

Weekly System Status Report – 2021 Week 30 (26/07/2021 – 01/08/2021)

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 26/Jul/2021	35,741	595	31,940	32,032	11.6%	13.4%	-0.3%
Tue 27/Jul/2021	35,295	724	31,793	31,767	11.1%	13.4%	0.1%
Wed 28/Jul/2021	34,525	505	32,146	32,199	7.2%	8.8%	-0.2%
Thu 29/Jul/2021	33,409	548	32,546	31,975	4.5%	6.2%	1.8%
Fri 30/Jul/2021	33,258	621	31,230	30,582	8.8%	10.8%	2.1%
Sat 31/Jul/2021	33,860	622	30,988	29,748	13.8%	15.9%	4.2%
Sun 01/Aug/2021	33,712	0	30,758	29,056	16.0%	16.0%	5.9%

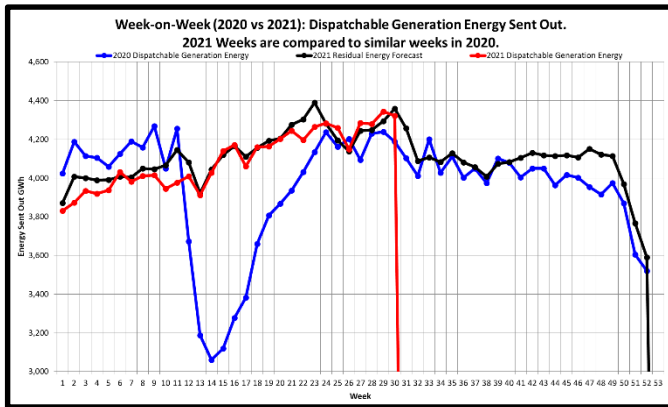
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 26/Jul/2021	37,298	595	33,504	33,589	11.0%	12.8%	-0.3%
Tue 27/Jul/2021	37,502	724	33,798	33,974	10.4%	12.5%	-0.5%
Wed 28/Jul/2021	35,707	505	33,673	33,380	7.0%	8.5%	0.9%
Thu 29/Jul/2021	34,475	548	33,681	32,955	4.6%	6.3%	2.2%
Fri 30/Jul/2021	35,905	623	31,875	31,138	15.3%	17.3%	2.4%
Sat 31/Jul/2021	34,581	622	31,724	30,469	13.5%	15.5%	4.1%
Sun 01/Aug/2021	35,559	0	32,289	30,903	15.1%	15.1%	4.5%

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) = 49 590 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 30 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	4,322	GWh
Week-on-Week Growth	3.21	%
Year-on-Year Growth (Year-to-Date) Annual	4.16	%

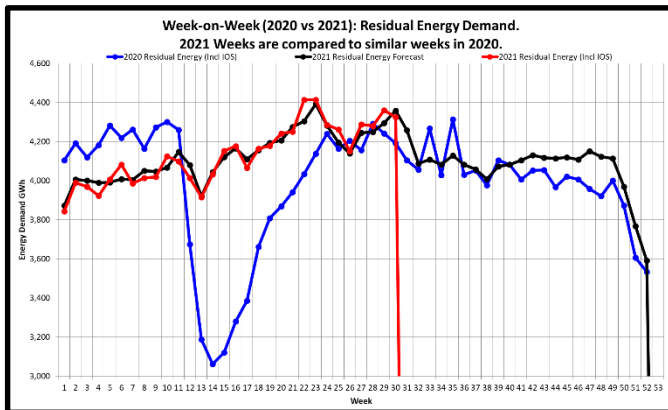
Note:

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 01 Aug Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	134,213	226,721	GWh
2017	132,400	225,203	GWh
2018	131,901	224,202	GWh
2019	129,742	219,563	GWh
2020	120,068	206,725	GWh
2021 (YTD)	124,407		GWh

Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 30 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,325	GWh
Week-on-Week Growth	3.20	%
Year-on-Year Growth (Year-to-Date) Annual	4.22	%

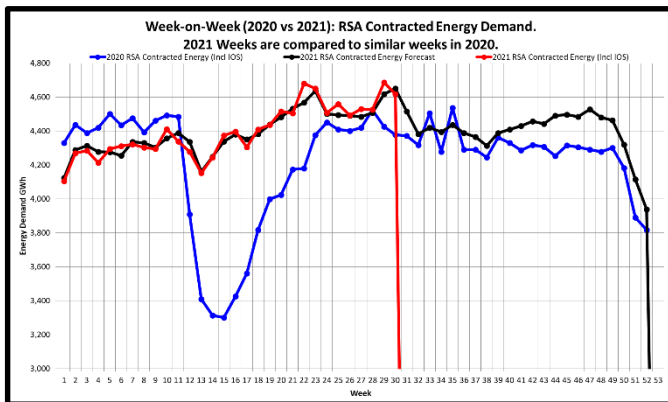
Note:

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 01 Aug Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	134,271	226,808	GWh
2017	132,409	225,248	GWh
2018	132,005	224,594	GWh
2019	130,454	220,924	GWh
2020	121,071	208,151	GWh
2021 (YTD)	125,491		GWh

Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 30 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,618	GWh
Week-on-Week Growth	5.47	%
Year-on-Year Growth (Year-to-Date) Annual	5.35	%

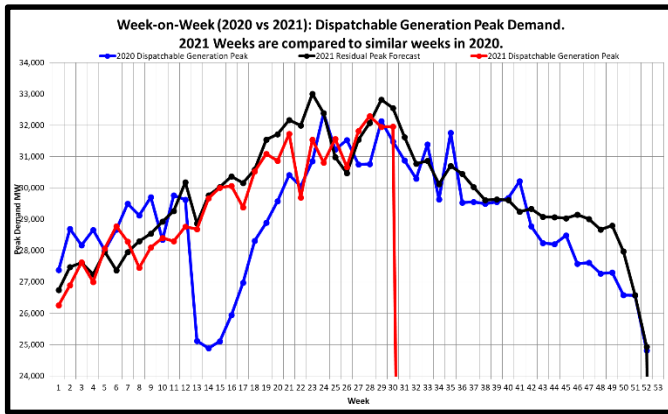
Note:

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 01 Aug Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	140,023	238,069	GWh
2017	138,171	235,426	GWh
2018	138,051	235,482	GWh
2019	136,962	232,511	GWh
2020	127,562	220,630	GWh
2021 (YTD)	133,653		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



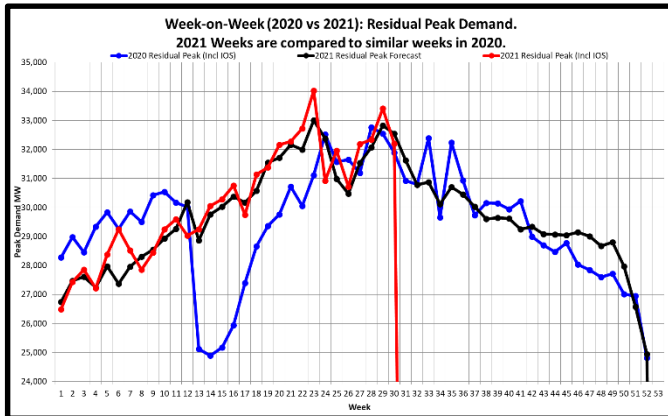
Week 30 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	31,964	MW
Week-on-Week Growth	1.54	%
Year-on-Year Growth (Year-to-Date) Annual	-0.28	%

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)	Thu 15-Jul-2021	32,292	MW

Week-on-Week Residual Peak Demand

[2021 weeks compared to similar 2020 weeks]



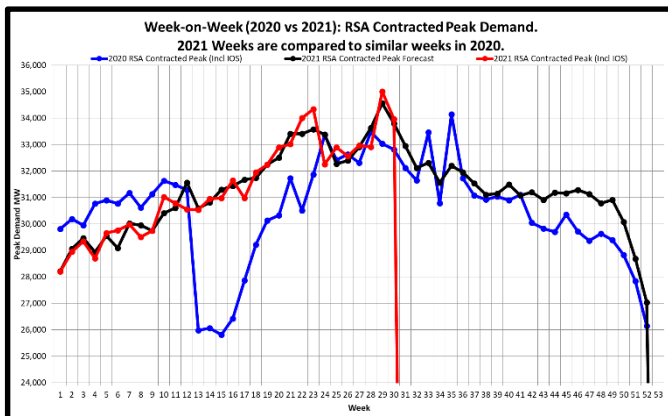
Week 30 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	32,199	MW
Week-on-Week Growth	0.96	%
Year-on-Year Growth (Year-to-Date) Annual	3.89	%

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	34,029	MW

Week-on-Week RSA Contracted Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 30 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	33,974	MW
Week-on-Week Growth	3.52	%
Year-on-Year Growth (Year-to-Date) Annual	4.56	%

