

Weekly System Status Report – 2021 Week 21 (24/05/2021 – 30/05/2021)

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.

Disclaimer

The Data published here is for information purposes only. The content is subject to verification and validation. Eskom shall not be held responsible for any errors or it being misleading or incomplete and accepts no liability whatsoever for any loss, damages or expenses, howsoever, incurred or suffered, resulting or arising, from the use of this Data or any reliance placed on it.

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 24/May/2021	32,202	726	32,167	31,602	1.9%	4.2%	1.8%
Tue 25/May/2021	32,153	725	31,937	32,281	-0.4%	1.8%	-1.1%
Wed 26/May/2021	32,032	725	32,134	32,013	0.1%	2.3%	0.4%
Thu 27/May/2021	33,104	726	31,581	30,836	7.4%	9.7%	2.4%
Fri 28/May/2021	32,428	504	30,242	29,439	10.2%	11.9%	2.7%
Sat 29/May/2021	29,633	593	29,018	28,601	3.6%	5.7%	1.5%
Sun 30/May/2021	30,021	724	30,160	29,924	0.3%	2.7%	0.8%

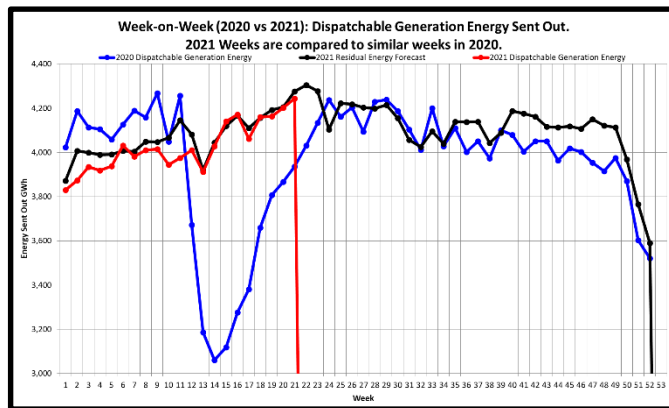
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 24/May/2021	33,420	726	33,412	32,820	1.8%	4.0%	1.8%
Tue 25/May/2021	32,892	725	33,159	33,019	-0.4%	1.8%	0.4%
Wed 26/May/2021	32,772	725	32,699	32,753	0.1%	2.3%	-0.2%
Thu 27/May/2021	34,778	726	33,174	32,510	7.0%	9.2%	2.0%
Fri 28/May/2021	33,892	504	31,838	30,903	9.7%	11.3%	3.0%
Sat 29/May/2021	31,109	593	30,434	30,077	3.4%	5.4%	1.2%
Sun 30/May/2021	30,904	724	31,056	30,807	0.3%	2.7%	0.8%

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) = 49 591 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

[2021 weeks compared to similar 2020 weeks]



Week 21 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	4,244	GWh
Week-on-Week Growth	7.80	%
Year-on-Year Growth (Year-to-Date) Annual	5.02	%

Note:

2021 Weeks are compared to similar weeks in 2020.

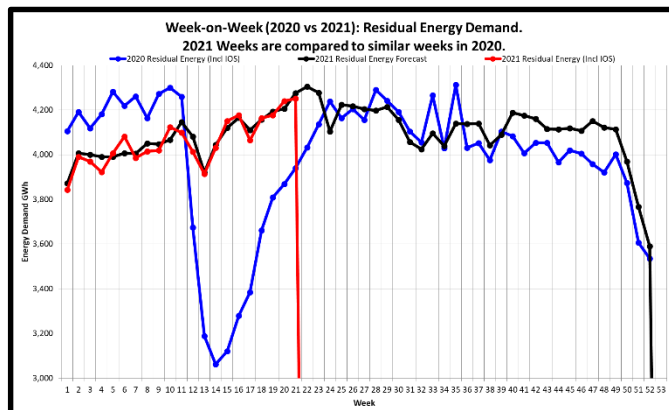
(2021 week 1 ~ 2020 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 30 May Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	93,419	226,721	GWh
2017	92,119	225,203	GWh
2018	91,315	224,202	GWh
2019	90,024	219,563	GWh
2020	82,551	206,725	GWh
2021 (YTD)	86,022		GWh

Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 21 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,251	GWh
Week-on-Week Growth	7.88	%
Year-on-Year Growth (Year-to-Date) Annual	4.79	%

Note:

2021 Weeks are compared to similar weeks in 2020.

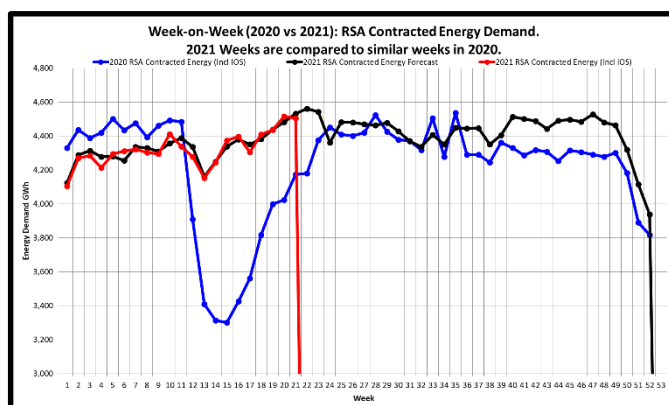
(2021 week 1 ~ 2020 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 30 May Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	93,465	226,808	GWh
2017	92,122	225,248	GWh
2018	91,375	224,594	GWh
2019	90,711	220,924	GWh
2020	83,416	208,151	GWh
2021 (YTD)	86,713		GWh

Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 21 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,507	GWh
Week-on-Week Growth	7.97	%
Year-on-Year Growth (Year-to-Date) Annual	5.85	%

Note:

2021 Weeks are compared to similar weeks in 2020.

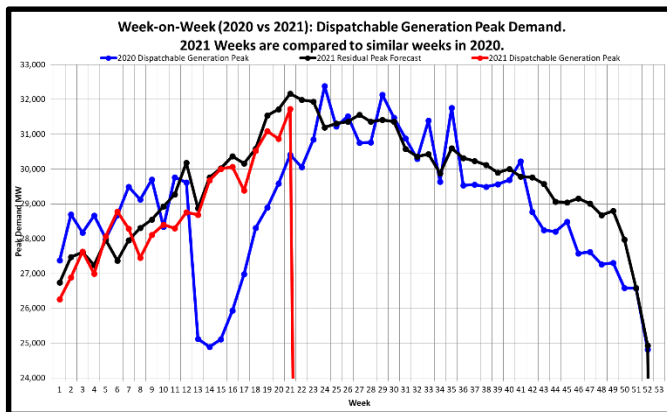
(2021 week 1 ~ 2020 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 30 May Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	97,764	238,069	GWh
2017	96,429	235,426	GWh
2018	95,659	235,482	GWh
2019	95,315	232,511	GWh
2020	87,996	220,630	GWh
2021 (YTD)	92,390		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 21 : Dispatchable Generation Peak Demand Statistics

Peak Demand	31,727	MW
Week-on-Week Growth	4.31	%
Year-on-Year Growth (Year-to-Date) Annual	4.31	%

Note:

2021 Weeks are compared to similar weeks in 2020.

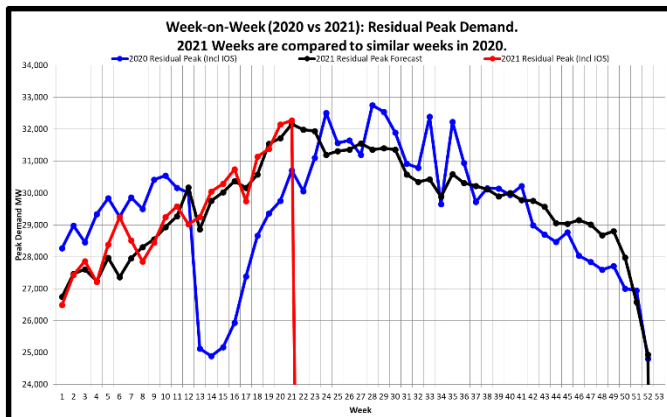
(2021 week 1 ~ 2020 week 1)

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 21 : Residual Peak Demand Statistics (Incl IOS)

Peak Demand	32,281	MW
Week-on-Week Growth	5.10	%
Year-on-Year Growth (Year-to-Date) Annual	5.10	%

Note:

2021 Weeks are compared to similar weeks in 2020.

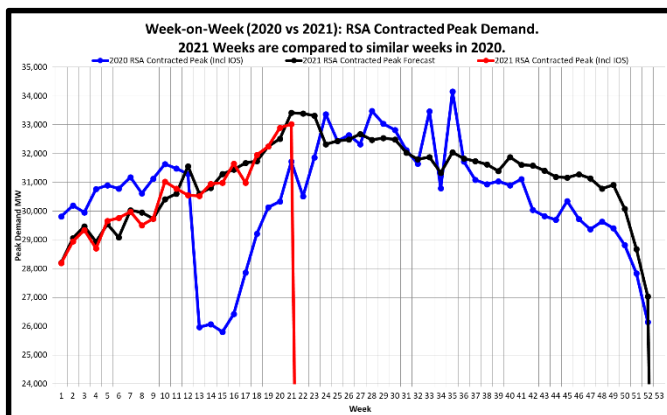
(2021 week 1 ~ 2020 week 1)

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 25-May-2021	32,281	MW

Week-on-Week RSA Contracted Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 21 : RSA Contracted Peak Demand Statistics (Incl IOS)

Peak Demand	33,019	MW
Week-on-Week Growth	4.08	%
Year-on-Year Growth (Year-to-Date) Annual	4.08	%

