Weekly System Status Report – 2024 Week 3 (15/01/2024 – 21/01/2024)

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 15/Jan/2024	26,089	287	25,507	25,202	3.5%	4.7%	1.2%
Tue 16/Jan/2024	27,346	320	25,313	25,087	9.0%	10.3%	0.9%
Wed 17/Jan/2024	26,034	0	25,503	25,502	2.1%	2.1%	0.0%
Thu 18/Jan/2024	27,049	504	25,665	25,871	4.6%	6.5%	-0.8%
Fri 19/Jan/2024	26,932	557	24,966	25,361	6.2%	8.4%	-1.6%
Sat 20/Jan/2024	27,302	554	24,856	24,974	9.3%	11.5%	-0.5%
Sun 21/Jan/2024	26,979	537	24,383	23,999	12.4%	14.7%	1.6%

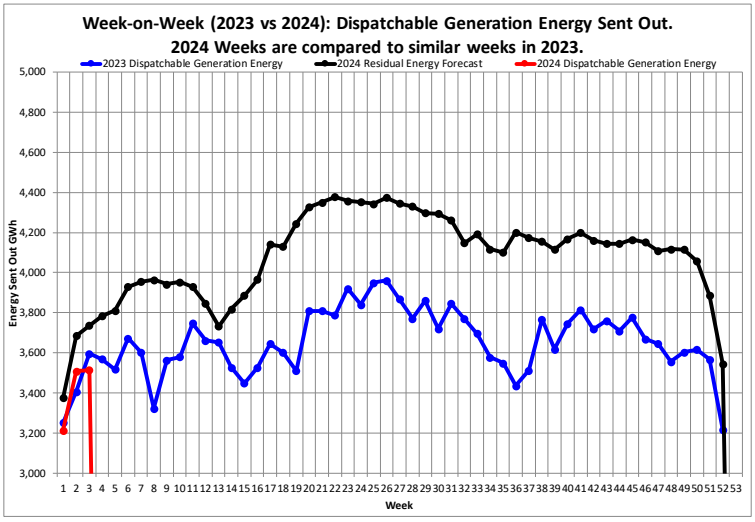
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 15/Jan/2024	28,054	287	27,477	27,167	3.3%	4.3%	1.1%
Tue 16/Jan/2024	30,077	320	27,935	27,818	8.1%	9.3%	0.4%
Wed 17/Jan/2024	28,785	0	28,210	28,254	1.9%	1.9%	-0.2%
Thu 18/Jan/2024	29,871	504	28,185	28,693	4.1%	5.9%	-1.8%
Fri 19/Jan/2024	29,200	557	27,239	27,629	5.7%	7.7%	-1.4%
Sat 20/Jan/2024	29,065	554	26,753	26,737	8.7%	10.8%	0.1%
Sun 21/Jan/2024	29,543	537	26,280	26,563	11.2%	13.2%	-1.1%

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

[2023 weeks compared to similar 2022 weeks]



Week 3 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	3,515	GWh
Week-on-Week Growth	-2.26	%
Year-on-Year Growth (Year-to-Date) Annual	-0.16	%

Note:

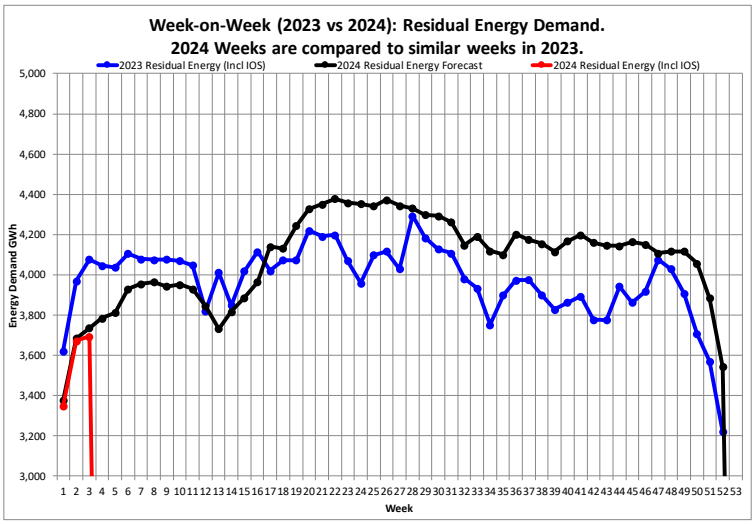
2024 Weeks are compared to similar weeks in 2023.

