

Weekly System Status Report – 2021 Week 27 (05/07/2021 – 11/07/2021)

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 05/Jul/2021	33,646	413	30,735	30,887	8.9%	10.3%	-0.5%
Tue 06/Jul/2021	34,698	727	31,538	32,182	7.8%	10.1%	-2.0%
Wed 07/Jul/2021	33,391	727	30,896	30,825	8.3%	10.7%	0.2%
Thu 08/Jul/2021	33,661	515	30,684	30,513	10.3%	12.0%	0.6%
Fri 09/Jul/2021	33,030	549	30,302	30,927	6.8%	8.6%	-2.0%
Sat 10/Jul/2021	33,198	726	29,246	30,729	8.0%	10.4%	-4.8%
Sun 11/Jul/2021	35,707	726	30,181	30,579	16.8%	19.1%	-1.3%

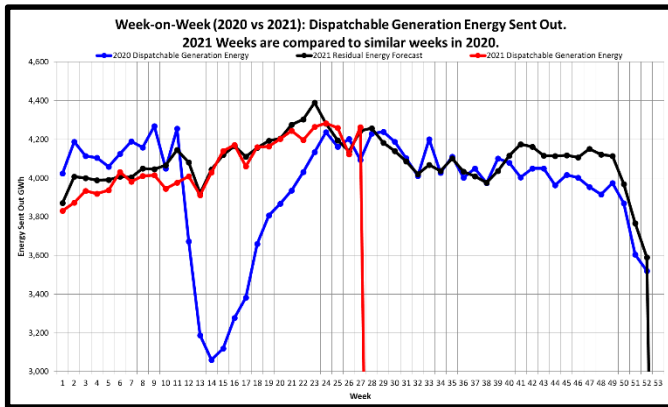
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 05/Jul/2021	34,361	413	31,599	31,602	8.7%	10.0%	0.0%
Tue 06/Jul/2021	35,479	727	32,251	32,963	7.6%	9.8%	-2.2%
Wed 07/Jul/2021	34,998	727	32,166	32,433	7.9%	10.2%	-0.8%
Thu 08/Jul/2021	35,845	515	32,906	32,696	9.6%	11.2%	0.6%
Fri 09/Jul/2021	33,574	549	31,114	31,471	6.7%	8.4%	-1.1%
Sat 10/Jul/2021	33,731	726	29,811	31,262	7.9%	10.2%	-4.6%
Sun 11/Jul/2021	36,633	726	31,247	31,506	16.3%	18.6%	-0.8%

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 27 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	4,264	GWh
Week-on-Week Growth	4.17	%
Year-on-Year Growth (Year-to-Date) Annual	4.34	%

Note:

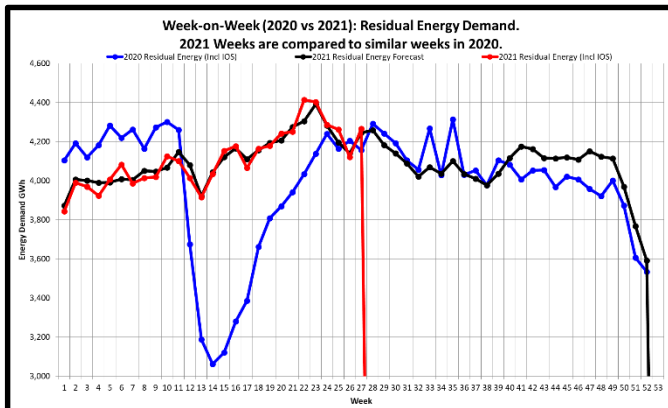
2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 11 Jul Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	120,577	226,721	GWh
2017	118,992	225,203	GWh
2018	118,475	224,202	GWh
2019	116,612	219,563	GWh
2020	107,400	206,725	GWh
2021 (YTD)	111,416		GWh

Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 27 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,266	GWh
Week-on-Week Growth	2.66	%
Year-on-Year Growth (Year-to-Date) Annual	4.44	%

Note:

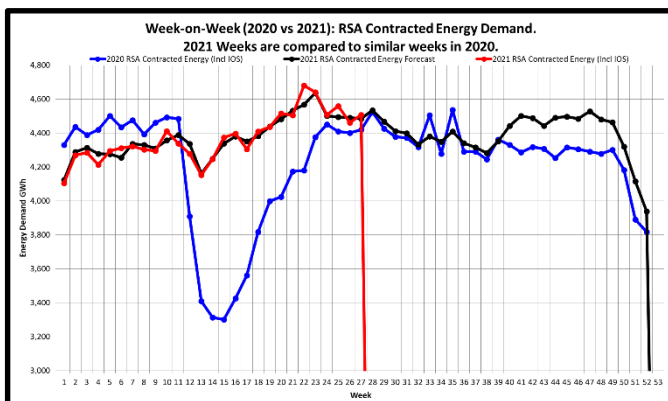
2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 11 Jul Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	120,631	226,808	GWh
2017	118,998	225,248	GWh
2018	118,569	224,594	GWh
2019	117,318	220,924	GWh
2020	108,311	208,151	GWh
2021 (YTD)	112,467		GWh

Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 27 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,509	GWh
Week-on-Week Growth	1.99	%
Year-on-Year Growth (Year-to-Date) Annual	5.48	%

Note:

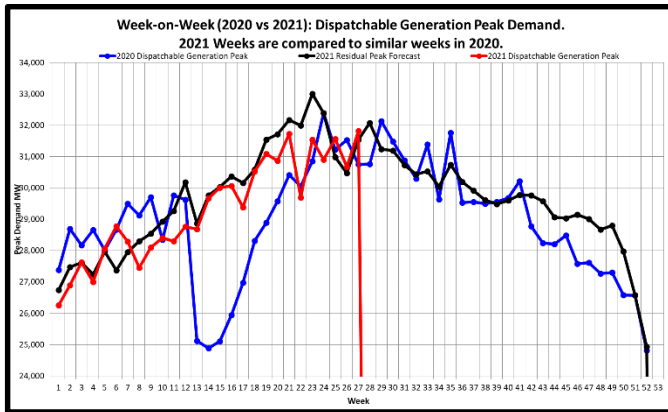
2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 11 Jul Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	125,876	238,069	GWh
2017	124,265	235,426	GWh
2018	124,006	235,482	GWh
2019	123,155	232,511	GWh
2020	114,191	220,630	GWh
2021 (YTD)	119,759		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



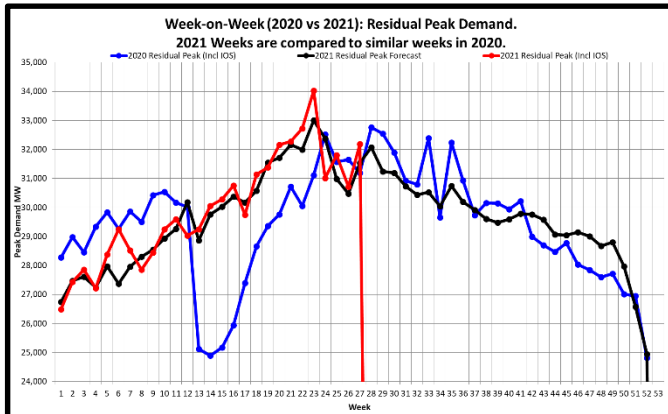
Week 27 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	31,818	MW
Week-on-Week Growth	3.47	%
Year-on-Year Growth (Year-to-Date) Annual	-1.75	%

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 06-Jul-2021	31,818	MW

Week-on-Week Residual Peak Demand

[2021 weeks compared to similar 2020 weeks]



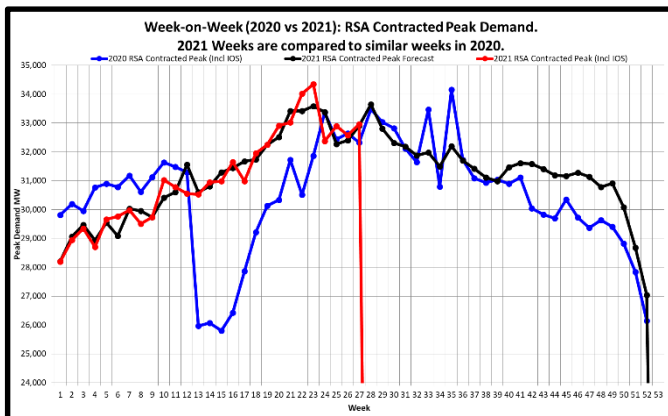
Week 27 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	32,182	MW
Week-on-Week Growth	3.16	%
Year-on-Year Growth (Year-to-Date) Annual	4.65	%

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 27 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	32,963	MW
Week-on-Week Growth	1.99	%
Year-on-Year Growth (Year-to-Date) Annual	2.94	%

