

Weekly System Status Report – 2022 Week 17 (25/04/2022 – 01/05/2022)

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 25/Apr/2022	30,101	725	30,370	30,838	-2.4%	0.0%	-1.5%
Tue 26/Apr/2022	31,260	680	29,041	29,526	5.9%	8.2%	-1.6%
Wed 27/Apr/2022	30,351	724	28,350	29,389	3.3%	5.7%	-3.5%
Thu 28/Apr/2022	31,035	719	30,116	30,116	3.1%	5.4%	0.0%
Fri 29/Apr/2022	29,505	526	28,110	27,380	7.8%	9.7%	2.7%
Sat 30/Apr/2022	28,635	525	27,038	27,246	5.1%	7.0%	-0.8%
Sun 01/May/2022	29,416	528	27,213	27,444	7.2%	9.1%	-0.8%

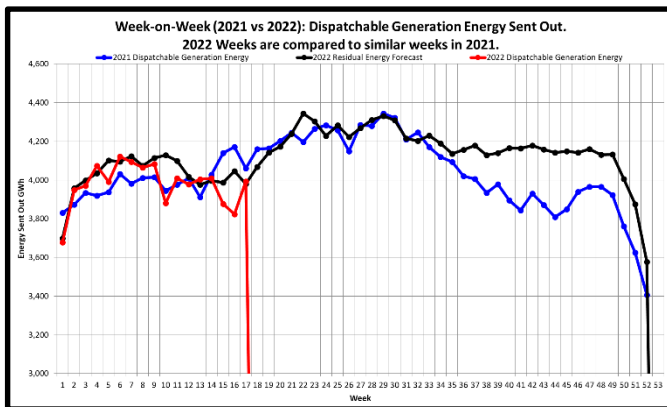
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 25/Apr/2022	31,204	725	31,568	31,941	-2.3%	0.0%	-1.2%
Tue 26/Apr/2022	32,739	680	30,583	31,005	5.6%	7.8%	-1.4%
Wed 27/Apr/2022	31,477	724	29,831	30,514	3.2%	5.5%	-2.2%
Thu 28/Apr/2022	31,969	719	31,233	31,050	3.0%	5.3%	0.6%
Fri 29/Apr/2022	31,478	526	29,824	29,353	7.2%	9.0%	1.6%
Sat 30/Apr/2022	29,706	525	28,420	28,316	4.9%	6.8%	0.4%
Sun 01/May/2022	30,384	528	28,109	28,412	6.9%	8.8%	-1.1%

Notes:

- Available Dispatchable Generation means **all generation resources** that can be dispatched by Eskom and includes capacity available from all emergency generation resources.
- RSA Contracted Load Forecast is the total official day-ahead hourly forecast. Residual Load Forecast excludes the expected generation from renewables.
- 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.
- Net Maximum Dispatchable Capacity (including imports and emergency generation resources) = 49 512 MW (Incl. non-comm. Kusile units).
- These figures do not include any demand side products.
- 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 17 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	3,993	GWh
Week-on-Week Growth	-1.70	%
Year-on-Year Growth (Year-to-Date) Annual	-0.26	%

Note:

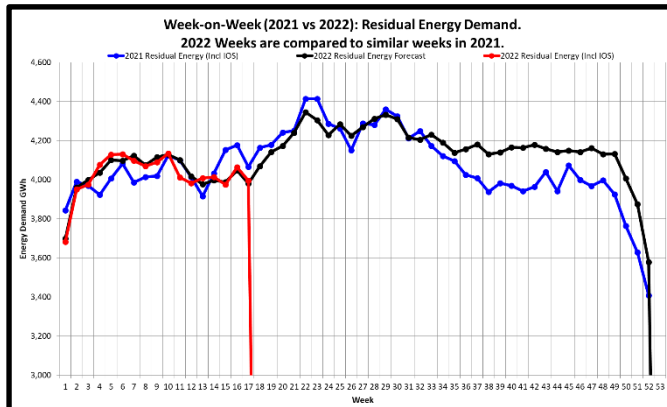
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 01 May Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	73,346	225,203	GWh
2018	72,923	224,202	GWh
2019	71,884	219,563	GWh
2020	66,881	206,725	GWh
2021	68,704	210,022	GWh
2022 (YTD)	68,545		GWh

Week-on-Week Residual Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 17 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	3,996	GWh
Week-on-Week Growth	-1.71	%
Year-on-Year Growth (Year-to-Date) Annual	-0.04	%

Note:

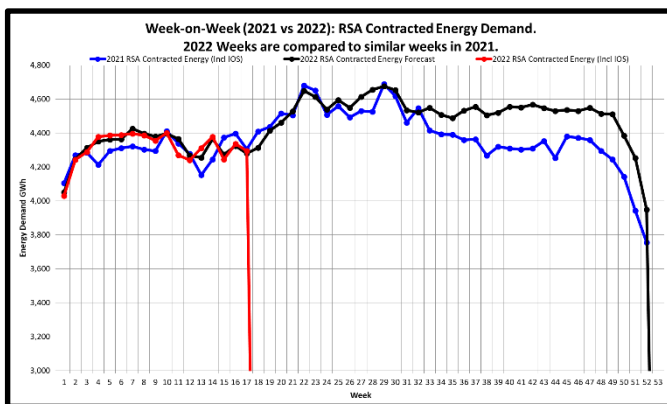
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 01 May Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	73,345	225,248	GWh
2018	72,966	224,594	GWh
2019	72,546	220,924	GWh
2020	67,738	208,151	GWh
2021	69,331	211,958	GWh
2022 (YTD)	69,323		GWh

Week-on-Week RSA Contracted Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 17 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,295	GWh
Week-on-Week Growth	-0.26	%
Year-on-Year Growth (Year-to-Date) Annual	0.59	%

Note:

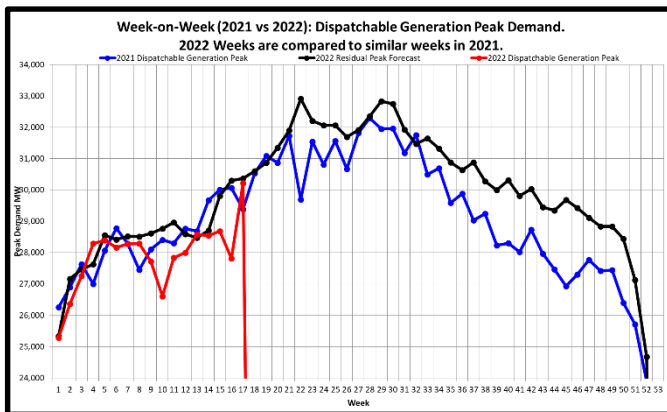
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 01 May Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	77,096	235,426	GWh
2018	76,507	235,482	GWh
2019	76,396	232,511	GWh
2020	71,546	220,630	GWh
2021	73,932	227,166	GWh
2022 (YTD)	74,391		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2022 weeks compared to similar 2021 weeks]



Week 17 : Dispatchable Generation Peak Demand Statistics

Peak Demand	30,219	MW
Week-on-Week Growth	2.84	%
Year-on-Year Growth (Year-to-Date) Annual	0.52	%

Note:

2022 Weeks are compared to similar weeks in 2021.

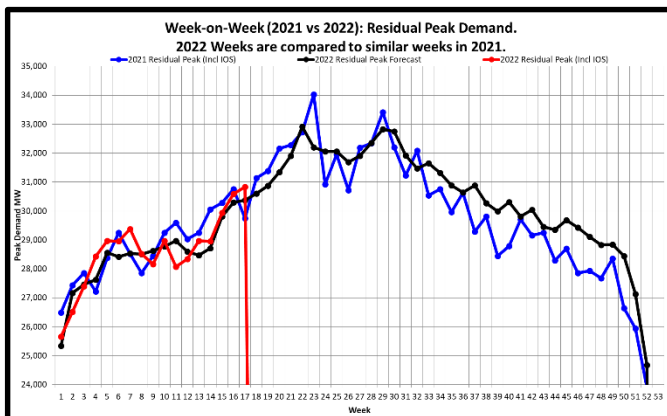
(2022 week 1 ~ 2021 week 1)

Annual Dispatchable Generation 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 17 : Residual Peak Demand Statistics (Incl IOS)

Peak Demand	30,838	MW
Week-on-Week Growth	3.65	%
Year-on-Year Growth (Year-to-Date) Annual	0.28	%

Note:

2022 Weeks are compared to similar weeks in 2021.

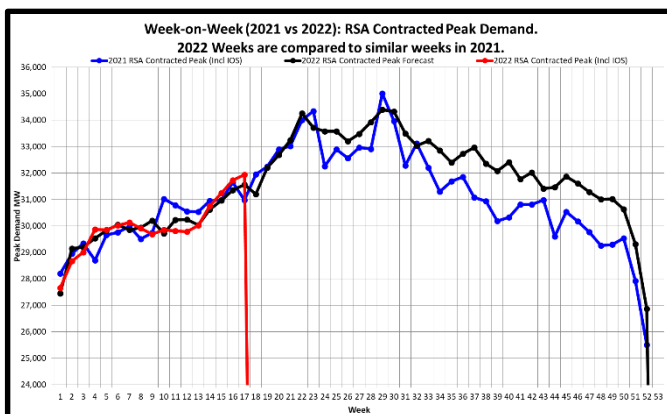
(2022 week 1 ~ 2021 week 1)

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)	Mon 25-Apr-2022	30,838	MW

Week-on-Week RSA Contracted Peak Demand

[2022 weeks compared to similar 2021 weeks]



Week 17 : RSA Contracted Peak Demand Statistics (Incl IOS)