(2024 week 1 ~ 2023 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics			
Year	**01 Jan to 21 Jan Energy**	**Annual Energy (01 Jan to 31 Dec)**	**Unit**
2019	12,043	219,575	GWh
2020	11,981	206,725	GWh
2021	11,442	210,022	GWh
2022	11,455	202,845	GWh
2023	10,185	190,289	GWh
2024 (YTD)	10,237		GWh

Week-on-Week Residual Energy Demand

[2023 weeks compared to similar 2022 weeks]



Week 3 : Residual Energy Demand Statistics		
Energy Demand	3,695	GWh
Week-on-Week Growth	-9.38	%
Year-on-Year Growth (Year-to-Date) Annual	-8.18	%

Note:

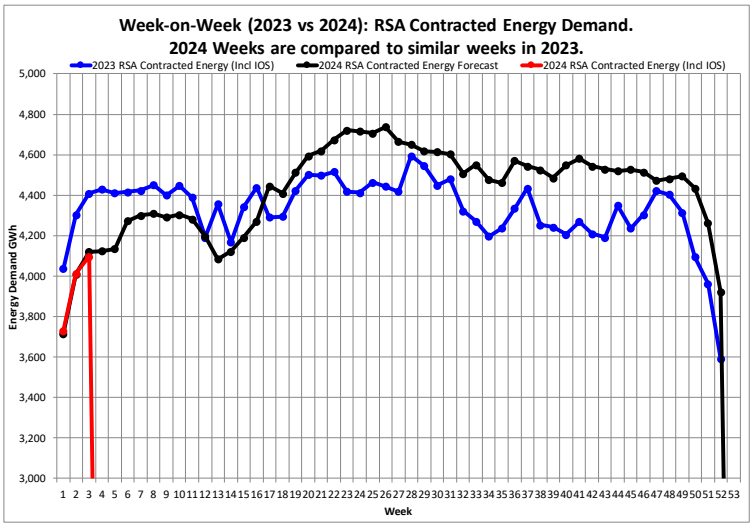
2024 Weeks are compared to similar weeks in 2023.

(2024 week 1 ~ 2023 week 1)

Annual Residual Energy Demand Statistics			
Year	**01 Jan to 21 Jan Energy**	**Annual Energy (01 Jan to 31 Dec)**	**Unit**
2019	12,054	220,937	GWh
2020	12,095	208,151	GWh
2021	11,604	211,958	GWh
2022	11,464	211,132	GWh
2023	11,589	207,045	GWh
2024 (YTD)	10,714		GWh

Week-on-Week RSA Contracted Energy Demand

[2023 weeks compared to similar 2022 weeks]



Week 3 : RSA Contracted Energy Demand Statistics		
Energy Demand	4,097	GWh
Week-on-Week Growth	-7.08	%
Year-on-Year Growth (Year-to-Date) Annual	-7.13	%

Note:

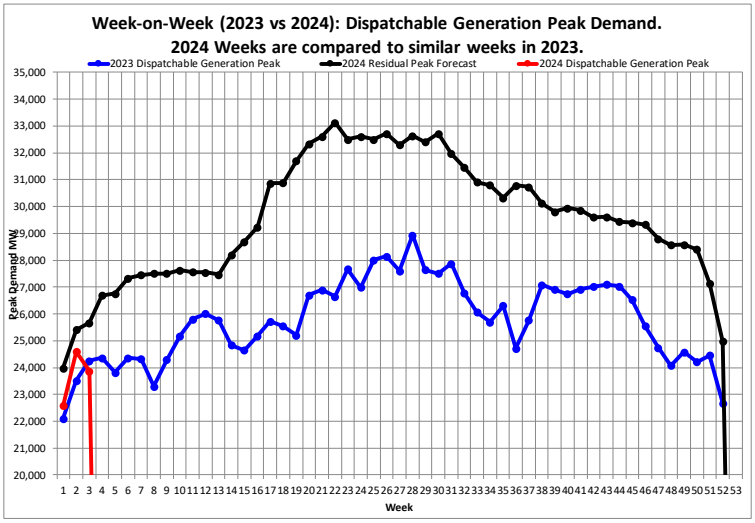
2024 Weeks are compared to similar weeks in 2023.

(2024 week 1 ~ 2023 week 1)

Annual RSA Contracted Energy Demand Statistics			
Year	**01 Jan to 21 Jan Energy**	**Annual Energy (01 Jan to 31 Dec)**	**Unit**
2019	12,850	232,524	GWh
2020	12,829	220,630	GWh
2021	12,462	227,166	GWh
2022	12,424	227,335	GWh
2023	12,673	225,730	GWh
2024 (YTD)	11,840		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2023 weeks compared to similar 2022 weeks]



Week 3 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	23,866	MW
Week-on-Week Growth	-1.57	%
Year-on-Year Growth (Year-to-Date) Annual	1.44	%

Note:

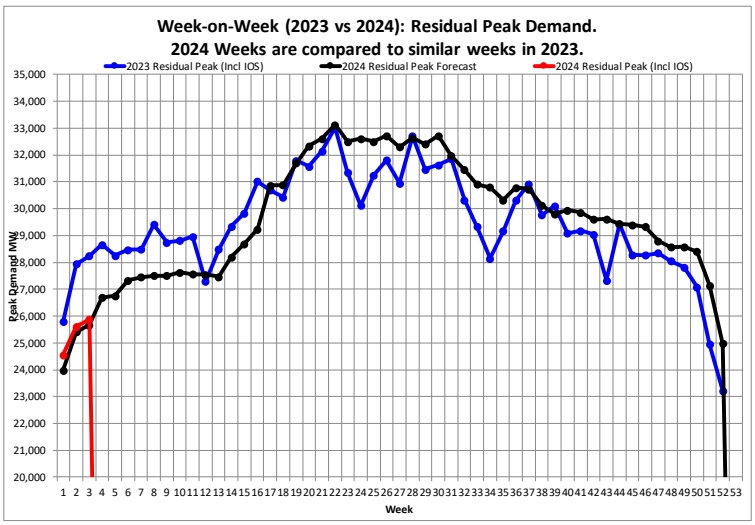
2024 Weeks are compared to similar weeks in 2023.

(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-Jan-2024	24,599	MW

Week-on-Week Residual Peak Demand

[2023 weeks compared to similar 2022 weeks]



Week 3 : Residual Peak Demand Statistics		
Peak Demand	25,871	MW
Week-on-Week Growth	-8.38	%
Year-on-Year Growth (Year-to-Date) Annual	-8.38	%

Note:

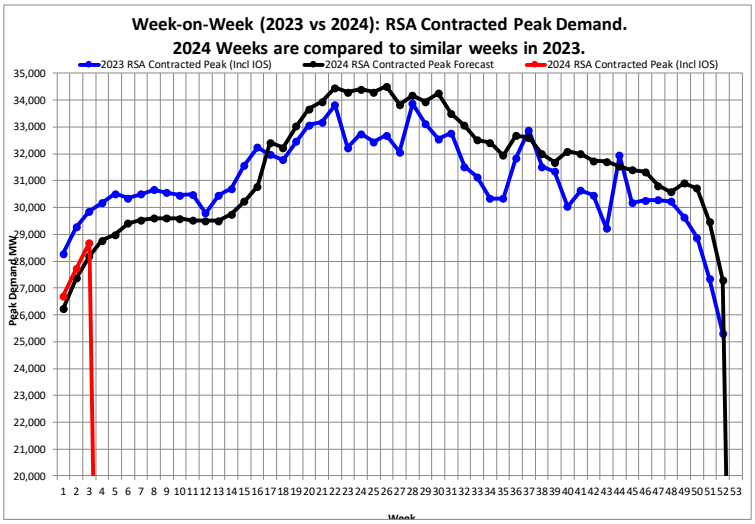
2024 Weeks are compared to similar weeks in 2023.

