Weekly System Status Report – 2024 Week 17 (22/04/2024 – 28/04/2024)

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 22/Apr/2024	30,270	0	28,411	28,188	7.4%	7.4%	0.8%
Tue 23/Apr/2024	30,573	0	28,387	28,546	7.1%	7.1%	-0.6%
Wed 24/Apr/2024	29,550	0	28,256	27,791	6.3%	6.3%	1.7%
Thu 25/Apr/2024	29,411	0	28,096	26,817	9.7%	9.7%	4.8%
Fri 26/Apr/2024	29,364	0	25,765	25,052	17.2%	17.2%	2.8%
Sat 27/Apr/2024	28,980	0	25,143	24,533	18.1%	18.1%	2.5%
Sun 28/Apr/2024	29,559	0	25,059	26,039	13.5%	13.5%	-3.8%

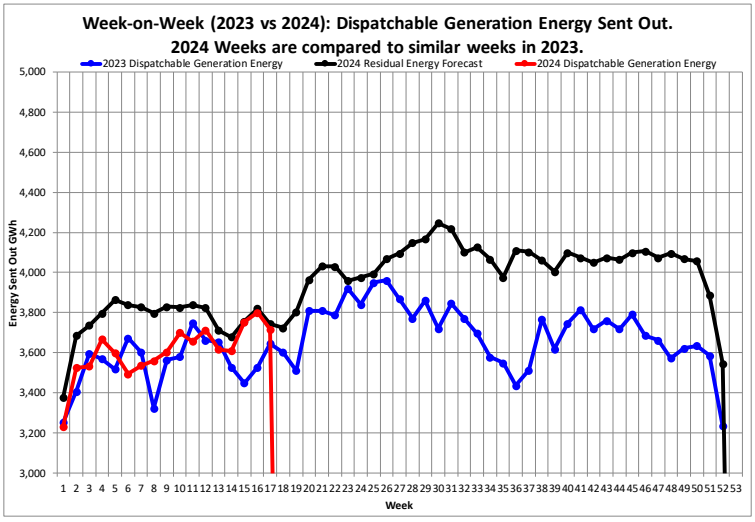
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 22/Apr/2024	31,466	0	29,671	29,383	7.1%	7.1%	1.0%
Tue 23/Apr/2024	31,416	0	29,297	29,390	6.9%	6.9%	-0.3%
Wed 24/Apr/2024	30,807	0	29,352	29,048	6.1%	6.1%	1.0%
Thu 25/Apr/2024	31,473	0	29,738	28,879	9.0%	9.0%	3.0%
Fri 26/Apr/2024	32,211	0	28,495	27,898	15.5%	15.5%	2.1%
Sat 27/Apr/2024	31,556	0	27,555	27,109	16.4%	16.4%	1.6%
Sun 28/Apr/2024	31,250	0	27,157	27,730	12.7%	12.7%	-2.1%

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

[2024 weeks compared to similar 2023 weeks]



Week 17 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	3,716	GWh
Week-on-Week Growth	1.94	%
Year-on-Year Growth (Year-to-Date) Annual	1.69	%

Note:

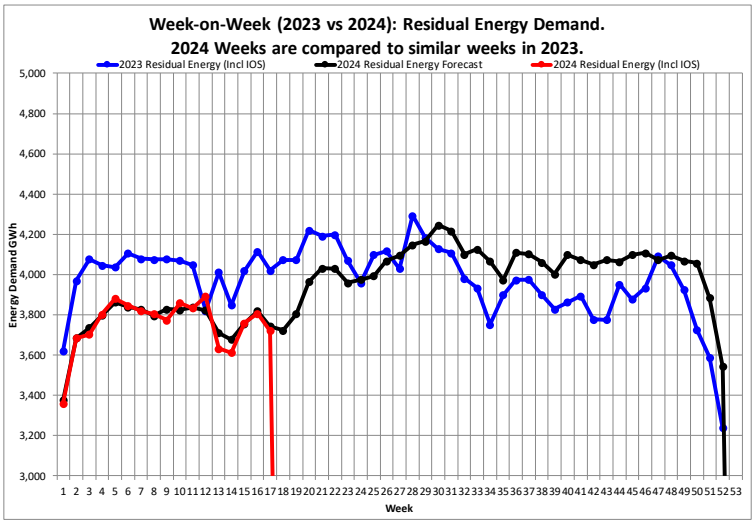
2024 Weeks are compared to similar weeks in 2023.

