

Weekly System Status Report – 2023 Week 35 (28/08/2023 – 03/09/2023)

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 28/Aug/2023	28,617	0	28,278	28,836	-0.8%	-0.8%	-1.9%
Tue 29/Aug/2023	27,333	0	28,512	28,624	-4.5%	-4.5%	-0.4%
Wed 30/Aug/2023	28,111	0	28,543	29,156	-3.6%	-3.6%	-2.1%
Thu 31/Aug/2023	28,110	0	27,639	27,802	1.1%	1.1%	-0.6%
Fri 01/Sep/2023	27,301	0	27,120	27,913	-2.2%	-2.2%	-2.8%
Sat 02/Sep/2023	25,928	0	26,653	27,048	-4.1%	-4.1%	-1.5%
Sun 03/Sep/2023	25,834	0	26,608	26,815	-3.7%	-3.7%	-0.8%

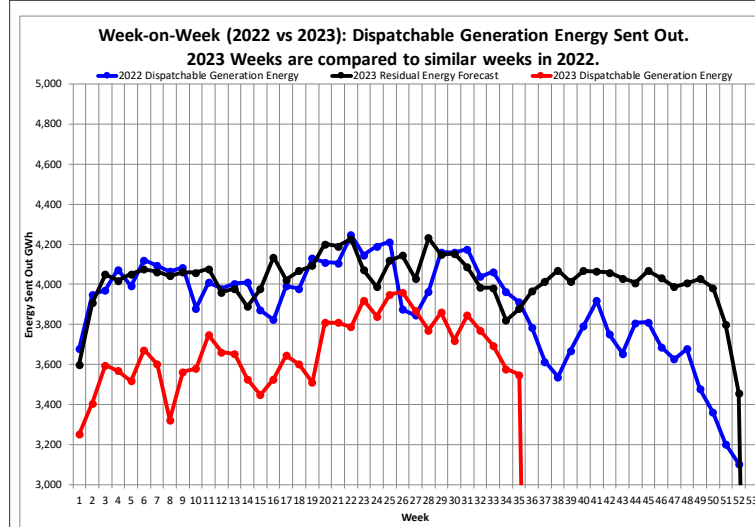
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 28/Aug/2023	29,913	0	29,873	30,132	-0.7%	-0.7%	-0.9%
Tue 29/Aug/2023	28,838	0	29,937	30,129	-4.3%	-4.3%	-0.6%
Wed 30/Aug/2023	29,200	0	30,088	30,245	-3.5%	-3.5%	-0.5%
Thu 31/Aug/2023	30,667	0	30,260	30,360	1.0%	1.0%	-0.3%
Fri 01/Sep/2023	28,359	0	28,617	28,971	-2.1%	-2.1%	-1.2%
Sat 02/Sep/2023	26,908	0	27,643	28,028	-4.0%	-4.0%	-1.4%
Sun 03/Sep/2023	27,515	0	28,250	28,495	-3.4%	-3.4%	-0.9%

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) = 49 191 MW.
- 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

[2023 weeks compared to similar 2022 weeks]



Week 35 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	3,549	GWh
Week-on-Week Growth	-9.25	%
Year-on-Year Growth (Year-to-Date) Annual	-9.05	%

Note:

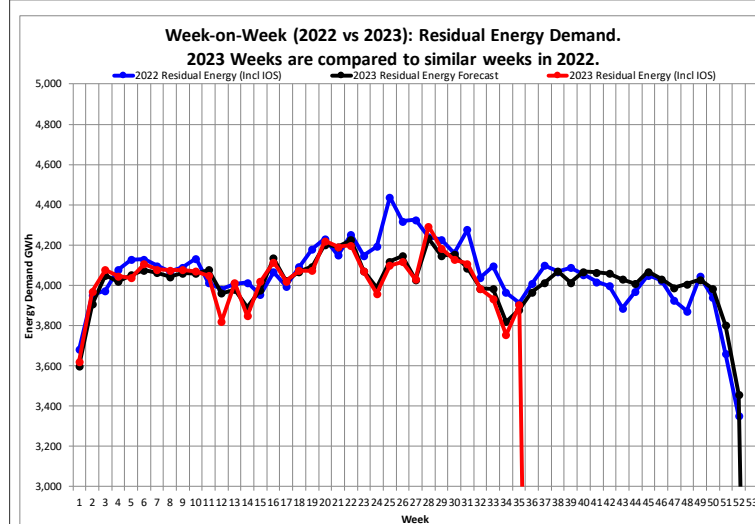
2023 Weeks are compared to similar weeks in 2022.

