

Weekly System Status Report – 2023 Week 12 (20/03/2023 – 26/03/2023)

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

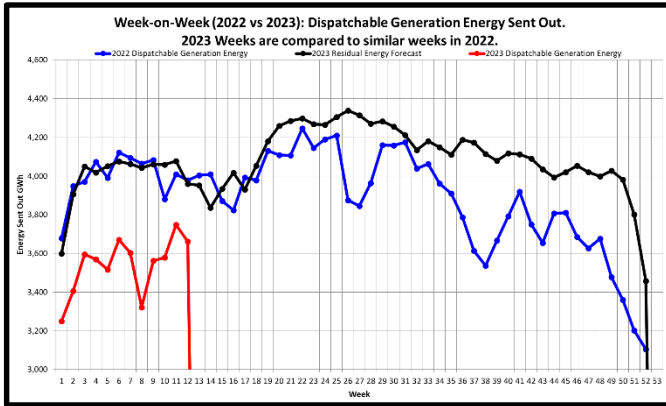
Date	Available Dispatchable Generation (MW)	Non-commercial Generation (MW)	Residual Load Forecast (MW)	Actual Residual Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (Residual Demand)
Mon 20/Mar/2023	28,100	0	26,946	24,993	12.4%	12.4%	7.8%
Tue 21/Mar/2023	29,160	0	26,790	26,226	11.2%	11.2%	2.1%
Wed 22/Mar/2023	28,298	0	28,298	27,220	4.0%	4.0%	4.0%
Thu 23/Mar/2023	28,751	0	27,956	27,976	2.8%	2.8%	-0.1%
Fri 24/Mar/2023	28,411	0	26,927	26,692	6.4%	6.4%	0.9%
Sat 25/Mar/2023	27,975	0	26,190	26,078	7.3%	7.3%	0.4%
Sun 26/Mar/2023	27,484	0	25,794	24,915	10.3%	10.3%	3.5%

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 20/Mar/2023	30,229	0	28,940	27,122	11.5%	11.5%	6.7%
Tue 21/Mar/2023	30,650	0	28,247	27,717	10.6%	10.6%	1.9%
Wed 22/Mar/2023	30,509	0	30,184	29,393	3.8%	3.8%	2.7%
Thu 23/Mar/2023	30,354	0	30,431	29,578	2.6%	2.6%	2.9%
Fri 24/Mar/2023	30,298	0	28,672	28,579	6.0%	6.0%	0.3%
Sat 25/Mar/2023	28,918	0	28,035	27,020	7.0%	7.0%	3.8%
Sun 26/Mar/2023	29,465	0	27,715	26,896	9.6%	9.6%	3.0%

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) = 49 191 MW.
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



[2023 weeks compared to similar 2022 weeks]

Week 12 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	3,662	GWh
Week-on-Week Growth	-7.95	%
Year-on-Year Growth (Year-to-Date) Annual	-11.28	%

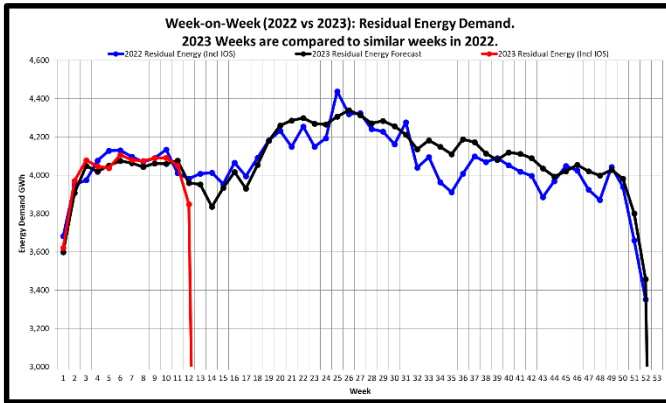
Note:

2023 Weeks are compared to similar weeks in 2022.
(2023 week 1 ~ 2022 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 26 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2018	51,552	224,202	GWh
2019	50,222	219,575	GWh
2020	50,451	206,725	GWh
2021	47,861	210,022	GWh
2022	48,304	202,846	GWh
2023 (YTD)	42,925		GWh

Week-on-Week Residual Energy Demand



[2023 weeks compared to similar 2022 weeks]

Week 12 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	3,849	GWh
Week-on-Week Growth	-3.32	%
Year-on-Year Growth (Year-to-Date) Annual	-0.48	%