(2024 week 1 ~ 2023 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics			
Year	01 Jan to 28 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2019	70,073	219,575	GWh
2020	65,403	206,725	GWh
2021	66,953	210,022	GWh
2022	66,886	202,845	GWh
2023	59,715	190,434	GWh
2024 (YTD)	61,303		GWh

Week-on-Week Residual Energy Demand

[2024 weeks compared to similar 2023 weeks]



Week 17 : Residual Energy Demand Statistics		
Energy Demand	3,721	GWh
Week-on-Week Growth	-7.44	%
Year-on-Year Growth (Year-to-Date) Annual	-6.25	%

Note:

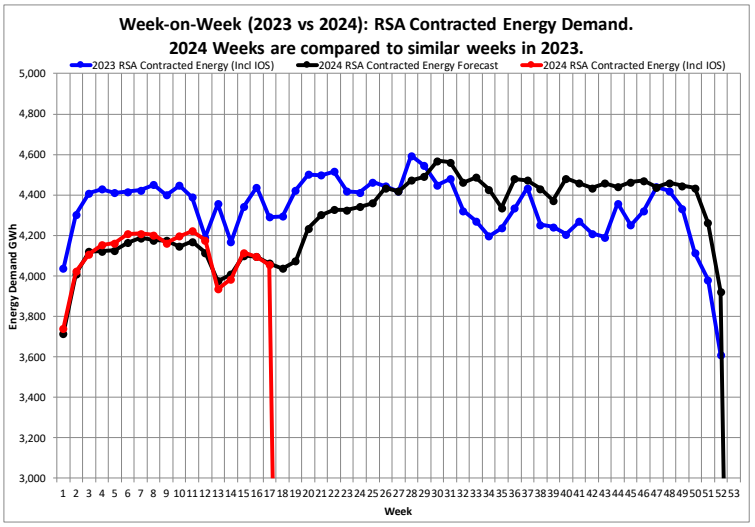
2024 Weeks are compared to similar weeks in 2023.

(2024 week 1 ~ 2023 week 1)

Annual Residual Energy Demand Statistics			
Year	01 Jan to 28 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2019	70,734	220,937	GWh
2020	66,258	208,151	GWh
2021	67,578	211,958	GWh
2022	67,652	211,132	GWh
2023	67,429	207,190	GWh
2024 (YTD)	63,791		GWh

Week-on-Week RSA Contracted Energy Demand

[2024 weeks compared to similar 2023 weeks]



Week 17 : RSA Contracted Energy Demand Statistics		
Energy Demand	4,056	GWh
Week-on-Week Growth	-5.47	%
Year-on-Year Growth (Year-to-Date) Annual	-5.62	%

Note:

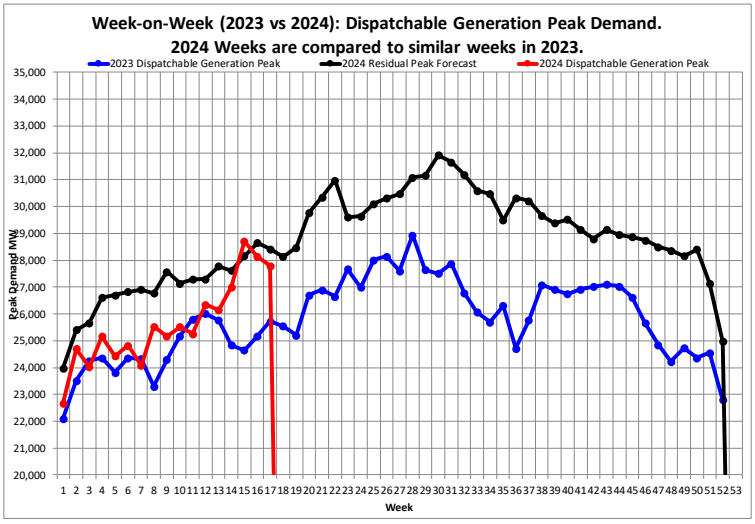
2024 Weeks are compared to similar weeks in 2023.

