

## Weekly System Status Report – 2022 Week 3 (17/01/2022 – 23/01/2022)

### 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 17/Jan/2022	32,879	0	27,296	27,254	20.6%	20.6%	0.2%
Tue 18/Jan/2022	30,652	0	27,101	26,732	14.7%	14.7%	1.4%
Wed 19/Jan/2022	30,087	0	27,463	27,395	9.8%	9.8%	0.2%
Thu 20/Jan/2022	31,031	0	26,942	26,721	16.1%	16.1%	0.8%
Fri 21/Jan/2022	28,558	0	26,123	25,996	9.9%	9.9%	0.5%
Sat 22/Jan/2022	29,506	0	25,153	25,571	15.4%	15.4%	-1.6%
Sun 23/Jan/2022	31,217	0	25,819	26,365	18.4%	18.4%	-2.1%

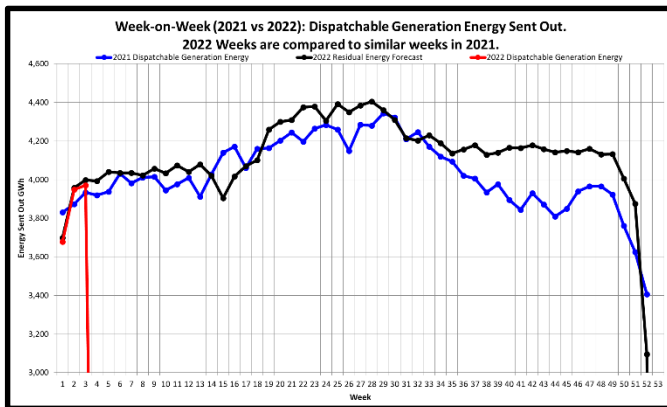
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 17/Jan/2022	34,645	0	28,823	29,020	19.4%	19.4%	-0.7%
Tue 18/Jan/2022	32,902	0	29,116	28,983	13.5%	13.5%	0.5%
Wed 19/Jan/2022	31,626	0	29,208	28,934	9.3%	9.3%	0.9%
Thu 20/Jan/2022	33,287	0	28,949	28,976	14.9%	14.9%	-0.1%
Fri 21/Jan/2022	31,906	0	28,206	27,813	14.7%	14.7%	1.4%
Sat 22/Jan/2022	31,847	0	27,239	27,912	14.1%	14.1%	-2.4%
Sun 23/Jan/2022	32,539	0	27,446	27,687	17.5%	17.5%	-0.9%

### 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 3 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	3,971	GWh
Week-on-Week Growth	0.94	%
Year-on-Year Growth (Year-to-Date) Annual	-0.35	%

#### Note:

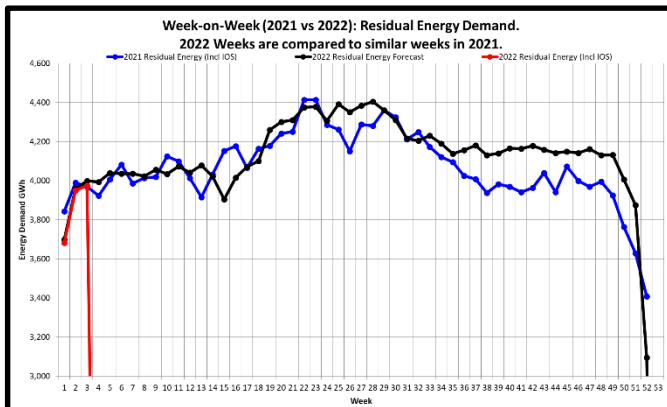
2022 Weeks are compared to similar weeks in 2021.  
(2022 week 1 ~ 2021 week 1)

### Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 23 Jan Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	13,511	225,203	GWh
2018	13,634	224,202	GWh
2019	13,287	219,563	GWh
2020	13,188	206,725	GWh
2021	12,588	210,023	GWh
2022 (YTD)	4,625		GWh

## Week-on-Week Residual Energy Demand

[2022 weeks compared to similar 2021 weeks]



### Week 3 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	3,974	GWh
Week-on-Week Growth	0.12	%
Year-on-Year Growth (Year-to-Date) Annual	-1.65	%