(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)	Thu 18-Jan-2024	25,871	MW

Week-on-Week RSA Contracted Peak Demand

[2023 weeks compared to similar 2022 weeks]



Week 3 : RSA Contracted Peak Demand Statistics		
Peak Demand	28,693	MW
Week-on-Week Growth	-3.92	%
Year-on-Year Growth (Year-to-Date) Annual	-3.92	%

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)	Thu 18-Jan-2024	28,693	MW

Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	42	43	44	45	46	47	48	49	50	51	52	1	2	3	2024	2023
Energy Availability Factor (Eskom EAF)	60.05	56.08	54.42	55.13	53.36	54.25	54.12	55.08	54.71	54.66	49.52	48.97	51.76	52.13	**51.17**	**54.68**
Planned Outage Factor	10.82	10.53	8.91	10.27	11.02	12.13	14.21	14.53	17.89	17.29	19.05	18.88	17.27	17.97	**18.03**	**10.90**
Unplanned Outage Factor	27.89	32.09	35.51	33.03	33.78	31.90	30.08	28.79	26.17	26.91	30.39	30.89	29.71	28.48	**29.50**	**33.09**
Other Outage Factor	1.24	1.30	1.16	1.57	1.84	1.72	1.59	1.60	1.23	1.14	1.04	1.26	1.26	1.42	**1.30**	**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 (-18200 MW)	MW Likely Risk Senario (-20200 MW)
22-Jan-24	4	28775	26688	40205	22005	8986	16000		
29-Jan-24	5	28993	26752	40790	22590	8401	16000		
05-Feb-24	6	29415	27325	42045	23845	7146	16000		
12-Feb-24	7	29535	27445	41405	23205	7786	16000		
19-Feb-24	8	29600	27510	41875	23675	7316	16000		
26-Feb-24	9	29597	27507	41875	23675	7316	16000		
04-Mar-24	10	29582	27622	41979	23779	7212	16000		
11-Mar-24	11	29526	27566	42307	24107	6884	16000		
18-Mar-24	12	29512	27552	42709	24509	6482	16000		
25-Mar-24	13	29512	27467	42189	23989	7002	16000		
01-Apr-24	14	29750	28201	43110	24910	6081	16000		
08-Apr-24	15	30233	28684	43773	25573	5418	16000		
15-Apr-24	16	30785	29236	44123	25923	5068	16000		
22-Apr-24	17	32418	30869	45033	26833	4158	16000		
29-Apr-24	18	32233	30877	45033	26833	4158	16000		
06-May-24	19	33030	31695	46178	27978	3013	16000		
13-May-24	20	33673	32338	46178	27978	3013	16000		
20-May-24	21	33942	32607	46771	28571	2420	16000		
27-May-24	22	34467	33131	47436	29236	1755	16000		
03-Jun-24	23	34299	32501	46929	28729	2262	16000		
10-Jun-24	24	34408	32610	46929	28729	2262	16000		
17-Jun-24	25	34302	32504	46839	28639	2352	16000		
24-Jun-24	26	34515	32717	46929	28729	2262	16000		
01-Jul-24	27	33834	32299	47504	29304	1687	16000		
08-Jul-24	28	34176	32642	47504	29304	1687	16000		
15-Jul-24	29	33948	32413	46784	28584	2407	16000		
22-Jul-24	30	34257	32722	47140	28940	2051	16000		
29-Jul-24	31	33502	31968	46555	28355	2636	16000		
05-Aug-24	32	33064	31447	45330	27130	3861	16000		
12-Aug-24	33	32520	30903	44860	26660	4331	16000		
19-Aug-24	34	32414	30798	44082	25882	5109	16000		
26-Aug-24	35	31943	30327	43980	25780	5211	16000		
02-Sep-24	36	32674	30789	44862	26662	4329	16000		
09-Sep-24	37	32611	30726	44414	26214	4777	16000		
16-Sep-24	38	32005	30120	43679	25479	5512	16000		
23-Sep-24	39	31690	29805	43436	25236	5755	16000		
30-Sep-24	40	32088	29950	43332	25132	5859	16000		
07-Oct-24	41	31996	29858	43729	25529	5462	16000		
14-Oct-24	42	31738	29608	43464	25264	5727	16000		
21-Oct-24	43	31706	29617	43464	25264	5727	16000		
28-Oct-24	44	31535	29446	43576	25376	5615	16000		
04-Nov-24	45	31399	29392	43386	25186	5805	16000		
11-Nov-24	46	31331	29323	43246	25046	5945	16000		
18-Nov-24	47	30812	28804	42896	24696	6295	16000		
25-Nov-24	48	30578	28571	42404	24204	6787	16000		
02-Dec-24	49	30913	28586	42444	24244	6747	16000		
09-Dec-24	50	30725	28398	42444	24244	6747	16000		
16-Dec-24	51	29472	27145	41051	22851	8140	16000		
23-Dec-24	52	27305	24979	39846	21646	9345	16000		
30-Dec-24	1	27214	25070	41151	22951	8040	16000		
06-Jan-25	2	29980	27822	41899	23699	7292	16000		
13-Jan-25	3	30239	28095	42372	24172	6819	16000		
20-Jan-25	4	30258	28114	42532	24332	6659	16000		
27-Jan-25	5	30634	28490	42579	24379	6612	16000		

