

Weekly System Status Report – 2021 Week 23 (07/06/2021 – 13/06/2021)

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 07/Jun/2021	32,000	506	31,292	31,424	1.8%	3.4%	-0.4%
Tue 08/Jun/2021	33,825	727	31,924	34,025	-0.6%	1.5%	-6.2%
Wed 09/Jun/2021	32,976	550	32,371	33,015	-0.1%	1.5%	-2.0%
Thu 10/Jun/2021	33,135	550	33,009	32,768	1.1%	2.8%	0.7%
Fri 11/Jun/2021	33,694	551	31,237	30,503	10.5%	12.3%	2.4%
Sat 12/Jun/2021	30,810	550	30,864	30,654	0.5%	2.3%	0.7%
Sun 13/Jun/2021	30,896	547	30,635	30,350	1.8%	3.6%	0.9%

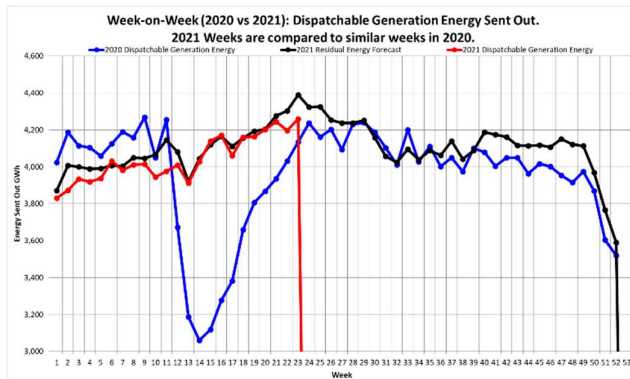
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 07/Jun/2021	33,864	506	33,034	33,289	1.7%	3.2%	-0.8%
Tue 08/Jun/2021	34,137	727	32,778	34,337	-0.6%	1.5%	-4.5%
Wed 09/Jun/2021	33,364	550	33,019	33,403	-0.1%	1.5%	-1.1%
Thu 10/Jun/2021	33,814	550	33,582	33,448	1.1%	2.7%	0.4%
Fri 11/Jun/2021	34,644	551	32,151	31,453	10.1%	11.9%	2.2%
Sat 12/Jun/2021	31,372	550	31,566	31,216	0.5%	2.3%	1.1%
Sun 13/Jun/2021	32,244	547	31,849	31,697	1.7%	3.4%	0.5%

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) = 49 596 MW (Incl. non-comm. Kusile units).
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

[2021 weeks compared to similar 2020 weeks]



Week 23 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	4,259	GWh
Week-on-Week Growth	3.02	%
Year-on-Year Growth (Year-to-Date) Annual	4.89	%

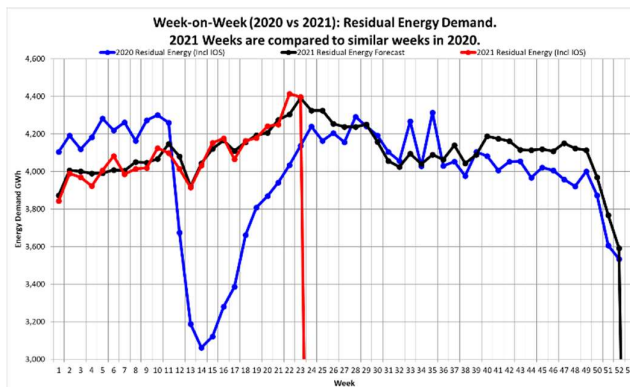
Note:

2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics			
Year	01 Jan to 13 Jun Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	102,462	226,721	GWh
2017	101,108	225,203	GWh
2018	100,448	224,202	GWh
2019	98,874	219,563	GWh
2020	90,677	206,725	GWh
2021 (YTD)	94,479		GWh

Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 23 : Residual Energy Demand Statistics (Incl IOS)		
Energy Demand	4,397	GWh
Week-on-Week Growth	6.29	%
Year-on-Year Growth (Year-to-Date) Annual	5.07	%