#### Note:

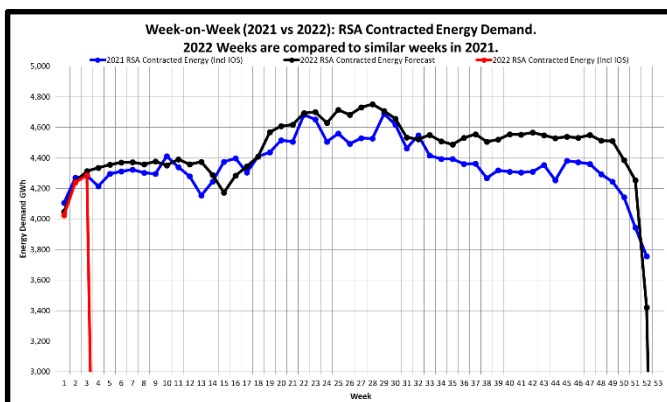
2022 Weeks are compared to similar weeks in 2021.  
(2022 week 1 ~ 2021 week 1)

### Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 23 Jan Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	13,514	225,248	GWh
2018	13,641	224,594	GWh
2019	13,300	220,924	GWh
2020	13,303	208,151	GWh
2021	12,751	211,957	GWh
2022 (YTD)	12,552		GWh

## Week-on-Week RSA Contracted Energy Demand

[2022 weeks compared to similar 2021 weeks]



### Week 3 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,288	GWh
Week-on-Week Growth	0.08	%
Year-on-Year Growth (Year-to-Date) Annual	-0.84	%

#### Note:

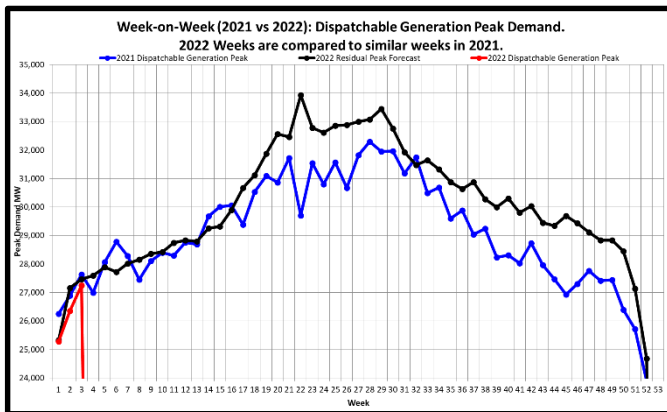
2022 Weeks are compared to similar weeks in 2021.  
(2022 week 1 ~ 2021 week 1)

### Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 23 Jan Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	14,398	235,426	GWh
2018	14,418	235,482	GWh
2019	14,167	232,511	GWh
2020	14,108	220,630	GWh
2021	13,688	227,167	GWh
2022 (YTD)	13,600		GWh

## Week-on-Week Dispatchable Generation Peak Demand

[2022 weeks compared to similar 2021 weeks]



### Week 3 : Dispatchable Generation Peak Demand Statistics

Peak Demand	27,256	MW
Week-on-Week Growth	-1.34	%
Year-on-Year Growth (Year-to-Date) Annual	-1.34	%

#### Note:

2022 Weeks are compared to similar weeks in 2021.

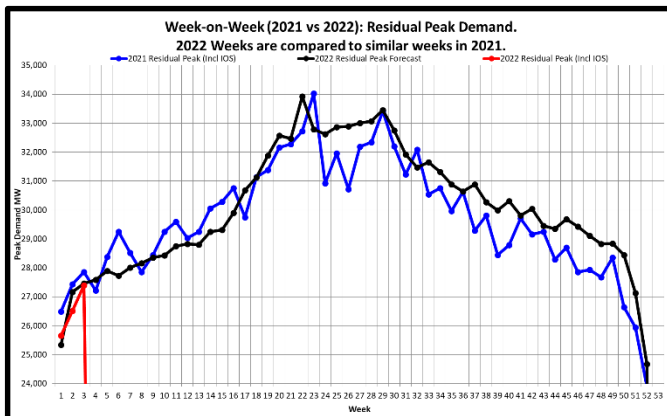
(2022 week 1 ~ 2021 week 1)