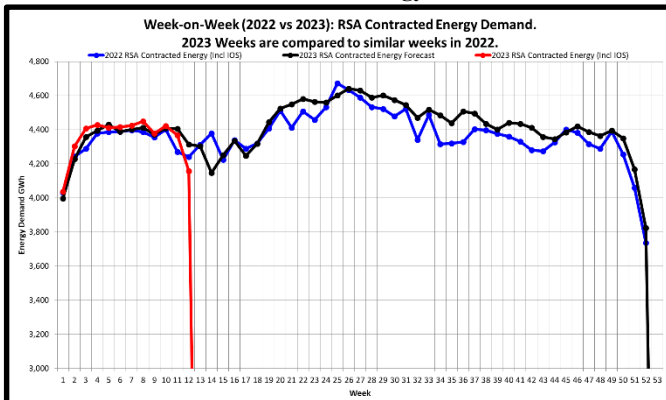
Note:

2023 Weeks are compared to similar weeks in 2022.
(2023 week 1 ~ 2022 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 26 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2018	51,580	224,594	GWh
2019	50,864	220,937	GWh
2020	51,299	208,151	GWh
2021	48,462	211,958	GWh
2022	48,735	211,133	GWh
2023 (YTD)	48,563		GWh

Week-on-Week RSA Contracted Energy Demand



[2023 weeks compared to similar 2022 weeks]

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

Energy Demand	4,158	GWh
Week-on-Week Growth	-1.97	%
Year-on-Year Growth (Year-to-Date) Annual	0.84	%

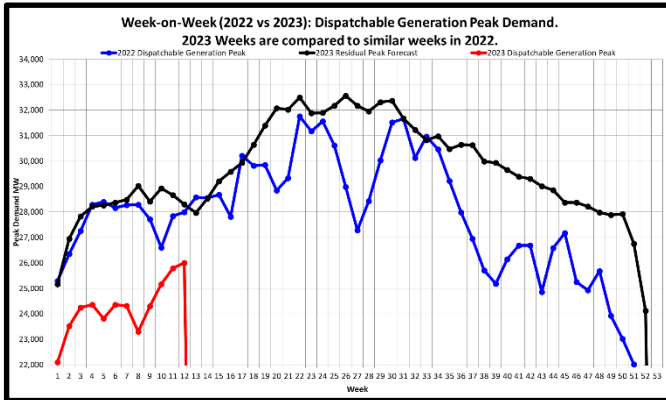
Note:

2023 Weeks are compared to similar weeks in 2022.
(2023 week 1 ~ 2022 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 26 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2018	54,223	235,482	GWh
2019	53,743	232,524	GWh
2020	54,080	220,630	GWh
2021	51,870	227,166	GWh
2022	52,247	227,336	GWh
2023 (YTD)	52,732		GWh

Week-on-Week Dispatchable Generation Peak Demand



[2023 weeks compared to similar 2022 weeks]

Week 12 : Dispatchable Generation Peak Demand Statistics

Peak Demand	26,003	MW
Week-on-Week Growth	-7.13	%
Year-on-Year Growth (Year-to-Date) Annual	-8.43	%

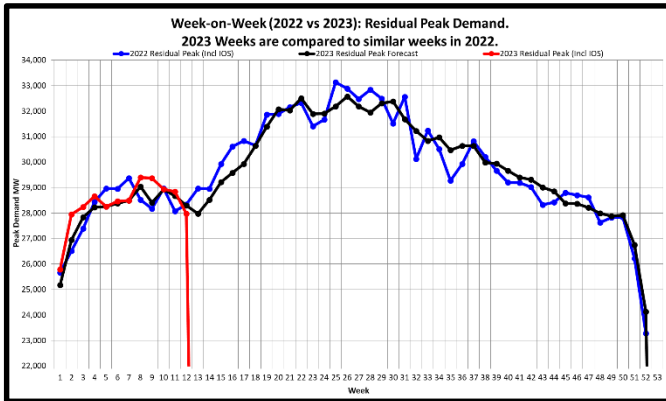
Note:

2023 Weeks are compared to similar weeks in 2022.
(2023 week 1 ~ 2022 week 1)

Annual Dispatchable Generation Peak Demand Statistics

Year	Peak Date	Annual Peak	Unit
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	Thu 02-Jun-2022	31,756	MW
2023 (YTD)	Tue 21-Mar-2023	26,003	MW

Week-on-Week Residual Peak Demand



[2023 weeks compared to similar 2022 weeks]

Week 12 : Residual Peak Demand Statistics (Incl IOS)