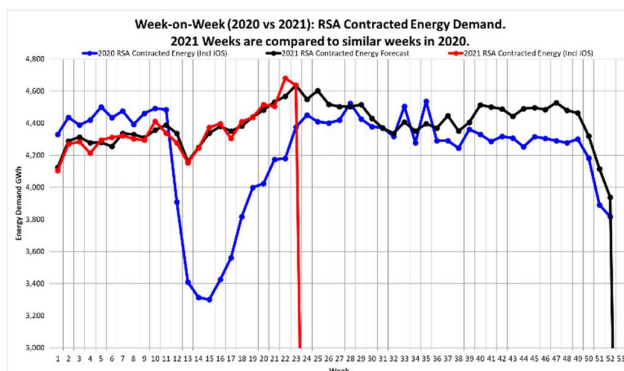
Note:

2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)			
Year	01 Jan to 13 Jun Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	102,509	226,808	GWh
2017	101,112	225,248	GWh
2018	100,514	224,594	GWh
2019	99,569	220,924	GWh
2020	91,546	208,151	GWh
2021 (YTD)	95,524		GWh

Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 23 : RSA Contracted Energy Demand Statistics (Incl IOS)		
Energy Demand	4,637	GWh
Week-on-Week Growth	5.95	%
Year-on-Year Growth (Year-to-Date) Annual	6.12	%

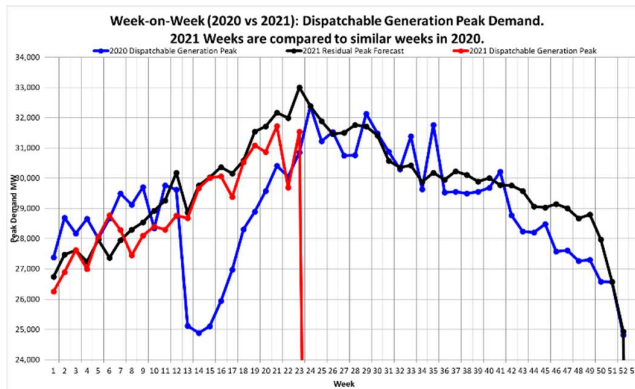
Note:

2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)			
Year	01 Jan to 13 Jun Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	107,127	238,069	GWh
2017	105,759	235,426	GWh
2018	105,202	235,482	GWh
2019	104,567	232,511	GWh
2020	96,515	220,630	GWh
2021 (YTD)	101,710		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 23 : Dispatchable Generation Peak Demand Statistics

Peak Demand	31,542	MW
Week-on-Week Growth	2.23	%
Year-on-Year Growth (Year-to-Date) Annual	2.83	%

Note:

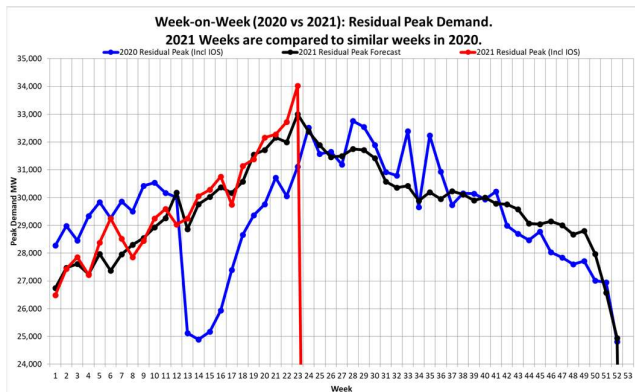
2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual Dispatchable Generation Peak Demand Statistics

Year	Peak Date	Annual Peak	Unit
2016	Thu 04-Aug-2016	34,181	MW
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 (YTD)	Tue 25-May-2021	31,727	MW

Week-on-Week Residual Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 23 : Residual Peak Demand Statistics (Incl IOS)

