

Weekly System Status Report – 2022 Week 9 (28/02/2022 – 06/03/2022)

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 28/Feb/2022	30,509	412	27,978	28,169	8.3%	9.8%	-0.7%
Tue 01/Mar/2022	29,701	542	28,305	27,945	6.3%	8.2%	1.3%
Wed 02/Mar/2022	30,040	543	28,619	27,749	8.3%	10.2%	3.1%
Thu 03/Mar/2022	30,040	474	28,061	27,960	7.4%	9.1%	0.4%
Fri 04/Mar/2022	30,690	445	27,300	27,457	11.8%	13.4%	-0.6%
Sat 05/Mar/2022	29,353	460	26,286	26,010	12.9%	14.6%	1.1%
Sun 06/Mar/2022	29,003	423	26,751	26,783	8.3%	9.9%	-0.1%

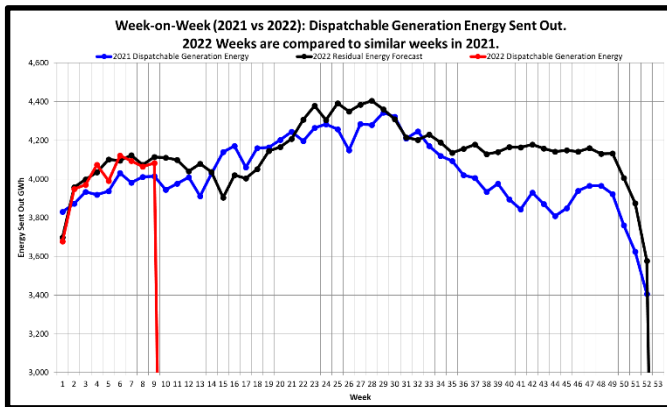
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 28/Feb/2022	31,840	412	29,582	29,500	7.9%	9.3%	0.3%
Tue 01/Mar/2022	31,457	542	29,897	29,701	5.9%	7.7%	0.7%
Wed 02/Mar/2022	31,776	543	30,210	29,485	7.8%	9.6%	2.5%
Thu 03/Mar/2022	31,438	474	29,717	29,359	7.1%	8.7%	1.2%
Fri 04/Mar/2022	32,056	445	28,880	28,823	11.2%	12.8%	0.2%
Sat 05/Mar/2022	31,390	460	27,951	28,047	11.9%	13.6%	-0.3%
Sun 06/Mar/2022	30,153	423	28,086	27,933	7.9%	9.5%	0.5%

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 9 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	4,084	GWh
Week-on-Week Growth	1.71	%
Year-on-Year Growth (Year-to-Date) Annual	1.38	%

Note:

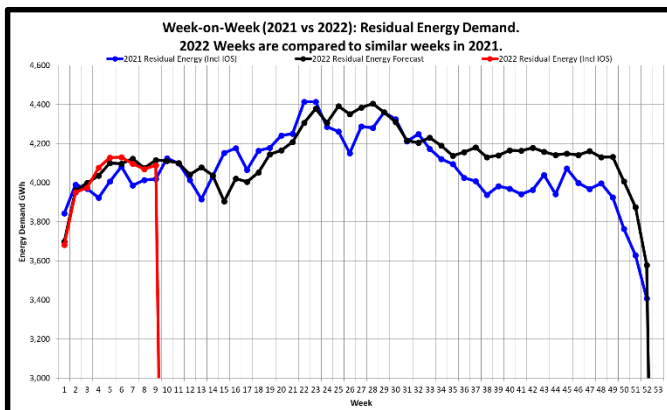
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 06 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	39,207	225,203	GWh
2018	39,243	224,202	GWh
2019	38,654	219,563	GWh
2020	38,640	206,725	GWh
2021	36,470	210,021	GWh
2022 (YTD)	4,625		GWh

Week-on-Week Residual Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 9 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,090	GWh
Week-on-Week Growth	1.75	%
Year-on-Year Growth (Year-to-Date) Annual	1.02	%

Note:

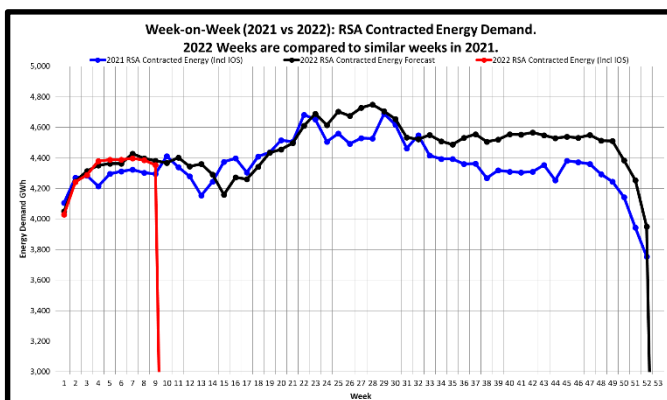
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 06 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	39,205	225,248	GWh
2018	39,264	224,594	GWh
2019	38,867	220,924	GWh
2020	39,231	208,151	GWh
2021	36,765	211,957	GWh
2022 (YTD)	37,142		GWh