Peak Demand	31,941	MW
Week-on-Week Growth	3.09	%
Year-on-Year Growth (Year-to-Date) Annual	0.92	%

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 25-Apr-2022	31,941	MW

Weekly Generation Availability

	Week																Annual (Jan - Dec)	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	2022	2021		
Energy Availability Factor (Eskom EAF)	59.22	57.31	59.12	60.12	60.71	58.75	56.39	60.04	60.02	59.16	60.27	56.03	55.72	59.00	58.64	61.79		
Planned Outage Factor	14.18	11.94	12.75	11.04	11.63	11.80	13.91	11.89	12.83	14.12	12.01	11.78	11.11	10.11	12.14	10.81		
Unplanned Outage Factor	24.69	29.20	26.40	27.34	26.22	28.09	28.34	26.86	25.83	25.38	26.56	30.56	31.79	29.37	27.71	24.53		
Other Outage Factor	1.91	1.55	1.73	1.50	1.44	1.36	1.36	1.21	1.32	1.34	1.16	1.63	1.38	1.52	1.51	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)
02-May-22	18	31204	30603	44338	30138	5174	12000		
09-May-22	19	32204	30865	44673	30473	4839	12000		
16-May-22	20	32686	31347	45628	31428	3884	12000		
23-May-22	21	33244	31905	45998	31798	3514	12000		
30-May-22	22	34254	32915	46904	32704	2608	12000		
06-Jun-22	23	33715	32201	45684	31484	3828	12000		
13-Jun-22	24	33577	32062	45482	31282	4030	12000		
20-Jun-22	25	33577	32063	46632	32432	2880	12000		
27-Jun-22	26	33208	31693	45736	31536	3776	12000		
04-Jul-22	27	33483	31909	45898	31698	3614	12000		
11-Jul-22	28	33931	32358	46434	32234	3078	12000		
18-Jul-22	29	34401	32827	46434	32234	3078	12000		
25-Jul-22	30	34323	32750	46274	32074	3238	12000		
01-Aug-22	31	33489	31924	45186	30986	4326	12000		
08-Aug-22	32	33039	31474	44445	30245	5067	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	44032	29832	5480	12000		
05-Sep-22	36	32729	30641	44092	28892	5420	13000		
12-Sep-22	37	32971	30883	43764	28564	5748	13000		
19-Sep-22	38	32359	30272	43327	28127	6185	13000		
26-Sep-22	39	32080	29992	42757	27557	6755	13000		
03-Oct-22	40	32414	30308	43624	28424	5888	13000		
10-Oct-22	41	31774	29809	43292	28092	6220	13000		
17-Oct-22	42	32028	30038	43542	28342	5970	13000		
24-Oct-22	43	31415	29451	43356	28156	6156	13000		
31-Oct-22	44	31472	29346	42445	27245	7067	13000		
07-Nov-22	45	31872	29689	42705	27505	6807	13000		
14-Nov-22	46	31613	29430	42324	27124	7188	13000		
21-Nov-22	47	31292	29109	42170	26970	7342	13000		
28-Nov-22	48	31015	28832	41517	26317	7995	13000		
05-Dec-22	49	31023	28837	42557	27357	6955	13000		
12-Dec-22	50	30633	28446	41544	26344	7968	13000		
19-Dec-22	51	29318	27132	40009	24809	9503	13000		
26-Dec-22	52	26867	24680	40664	25464	8848	13000		
02-Jan-23	1	28588	26066	40664	25464	8848	13000		
09-Jan-23	2	29704	27670	41129	25929	8383	13000		
16-Jan-23	3	30496	28461	41102	25902	8410	13000		
23-Jan-23	4	30174	28139	41127	25927	8385	13000		
30-Jan-23	5	30383	28349	40987	25787	8525	13000		
06-Feb-23	6	30997	29208	41520	26320	7992	13000		
13-Feb-23	7	30835	29045	41520	26320	7992	13000		
20-Feb-23	8	30909	29119	42312	27112	7200	13000		
27-Feb-23	9	30721	29153	42074	26874	7438	13000		
06-Mar-23	10	31153	29585	42503	27303	7009	13000		
13-Mar-23	11	30805	29237	42424	27224	7088	13000		
20-Mar-23	12	31014	29366	42289	27089	7223	13000		
27-Mar-23	13	30853	29206	42864	27664	6648	13000		
03-Apr-23	14	32231	30573	40963	26763	8549	12000		
10-Apr-23	15	32505	30846	39707	25507	9805	12000		
17-Apr-23	16	32996	31338	41113	26913	8399	12000		
24-Apr-23	17	33680	32021	41688	27488	7824	12000		
01-May-23	18	33850	32419	42919	28719	6593	12000		
08-May-23	19	34781	33349	42383	28183	7129	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: 48 507 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	2,337.5	4,377.9
	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	562,549	1,816,879	2,978,852	5,420,745
	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