Peak Demand	34,025	MW
Week-on-Week Growth	9.37	%
Year-on-Year Growth (Year-to-Date) Annual	9.37	%

Note:

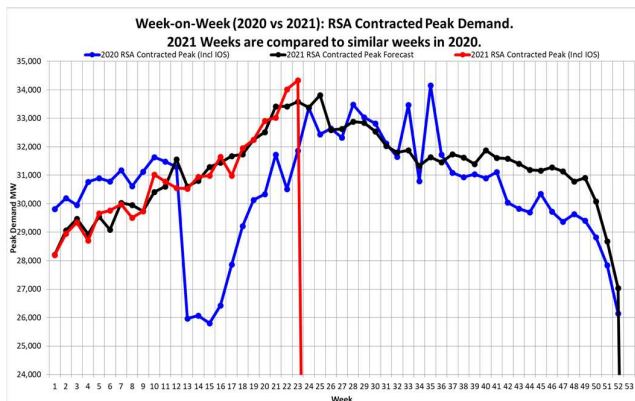
2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual Residual Peak Demand Statistics (Incl IOS)

Year	Peak Date	Annual Peak	Unit
2016	Thu 07-Jul-2016	34,488	MW
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 (YTD)	Tue 08-Jun-2021	34,025	MW

Week-on-Week RSA Contracted Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 23 : RSA Contracted Peak Demand Statistics (Incl IOS)

Peak Demand	34,337	MW
Week-on-Week Growth	7.75	%
Year-on-Year Growth (Year-to-Date) Annual	7.75	%

Note:

2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual RSA Contracted Peak Demand Statistics (Incl IOS)

Year	Peak Date	Annual Peak	Unit
2016	Mon 30-May-2016	34,913	MW
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 (YTD)	Tue 08-Jun-2021	34,337	MW

Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	YTD	2020
Energy Availability Factor (Eskom EAF)	60.14	59.57	60.32	59.33	61.98	63.60	65.79	64.20	64.85	63.94	64.97	63.61	64.75	65.70	61.24	65.04
Planned Outage Factor	14.52	14.56	12.17	12.58	11.62	11.88	10.07	11.43	9.07	9.50	7.59	6.84	5.27	3.57	11.21	11.24
Unplanned Outage Factor	21.92	22.68	24.49	25.41	23.63	22.35	22.04	22.59	24.01	25.04	25.70	26.96	27.85	28.50	24.50	20.88
Other Outage Factor	3.42	3.19	3.02	2.68	2.77	2.17	2.10	1.78	2.07	1.52	1.74	2.59	2.13	2.23	3.05	2.84