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): 16 000 MW
Reserves: OR + UA = 18 200 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
Total (Incl other REs)	6,280.2
Estimated Rooftop PV	5,203.7

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	3,102.2	5,129.8
	Max Date	15-Mar-2022 15:00	24-Oct-2021 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
	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	2,047.8	3,102.2	5,129.8
	Max Date	21-Feb-2023 13:00	12-Nov-2023 11:00	25-Aug-2023 20:00	15-Sep-2023 13:00
2024	Maximum	398.6	1,888.1	2,124.0	3,982.6
	Max Date	01-Jan-2024 14:00	01-Jan-2024 10:00	01-Jan-2024 20:00	01-Jan-2024 10:00

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 Maximum	Annual Energy	1,656,017	5,069,146	11,613,364	18,241,189
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	15,208,327
2022	Total Energy	1,448,276	4,844,736	9,692,373	16,202,974
2023	Total Energy	1,375,349	5,014,831	11,613,364	18,241,189
2024	Total Energy	130,040	488,578	936,301	1,568,842

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	2,148
	Max Date	20-Apr-2023 to 21-Apr-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	2,148
	Max Date	20-Apr-2023 to 21-Apr-2023
2024	Maximum	801
	Max Date	20-Jan-2024 to 21-Jan-2024

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
2024	Maximum	18.9%
	Max Date	01-Jan-2024 09:00

Estimated Rooftop PV

Maximum/Installed Rooftop PV (MW):	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	Northern Cape	North-West	Western Cape	Total
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	1,207.80	810.9	296.6	450.7	129.5	669.3	527.4	4,740.40
Jun-23	284.3	280.2	1,207.80	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	368.7	189.8	298.8	82	310.4	198	2,586.40
Nov-22	130.2	160.3	848.3	368.7	189.8	298.8	79.1	184.8	161.9	2,421.90
Oct-22	130.2	160.3	848.3	296.9	189.8	298.8	79.1	184.8	150	2,338.10
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.