(2023 week 1 ~ 2022 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics			
Year	01 Jan to 03 Sep Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2018	152,352	224,202	GWh
2019	149,342	219,575	GWh
2020	139,370	206,725	GWh
2021	144,120	210,022	GWh
2022	141,293	202,847	GWh
2023 (YTD)	128,561		GWh

Week-on-Week Residual Energy Demand

[2023 weeks compared to similar 2022 weeks]



Week 35 : Residual Energy Demand Statistics		
Energy Demand	3,903	GWh
Week-on-Week Growth	-0.23	%
Year-on-Year Growth (Year-to-Date) Annual	-1.56	%

Note:

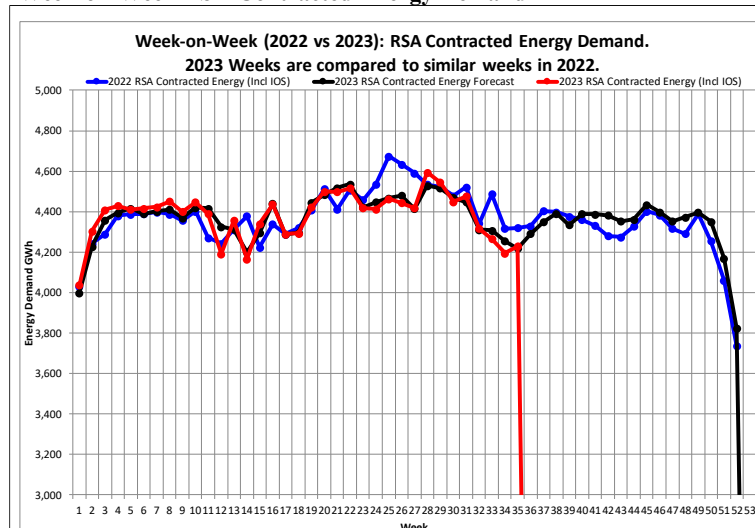
2023 Weeks are compared to similar weeks in 2022.

(2023 week 1 ~ 2022 week 1)

Annual Residual Energy Demand Statistics			
Year	01 Jan to 03 Sep Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2018	152,474	224,594	GWh
2019	150,062	220,937	GWh
2020	140,590	208,151	GWh
2021	145,212	211,958	GWh
2022	144,036	211,134	GWh
2023 (YTD)	141,833		GWh

Week-on-Week RSA Contracted Energy Demand

[2023 weeks compared to similar 2022 weeks]



Week 35 : RSA Contracted Energy Demand Statistics		
Energy Demand	4,230	GWh
Week-on-Week Growth	-2.09	%
Year-on-Year Growth (Year-to-Date) Annual	-0.35	%

Note:

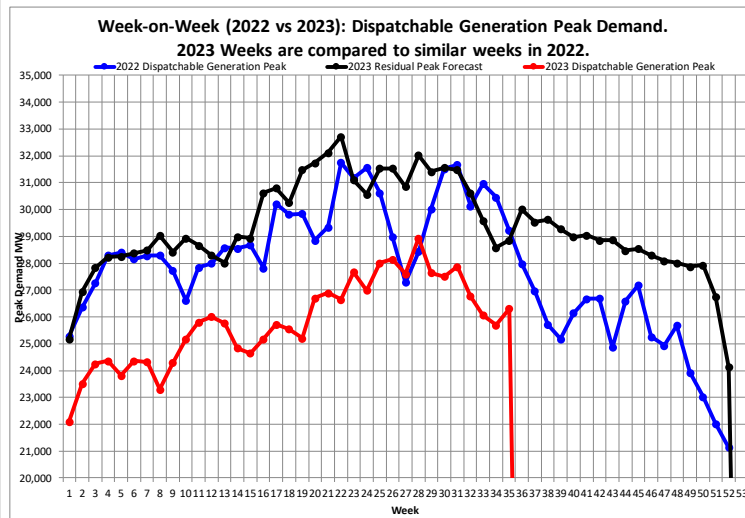
2023 Weeks are compared to similar weeks in 2022.