### 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)	Wed 19-Jan-2022	27,256	MW

## Week-on-Week Residual Peak Demand

[2022 weeks compared to similar 2021 weeks]



### Week 3 : Residual Peak Demand Statistics (Incl IOS)

Peak Demand	27,395	MW
Week-on-Week Growth	-1.68	%
Year-on-Year Growth (Year-to-Date) Annual	-1.68	%

#### Note:

2022 Weeks are compared to similar weeks in 2021.

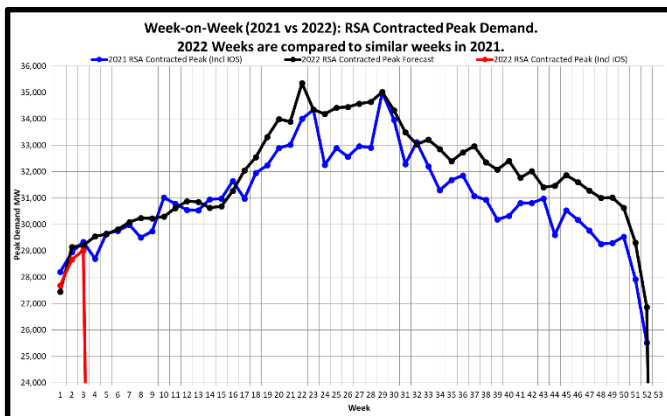
(2022 week 1 ~ 2021 week 1)

### 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)	Wed 19-Jan-2022	27,395	MW

## Week-on-Week RSA Contracted Peak Demand

[2022 weeks compared to similar 2021 weeks]



### Week 3 : RSA Contracted Peak Demand Statistics (Incl IOS)

Peak Demand	29,020	MW
Week-on-Week Growth	-1.09	%
Year-on-Year Growth (Year-to-Date) Annual	-1.09	%

