

## Weekly System Status Report – 2021 Week 33 (16/08/2021 – 22/08/2021)

### 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 16/Aug/2021	34,081	0	31,450	30,275	12.6%	12.6%	3.9%
Tue 17/Aug/2021	34,229	0	30,614	30,531	12.1%	12.1%	0.3%
Wed 18/Aug/2021	33,787	0	30,532	30,338	11.4%	11.4%	0.6%
Thu 19/Aug/2021	32,507	0	31,014	30,317	7.2%	7.2%	2.3%
Fri 20/Aug/2021	33,644	0	29,260	28,981	16.1%	16.1%	1.0%
Sat 21/Aug/2021	33,944	0	28,350	28,203	20.4%	20.4%	0.5%
Sun 22/Aug/2021	32,477	0	28,640	29,011	11.9%	11.9%	-1.3%

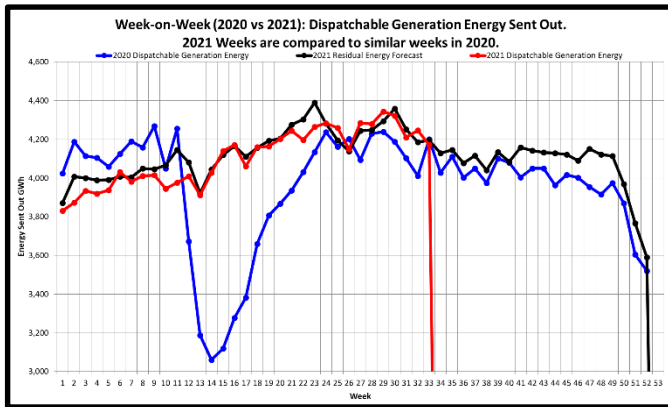
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 16/Aug/2021	35,985	0	33,343	32,179	11.8%	11.8%	3.6%
Tue 17/Aug/2021	35,842	0	32,320	32,144	11.5%	11.5%	0.5%
Wed 18/Aug/2021	34,944	0	31,906	31,495	11.0%	11.0%	1.3%
Thu 19/Aug/2021	33,579	0	31,947	31,389	7.0%	7.0%	1.8%
Fri 20/Aug/2021	34,822	0	30,374	30,159	15.5%	15.5%	0.7%
Sat 21/Aug/2021	35,183	0	29,730	29,443	19.5%	19.5%	1.0%
Sun 22/Aug/2021	33,085	0	29,514	29,618	11.7%	11.7%	-0.4%

### 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]



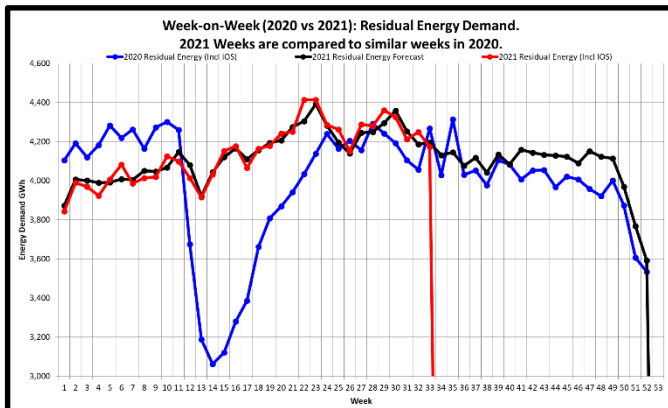
Week 33 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	4,171	GWh
Week-on-Week Growth	-0.69	%
Year-on-Year Growth (Year-to-Date) Annual	4.01	%

**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 22 Aug Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	147,368	226,721	GWh
2017	145,565	225,203	GWh
2018	145,021	224,202	GWh
2019	142,279	219,563	GWh
2020	132,370	206,725	GWh
2021 (YTD)	137,036		GWh

## Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



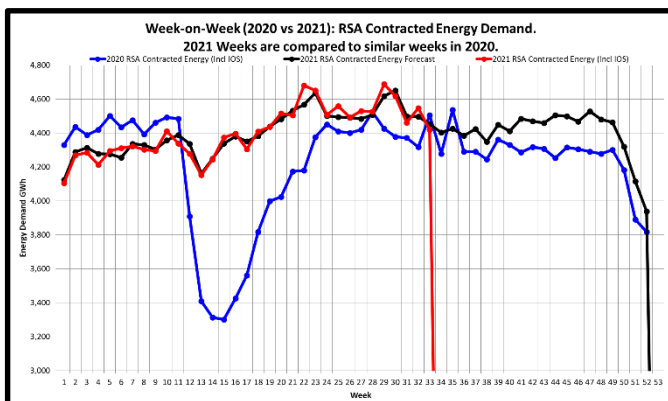
Week 33 : Residual Energy Demand Statistics (Incl IOS)		
Energy Demand	4,173	GWh
Week-on-Week Growth	-2.20	%
Year-on-Year Growth (Year-to-Date) Annual	3.98	%