Peak Demand	27,976	MW
Week-on-Week Growth	-1.29	%
Year-on-Year Growth (Year-to-Date) Annual	0.10	%

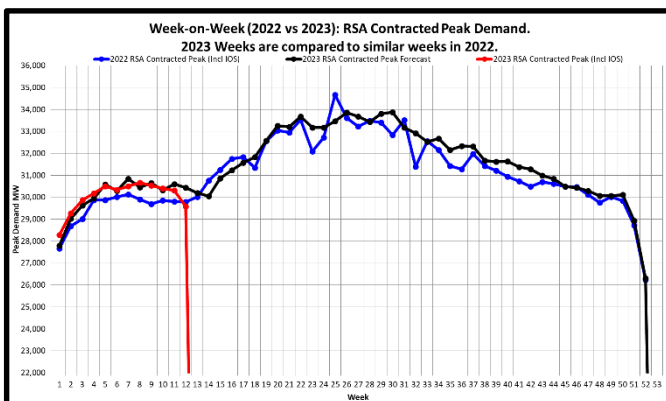
Note:

2023 Weeks are compared to similar weeks in 2022.
(2023 week 1 ~ 2022 week 1)

Annual Residual Peak Demand Statistics (Incl IOS)

Year	Peak Date	Annual Peak	Unit
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	Thu 23-Jun-2022	33,136	MW
2023 (YTD)	Tue 21-Feb-2023	29,405	MW

Week-on-Week RSA Contracted Peak Demand



[2023 weeks compared to similar 2022 weeks]

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

Peak Demand	29,578	MW
Week-on-Week Growth	-0.69	%
Year-on-Year Growth (Year-to-Date) Annual	1.76	%

Note:

2023 Weeks are compared to similar weeks in 2022.
(2023 week 1 ~ 2022 week 1)

Annual RSA Contracted Peak Demand Statistics (Incl IOS)

Year	Peak Date	Annual Peak	Unit
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	Thu 23-Jun-2022	34,666	MW
2023 (YTD)	Tue 21-Feb-2023	30,663	MW

Weekly Generation Availability

	Week												Annual (Jan - Dec)			
	51	52	1	2	3	4	5	6	7	8	9	10	11	12	2023	2022
Energy Availability Factor (Eskom EAF)	49.87	48.46	49.18	50.79	52.50	52.33	53.21	54.33	52.24	50.74	53.02	53.15	58.50	55.60	53.03	58.00
Planned Outage Factor	16.67	17.09	13.97	12.75	13.07	13.61	10.75	10.89	9.08	9.57	10.25	9.39	9.44	12.31	11.34	10.62
Unplanned Outage Factor	32.22	33.17	34.63	34.02	31.94	32.25	34.88	33.38	35.79	34.94	35.73	35.68	30.71	30.98	33.63	29.86
Other Outage Factor	1.24	1.28	2.22	2.44	2.49	1.81	1.16	1.40	2.89	4.75	1.00	1.78	1.35	1.11	2.00	1.52

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)