(2024 week 1 ~ 2023 week 1)

Annual RSA Contracted Energy Demand Statistics			
Year	01 Jan to 28 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2019	74,492	232,524	GWh
2020	70,006	220,630	GWh
2021	72,070	227,166	GWh
2022	72,580	227,335	GWh
2023	73,262	225,875	GWh
2024 (YTD)	69,753		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2024 weeks compared to similar 2023 weeks]



Week 17 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	27,795	MW
Week-on-Week Growth	8.07	%
Year-on-Year Growth (Year-to-Date) Annual	10.41	%

Note:

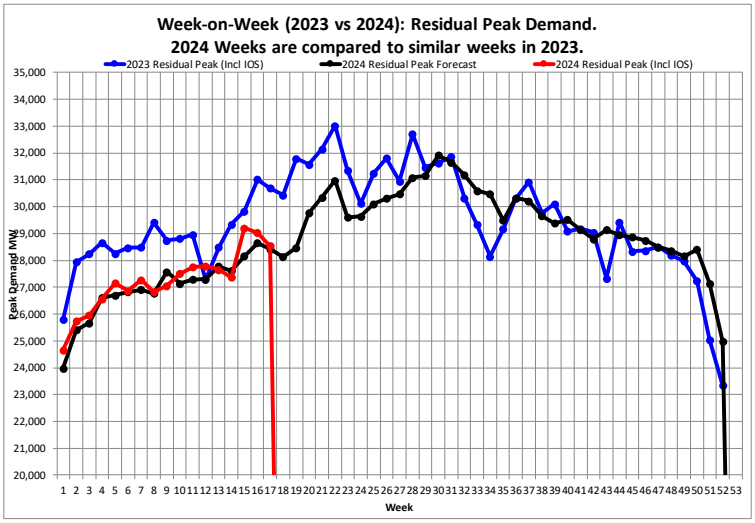
2024 Weeks are compared to similar weeks in 2023.

(2024 week 1 ~ 2023 week 1)

Annual Dispatchable Generation Peak Demand Statistics			
Year	**Peak Date**	**Annual Peak**	**Unit**
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	Mon 10-Jul-2023	28,937	MW
2024 (YTD)	Mon 08-Apr-2024	28,710	MW

Week-on-Week Residual Peak Demand

[2024 weeks compared to similar 2023 weeks]



Week 17 : Residual Peak Demand Statistics		
Peak Demand	28,546	MW
Week-on-Week Growth	-7.01	%
Year-on-Year Growth (Year-to-Date) Annual	-5.84	%

Note:

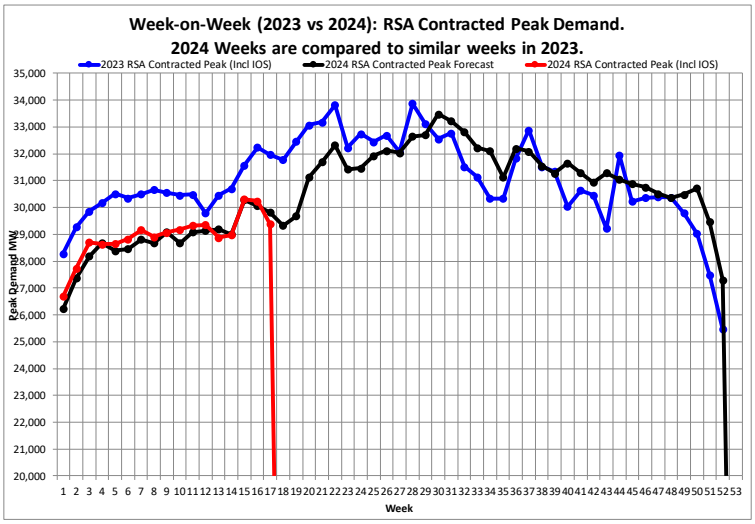
2024 Weeks are compared to similar weeks in 2023.

(2024 week 1 ~ 2023 week 1)

Annual Residual Peak Demand Statistics			
Year	**Peak Date**	**Annual Peak**	**Unit**
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	Tue 30-May-2023	33,016	MW
2024 (YTD)	Mon 08-Apr-2024	29,212	MW

Week-on-Week RSA Contracted Peak Demand

[2024 weeks compared to similar 2023 weeks]



Week 17 : RSA Contracted Peak Demand Statistics		
Peak Demand	29,390	MW
Week-on-Week Growth	-8.09	%
Year-on-Year Growth (Year-to-Date) Annual	-5.97	%

Note:

2024 Weeks are compared to similar weeks in 2023.

(2024 week 1 ~ 2023 week 1)

Annual RSA Contracted Peak Demand Statistics			
Year	**Peak Date**	**Annual Peak**	**Unit**
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	Mon 10-Jul-2023	33,873	MW
2024 (YTD)	Mon 08-Apr-2024	30,314	MW

Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	2024	2023
Energy Availability Factor (Eskom EAF)	52.96	51.50	50.58	52.50	51.61	53.83	53.58	53.63	53.89	56.76	57.33	58.71	58.24	58.88	**53.93**	**54.69**
Planned Outage Factor	16.76	16.37	15.92	17.13	16.75	16.07	13.19	14.44	13.91	13.02	11.14	11.99	11.91	10.45	**14.88**	**10.90**
Unplanned Outage Factor	29.19	31.19	32.40	29.36	30.48	29.10	32.74	31.47	31.80	29.87	31.10	28.79	29.21	30.30	**30.38**	**33.08**
Other Outage Factor	1.09	0.94	1.10	1.01	1.16	1.00	0.49	0.46	0.40	0.35	0.43	0.51	0.64	0.37	**0.81**	**1.33**

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 (-16200 MW)	MW Likely Risk Senario (-18200 MW)
29-Apr-24	18	29326	28128	42572	26372	6619	14000		
06-May-24	19	29683	28472	43680	27480	5511	14000		
13-May-24	20	31122	29772	45188	28988	4003	14000		
20-May-24	21	31701	30350	45133	28933	4058	14000		
27-May-24	22	32323	30972	45853	29653	3338	14000		
03-Jun-24	23	31420	29601	44947	28747	4244	14000		
10-Jun-24	24	31465	29645	44947	28747	4244	14000		
17-Jun-24	25	31926	30106	45497	29297	3694	14000		
24-Jun-24	26	32127	30308	45587	29387	3604	14000		
01-Jul-24	27	32033	30477	46348	30148	2843	14000		
08-Jul-24	28	32648	31093	46466	30266	2725	14000		
15-Jul-24	29	32707	31151	46611	30411	2580	14000		
22-Jul-24	30	33477	31921	46521	30321	2670	14000		
29-Jul-24	31	33217	31661	47038	30838	2153	14000		
05-Aug-24	32	32815	31183	45996	29796	3195	14000		
12-Aug-24	33	32235	30602	45276	29076	3915	14000		
19-Aug-24	34	32102	30469	45378	29178	3813	14000		
26-Aug-24	35	31122	29489	44683	28483	4508	14000		
02-Sep-24	36	32206	30318	44498	28298	4693	14000		
09-Sep-24	37	32100	30213	44498	28298	4693	14000		
16-Sep-24	38	31551	29663	44568	28368	4623	14000		
23-Sep-24	39	31272	29384	43550	27350	5641	14000		
30-Sep-24	40	31663	29516	44431	28231	4760	14000		
07-Oct-24	41	31291	29143	43378	27178	5813	14000		
14-Oct-24	42	30935	28796	42903	26703	6288	14000		
21-Oct-24	43	31288	29140	43478	27278	5713	14000		
28-Oct-24	44	31043	28945	42643	26443	6548	14000		
04-Nov-24	45	30877	28868	42737	26537	6454	14000		
11-Nov-24	46	30756	28747	43623	27423	5568	14000		
18-Nov-24	47	30513	28504	43830	27630	5361	14000		
25-Nov-24	48	30369	28360	43830	27630	5361	14000		
02-Dec-24	49	30491	28165	43585	27385	5606	14000		
09-Dec-24	50	30725	28398	43585	27385	5606	14000		
16-Dec-24	51	29472	27145	42318	26118	6873	14000		
23-Dec-24	52	27305	24979	41103	24903	8088	14000		
30-Dec-24	1	27003	24770	40953	24753	8238	14000		
06-Jan-25	2	29323	27090	42275	26075	6916	14000		
13-Jan-25	3	30006	27773	42257	26057	6934	14000		
20-Jan-25	4	30111	27878	41793	25593	7398	14000		
27-Jan-25	5	30338	28105	43403	27203	5788	14000		
03-Feb-25	6	30275	28153	43759	27559	5432	14000		
10-Feb-25	7	30453	28331	43759	27559	5432	14000		
17-Feb-25	8	30607	28486	42678	26478	6513	14000		
24-Feb-25	9	30504	28382	43973	27773	5218	14000		
03-Mar-25	10	30359	28547	42922	26722	6269	14000		
10-Mar-25	11	30779	28967	42591	26391	6600	14000		
17-Mar-25	12	30715	28808	43158	26958	6033	14000		
24-Mar-25	13	30578	28744	42733	26533	6458	14000		
31-Mar-25	14	30348	28778	42686	26486	6505	14000		
07-Apr-25	15	30824	29254	43538	27338	5653	14000		
14-Apr-25	16	31186	29616	44258	28058	4933	14000		
21-Apr-25	17	31936	30366	44258	28058	4933	14000		
28-Apr-25	18	31289	29719	44258	28058	4933	14000		
05-May-25	19	32689	31338	45446	29246	3745	14000		

