

Weekly System Status Report – 2021 Week 34 (23/08/2021 – 29/08/2021)

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 23/Aug/2021	33,946	0	30,492	30,761	10.4%	10.4%	-0.9%
Tue 24/Aug/2021	33,129	0	30,362	30,325	9.2%	9.2%	0.1%
Wed 25/Aug/2021	32,878	0	30,481	29,157	12.8%	12.8%	4.5%
Thu 26/Aug/2021	33,219	0	29,674	28,865	15.1%	15.1%	2.8%
Fri 27/Aug/2021	33,247	0	27,490	26,819	24.0%	24.0%	2.5%
Sat 28/Aug/2021	33,730	0	29,025	29,663	13.7%	13.7%	-2.2%
Sun 29/Aug/2021	33,984	0	28,876	30,136	12.8%	12.8%	-4.2%

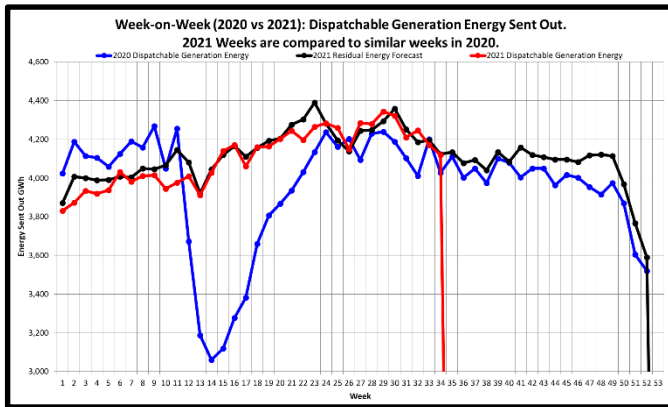
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 23/Aug/2021	34,484	0	31,531	31,299	10.2%	10.2%	0.7%
Tue 24/Aug/2021	33,763	0	31,490	30,959	9.1%	9.1%	1.7%
Wed 25/Aug/2021	33,807	0	31,531	30,086	12.4%	12.4%	4.8%
Thu 26/Aug/2021	35,234	0	31,393	30,618	15.1%	15.1%	2.5%
Fri 27/Aug/2021	36,861	0	29,426	29,431	25.2%	25.2%	0.0%
Sat 28/Aug/2021	34,973	0	30,340	30,907	13.2%	13.2%	-1.8%
Sun 29/Aug/2021	34,831	0	29,829	30,984	12.4%	12.4%	-3.7%

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 34 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	4,120	GWh
Week-on-Week Growth	2.26	%
Year-on-Year Growth (Year-to-Date) Annual	3.95	%

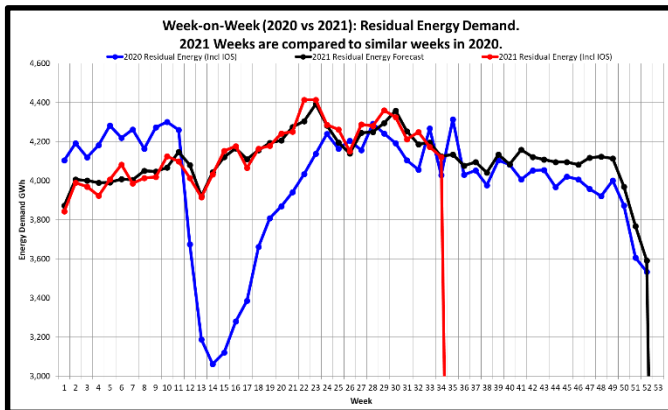
Note:

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 29 Aug Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	151,647	226,721	GWh
2017	149,921	225,203	GWh
2018	149,329	224,202	GWh
2019	146,409	219,563	GWh
2020	136,378	206,725	GWh
2021 (YTD)	141,155		GWh

Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 34 : Residual Energy Demand Statistics (Incl IOS)		
Energy Demand	4,121	GWh
Week-on-Week Growth	2.28	%
Year-on-Year Growth (Year-to-Date) Annual	3.93	%

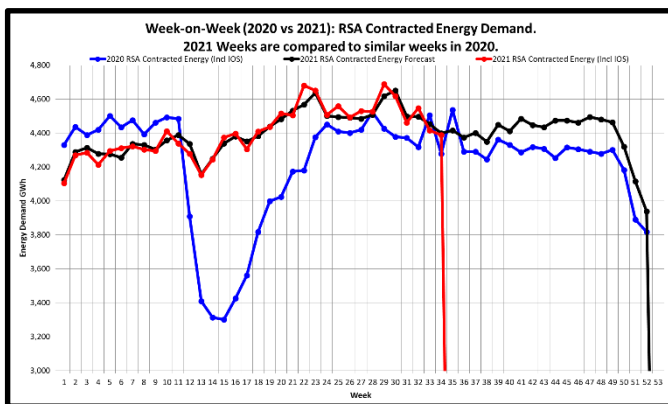
Note:

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 29 Aug Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	151,707	226,808	GWh
2017	149,938	225,248	GWh
2018	149,449	224,594	GWh
2019	147,127	220,924	GWh
2020	137,492	208,151	GWh
2021 (YTD)	142,245		GWh

Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 34 : RSA Contracted Energy Demand Statistics (Incl IOS)		
Energy Demand	4,390	GWh
Week-on-Week Growth	2.60	%
Year-on-Year Growth (Year-to-Date) Annual	4.93	%

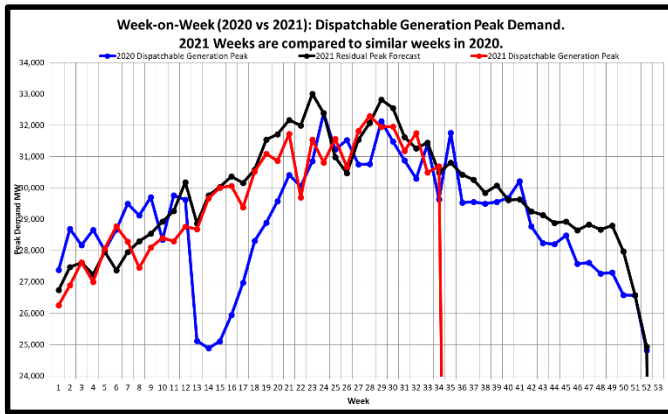
Note:

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 29 Aug Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	158,194	238,069	GWh
2017	156,422	235,426	GWh
2018	156,257	235,482	GWh
2019	154,422	232,511	GWh
2020	145,012	220,630	GWh
2021 (YTD)	151,469		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



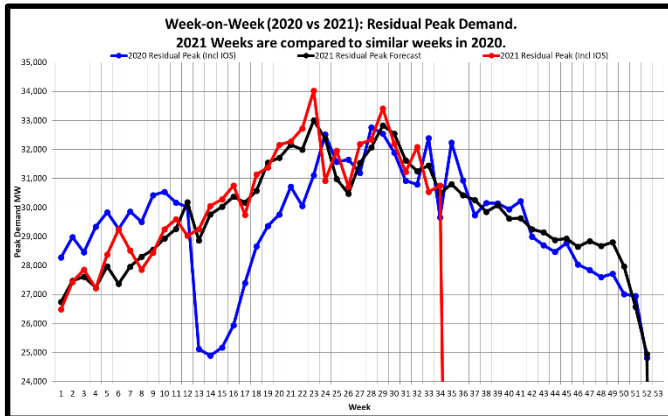
Week 34 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	30,689	MW
Week-on-Week Growth	3.56	%
Year-on-Year Growth (Year-to-Date) Annual	-0.28	%

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]



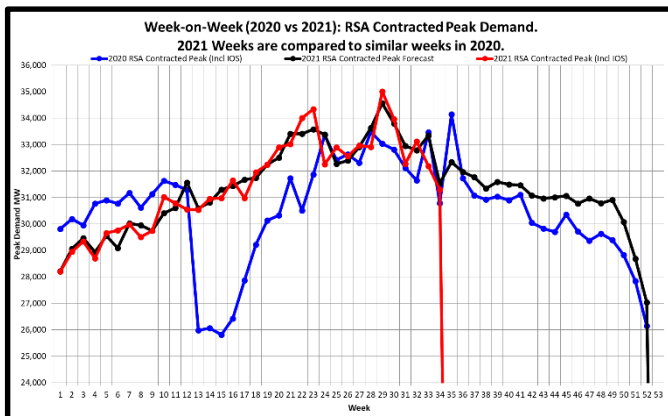
Week 34 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	30,761	MW
Week-on-Week Growth	3.74	%
Year-on-Year Growth (Year-to-Date) Annual	3.89	%

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 34 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	31,299	MW
Week-on-Week Growth	1.65	%
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	35,005	MW

Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	YTD	2020
Energy Availability Factor (Eskom EAF)	63.53	64.37	65.09	66.65	67.89	68.52	67.17	68.25	66.90	68.18	70.07	65.04	65.60	65.44	63.14	65.04
Planned Outage Factor	5.72	5.39	3.72	6.66	7.54	8.76	8.94	7.53	5.95	7.59	9.50	11.79	9.69	12.74	10.28	11.24
Unplanned Outage Factor	27.04	28.04	28.84	24.74	22.79	20.41	21.30	21.74	24.85	21.85	18.33	20.82	22.38	19.31	23.58	20.88
Other Outage Factor	3.71	2.20	2.35	1.95	1.78	2.31	2.59	2.48	2.30	2.38	2.10	2.35	2.33	2.51	3.00	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)
30-Aug-21	35	32347	30806	43487	30287	6103	11000		
06-Sep-21	36	31975	30423	44196	30996	5394	11000		
13-Sep-21	37	31769	30264	43513	29313	6077	12000		
20-Sep-21	38	31348	29844	43276	29076	6314	12000		
27-Sep-21	39	31587	30083	43951	29751	5639	12000		
04-Oct-21	40	31490	29615	43596	29396	5994	12000		
11-Oct-21	41	31463	29638	43596	29396	5994	12000		
18-Oct-21	42	31078	29253	42921	28721	6669	12000		
25-Oct-21	43	30965	29140	42893	28693	6697	12000		
01-Nov-21	44	31007	28879	43806	29606	5784	12000		
08-Nov-21	45	31060	28932	43648	29448	5942	12000		
15-Nov-21	46	30776	28647	43031	28831	6559	12000		
22-Nov-21	47	30962	28834	43139	28939	6451	12000		
29-Nov-21	48	30786	28674	43327	29127	6263	12000		
06-Dec-21	49	30908	28807	43307	29107	6283	12000		
13-Dec-21	50	30078	27977	42364	28164	7226	12000		
20-Dec-21	51	28684	26583	42559	28359	7031	12000		
27-Dec-21	52	27041	24940	43529	29329	6061	12000		
03-Jan-22	1	29054	26537	42152	27952	7438	12000		
10-Jan-22	2	29675	27479	41617	27417	7973	12000		
17-Jan-22	3	30014	27818	41536	27336	8054	12000		
24-Jan-22	4	30149	27953	41388	27188	8202	12000		
31-Jan-22	5	30660	28504	42652	28452	6938	12000		
07-Feb-22	6	31070	28914	42875	28675	6715	12000		
14-Feb-22	7	31222	29066	43836	29636	5754	12000		
21-Feb-22	8	31028	28872	43372	29172	6218	12000		
28-Feb-22	9	31137	29264	42637	28437	6953	12000		
07-Mar-22	10	31398	29525	43667	29467	5923	12000		
14-Mar-22	11	31249	29375	43697	29497	5893	12000		
21-Mar-22	12	31216	29161	44028	29828	5562	12000		
28-Mar-22	13	31470	29415	44281	30081	5309	12000		
04-Apr-22	14	31552	30175	43875	29675	5715	12000		
11-Apr-22	15	31814	30437	43662	30462	5928	11000		
18-Apr-22	16	32020	30642	43797	30597	5793	11000		
25-Apr-22	17	32052	30674	43797	30597	5793	11000		
02-May-22	18	32553	31122	44182	30982	5408	11000		
09-May-22	19	33309	31878	44851	31651	4739	11000		
16-May-22	20	33997	32566	45781	32581	3809	11000		
23-May-22	21	33899	32468	45781	32581	3809	11000		
30-May-22	22	35359	33928	46249	33049	3341	11000		
06-Jun-22	23	34352	32786	45124	31924	4466	11000		
13-Jun-22	24	34186	32620	45255	32055	4335	11000		
20-Jun-22	25	34427	32861	45168	31968	4422	11000		
27-Jun-22	26	34450	32884	45463	32263	4127	11000		
04-Jul-22	27	34574	33000	46361	33161	3229	11000		
11-Jul-22	28	34644	33071	45653	32453	3937	11000		
18-Jul-22	29	35023	33450	45463	32263	4127	11000		
25-Jul-22	30	34323	32750	44988	31788	4602	11000		
01-Aug-22	31	33469	31924	44376	31176	5214	11000		
08-Aug-22	32	33018	31474	43692	30492	5898	11000		
15-Aug-22	33	33191	31647	44429	31229	5161	11000		
22-Aug-22	34	32840	31323	44429	31229	5161	11000		
29-Aug-22	35	32383	30878	44401	31201	5189	11000		
05-Sep-22	36	32427	30641	43961	30761	5629	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 (12000 MW from September the end March)

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).

Medupi Unit 4 capacity of 720MW has been removed from the capacity planning models by including it in the committed PCLF (although it is UCLF).

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	946,071	3,112,773	5,189,226	9,330,317

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	1,743
	Max Date	07-Aug-2021 to 08-Aug-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	1,743
	Max Date	07-Aug-2021 to 08-Aug-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