

Weekly System Status Report – 2022 Week 19 (09/05/2022 – 15/05/2022)

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 09/May/2022	31,316	582	30,979	31,181	0.4%	2.3%	-0.6%
Tue 10/May/2022	31,968	337	30,694	30,681	4.2%	5.3%	0.0%
Wed 11/May/2022	32,266	582	30,949	31,861	1.3%	3.1%	-2.9%
Thu 12/May/2022	33,433	583	31,172	31,132	7.4%	9.3%	0.1%
Fri 13/May/2022	31,049	581	30,014	29,780	4.3%	6.2%	0.8%
Sat 14/May/2022	28,938	576	28,492	28,341	2.1%	4.1%	0.5%
Sun 15/May/2022	29,356	344	28,776	29,160	0.7%	1.9%	-1.3%

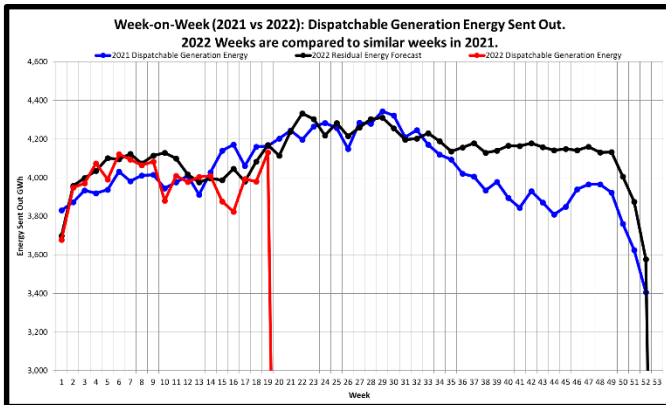
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 09/May/2022	31,935	582	31,484	31,800	0.4%	2.3%	-1.0%
Tue 10/May/2022	33,252	337	31,914	31,965	4.0%	5.1%	-0.2%
Wed 11/May/2022	32,947	582	31,894	32,542	1.2%	3.0%	-2.0%
Thu 12/May/2022	34,618	583	32,065	32,316	7.1%	8.9%	-0.8%
Fri 13/May/2022	32,303	581	31,353	31,034	4.1%	6.0%	1.0%
Sat 14/May/2022	29,993	576	29,441	29,396	2.0%	4.0%	0.2%
Sun 15/May/2022	30,577	344	30,083	30,382	0.6%	1.8%	-1.0%

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) = 49 512 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 19 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	4,131	GWh
Week-on-Week Growth	-0.79	%
Year-on-Year Growth (Year-to-Date) Annual	-0.52	%

Note:

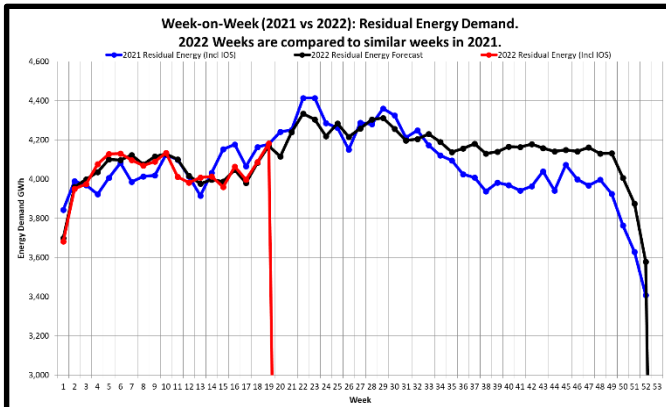
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 15 May Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	82,313	225,203	GWh
2018	81,619	224,202	GWh
2019	80,502	219,563	GWh
2020	74,218	206,725	GWh
2021	77,019	210,022	GWh
2022 (YTD)	76,655		GWh

Week-on-Week Residual Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 19 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,181	GWh
Week-on-Week Growth	0.09	%
Year-on-Year Growth (Year-to-Date) Annual	-0.15	%

Note:

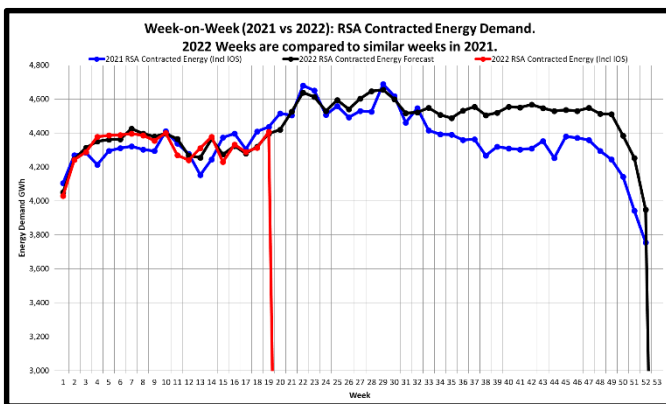
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 15 May Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	82,312	225,248	GWh
2018	81,669	224,594	GWh
2019	81,174	220,924	GWh
2020	75,078	208,151	GWh
2021	77,652	211,958	GWh
2022 (YTD)	77,580		GWh

