

Weekly System Status Report – 2021 Week 28 (12/07/2021 – 18/07/2021)

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 12/Jul/2021	34,613	412	30,483	29,602	16.9%	18.3%	3.0%
Tue 13/Jul/2021	35,595	725	32,074	31,376	13.4%	15.8%	2.2%
Wed 14/Jul/2021	33,954	505	31,886	32,135	5.7%	7.2%	-0.8%
Thu 15/Jul/2021	34,317	726	31,719	32,345	6.1%	8.3%	-1.9%
Fri 16/Jul/2021	34,631	645	30,610	31,451	10.1%	12.2%	-2.7%
Sat 17/Jul/2021	32,974	548	30,548	31,100	6.0%	7.8%	-1.8%
Sun 18/Jul/2021	32,522	550	30,374	30,583	6.3%	8.1%	-0.7%

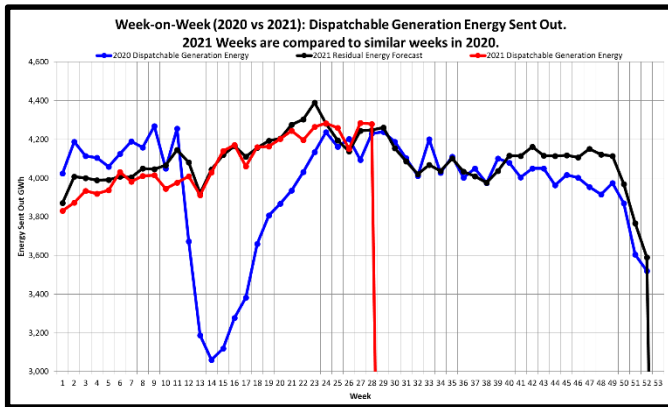
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 12/Jul/2021	36,906	412	32,687	31,896	15.7%	17.0%	2.5%
Tue 13/Jul/2021	36,675	725	33,642	32,456	13.0%	15.2%	3.7%
Wed 14/Jul/2021	34,565	505	32,672	32,747	5.6%	7.1%	-0.2%
Thu 15/Jul/2021	34,889	726	32,405	32,917	6.0%	8.2%	-1.6%
Fri 16/Jul/2021	35,447	645	31,324	32,267	9.9%	11.9%	-2.9%
Sat 17/Jul/2021	33,616	548	31,133	31,742	5.9%	7.6%	-1.9%
Sun 18/Jul/2021	33,494	550	31,282	31,555	6.1%	7.9%	-0.9%

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 28 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	4,279	GWh
Week-on-Week Growth	1.16	%
Year-on-Year Growth (Year-to-Date) Annual	4.26	%

Note:

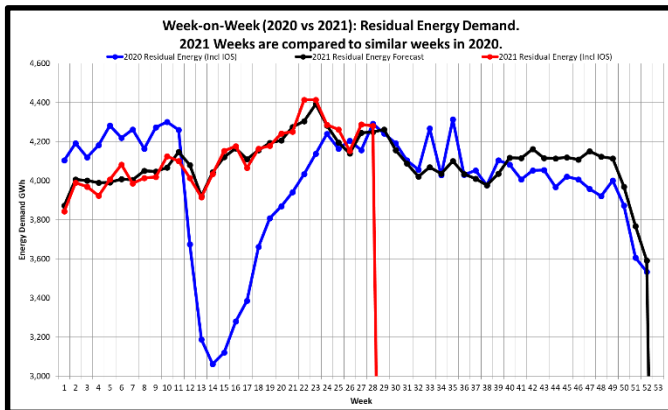
2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 18 Jul Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	125,122	226,721	GWh
2017	123,466	225,203	GWh
2018	123,012	224,202	GWh
2019	121,033	219,563	GWh
2020	111,602	206,725	GWh
2021 (YTD)	115,743		GWh

Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 28 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,281	GWh
Week-on-Week Growth	-0.24	%
Year-on-Year Growth (Year-to-Date) Annual	4.31	%

Note:

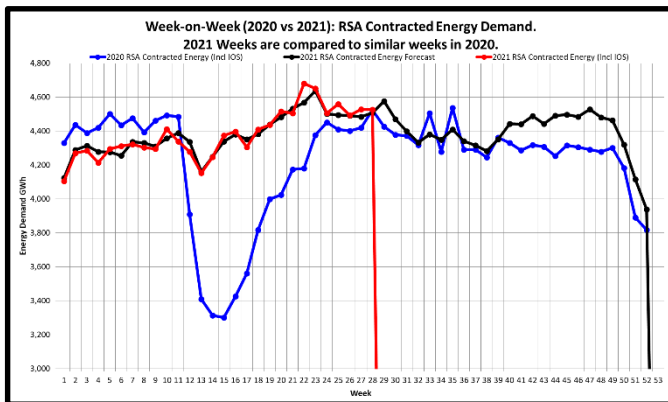
2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 18 Jul Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	125,178	226,808	GWh
2017	123,473	225,248	GWh
2018	123,109	224,594	GWh
2019	121,741	220,924	GWh
2020	112,599	208,151	GWh
2021 (YTD)	116,809		GWh

Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 28 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,527	GWh
Week-on-Week Growth	0.05	%
Year-on-Year Growth (Year-to-Date) Annual	5.32	%

Note:

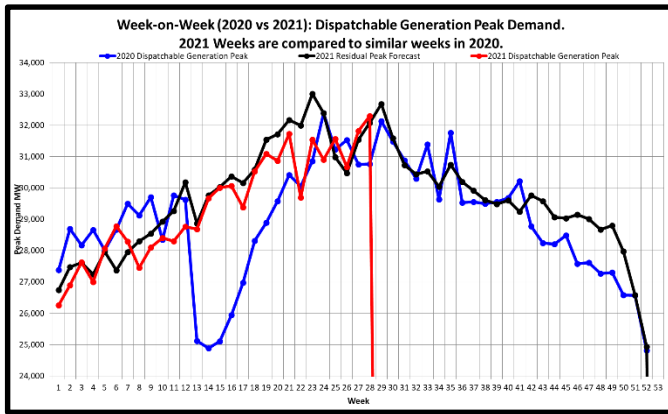
2021 Weeks are compared to similar weeks in 2020.
(2021 week 1 ~ 2020 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 18 Jul Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	130,586	238,069	GWh
2017	128,896	235,426	GWh
2018	128,750	235,482	GWh
2019	127,748	232,511	GWh
2020	118,730	220,630	GWh
2021 (YTD)	124,348		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



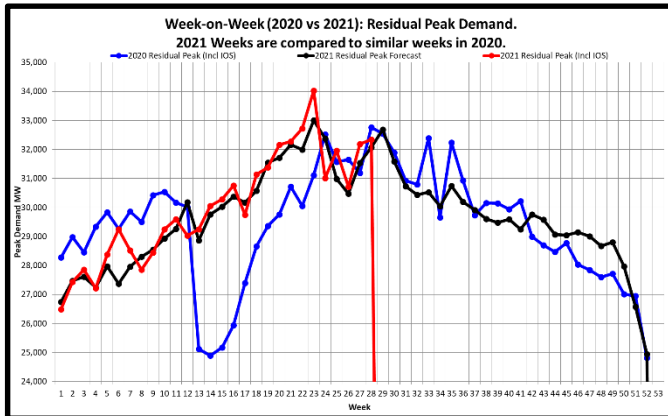
Week 28 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	32,292	MW
Week-on-Week Growth	4.96	%
Year-on-Year Growth (Year-to-Date) Annual	-0.28	%

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]



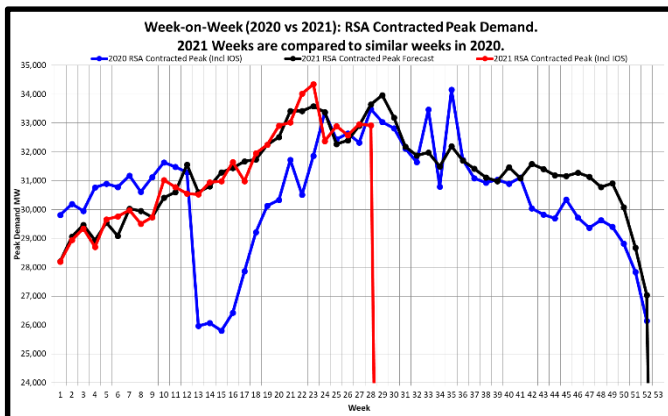
Week 28 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	32,345	MW
Week-on-Week Growth	-1.25	%
Year-on-Year Growth (Year-to-Date) Annual	3.89	%

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 28 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	32,917	MW
Week-on-Week Growth	-1.68	%
Year-on-Year Growth (Year-to-Date) Annual	2.59	%

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	34,347	MW

Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	YTD	2020
Energy Availability Factor (Eskom EAF)	63.57	65.76	64.14	64.80	63.92	64.96	63.61	64.37	65.10	66.67	67.90	68.72	67.52	68.55	62.40	65.04
Planned Outage Factor	11.88	10.07	10.55	7.53	7.95	6.04	5.72	5.39	3.72	6.66	7.54	8.70	8.87	7.50	10.39	11.24
Unplanned Outage Factor	22.38	22.07	22.65	24.06	25.06	25.71	26.97	28.05	28.84	24.73	22.78	20.27	21.04	21.52	24.07	20.88
Other Outage Factor	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	2.43	3.14	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)
19-Jul-21	29	33969	32679	45782	32582	3814	11000		
26-Jul-21	30	33184	31588	45345	32145	4251	11000		
02-Aug-21	31	32180	30734	45490	32290	4106	11000		
09-Aug-21	32	31880	30434	45295	32095	4301	11000		
16-Aug-21	33	31977	30531	44596	31396	5000	11000		
23-Aug-21	34	31492	30046	44448	31248	5148	11000		
30-Aug-21	35	32192	30746	45409	32209	4187	11000		
06-Sep-21	36	31703	30199	44577	31377	5019	11000		
13-Sep-21	37	31415	29910	44429	31229	5167	11000		
20-Sep-21	38	31114	29609	43664	30464	5932	11000		
27-Sep-21	39	30989	29485	43545	30345	6051	11000		
04-Oct-21	40	31472	29597	44470	31270	5126	11000		
11-Oct-21	41	31084	29243	44470	31270	5126	11000		
18-Oct-21	42	31588	29763	44410	31210	5186	11000		
25-Oct-21	43	31400	29575	43564	30364	6032	11000		
01-Nov-21	44	31194	29066	43442	30242	6154	11000		
08-Nov-21	45	31167	29038	43244	30044	6352	11000		
15-Nov-21	46	31281	29153	44782	31582	4814	11000		
22-Nov-21	47	31139	29010	44505	31305	5091	11000		
29-Nov-21	48	30786	28674	44348	31148	5248	11000		
06-Dec-21	49	30908	28807	44243	31043	5353	11000		
13-Dec-21	50	30078	27977	42725	29525	6871	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	29054	26537	43553	30353	6043	11000		
10-Jan-22	2	29675	27479	42168	28968	7428	11000		
17-Jan-22	3	30014	27818	42087	28887	7509	11000		
24-Jan-22	4	30149	27953	41939	28739	7657	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	44987	31787	4609	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	45879	32679	3717	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		
25-Jul-22	30	34153	32750	45714	32514	3882	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	840,272	2,679,121	4,418,344	8,009,129

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