#### 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)	Mon 17-Jan-2022	29,020	MW

## Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	42	43	44	45	46	47	48	49	50	51	52	1	2	3	2022	2021
Energy Availability Factor (Eskom EAF)	58.70	58.22	56.46	58.45	58.55	61.73	58.31	57.38	59.24	56.20	54.65	58.10	59.25	59.97	59.00	61.79
Planned Outage Factor	11.00	11.42	9.82	13.33	8.90	12.28	12.12	11.71	11.94	13.61	13.87	9.98	10.67	14.60	12.19	10.81
Unplanned Outage Factor	27.67	27.94	30.98	24.91	29.88	23.84	27.44	28.13	26.98	28.51	29.86	30.02	28.11	24.03	27.03	24.53
Other Outage Factor	2.63	2.42	2.74	3.31	2.67	2.15	2.13	2.78	1.84	1.68	1.62	1.90	1.97	1.40	1.78	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)
24-Jan-22	4	29556	27592	41679	27479	7911	12000		
31-Jan-22	5	29637	27889	41966	27766	7624	12000		
07-Feb-22	6	29810	27727	42824	28624	6766	12000		
14-Feb-22	7	30099	28015	42580	28380	7010	12000		
21-Feb-22	8	30243	28160	43118	28918	6472	12000		
28-Feb-22	9	30232	28359	42935	28735	6655	12000		
07-Mar-22	10	30299	28425	43752	29552	5838	12000		
14-Mar-22	11	30620	28747	44197	29997	5393	12000		
21-Mar-22	12	30886	28831	43474	29274	6116	12000		
28-Mar-22	13	30854	28799	43343	29143	6247	12000		
04-Apr-22	14	30630	29253	43743	30543	5847	11000		
11-Apr-22	15	30692	29314	44476	31276	5114	11000		
18-Apr-22	16	31272	29894	44476	31276	5114	11000		
25-Apr-22	17	32052	30674	44621	31421	4969	11000		
02-May-22	18	32553	31122	45196	31996	4394	11000		
09-May-22	19	33309	31878	46591	33391	2999	11000		
16-May-22	20	33997	32566	46591	33391	2999	11000		
23-May-22	21	33899	32468	46591	33391	2999	11000		
30-May-22	22	35359	33928	46775	33575	2815	11000		
06-Jun-22	23	34352	32786	46100	32900	3490	11000		
13-Jun-22	24	34186	32620	45507	32307	4083	11000		
20-Jun-22	25	34427	32861	45377	32177	4213	11000		
27-Jun-22	26	34450	32884	46142	32942	3448	11000		
04-Jul-22	27	34574	33000	46072	32872	3518	11000		
11-Jul-22	28	34644	33071	46162	32962	3428	11000		
18-Jul-22	29	35023	33450	46162	32962	3428	11000		
25-Jul-22	30	34323	32750	46352	33152	3238	11000		
01-Aug-22	31	33489	31924	45068	31868	4522	11000		
08-Aug-22	32	33039	31474	44384	31184	5206	11000		
15-Aug-22	33	33212	31647	43920	30720	5670	11000		
22-Aug-22	34	32861	31323	44110	30910	5480	11000		
29-Aug-22	35	32397	30878	44296	31096	5294	11000		
05-Sep-22	36	32729	30641	44215	30015	5375	12000		
12-Sep-22	37	32971	30883	44442	30242	5148	12000		
19-Sep-22	38	32359	30272	43805	29605	5785	12000		
26-Sep-22	39	32080	29992	43349	29149	6241	12000		
03-Oct-22	40	32414	30308	43846	29646	5744	12000		
10-Oct-22	41	31774	29809	43327	29127	6263	12000		
17-Oct-22	42	32028	30038	43077	28877	6513	12000		
24-Oct-22	43	31415	29451	42393	28193	7197	12000		
31-Oct-22	44	31472	29346	42259	28059	7331	12000		
07-Nov-22	45	31872	29689	42202	28002	7388	12000		
14-Nov-22	46	31613	29430	42402	28202	7188	12000		
21-Nov-22	47	31292	29109	42196	27996	7394	12000		
28-Nov-22	48	31015	28832	41691	27491	7899	12000		
05-Dec-22	49	31026	28837	42908	28708	6682	12000		
12-Dec-22	50	30635	28446	41729	27529	7861	12000		
19-Dec-22	51	29321	27132	40194	25994	9396	12000		
26-Dec-22	52	26869	24680	40274	26074	9316	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	504.6	2,026.2	2,056.3	4,047.3
	Max Date	01-Jan-2022 11:00	05-Jan-2022 11:00	13-Jan-2022 17:00	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	15,210,007
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	15,210,007
2022	Total Energy	168,475	498,168	756,046	1,434,072

Maximum Difference between Consecutive Evening Peaks (MW) - based on System Operator data (subject to metering verification)		
Cal Year	Indicator	Total (Incl other REs)
All Time	Maximum	1,744
	Max Date	07-Aug-2021 to 08-Aug-2021
2016	Maximum	828
	Max Date	30-Aug-2016 to 31-Aug-2016
2017	Maximum	1,038
	Max Date	19-Jun-2017 to 20-Jun-2017
2018	Maximum	1,336
	Max Date	01-Sep-2018 to 02-Sep-2018
2019	Maximum	1,464
	Max Date	05-Jul-2019 to 06-Jul-2019
2020	Maximum	1,488
	Max Date	31-Aug-2020 to 01-Sep-2020
2021	Maximum	1,744
	Max Date	07-Aug-2021 to 08-Aug-2021
2022	Maximum	1,067
	Max Date	31-Dec-2021 to 01-Jan-2022

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)
All Time	Maximum	19.1%
	Max Date	01-Nov-2021 13:00
2016	Maximum	9.8%
	Max Date	23-Dec-2016 13:00
2017	Maximum	12.7%
	Max Date	25-Dec-2017 15:00
2018	Maximum	13.1%
	Max Date	01-Jan-2018 14:00
2019	Maximum	13.9%
	Max Date	14-Dec-2019 14:00
2020	Maximum	16.1%
	Max Date	27-Dec-2020 15:00
2021	Maximum	19.1%
	Max Date	01-Nov-2021 13:00
2022	Maximum	18.0%
	Max Date	01-Jan-2022 15:00