(2023 week 1 ~ 2022 week 1)

Annual RSA Contracted Energy Demand Statistics			
Year	01 Jan to 03 Sep Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2018	159,413	235,482	GWh
2019	157,520	232,524	GWh
2020	148,285	220,630	GWh
2021	154,668	227,166	GWh
2022	154,362	227,337	GWh
2023 (YTD)	153,877		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2023 weeks compared to similar 2022 weeks]



Week 35 : Dispatchable Generation Peak Demand Statistics			
Peak Demand	26,306	MW	
Week-on-Week Growth	-9.97	%	
Year-on-Year Growth (Year-to-Date) Annual	-8.88	%	

Note:

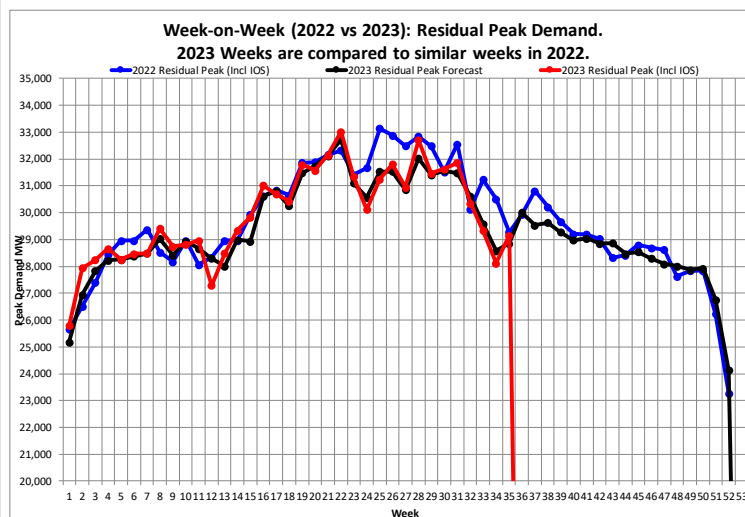
2023 Weeks are compared to similar weeks in 2022.

(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)	Mon 10-Jul-2023	28,937	MW

Week-on-Week Residual Peak Demand

[2023 weeks compared to similar 2022 weeks]



Week 35 : Residual Peak Demand Statistics			
Peak Demand	29,156	MW	
Week-on-Week Growth	-0.40	%	
Year-on-Year Growth (Year-to-Date) Annual	-0.36	%	

Note:

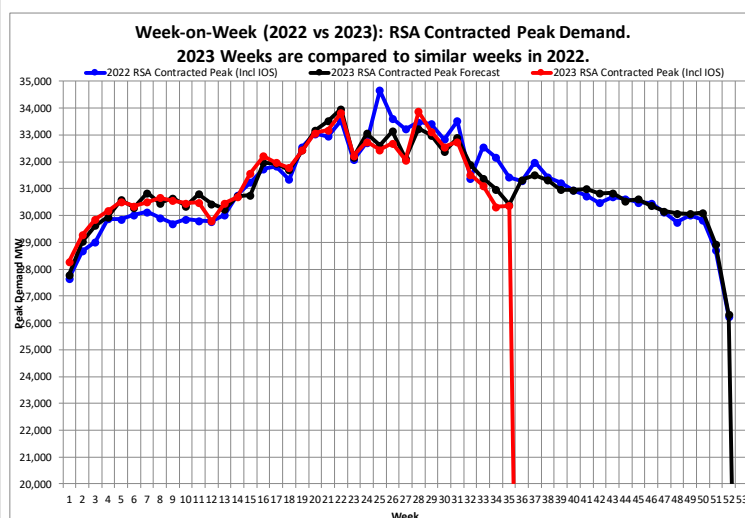
2023 Weeks are compared to similar weeks in 2022.

(2023 week 1 ~ 2022 week 1)

Annual Residual Peak Demand Statistics			
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 30-May-2023	33,016	MW

Week-on-Week RSA Contracted Peak Demand

[2023 weeks compared to similar 2022 weeks]



Week 35 : RSA Contracted Peak Demand Statistics			
Peak Demand	30,360	MW	
Week-on-Week Growth	-3.41	%	
Year-on-Year Growth (Year-to-Date) Annual	-2.29	%	

Note:

2023 Weeks are compared to similar weeks in 2022.

(2023 week 1 ~ 2022 week 1)

Annual RSA Contracted Peak Demand Statistics			
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)	Mon 10-Jul-2023	33,873	MW

Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	2023	2022
Energy Availability Factor (Eskom EAF)	57.58	59.14	57.29	57.91	58.19	57.54	56.02	57.16	57.18	58.74	56.75	56.38	55.14	53.49	54.46	58.00
Planned Outage Factor	5.16	5.95	9.58	8.01	8.14	9.47	6.82	6.07	7.52	7.29	8.86	9.69	10.52	12.82	10.09	10.62
Unplanned Outage Factor	36.18	33.85	32.03	32.84	32.82	32.41	36.71	35.87	34.19	33.05	33.48	32.75	33.40	32.99	34.16	29.86
Other Outage Factor	1.08	1.06	1.10	1.24	0.85	0.58	0.45	0.90	1.11	0.92	0.91	1.18	0.94	0.70	1.29	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 (-19200 MW)
04-Sep-23	36	31330	30017	43784	26584	5407	15000		
11-Sep-23	37	31502	29530	45026	27826	4165	15000		
18-Sep-23	38	31319	29632	44389	27189	4802	15000		
25-Sep-23	39	30969	29282	44031	26831	5160	15000		
02-Oct-23	40	30953	28976	43758	26558	5433	15000		
09-Oct-23	41	30997	29039	43906	26706	5285	15000		
16-Oct-23	42	30827	28850	44197	26997	4994	15000		
23-Oct-23	43	30839	28862	43677	26477	5514	15000		
30-Oct-23	44	30541	28474	43566	26366	5625	15000		
06-Nov-23	45	30606	28538	43538	26338	5653	15000		
13-Nov-23	46	30370	28302	44000	26800	5191	15000		
20-Nov-23	47	30158	28090	43170	25970	6021	15000		
27-Nov-23	48	30082	28014	42517	25317	6674	15000		
04-Dec-23	49	30063	27880	42517	27317	6674	13000		
11-Dec-23	50	30109	27927	42492	27292	6699	13000		
18-Dec-23	51	28935	26752	42103	26903	7088	13000		
25-Dec-23	52	26312	24130	39858	24658	9333	13000		
01-Jan-24	1	27780	25636	40783	25583	8408	13000		
08-Jan-24	2	29422	27278	41965	26765	7226	13000		
15-Jan-24	3	29883	27739	42830	27630	6361	13000		
22-Jan-24	4	30203	28059	43010	27810	6181	13000		
29-Jan-24	5	30358	28214	42820	27620	6371	13000		
05-Feb-24	6	30700	28610	43270	28070	5921	13000		
12-Feb-24	7	30793	28704	43675	28475	5516	13000		
19-Feb-24	8	30724	28635	43030	27830	6161	13000		
26-Feb-24	9	30567	28477	43030	27830	6161	13000		
04-Mar-24	10	30918	28958	43693	28493	5498	13000		
11-Mar-24	11	30966	29006	43100	27900	6091	13000		
18-Mar-24	12	30790	28807	43152	27952	6039	13000		
25-Mar-24	13	30764	28719	42767	27567	6424	13000		
01-Apr-24	14	31151	29620	43902	28702	5289	13000		
08-Apr-24	15	31666	30135	44508	29308	4683	13000		
15-Apr-24	16	32015	30483	44858	29658	4333	13000		
22-Apr-24	17	32400	30869	45033	29833	4158	13000		
29-Apr-24	18	32215	30877	45648	30448	3543	13000		
06-May-24	19	33020	31695	46241	31041	2950	13000		
13-May-24	20	33663	32338	46241	31041	2950	13000		
20-May-24	21	33932	32607	46241	31041	2950	13000		
27-May-24	22	34457	33131	47436	32236	1755	13000		
03-Jun-24	23	34299	32501	46929	31729	2262	13000		
10-Jun-24	24	34408	32610	46929	31729	2262	13000		
17-Jun-24	25	34302	32504	47504	32304	1687	13000		
24-Jun-24	26	34515	32717	47504	32304	1687	13000		
01-Jul-24	27	33834	32299	47414	32214	1777	13000		
08-Jul-24	28	34176	32642	47414	32214	1777	13000		
15-Jul-24	29	33948	32413	46784	31584	2407	13000		
22-Jul-24	30	34257	32722	47140	31940	2051	13000		
29-Jul-24	31	33502	31968	46555	31355	2636	13000		
05-Aug-24	32	33064	31447	45330	30130	3861	13000		
12-Aug-24	33	32520	30903	45580	30380	3611	13000		
19-Aug-24	34	32414	30798	44802	29602	4389	13000		
26-Aug-24	35	31943	30327	44700	29500	4491	13000		
02-Sep-24	36	32476	30789	45047	29847	4144	13000		
09-Sep-24	37	32413	30726	44599	29399	4592	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 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 MW until end November 2023 then 13000 MW onward

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 - 2023 to 2027. (Published 30 October 2022).

<https://www.eskom.co.za/wp-content/uploads/2022/10/Medium-Term-System-Adequacy-Outlook-2023-2027.pdf>

or Download the medium-term system adequacy outlook 2023 – 2027 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	4,740.4

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	5,126.1
	Max Date	15-Mar-2022 15:00	24-Oct-2021 12:00	25-Aug-2023 20:00	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	3,102.2	4,877.8
	Max Date	21-Feb-2023 13:00	21-Feb-2023 12:00	25-Aug-2023 20:00	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	868,458	3,292,397	7,903,504	12,264,645

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	2,149
	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	2,149
	Max Date	20-Apr-2023 to 21-Apr-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