Week-on-Week RSA Contracted Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 9 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,355	GWh
Week-on-Week Growth	1.38	%
Year-on-Year Growth (Year-to-Date) Annual	1.18	%

Note:

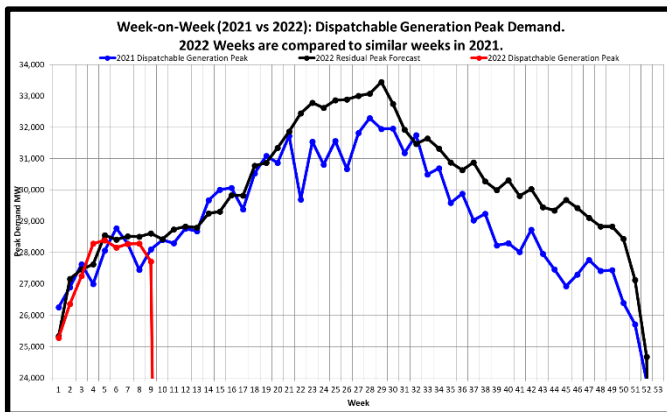
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 06 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	41,529	235,426	GWh
2018	41,357	235,482	GWh
2019	41,105	232,511	GWh
2020	41,404	220,630	GWh
2021	39,427	227,166	GWh
2022 (YTD)	39,905		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2022 weeks compared to similar 2021 weeks]



Week 9 : Dispatchable Generation Peak Demand Statistics

Peak Demand	27,719	MW
Week-on-Week Growth	-1.39	%
Year-on-Year Growth (Year-to-Date) Annual	-1.33	%

Note:

2022 Weeks are compared to similar weeks in 2021.

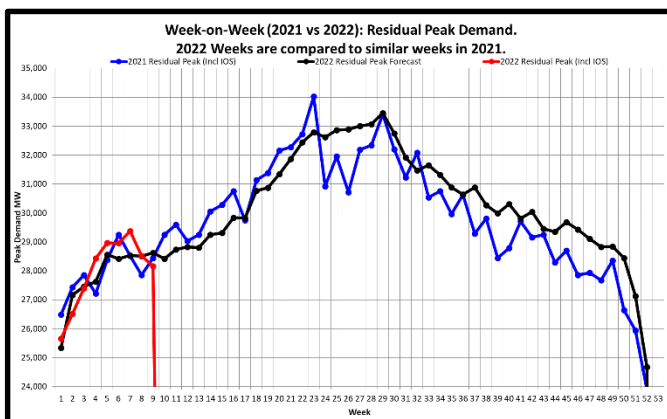
(2022 week 1 ~ 2021 week 1)

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 9 : Residual Peak Demand Statistics (Incl IOS)

Peak Demand	28,169	MW
Week-on-Week Growth	-0.97	%
Year-on-Year Growth (Year-to-Date) Annual	0.45	%

Note:

2022 Weeks are compared to similar weeks in 2021.

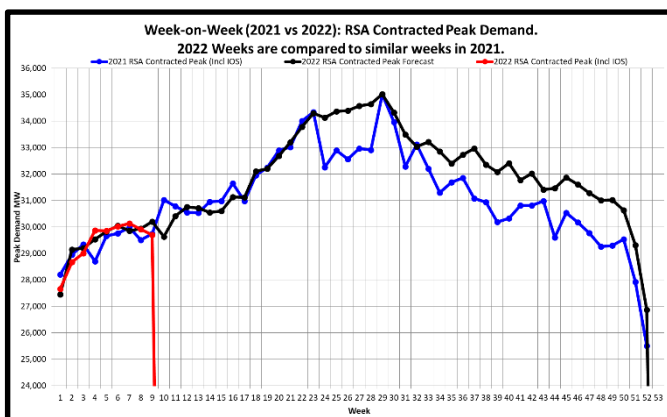
(2022 week 1 ~ 2021 week 1)

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 9 : RSA Contracted Peak Demand Statistics (Incl IOS)

Peak Demand	29,701	MW
Week-on-Week Growth	-0.13	%
Year-on-Year Growth (Year-to-Date) Annual	0.51	%