52 Week Outlook

This is the forecast demand vs. available generating capacity for each week for 52 weeks 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 (-17200 MW)	MW Likely Risk Scenario (-18700 MW)
27-Mar-23	13	30192	27975	42311	25111	6880	15000		
03-Apr-23	14	30054	28526	42606	25406	6585	15000		
10-Apr-23	15	30863	29216	43246	26046	5945	15000		
17-Apr-23	16	31228	29581	43981	26781	5210	15000		
24-Apr-23	17	31577	29931	44516	27316	4675	15000		
01-May-23	18	31824	30642	45056	27856	4135	15000		
08-May-23	19	32574	31392	45812	28612	3379	15000		
15-May-23	20	33257	32075	46584	29384	2607	15000		
22-May-23	21	33213	32031	47177	29977	2014	15000		
29-May-23	22	33681	32499	47377	30177	1814	15000		
05-Jun-23	23	33170	31890	47229	30029	1962	15000		
12-Jun-23	24	33184	31903	47377	30177	1814	15000		
19-Jun-23	25	33465	32184	47377	30177	1814	15000		
26-Jun-23	26	33853	32572	47100	29900	2091	15000		
03-Jul-23	27	33675	32184	46503	29303	2688	15000		
10-Jul-23	28	33441	31950	46753	29553	2438	15000		
17-Jul-23	29	33806	32315	46563	29363	2628	15000		
24-Jul-23	30	33869	32378	46215	29015	2976	15000		
31-Jul-23	31	33172	31681	45640	28440	3551	15000		
07-Aug-23	32	32921	31227	45924	28724	3267	15000		
14-Aug-23	33	32522	30828	45508	28308	3683	15000		
21-Aug-23	34	32669	30975	45746	28546	3445	15000		
28-Aug-23	35	32154	30475	45851	28651	3340	15000		
04-Sep-23	36	32329	30642	45201	28001	3990	15000		
11-Sep-23	37	32319	30633	46023	28823	3168	15000		
18-Sep-23	38	31676	29989	45773	28573	3418	15000		
25-Sep-23	39	31623	29936	44925	27725	4266	15000		
02-Oct-23	40	31635	29659	44545	27345	4646	15000		
09-Oct-23	41	31372	29395	44635	27435	4556	15000		
16-Oct-23	42	31286	29309	44351	27151	4840	15000		
23-Oct-23	43	30991	29015	43538	26338	5653	15000		
30-Oct-23	44	30837	28860	43708	26508	5483	15000		
06-Nov-23	45	30480	28381	43100	25900	6091	15000		
13-Nov-23	46	30439	28371	42359	25159	6832	15000		
20-Nov-23	47	30288	28220	42756	25556	6435	15000		
27-Nov-23	48	30059	27991	42355	25155	6836	15000		
04-Dec-23	49	30063	27880	43132	25932	6059	15000		
11-Dec-23	50	30109	27927	41939	24739	7252	15000		
18-Dec-23	51	28935	26752	40390	23190	8801	15000		
25-Dec-23	52	26312	24130	40190	22990	9001	15000		
01-Jan-24	1	27954	25810	41203	24003	7988	15000		
08-Jan-24	2	29548	27404	41303	24103	7888	15000		
15-Jan-24	3	30300	28156	42362	25162	6829	15000		
22-Jan-24	4	30273	28129	43230	26030	5961	15000		
29-Jan-24	5	30490	28346	43512	26312	5679	15000		
05-Feb-24	6	31030	28940	43121	25921	6070	15000		
12-Feb-24	7	31154	29065	43268	26068	5923	15000		
19-Feb-24	8	31289	29199	43763	26563	5428	15000		
26-Feb-24	9	31095	29006	43148	25948	6043	15000		
04-Mar-24	10	31120	29552	44306	27106	4885	15000		
11-Mar-24	11	30804	29236	44563	27363	4628	15000		
18-Mar-24	12	31048	29480	45476	28276	3715	15000		
25-Mar-24	13	30924	29276	45826	28626	3365	15000		

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 1500 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): 15 000

Reserves: OR + UA = 17 200 MW

Eskom Installed Capacity: 48 186 MW.

Installed Dispatchable Capacity: 49 191 MW (Incl. Avon and Dedisa).

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	2,287.1
Wind (Eskom+IPP)	3,442.6
Total (Incl other REs)	6,280.2

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	3,028.1	5,126.1
	Max Date	15-Mar-2022 15:00	24-Oct-2021 12:00	02-Dec-2022 16:00	05-Sep-2022 12:00
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	2,048.8	3,028.1	5,126.1
	Max Date	15-Mar-2022 15:00	20-Nov-2022 11:00	02-Dec-2022 16:00	05-Sep-2022 12:00
2023	Maximum	505.8	2,044.1	2,829.4	4,887.8
	Max Date	21-Feb-2023 13:00	21-Feb-2023 12:00	20-Feb-2023 17:00	20-Feb-2023 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	9,692,373	16,202,974
2016	Total Energy	529,522	2,630,141	3,730,771	6,951,261
	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
	Total Energy	1,557,151	3,324,989	6,624,642	11,586,945
2018	Total Energy	1,626,049	4,140,212	6,625,830	12,478,704
	Total Energy	1,656,017	5,069,146	8,359,224	15,208,327
2019	Total Energy	1,448,276	4,844,736	9,692,373	16,202,974
	Total Energy	455,890	1,321,649	2,588,633	4,437,111

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	1,832
	Max Date	20-Feb-2023 to 21-Feb-2023
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	1,523
	Max Date	07-Aug-2022 to 08-Aug-2022
2023	Maximum	1,832
	Max Date	20-Feb-2023 to 21-Feb-2023

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	21.8%
	Max Date	20-Feb-2023 15:00
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	19.3%
	Max Date	05-Sep-2022 12:00
2023	Maximum	21.8%
	Max Date	20-Feb-2023 15:00