30272	43193	27993	6397	13000		
26-Sep-22	39	32080	29992	43349	28149	6241	13000		
03-Oct-22	40	32414	30308	44126	28926	5464	13000		
10-Oct-22	41	31774	29809	43549	28349	6041	13000		
17-Oct-22	42	32028	30038	43797	28597	5793	13000		
24-Oct-22	43	31415	29451	43261	28061	6329	13000		
31-Oct-22	44	31472	29346	42407	27207	7183	13000		
07-Nov-22	45	31872	29689	41757	26557	7833	13000		
14-Nov-22	46	31613	29430	42402	27202	7188	13000		
21-Nov-22	47	31292	29109	42048	26848	7542	13000		
28-Nov-22	48	31015	28832	41395	26195	8195	13000		
05-Dec-22	49	31023	28837	42760	27560	6830	13000		
12-Dec-22	50	30633	28446	41729	26529	7861	13000		
19-Dec-22	51	29318	27132	40194	24994	9396	13000		
26-Dec-22	52	26867	24680	40274	25074	9316	13000		
02-Jan-23	1	28588	26066	40274	25074	9316	13000		
09-Jan-23	2	29704	27670	40989	25789	8601	13000		
16-Jan-23	3	30496	28461	40980	25780	8610	13000		
23-Jan-23	4	30174	28139	41205	26005	8385	13000		
30-Jan-23	5	30383	28349	41065	25865	8525	13000		
06-Feb-23	6	30997	29208	41798	26598	7792	13000		
13-Feb-23	7	30835	29045	41598	26398	7992	13000		
20-Feb-23	8	30909	29119	42390	27190	7200	13000		
27-Feb-23	9	31026	29153	42152	26952	7438	13000		
06-Mar-23	10	31458	29585	42581	27381	7009	13000		
13-Mar-23	11	31111	29237	43137	27937	6453	13000		
20-Mar-23	12	31424	29366	42417	27217	7173	13000		
27-Mar-23	13	31263	29206	42992	27792	6598	13000		
03-Apr-23	14	31950	30573	41805	27605	7785	12000		

Notes - Assumptions critical:

The maintenance plan included in these assumptions includes a base scenario of outages (planned risk level). As there is opportunity for further outages, these will be included. This "likely risk scenario" includes an additional 2000 MW of outages on the base plan.

The expected imports at Apollo is included.

Avon and Dedisa is also included.

The forecast used is the latest operational weekly residual peak forecast, which excludes the expected renewable generation.

Operating Reserve (OR) from Generation: 2 200 MW

Unplanned Outage Assumption (UA): 12 000 MW (13000 MW from September 2022)

Reserves: OR + UA = 14 200 MW

Eskom Installed Capacity: 48 585 MW (Incl. non-comm. Kusile units).

Installed Dispatchable Capacity: 49 590 MW (Incl. Avon and Dedisa).

Medupi Unit 4 capacity of 720MW has been removed from the capacity planning models by including it in the committed PCLF (although it is UCLF).

Key:

Risk Level	Description
Green	Adequate Generation to meet Demand and Reserves.
Yellow	< 1 000MW Possibly short to meet Reserves
Orange	1 001MW - 2 000MW Definitely short to meet Reserves and possibly Demand
Red	> 2 001MW Short to meet Demand and Reserves

Medium Term Peak Demand/Capacity Forecast

Please go to the link below for the Medium-term System Adequacy Outlook - 2022 to 2026. (Published 30 October 2021).

<https://www.eskom.co.za/wp-content/uploads/2021/11/MediumTermSystemAdequacyOutlook2022-2026.pdf>

or

<https://www.eskom.co.za/eskom-divisions/tx/system-adequacy-reports/>

Renewable Energy Statistics

Note: Times are expressed as hour beginning

Current Installed Capacity (MW)	
CSP	500.0
PV	2,212.1
Wind (Eskom+IPP)	3,163.4
Total (Incl other REs)	5,901.0