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)	
	48	49	50	51	52	1	2	3	4	5	6	7	8	9	2022	2021
Energy Availability Factor (Eskom EAF)	58.16	57.37	59.24	56.20	54.59	57.85	58.63	59.58	59.24	57.32	59.12	60.11	60.72	59.07	58.84	61.79
Planned Outage Factor	12.12	11.71	11.94	13.61	13.88	10.07	10.70	14.69	14.18	11.94	12.75	11.04	11.63	11.81	12.18	10.81
Unplanned Outage Factor	27.59	28.14	26.98	28.53	29.91	30.18	28.69	24.33	24.67	29.19	26.40	27.35	26.21	27.80	27.34	24.53
Other Outage Factor	2.13	2.78	1.84	1.66	1.62	1.90	1.98	1.40	1.91	1.55	1.73	1.50	1.44	1.32	1.64	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)
07-Mar-22	10	29629	28425	41657	27457	7933	12000		
14-Mar-22	11	30408	28743	43753	29553	5837	12000		
21-Mar-22	12	30756	28831	42859	28659	6731	12000		
28-Mar-22	13	30724	28799	42550	28350	7040	12000		
04-Apr-22	14	30546	29253	43168	29968	6422	11000		
11-Apr-22	15	30608	29314	43551	30351	6039	11000		
18-Apr-22	16	31130	29837	44476	31276	5114	11000		
25-Apr-22	17	31118	29824	43901	30701	5689	11000		
02-May-22	18	32110	30771	44476	31276	5114	11000		
09-May-22	19	32204	30865	45351	32151	4239	11000		
16-May-22	20	32686	31347	45476	32276	4114	11000		
23-May-22	21	33208	31869	46051	32851	3539	11000		
30-May-22	22	33783	32444	46775	33575	2815	11000		
06-Jun-22	23	34300	32786	46100	32900	3490	11000		
13-Jun-22	24	34134	32620	45460	32260	4130	11000		
20-Jun-22	25	34375	32861	45952	32752	3638	11000		
27-Jun-22	26	34399	32884	46124	32924	3466	11000		
04-Jul-22	27	34574	33000	46019	32819	3571	11000		
11-Jul-22	28	34644	33071	46109	32909	3481	11000		
18-Jul-22	29	35023	33450	46352	33152	3238	11000		
25-Jul-22	30	34323	32750	46542	33342	3048	11000		
01-Aug-22	31	33489	31924	45258	32058	4332	11000		
08-Aug-22	32	33039	31474	44574	31374	5016	11000		
15-Aug-22	33	33212	31647	44722	31522	4868	11000		
22-Aug-22	34	32861	31323	44912	31712	4678	11000		
29-Aug-22	35	32397	30878	44486	31286	5104	11000		
05-Sep-22	36	32729	30641	44215	30015	5375	12000		
12-Sep-22	37	32971	30883	43830	29630	5760	12000		
19-Sep-22	38	32359	30272	43193	28993	6397	12000		
26-Sep-22	39	32080	29992	43349	29149	6241	12000		
03-Oct-22	40	32414	30308	43496	29296	6094	12000		
10-Oct-22	41	31774	29809	42829	28629	6761	12000		
17-Oct-22	42	32028	30038	43077	28877	6513	12000		
24-Oct-22	43	31415	29451	42541	28341	7049	12000		
31-Oct-22	44	31472	29346	42407	28207	7183	12000		
07-Nov-22	45	31872	29689	42350	28150	7240	12000		
14-Nov-22	46	31613	29430	42402	28202	7188	12000		
21-Nov-22	47	31292	29109	42048	27848	7542	12000		
28-Nov-22	48	31015	28832	41543	27343	8047	12000		
05-Dec-22	49	31023	28837	42908	28708	6682	12000		
12-Dec-22	50	30633	28446	41729	27529	7861	12000		
19-Dec-22	51	29318	27132	40194	25994	9396	12000		
26-Dec-22	52	26867	24680	40274	26074	9316	12000		
02-Jan-23	1	28588	26066	40274	26074	9316	12000		
09-Jan-23	2	29704	27670	40989	26789	8601	12000		
16-Jan-23	3	30496	28461	41620	27420	7970	12000		
23-Jan-23	4	30174	28139	40565	26365	9025	12000		
30-Jan-23	5	30383	28349	41065	26865	8525	12000		
06-Feb-23	6	30997	29208	41798	27598	7792	12000		
13-Feb-23	7	30835	29045	41598	27398	7992	12000		
20-Feb-23	8	30909	29119	42390	28190	7200	12000		
27-Feb-23	9	31026	29153	42152	27952	7438	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 (11000 MW from April '22)

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
	Total Energy				
2016	Total Energy	529,522	2,630,141	3,730,771	6,951,261
2017	Total Energy	687,703	3,324,857	5,081,023	9,198,632
2018	Total Energy	1,031,288	3,282,124	6,467,095	10,887,902
2019	Total Energy	1,557,151	3,324,989	6,624,642	11,586,945
2020	Total Energy	1,626,049	4,140,212	6,625,830	12,478,704
2021	Total Energy	1,656,017	5,069,146	8,359,224	15,208,327
2022	Total Energy	335,429	1,119,735	1,666,936	3,145,008

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