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): 14 000 MW
Reserves: OR + UA = 16 200 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 Definitively 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 - 2024 to 2028. (Published 30 October 2023).

https://www.eskom.co.za/wp-content/uploads/2023/11/Medium_Term_System_Adequacy_Outlook_2024-2028.pdf

or Download the medium-term system adequacy outlook 2024 – 2028 from

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
Hybrid	150.0
Total (Incl other REs)	6,430.2
Estimated Rooftop PV	5,439.9

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	2,111.7	3,102.2	5,129.8
	Max Date	15-Mar-2022 15:00	10-Feb-2024 12:00	25-Aug-2023 20:00	15-Sep-2023 13:00
2016	Maximum	200.9	1,350.5	1,229.8	2,576.3
Dec 2016	Max Date	09-Dec-2016 12:00	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
Dec 2017	Max Date	23-Dec-2017 16:00	25-Dec-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
Dec 2018	Max Date	04-Dec-2018 16:00	13-Dec-2018 12:00	27-Dec-2018 16:00	01-Dec-2018 12:00
2019	Maximum	502.1	1,375.6	1,872.0	3,530.6
Dec 2019	Max Date	19-Dec-2019 11:00	15-Dec-2019 11:00	14-Dec-2019 15:00	14-Dec-2019 14:00
2020	Maximum	504.5	1,929.2	2,113.9	4,050.0
Dec 2020	Max Date	11-Dec-2020 12:00	02-Dec-2020 11:00	01-Dec-2020 19:00	01-Dec-2020 13:00
2021	Maximum	504.9	2,099.5	2,639.3	4,784.7
Dec 2021	Max Date	29-Dec-2021 11:00	01-Dec-2021 12:00	15-Dec-2021 17:00	15-Dec-2021 15:00
2022	Maximum	506.2	2,048.8	3,028.1	5,126.1
Dec 2022	Max Date	04-Dec-2022 09:00	03-Dec-2022 12:00	02-Dec-2022 16:00	02-Dec-2022 15:00
2023	Maximum	505.8	2,047.8	3,102.2	5,129.8
Dec 2023	Max Date	14-Dec-2023 15:00	08-Dec-2023 11:00	14-Dec-2023 18:00	14-Dec-2023 15:00
2024	Maximum	501.6	2,111.7	3,049.9	4,995.7
Dec 2024	Max Date				

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 Maximum	Annual Energy	1,656,017	5,069,146	11,613,364	18,241,202
2016	Total	529,522	2,630,141	3,730,771	6,951,261
Dec 2016	Total	45,871	329,889	389,040	773,152
2017	Total	687,703	3,324,857	5,081,023	9,198,632
Dec 2017	Total	120,490	335,874	579,133	1,043,570
2018	Total	1,031,288	3,282,124	6,467,095	10,887,902
Dec 2018	Total	138,945	333,543	560,078	1,040,835
2019	Total	1,557,151	3,324,989	6,624,642	11,586,945
Dec 2019	Total	168,251	299,366	640,412	1,115,544
2020	Total	1,626,049	4,140,212	6,625,830	12,478,704
Dec 2020	Total	195,725	476,522	674,198	1,356,380
2021	Total	1,656,017	5,069,146	8,359,224	15,208,327
Dec 2021	Total	179,667	491,187	791,019	1,473,718
2022	Total	1,448,276	4,844,736	9,692,373	16,202,974
Dec 2022	Total	186,297	497,137	938,268	1,642,267
2023	Total	1,375,349	5,014,845	11,613,364	18,241,202
Dec 2023	Total	137,835	484,361	1,041,728	1,673,035
2024	Total	497,320	1,819,785	3,558,307	5,937,406
Dec 2024	Total				