Maximum Contribution (MW) - based on System Operator data (subject to metering verification)					
Cal Year	Indicator	CSP	PV	Wind (Eskom+IPP)	Total (Incl other REs)
All Time	Maximum	504.9	2,099.5	2,639.3	4,784.7
	Max Date	30-Nov-2021 16:00	24-Oct-2021 12:00	15-Dec-2021 17:00	01-Nov-2021 13:00
2016	Maximum	200.9	1,350.5	1,229.8	2,576.3
	Max Date	11-Aug-2016 14:00	16-Dec-2016 12:00	23-Dec-2016 13:00	23-Dec-2016 13:00
2017	Maximum	302.0	1,432.5	1,708.2	3,142.7
	Max Date	07-Nov-2017 10:00	27-Oct-2017 12:00	25-Dec-2017 18:00	13-Dec-2017 13:00
2018	Maximum	399.7	1,392.1	1,902.3	3,298.9
	Max Date	04-Dec-2018 16:00	03-Oct-2018 12:00	02-Oct-2018 16:00	28-Sep-2018 11:00
2019	Maximum	502.1	1,375.6	1,872.0	3,530.6
	Max Date	24-Sep-2019 11:00	19-Jan-2019 12:00	14-Dec-2019 15:00	27-Oct-2019 13:00
2020	Maximum	504.5	1,929.2	2,113.9	4,050.0
	Max Date	25-Nov-2020 12:00	25-Nov-2020 12:00	01-Dec-2020 19:00	24-Nov-2020 13:00
2021	Maximum	504.9	2,099.5	2,639.3	4,784.7
	Max Date	30-Nov-2021 16:00	24-Oct-2021 12:00	15-Dec-2021 17:00	01-Nov-2021 13:00
2022	Maximum	504.7	2,025.1	2,109.6	4,044.5
	Max Date	01-Jan-2022 11:00	05-Jan-2022 11:00	08-Jan-2022 19:00	01-Jan-2022 15:00

Annual Energy Contribution (MWh) - based on System Operator data (subject to metering verification)					
Cal Year	Indicator	CSP	PV	Wind (Eskom+IPP)	Total (Incl other REs)
All Time	Annual Energy	1,656,017	5,069,146	8,359,224	15,208,327
	Maximum Total Energy	529,522	2,630,141	3,730,771	6,951,261
2016	Total Energy	687,703	3,324,857	5,081,023	9,198,632
2017	Total Energy	1,031,288	3,282,124	6,467,095	10,887,902
2018	Total Energy	1,557,151	3,324,989	6,624,642	11,586,945
2019	Total Energy	1,626,049	4,140,212	6,625,830	12,478,704
2020	Total Energy	1,656,017	5,069,146	8,359,224	15,208,327
2021	Total Energy	400,821	1,300,564	1,990,233	3,720,269
2022	Total Energy				

Maximum Difference between Consecutive Evening Peaks (MW) - based on System Operator data (subject to metering verification)			Maximum proportion that Renewables contributed towards actual hourly energy supplied (%) - based on System Operator data (subject to metering verification)		
Cal Year	Indicator	Total (Incl other REs)	Cal Year	Indicator	Total (Incl other REs)
All Time	Maximum	1,744	All Time	Maximum	19.1%
	Max Date	07-Aug-2021 to 08-Aug-2021		Max Date	01-Nov-2021 13:00
2016	Maximum	828	2016	Maximum	9.8%
	Max Date	30-Aug-2016 to 31-Aug-2016		Max Date	23-Dec-2016 13:00
2017	Maximum	1,038	2017	Maximum	12.7%
	Max Date	19-Jun-2017 to 20-Jun-2017		Max Date	25-Dec-2017 15:00
2018	Maximum	1,336	2018	Maximum	13.1%
	Max Date	01-Sep-2018 to 02-Sep-2018		Max Date	01-Jan-2018 14:00
2019	Maximum	1,464	2019	Maximum	13.9%
	Max Date	05-Jul-2019 to 06-Jul-2019		Max Date	14-Dec-2019 14:00
2020	Maximum	1,488	2020	Maximum	16.1%
	Max Date	31-Aug-2020 to 01-Sep-2020		Max Date	27-Dec-2020 15:00
2021	Maximum	1,744	2021	Maximum	19.1%
	Max Date	07-Aug-2021 to 08-Aug-2021		Max Date	01-Nov-2021 13:00
2022	Maximum	1,324	2022	Maximum	18.0%
	Max Date	15-Feb-2022 to 16-Feb-2022		Max Date	01-Jan-2022 15:00