Week-on-Week RSA Contracted Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 19 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,409	GWh
Week-on-Week Growth	-0.65	%
Year-on-Year Growth (Year-to-Date) Annual	0.34	%

Note:

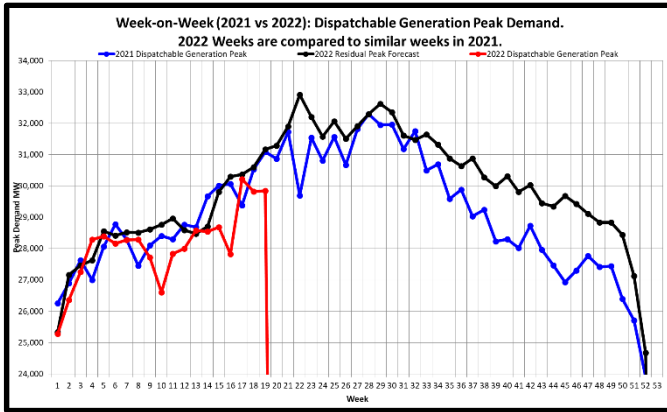
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 15 May Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	86,338	235,426	GWh
2018	85,583	235,482	GWh
2019	85,419	232,511	GWh
2020	79,249	220,630	GWh
2021	82,763	227,166	GWh
2022 (YTD)	83,089		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2022 weeks compared to similar 2021 weeks]



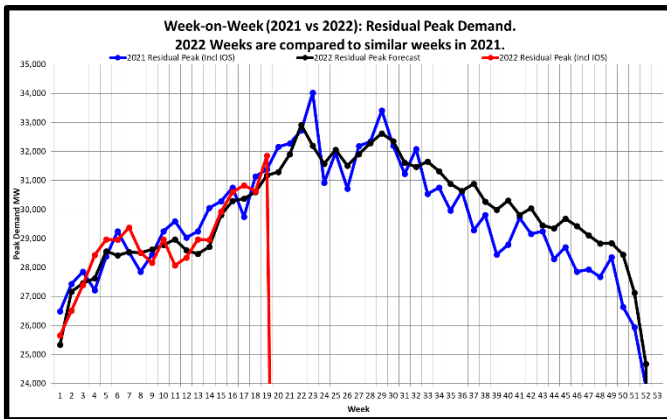
Week 19 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	29,851	MW
Week-on-Week Growth	-3.99	%
Year-on-Year Growth (Year-to-Date) Annual	-2.81	%

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)	Mon 25-Apr-2022	30,219	MW

Week-on-Week Residual Peak Demand

[2022 weeks compared to similar 2021 weeks]



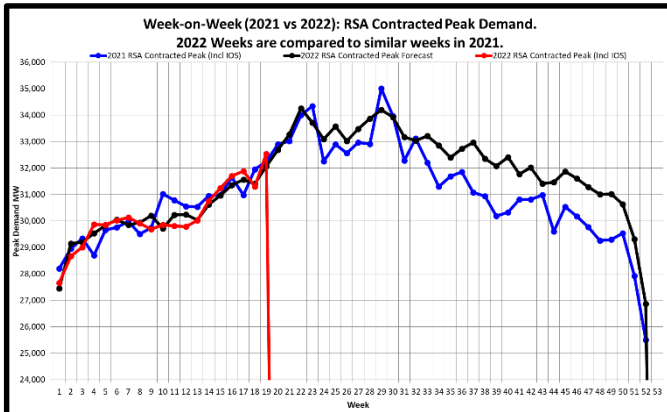
Week 19 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	31,861	MW
Week-on-Week Growth	1.51	%
Year-on-Year Growth (Year-to-Date) Annual	1.51	%

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 11-May-2022	31,861	MW

Week-on-Week RSA Contracted Peak Demand

[2022 weeks compared to similar 2021 weeks]



Week 19 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	32,542	MW
Week-on-Week Growth	0.90	%
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 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)	Wed 11-May-2022	32,542	MW