**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 22 Aug Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	147,428	226,808	GWh
2017	145,581	225,248	GWh
2018	145,136	224,594	GWh
2019	142,996	220,924	GWh
2020	133,483	208,151	GWh
2021 (YTD)	138,125		GWh

## Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



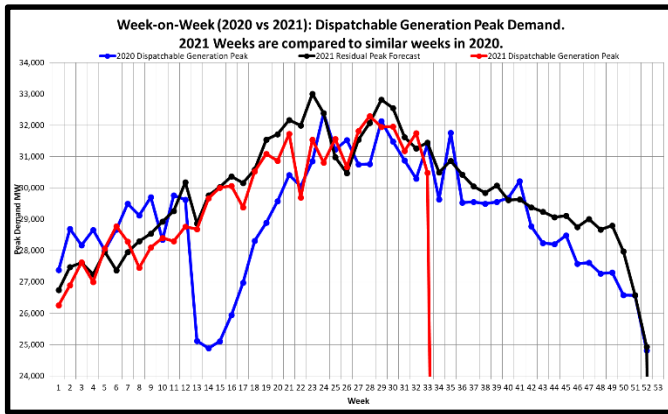
Week 33 : RSA Contracted Energy Demand Statistics (Incl IOS)		
Energy Demand	4,420	GWh
Week-on-Week Growth	-1.92	%
Year-on-Year Growth (Year-to-Date) Annual	5.01	%

**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 22 Aug Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	153,713	238,069	GWh
2017	151,865	235,426	GWh
2018	151,728	235,482	GWh
2019	150,089	232,511	GWh
2020	140,748	220,630	GWh
2021 (YTD)	147,084		GWh

### Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



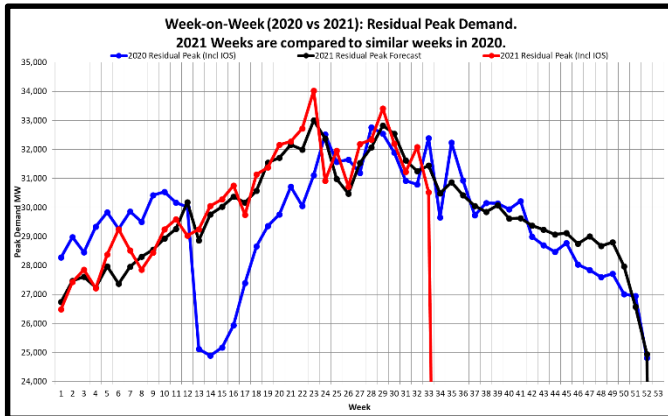
Week 33 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	30,482	MW
Week-on-Week Growth	-2.89	%
Year-on-Year Growth (Year-to-Date) Annual	-0.28	%

**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]



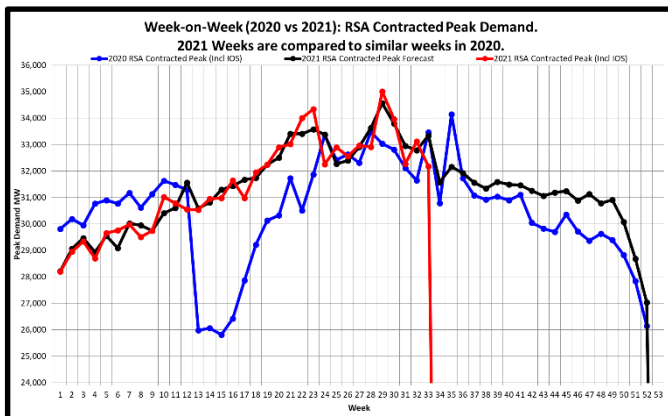
Week 33 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	30,531	MW
Week-on-Week Growth	-5.75	%
Year-on-Year Growth (Year-to-Date) Annual	3.89	%