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	34,343	MW

Weekly Generation Availability

	Week															Annual (Jan - Dec)	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	YTD	2020	
Energy Availability Factor (Eskom EAF)	61.92	63.59	65.76	64.14	64.80	63.95	64.96	63.62	64.38	65.10	66.66	67.90	68.73	67.55	62.21	65.04	
Planned Outage Factor	11.62	11.88	10.07	10.55	7.53	7.95	6.04	5.72	5.39	3.72	6.66	7.54	8.70	8.85	10.51	11.24	
Unplanned Outage Factor	23.69	22.36	22.07	22.65	24.06	25.03	25.71	26.96	28.04	28.84	24.74	22.78	20.26	21.03	24.11	20.88	
Other Outage Factor	2.77	2.17	2.10	2.66	3.61	3.07	3.29	3.70	2.19	2.34	1.94	1.78	2.31	2.57	3.17	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)
12-Jul-21	28	33642	32074	45841	32641	3755	11000		
19-Jul-21	29	32805	31242	46134	32934	3462	11000		
26-Jul-21	30	32315	31191	45342	32142	4254	11000		
02-Aug-21	31	32180	30734	45197	31997	4399	11000		
09-Aug-21	32	31880	30434	44723	31523	4873	11000		
16-Aug-21	33	31977	30531	45214	32014	4382	11000		
23-Aug-21	34	31492	30046	43728	30528	5868	11000		
30-Aug-21	35	32192	30746	45301	32101	4295	11000		
06-Sep-21	36	31703	30199	44002	30802	5594	11000		
13-Sep-21	37	31415	29910	44722	31522	4874	11000		
20-Sep-21	38	31114	29609	44532	31332	5064	11000		
27-Sep-21	39	30989	29485	44117	30917	5479	11000		
04-Oct-21	40	31472	29597	45190	31990	4406	11000		
11-Oct-21	41	31607	29782	43693	30493	5903	11000		
18-Oct-21	42	31588	29763	43690	30490	5906	11000		
25-Oct-21	43	31400	29575	43572	30372	6024	11000		
01-Nov-21	44	31194	29066	43442	30242	6154	11000		
08-Nov-21	45	31167	29038	43964	30764	5632	11000		
15-Nov-21	46	31281	29153	44930	31730	4666	11000		
22-Nov-21	47	31139	29010	43637	30437	5959	11000		
29-Nov-21	48	30786	28674	44203	31003	5393	11000		
06-Dec-21	49	30908	28807	44243	31043	5353	11000		
13-Dec-21	50	30078	27977	43152	29952	6444	11000		
20-Dec-21	51	28684	26583	43110	29910	6486	11000		
27-Dec-21	52	27041	24940	44080	30880	5516	11000		
03-Jan-22	1	29053	26537	43553	30353	6043	11000		
10-Jan-22	2	29675	27479	42168	28968	7428	11000		
17-Jan-22	3	30014	27818	42807	29607	6789	11000		
24-Jan-22	4	30149	27953	42659	29459	6937	11000		
31-Jan-22	5	30660	28504	43203	30003	6393	11000		
07-Feb-22	6	31070	28914	43236	30036	6360	11000		
14-Feb-22	7	31222	29066	43557	30357	6039	11000		
21-Feb-22	8	31028	28872	42899	29699	6697	11000		
28-Feb-22	9	31137	29264	43473	30273	6123	11000		
07-Mar-22	10	31398	29525	44203	31003	5393	11000		
14-Mar-22	11	31249	29375	43323	30123	6273	11000		
21-Mar-22	12	31216	29161	43654	30454	5942	11000		
28-Mar-22	13	31470	29415	43907	30707	5689	11000		
04-Apr-22	14	31552	30175	44586	31386	5010	11000		
11-Apr-22	15	31814	30437	44373	31173	5223	11000		
18-Apr-22	16	32020	30642	44508	31308	5088	11000		
25-Apr-22	17	32052	30674	44508	31308	5088	11000		
02-May-22	18	32553	31122	45662	32362	4034	11000		
09-May-22	19	33309	31878	45752	32552	3844	11000		
16-May-22	20	33997	32566	46682	33482	2914	11000		
23-May-22	21	33899	32468	46682	33482	2914	11000		
30-May-22	22	35359	33928	47150	33950	2446	11000		
06-Jun-22	23	34352	32786	45835	32635	3761	11000		
13-Jun-22	24	34186	32620	45966	32766	3630	11000		
20-Jun-22	25	34427	32861	46027	32827	3569	11000		
27-Jun-22	26	34450	32884	46174	32974	3422	11000		
04-Jul-22	27	34404	33000	46897	33697	2699	11000		
11-Jul-22	28	34474	33071	46189	32989	3407	11000		
18-Jul-22	29	34853	33450	46189	32989	3407	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	2,284.0	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	832,153	2,594,784	4,192,699	7,688,629

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	2,211.1
Wind (Eskom+IPP)	2,612.7
Total (Incl other REs)	5,349.4