Weekly Generation Availability

	Week															Annual (Jan - Dec)	
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	2022	2021	
Energy Availability Factor (Eskom EAF)	59.12	60.12	60.71	58.75	56.39	60.04	60.02	58.97	59.98	55.78	55.36	58.75	59.59	60.40	58.71	61.79	
Planned Outage Factor	12.75	11.04	11.63	11.80	13.91	11.89	12.83	14.15	12.08	11.82	11.16	10.24	8.66	5.18	11.61	10.81	
Unplanned Outage Factor	26.40	27.34	26.22	28.09	28.34	26.86	25.83	25.37	26.56	30.59	31.88	29.33	30.27	33.27	28.15	24.53	
Other Outage Factor	1.73	1.50	1.44	1.36	1.36	1.21	1.32	1.51	1.38	1.81	1.60	1.68	1.48	1.15	1.53	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	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)
16-May-22	20	32696	31287	44805	30605	4707	12000		
23-May-22	21	33278	31905	44740	30540	4772	12000		
30-May-22	22	34254	32915	46757	32557	2755	12000		
06-Jun-22	23	33715	32201	46022	31822	3490	12000		
13-Jun-22	24	33089	31575	45524	31324	3988	12000		
20-Jun-22	25	33577	32063	45672	31472	3840	12000		
27-Jun-22	26	33025	31511	44766	30566	4746	12000		
04-Jul-22	27	33484	31911	45393	31193	4119	12000		
11-Jul-22	28	33869	32295	46624	32424	2888	12000		
18-Jul-22	29	34200	32627	46824	32424	2888	12000		
25-Jul-22	30	33926	32352	45368	31168	4144	12000		
01-Aug-22	31	33173	31607	45368	31168	4144	12000		
08-Aug-22	32	33039	31474	44795	30595	4717	12000		
15-Aug-22	33	33212	31647	44446	30246	5066	12000		
22-Aug-22	34	32861	31323	44783	30583	4729	12000		
29-Aug-22	35	32397	30878	44063	29963	5449	12000		
05-Sep-22	36	32729	30641	43933	28733	5579	13000		
12-Sep-22	37	32971	30883	44180	28980	5332	13000		
19-Sep-22	38	32359	30272	43743	28543	5769	13000		
26-Sep-22	39	32080	29992	43491	28291	6021	13000		
03-Oct-22	40	32414	30308	43638	28438	5874	13000		
10-Oct-22	41	31774	29809	42835	27635	6677	13000		
17-Oct-22	42	32028	30038	43670	28470	5842	13000		
24-Oct-22	43	31415	29451	42684	27484	6828	13000		
31-Oct-22	44	31472	29346	42697	27497	6815	13000		
07-Nov-22	45	31872	29689	42626	27426	6886	13000		
14-Nov-22	46	31613	29430	42641	27441	6871	13000		
21-Nov-22	47	31292	29109	42487	27287	7025	13000		
28-Nov-22	48	31015	28832	41733	26533	7779	13000		
05-Dec-22	49	31023	28837	42611	27411	6901	13000		
12-Dec-22	50	30633	28446	42300	27100	7212	13000		
19-Dec-22	51	29318	27132	42171	26971	7341	13000		
26-Dec-22	52	28867	24680	39222	24022	10290	13000		
02-Jan-23	1	28598	26066	40372	25172	9140	13000		
09-Jan-23	2	29704	27670	41595	26395	7917	13000		
16-Jan-23	3	30496	28461	41958	26758	7554	13000		
23-Jan-23	4	30174	28139	41980	26780	7532	13000		
30-Jan-23	5	30383	28349	41415	26215	8097	13000		
06-Feb-23	6	30997	29208	41987	26787	7525	13000		
13-Feb-23	7	30835	29045	41787	26587	7725	13000		
20-Feb-23	8	30909	29119	42579	27379	6933	13000		
27-Feb-23	9	30721	29153	42522	27322	6990	13000		
06-Mar-23	10	31153	29585	43341	28141	6171	13000		
13-Mar-23	11	30805	29237	43357	28157	6155	13000		
20-Mar-23	12	31014	29366	43317	28117	6195	13000		
27-Mar-23	13	30853	29206	43317	28117	6195	13000		
03-Apr-23	14	32213	30573	44375	29175	5137	13000		
10-Apr-23	15	32486	30846	44725	29525	4787	13000		
17-Apr-23	16	32977	31338	44911	29711	4601	13000		
24-Apr-23	17	33661	32021	45486	30286	4026	13000		
01-May-23	18	33850	32419	46203	31003	3309	13000		
08-May-23	19	34781	33349	46843	31643	2669	13000		
15-May-23	20	34953	33522	47298	32098	2214	13000		
22-May-23	21	35280	33849	47498	32298	2014	13000		

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: 48 507 MW (Incl. non-comm. Kusile units).

Installed Dispatchable Capacity: 49 512 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)	5,926.0

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	506.2	2,099.5	2,639.3	4,784.7
	Max Date	15-Mar-2022 15:00	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	506.2	2,025.1	2,336.9	4,383.0
	Max Date	15-Mar-2022 15:00	05-Jan-2022 11:00	06-Apr-2022 16:00	06-Apr-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				
2016	Total Energy	529,522	2,630,141	3,730,771	6,951,261
	Maximum				
2017	Total Energy	687,703	3,324,857	5,081,023	9,198,632
	Maximum				
2018	Total Energy	1,031,288	3,282,124	6,467,095	10,887,902
	Maximum				
2019	Total Energy	1,557,151	3,324,989	6,624,642	11,586,945
	Maximum				
2020	Total Energy	1,626,049	4,140,212	6,625,830	12,478,704
	Maximum				
2021	Total Energy	1,656,017	5,069,146	8,359,224	15,208,327
	Maximum				
2022	Total Energy	601,741	1,959,963	3,267,281	5,900,033
	Maximum				

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	1,364
	Max Date	15-Feb-2022 to 16-Feb-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