**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 33 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	32,179	MW
Week-on-Week Growth	-3.85	%
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)	
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	YTD	2020
Energy Availability Factor (Eskom EAF)	64.95	63.53	64.37	65.09	66.65	67.89	68.53	67.17	68.25	66.90	68.18	70.07	65.04	65.60	63.05	65.04
Planned Outage Factor	6.04	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	10.22	11.24
Unplanned Outage Factor	25.72	27.04	28.04	28.84	24.74	22.79	20.40	21.30	21.74	24.85	21.85	18.33	20.82	22.38	23.71	20.88
Other Outage Factor	3.29	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	3.02	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)
23-Aug-21	34	31580	30492	42586	29386	7004	11000		
30-Aug-21	35	32157	30874	44575	31375	5015	11000		
06-Sep-21	36	31928	30423	43276	29076	6314	12000		
13-Sep-21	37	31559	30055	43573	29373	6017	12000		
20-Sep-21	38	31348	29844	43276	29076	6314	12000		
27-Sep-21	39	31587	30083	43571	29371	6019	12000		
04-Oct-21	40	31490	29615	43216	29016	6374	12000		
11-Oct-21	41	31463	29638	43216	29016	6374	12000		
18-Oct-21	42	31254	29379	42484	28284	7106	12000		
25-Oct-21	43	31064	29239	42513	28313	7077	12000		
01-Nov-21	44	31195	29067	44086	29886	5504	12000		
08-Nov-21	45	31247	29118	43268	29068	6322	12000		
15-Nov-21	46	30881	28752	43226	29026	6364	12000		
22-Nov-21	47	31139	29010	42949	28749	6641	12000		
29-Nov-21	48	30786	28674	43622	29422	5968	12000		
06-Dec-21	49	30908	28807	42942	28742	6648	12000		
13-Dec-21	50	30078	27977	41999	27799	7591	12000		
20-Dec-21	51	28684	26583	42384	28184	7206	12000		
27-Dec-21	52	27041	24940	43354	29154	6236	12000		
03-Jan-22	1	29054	26537	42827	28627	6763	12000		
10-Jan-22	2	29675	27479	41442	27242	8148	12000		
17-Jan-22	3	30014	27818	41361	27161	8229	12000		
24-Jan-22	4	30149	27953	41361	27161	8229	12000		
31-Jan-22	5	30660	28504	42477	28277	7113	12000		
07-Feb-22	6	31070	28914	42510	28310	7080	12000		
14-Feb-22	7	31222	29066	43471	29271	6119	12000		
21-Feb-22	8	31028	28872	43007	28807	6583	12000		
28-Feb-22	9	31137	29264	42272	28072	7318	12000		
07-Mar-22	10	31398	29525	43477	29277	6113	12000		
14-Mar-22	11	31249	29375	43317	29117	6273	12000		
21-Mar-22	12	31216	29161	43648	29448	5942	12000		
28-Mar-22	13	31470	29415	43901	29701	5689	12000		
04-Apr-22	14	31552	30175	43860	30660	5730	11000		
11-Apr-22	15	31814	30437	43647	30447	5943	11000		
18-Apr-22	16	32020	30642	43782	30582	5808	11000		
25-Apr-22	17	32052	30674	43782	30582	5808	11000		
02-May-22	18	32553	31122	44167	30967	5423	11000		
09-May-22	19	33309	31878	45026	31826	4564	11000		
16-May-22	20	33997	32566	45956	32756	3634	11000		
23-May-22	21	33899	32468	45956	32756	3634	11000		
30-May-22	22	35359	33928	46424	33224	3166	11000		
06-Jun-22	23	34352	32786	45109	31909	4481	11000		
13-Jun-22	24	34186	32620	45240	32040	4350	11000		
20-Jun-22	25	34427	32861	45153	31953	4437	11000		
27-Jun-22	26	34450	32884	45448	32248	4142	11000		
04-Jul-22	27	34574	33000	46171	32971	3419	11000		
11-Jul-22	28	34644	33071	45463	32263	4127	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	33659	31924	44566	31366	5024	11000		
08-Aug-22	32	33208	31474	43882	30682	5708	11000		
15-Aug-22	33	33381	31647	44619	31419	4971	11000		
22-Aug-22	34	33048	31323	44619	31419	4971	11000		
29-Aug-22	35	32603	30878	44591	31391	4999	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	957,046	3,104,960	5,150,665	9,295,220

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
<b>Total (Incl other REs)</b>	<b>5,490.4</b>