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 (-13200 MW)	MW Likely Risk Scenario (-15200 MW)
14-Jun-21	24	33383	32384	45853	32653	3743	11000		
21-Jun-21	25	33813	31893	45725	32525	3871	11000		
28-Jun-21	26	32586	31457	45487	32287	4109	11000		
05-Jul-21	27	32625	31502	46059	32859	3537	11000		
12-Jul-21	28	32862	31758	46865	33665	2731	11000		
19-Jul-21	29	32839	31716	47196	33996	2400	11000		
26-Jul-21	30	32543	31419	46290	33090	3306	11000		
02-Aug-21	31	32024	30578	45505	32305	4091	11000		
09-Aug-21	32	31801	30355	45505	32305	4091	11000		
16-Aug-21	33	31876	30430	45243	32043	4353	11000		
23-Aug-21	34	31329	29883	44529	31329	5067	11000		
30-Aug-21	35	31634	30188	45404	32204	4192	11000		
06-Sep-21	36	31452	29947	45147	31947	4449	11000		
13-Sep-21	37	31733	30228	44957	31757	4639	11000		
20-Sep-21	38	31621	30117	45342	32142	4254	11000		
27-Sep-21	39	31399	29895	44187	30987	5409	11000		
04-Oct-21	40	31883	30007	44537	31337	5059	11000		
11-Oct-21	41	31607	29782	43497	30297	6099	11000		
18-Oct-21	42	31588	29763	44029	30829	5567	11000		
25-Oct-21	43	31400	29575	43921	30721	5675	11000		
01-Nov-21	44	31194	29066	43306	30106	6290	11000		
08-Nov-21	45	31167	29038	43307	30107	6289	11000		
15-Nov-21	46	31281	29153	45239	32039	4357	11000		
22-Nov-21	47	31139	29010	43904	30704	5692	11000		
29-Nov-21	48	30786	28674	42744	29544	6852	11000		
06-Dec-21	49	30908	28807	43549	30349	6047	11000		
13-Dec-21	50	30078	27977	42006	28806	7590	11000		
20-Dec-21	51	28684	26583	41241	28041	8355	11000		
27-Dec-21	52	27041	24940	41491	28291	8105	11000		
03-Jan-22	1	29304	26817	41874	28674	7722	11000		
10-Jan-22	2	30021	27824	41733	28533	7863	11000		
17-Jan-22	3	30199	28002	42372	29172	7224	11000		
24-Jan-22	4	30136	27940	43012	29812	6584	11000		
31-Jan-22	5	31053	28896	42833	29633	6763	11000		
07-Feb-22	6	31542	29386	43448	30248	6148	11000		
14-Feb-22	7	31517	29361	43769	30569	5827	11000		
21-Feb-22	8	31330	29174	43813	30613	5783	11000		
28-Feb-22	9	31272	29375	43927	30727	5669	11000		
07-Mar-22	10	31598	29725	43557	30357	6039	11000		
14-Mar-22	11	31415	29492	43732	30532	5864	11000		
21-Mar-22	12	31216	29161	43261	30061	6335	11000		
28-Mar-22	13	31470	29415	44181	30981	5415	11000		
04-Apr-22	14	31793	30416	45188	31988	4408	11000		
11-Apr-22	15	32222	30845	44170	30970	5426	11000		
18-Apr-22	16	32476	31098	42945	29745	6651	11000		
25-Apr-22	17	32052	30674	43960	30360	6036	11000		
02-May-22	18	33091	31659	45897	32697	3699	11000		
09-May-22	19	33798	32367	45897	32697	3699	11000		
16-May-22	20	34173	32742	46872	33672	2724	11000		
23-May-22	21	34752	33321	46487	33287	3109	11000		
30-May-22	22	35718	34287	47127	33927	2469	11000		
06-Jun-22	23	34646	33256	46407	33207	3189	11000		
13-Jun-22	24	34034	32644	47258	34058	2338	11000		
20-Jun-22	25	34591	33201	47861	34461	1935	11000		

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): 11 000 MW

Reserves: OR + UA = 13 200 MW

Eskom Installed Capacity: 48 591 MW (Incl. non-comm.

Kusile units).

Installed Dispatchable Capacity: 49 596 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 - 2021 to 2025. (Published 30 October 2020).

<https://www.eskom.co.za/Whatweredoing/SupplyStatus/Documents/Medium%20Term%20System%20Adequacy%20Outlook%202020.pdf>

Renewable Energy Statistics

Note: Times are expressed as hour beginning

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	504.5	1,961.3	2,216.9	4,064.8
	Max Date	25-Nov-2020 12:00	20-Feb-2021 12:00	07-Jun-2021 12:00	10-Mar-2021 14:00
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	502.2	1,961.3	2,216.9	4,064.8
	Max Date	11-Mar-2021 15:00	20-Feb-2021 12:00	07-Jun-2021 12:00	10-Mar-2021 14:00

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	1,626,049	4,140,212	6,625,830	12,478,704
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	743,993	2,269,870	3,420,478	6,494,610

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	1,553
	Max Date	07-Jun-2021 to 08-Jun-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	1,553
	Max Date	07-Jun-2021 to 08-Jun-2021

Current Installed Capacity (MW)	
CSP	500.0
PV	2,211.1
Wind (Eskom+IPP)	2,612.7
Total (Incl other REs)	5,349.4