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 25-May-2021	33,019	MW

Weekly Generation Availability

	Week																Annual (Jan - Dec)	
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	YTD	2020		
Energy Availability Factor (Eskom EAF)	59.14	60.42	60.14	59.57	60.32	59.24	61.92	63.58	65.79	64.26	65.08	64.20	65.25	63.89	60.92	65.04		
Planned Outage Factor	13.42	15.10	14.52	14.56	12.17	12.58	11.62	11.88	10.07	11.40	9.01	9.45	7.50	6.82	11.79	11.24		
Unplanned Outage Factor	23.42	20.45	21.92	22.68	24.49	25.50	23.69	22.37	22.04	22.56	23.88	24.87	25.56	26.78	24.17	20.88		
Other Outage Factor	4.02	4.03	3.42	3.19	3.02	2.68	2.77	2.17	2.10	1.78	2.03	1.48	1.69	2.51	3.12	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)
31-May-21	22	33390	31991	46501	33301	3090	11000		
07-Jun-21	23	33320	31941	45453	32253	4138	11000		
14-Jun-21	24	32327	31197	44863	31663	4728	11000		
21-Jun-21	25	32441	31312	46685	33485	2906	11000		
28-Jun-21	26	32489	31359	45772	32572	3819	11000		
05-Jul-21	27	32683	31560	45579	32379	4012	11000		
12-Jul-21	28	32480	31357	46860	33660	2731	11000		
19-Jul-21	29	32535	31412	47191	33991	2400	11000		
26-Jul-21	30	32483	31360	46860	33660	2731	11000		
02-Aug-21	31	32024	30578	45500	32300	4091	11000		
09-Aug-21	32	31801	30355	45500	32300	4091	11000		
16-Aug-21	33	31876	30430	45238	32038	4353	11000		
23-Aug-21	34	31329	29883	44274	31074	5317	11000		
30-Aug-21	35	32040	30594	45149	31949	4442	11000		
06-Sep-21	36	31822	30317	45149	31949	4442	11000		
13-Sep-21	37	31733	30228	44759	31559	4832	11000		
20-Sep-21	38	31621	30117	45144	31944	4447	11000		
27-Sep-21	39	31399	29895	44554	31354	5037	11000		
04-Oct-21	40	31883	30007	43994	30794	5597	11000		
11-Oct-21	41	31607	29782	43774	30574	5817	11000		
18-Oct-21	42	31588	29763	43774	30574	5817	11000		
25-Oct-21	43	31400	29575	43427	30227	6164	11000		
01-Nov-21	44	31194	29066	43117	29917	6474	11000		
08-Nov-21	45	31167	29038	42889	29689	6702	11000		
15-Nov-21	46	31281	29153	44120	30920	5471	11000		
22-Nov-21	47	31139	29010	43505	30305	6086	11000		
29-Nov-21	48	30786	28674	42804	29604	6787	11000		
06-Dec-21	49	30908	28807	42827	29627	6764	11000		
13-Dec-21	50	30078	27977	41459	28259	8132	11000		
20-Dec-21	51	28684	26583	40604	27404	8987	11000		
27-Dec-21	52	27041	24940	41446	28246	8145	11000		
03-Jan-22	1	29304	26817	41961	28761	7630	11000		
10-Jan-22	2	30021	27824	41910	28710	7681	11000		
17-Jan-22	3	30199	28002	41579	28379	8012	11000		
24-Jan-22	4	30136	27940	43097	29897	6494	11000		
31-Jan-22	5	31053	28896	42918	29718	6673	11000		
07-Feb-22	6	31542	29386	43533	30333	6058	11000		
14-Feb-22	7	31517	29361	44054	30854	5537	11000		
21-Feb-22	8	31330	29174	44008	30808	5583	11000		
28-Feb-22	9	31272	29375	44122	30922	5469	11000		
07-Mar-22	10	31598	29725	43927	30727	5664	11000		
14-Mar-22	11	31415	29492	43927	30727	5664	11000		
21-Mar-22	12	31216	29161	43456	30256	6135	11000		
28-Mar-22	13	31470	29415	44176	30976	5415	11000		
04-Apr-22	14	31793	30416	45183	31983	4408	11000		
11-Apr-22	15	32222	30845	44165	30965	5426	11000		
18-Apr-22	16	32476	31098	42940	29740	6651	11000		
25-Apr-22	17	32052	30674	43555	30355	6036	11000		
02-May-22	18	33089	31659	45892	32692	3699	11000		
09-May-22	19	33796	32367	45892	32692	3699	11000		
16-May-22	20	34172	32742	46867	33667	2724	11000		
23-May-22	21	34750	33321	46482	33282	3109	11000		
30-May-22	22	35716	34287	47122	33922	2469	11000		
06-Jun-22	23	34646	33256	46402	33202	3189	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: 48 586 MW (Incl. non-comm. Kusile units).

Installed Dispatchable Capacity: 49 591 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	2,162.3	4,064.8
	Max Date	25-Nov-2020 12:00	20-Feb-2021 12:00	20-May-2021 17:00	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	2,162.3	4,064.8
	Max Date	11-Mar-2021 15:00	20-Feb-2021 12:00	20-May-2021 17:00	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
Maximum					
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	709,497	2,139,958	3,148,899	6,053,940

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	1,488
	Max Date	31-Aug-2020 to 01-Sep-2020
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	1,350
	Max Date	02-Jan-2021 to 03-Jan-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