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)	Thu 22-Jul-2021	35,006	MW

Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	YTD	2020
Energy Availability Factor (Eskom EAF)	64.15	64.80	63.92	64.94	63.53	64.37	65.08	66.65	67.89	68.72	67.51	68.54	67.27	68.38	62.78	65.04
Planned Outage Factor	10.55	7.53	7.95	6.04	5.72	5.39	3.72	6.66	7.54	8.70	8.87	7.50	5.90	7.59	10.15	11.24
Unplanned Outage Factor	22.64	24.06	25.06	25.73	27.04	28.05	28.85	24.74	22.79	20.27	21.04	21.52	24.60	21.71	23.99	20.88
Other Outage Factor	2.66	3.61	3.07	3.29	3.71	2.19	2.35	1.95	1.78	2.31	2.58	2.44	2.23	2.32	3.08	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)
02-Aug-21	31	32955	31625	46067	32867	3523	11000		
09-Aug-21	32	32122	30777	44870	31670	4720	11000		
16-Aug-21	33	32319	30873	44673	31473	4917	11000		
23-Aug-21	34	31567	30120	44185	30985	5405	11000		
30-Aug-21	35	32207	30703	44760	31560	4830	11000		
06-Sep-21	36	31960	30455	43931	30731	5659	11000		
13-Sep-21	37	31535	30031	44423	31223	5167	11000		
20-Sep-21	38	31114	29609	43593	30393	5997	11000		
27-Sep-21	39	31146	29641	43651	30451	5939	11000		
04-Oct-21	40	31490	29615	44019	30819	5571	11000		
11-Oct-21	41	31084	29243	43169	29969	6421	11000		
18-Oct-21	42	31210	29335	43924	30724	5666	11000		
25-Oct-21	43	30909	29084	43798	30598	5792	11000		
01-Nov-21	44	31194	29066	42961	29761	6629	11000		
08-Nov-21	45	31167	29038	42763	29563	6827	11000		
15-Nov-21	46	31281	29153	44531	31331	5059	11000		
22-Nov-21	47	31139	29010	44254	31054	5336	11000		
29-Nov-21	48	30786	28674	44342	31142	5248	11000		
06-Dec-21	49	30908	28807	44237	31037	5353	11000		
13-Dec-21	50	30078	27977	42719	29519	6871	11000		
20-Dec-21	51	28684	26583	42529	29329	7061	11000		
27-Dec-21	52	27041	24940	44074	30874	5516	11000		
03-Jan-22	1	29054	26537	43547	30347	6043	11000		
10-Jan-22	2	29675	27479	42162	28962	7428	11000		
17-Jan-22	3	30014	27818	42081	28881	7509	11000		
24-Jan-22	4	30149	27953	41933	28733	7657	11000		
31-Jan-22	5	30660	28504	43197	29997	6393	11000		
07-Feb-22	6	31070	28914	43230	30030	6360	11000		
14-Feb-22	7	31222	29066	43551	30351	6039	11000		
21-Feb-22	8	31028	28872	42418	29218	7172	11000		
28-Feb-22	9	31137	29264	42992	29792	6598	11000		
07-Mar-22	10	31398	29525	44197	30997	5393	11000		
14-Mar-22	11	31249	29375	43317	30117	6273	11000		
21-Mar-22	12	31216	29161	43648	30448	5942	11000		
28-Mar-22	13	31470	29415	43901	30701	5689	11000		
04-Apr-22	14	31552	30175	44580	31380	5010	11000		
11-Apr-22	15	31814	30437	44367	31167	5223	11000		
18-Apr-22	16	32020	30642	44502	31302	5088	11000		
25-Apr-22	17	32052	30674	44502	31302	5088	11000		
02-May-22	18	32553	31122	44981	31781	4609	11000		
09-May-22	19	33309	31878	45746	32546	3844	11000		
16-May-22	20	33997	32566	46676	33476	2914	11000		
23-May-22	21	33899	32468	46676	33476	2914	11000		
30-May-22	22	33359	33928	47144	33944	2446	11000		
06-Jun-22	23	34352	32786	45829	32629	3761	11000		
13-Jun-22	24	34186	32620	45960	32760	3630	11000		
20-Jun-22	25	34427	32861	45873	32673	3717	11000		
27-Jun-22	26	34450	32884	46168	32968	3422	11000		
04-Jul-22	27	34574	33000	46891	33691	2699	11000		
11-Jul-22	28	34644	33071	46183	32983	3407	11000		
18-Jul-22	29	35023	33450	46183	32983	3407	11000		
25-Jul-22	30	34323	32750	45708	32508	3882	11000		
01-Aug-22	31	33659	31924	45286	32086	4304	11000		
08-Aug-22	32	33208	31474	44602	31402	4988	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: 48 585 MW (Incl. non-comm. Kusile units).

Installed Dispatchable Capacity: 49 590 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	2,284.0	4,064.8
	Max Date	25-Nov-2020 12:00	20-Feb-2021 12:00	21-Jun-2021 13:00	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	2,284.0	4,064.8
	Max Date	11-Mar-2021 15:00	20-Feb-2021 12:00	21-Jun-2021 13:00	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
	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	893,004	2,859,689	4,705,501	8,534,392

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	1,721
	Max Date	24-Jun-2021 to 25-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	1,721
	Max Date	24-Jun-2021 to 25-Jun-2021

Current Installed Capacity (MW)	
CSP	500.0
PV	2,212.1
Wind (Eskom+IPP)	2,752.7
Total (Incl other REs)	5,490.4