Maximum Difference between Consecutive Evening Peaks (MW) -		
Cal Year	Indicator	Total (Incl other REs)
All Time	Maximum	2,148
	Max Date	20-Apr-2023 to 21-Apr-2023
2016	Maximum	828
Dec 2016	Max Date	25-Dec-2016 to 26-Dec-2016
2017	Maximum	1,038
Dec 2017	Max Date	08-Dec-2017 to 09-Dec-2017
2018	Maximum	1,336
Dec 2018	Max Date	05-Dec-2018 to 06-Dec-2018
2019	Maximum	1,464
Dec 2019	Max Date	07-Dec-2019 to 08-Dec-2019
2020	Maximum	1,488
Dec 2020	Max Date	01-Dec-2020 to 02-Dec-2020
2021	Maximum	1,744
Dec 2021	Max Date	02-Dec-2021 to 03-Dec-2021
2022	Maximum	1,523
Dec 2022	Max Date	22-Dec-2022 to 23-Dec-2022
2023	Maximum	2,148
Dec 2023	Max Date	30-Dec-2023 to 31-Dec-2023
2024	Maximum	1,672
Dec 2024	Max Date	

Maximum proportion that Renewables contributed towards actual hourly energy		
Cal Year	Indicator	Total (Incl other REs)
All Time	Maximum	21.8%
	Max Date	20-Feb-2023 15:00
2016	Maximum	9.8%
Dec 2016	Max Date	23-Dec-2016 13:00
2017	Maximum	12.7%
Dec 2017	Max Date	25-Dec-2017 15:00
2018	Maximum	13.1%
Dec 2018	Max Date	01-Dec-2018 12:00
2019	Maximum	13.9%
Dec 2019	Max Date	14-Dec-2019 14:00
2020	Maximum	16.1%
Dec 2020	Max Date	27-Dec-2020 15:00
2021	Maximum	19.1%
Dec 2021	Max Date	15-Dec-2021 13:00
2022	Maximum	19.3%
Dec 2022	Max Date	29-Dec-2022 14:00
2023	Maximum	21.8%
Dec 2023	Max Date	22-Dec-2023 12:00
2024	Maximum	19.8%
Dec 2024	Max Date	

Estimated Rooftop PV

Maximum/Installed Rooftop PV (MW):	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	Northern Cape	North-West	Western Cape	Total
Mar-24	368.2	307.7	1,503.70	810.9	413.3	516.1	208.4	669.3	642.4	5,439.90
Feb-24	368.2	307.7	1,503.70	810.9	413.3	516.1	208.4	669.3	642.4	5,439.90
Jan-24	368.2	280.2	1,503.70	810.9	413.3	516.1	208.4	669.3	642.4	5,412.30
Dec-23	368.2	280.2	1,295.00	810.9	413.3	516.1	208.4	669.3	642.4	5,203.70
Nov-23	368.2	280.2	1,216.60	810.9	413.3	509.3	129.5	669.3	642.4	5,039.60
Oct-23	368.2	280.2	1,207.80	810.9	413.3	509.3	129.5	669.3	616.8	5,005.00
Sep-23	368.2	280.2	1,207.80	810.9	413.3	476.6	129.5	669.3	527.4	4,883.00
Aug-23	368.2	280.2	1,207.80	810.9	345.6	474.1	129.5	669.3	527.4	4,812.80
Jul-23	368.2	280.2	1207.8	810.9	296.6	450.7	129.5	669.3	527.4	4,740.40
Jun-23	284.3	280.2	1207.8	565.8	296.6	450.7	129.5	669.3	527.4	4,411.50
May-23	190	204.9	1072.1	565.8	296.6	450.7	129.5	669.3	457.9	4,036.80
Apr-23	163.2	160.5	917.5	417.5	226.8	326.7	117.5	669.3	369	3,368.00
Mar-23	163.2	160.5	917.5	417.5	189.8	317.9	117.5	669.3	289.7	3,242.80
Feb-23	163.2	160.5	917.5	417.5	189.8	305.6	117.5	669.3	198	3,138.80
Jan-23	143.1	160.5	917.5	417.5	189.8	298.8	82.6	669.3	198	3,077.10
Dec-22	130.2	160.3	848.3	356.6	189.8	298.8	82	310.4	198	2,574.30
Nov-22	130.2	160.3	848.3	356.6	189.8	298.8	79.1	184.8	156.6	2,404.50
Oct-22	130.2	160.3	848.3	296.9	189.8	298.8	79.1	184.8	145.5	2,333.60
Sep-22	130.2	160.3	848.3	296.9	189.8	298.8	79.1	184.8	145.5	2,333.60
Aug-22	130.2	160.3	848.3	296.9	189.8	298.8	79.1	184.8	145.5	2,333.60
Jul-22	130.2	148.8	790.6	296.9	189.8	298.8	79.1	184.8	145.5	2,264.50

If there is a big jump from month to month it is mainly due to the high number of cloudy days during the latter month, not necessarily due to the number of installations in that month. It would very likely have been distributed in the preceding few months.