

Weekly System Status Report – 2021 Week 36 (06/09/2021 – 12/09/2021)

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 06/Sep/2021	31,351	0	29,303	28,834	8.7%	8.7%	1.6%
Tue 07/Sep/2021	32,484	0	29,359	30,040	8.1%	8.1%	-2.3%
Wed 08/Sep/2021	32,078	0	29,747	30,634	4.7%	4.7%	-2.9%
Thu 09/Sep/2021	32,561	0	29,471	29,128	11.8%	11.8%	1.2%
Fri 10/Sep/2021	31,722	0	28,345	27,927	13.6%	13.6%	1.5%
Sat 11/Sep/2021	30,359	0	27,263	26,585	14.2%	14.2%	2.6%
Sun 12/Sep/2021	31,642	0	26,963	26,681	18.6%	18.6%	1.1%

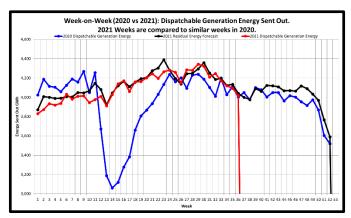
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non- Commercial Units)	Operating Reserve Margin (Incl Non- Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 06/Sep/2021	33,503	0	31,398	30,986	8.1%	8.1%	1.3%
Tue 07/Sep/2021	33,978	0	31,105	31,534	7.8%	7.8%	-1.4%
Wed 08/Sep/2021	33,310	0	30,992	31,865	4.5%	4.5%	-2.7%
Thu 09/Sep/2021	34,623	0	31,439	31,190	11.0%	11.0%	0.8%
Fri 10/Sep/2021	33,264	0	30,036	29,469	12.9%	12.9%	1.9%
Sat 11/Sep/2021	32,077	0	29,052	28,303	13.3%	13.3%	2.6%
Sun 12/Sep/2021	33,289	0	28,768	28,329	17.5%	17.5%	1.5%

Notes:

- 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 36 : Dispatchable Generation Energy Sent Out Statistics					
Energy Sent Out	4,019	GWh			
Week-on-Week Growth	0.41	%			
Year-on-Year Growth (Year-to-Date) Annual 3.73 %					
-					

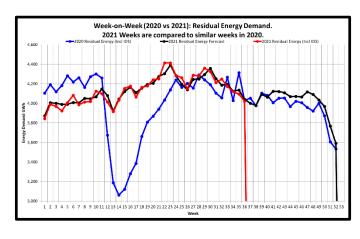
Note:

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 12 Sep Energy	Annual Energy (01 Jan to 31 Dec)	Unit		
2016	160,136	226,721	GWh		
2017	158,530	225,203	GWh		
2018	157,955	224,202	GWh		
2019	154,825	219,563	GWh		
2020	144,538	206,725	GWh		
2021 (YTD)	149,267		GWh		

Week-on-Week Residual Energy Demand



[2021 weeks compared to similar 2020 weeks]

Week 36 : Residual Energy Demand Statistics (Incl IOS)				
Energy Demand	4,023	GWh		
Week-on-Week Growth	-0.18	%		
Year-on-Year Growth (Year-to-Date) Annual	3.54	%		

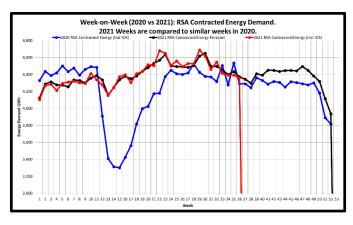
Note:

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 12 Sep Energy	Annual Energy (01 Jan to 31 Dec)	Unit			
2016	160,197	226,808	GWh			
2017	158,553	225,248	GWh			
2018	158,085	224,594	GWh			
2019	155,550	220,924	GWh			
2020	145,883	208,151	GWh			
2021 (YTD)	150,364		GWh			

Week-on-Week RSA Contracted Energy Demand



[2021 weeks compared to similar 2020 weeks]

Week 36 : RSA Contracted Energy Demand Statistics (Incl IOS)					
Energy Demand	4,360	GWh			
Week-on-Week Growth	1.58	%			
Year-on-Year Growth (Year-to-Date) Annual	4.60	%			

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 12 Sep Energy	Annual Energy (01 Jan to 31 Dec)	Unit	
2016	167,168	238,069	GWh	
2017	165,373	235,426	GWh	
2018	165,289	235,482	GWh	
2019	163,297	232,511	GWh	
2020	153,864	220,630	GWh	
2021 (YTD)	160,226		GWh	



Week-on-Week Dispatchable Generation Peak Demand

Week-on-Week (2020 vs 2021): Dispatchable Generation Peak Demand. 2021 Weeks are compared to similar weeks in 2020. 34,000 32,000 31,000 32,000 32,000 27,000 21,000 21,000 22,000 21,000 22,000 22,000 23,000 24,000 25,000 26,000 27,000 28,000 29,000 20,000 20,000 21,000 21,000 22,000 22,000 23,000 24,000 25,000 26,000 27,000 27,000 28,000 28,000 29,000 20,0

[2021 weeks compared to similar 2020 weeks]

Week 36 : Dispatchable Generation Peak Demand Statistics					
Peak Demand	29,879	WW			
Week-on-Week Growth	1.17	%			
Year-on-Year Growth (Year-to-Date) Annual -0.28 %					

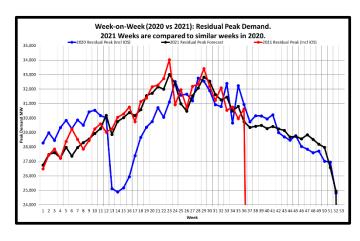
Note:

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 36 : Residual Peak Demand Statistics (Incl IOS)					
Peak Demand	30,634	MW			
Week-on-Week Growth	-0.98	%			
Year-on-Year Growth (Year-to-Date) Annual	3.89	%			

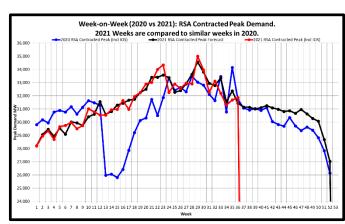
Note:

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 36 : RSA Contracted Peak Demand Statistics (Incl IOS)							
Peak Demand	31,865	MW					
Week-on-Week Growth	0.43	%					
Year-on-Year Growth (Year-to-Date) Annual	2.49	%					

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	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

							We	ek							Annual (J	Jan - Dec)
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	YTD	2020
Energy Availability Factor (Eskom EAF)	65.08	66.62	67.87	68.53	67.16	68.25	66.90	68.14	69.80	64.75	65.40	65.23	64.79	62.42	63.12	65.04
Planned Outage Factor	3.72	6.66	7.54	8.76	8.94	7.53	5.95	7.60	9.59	11.85	9.69	12.79	11.59	10.49	10.32	11.24
Unplanned Outage Factor	28.85	24.77	22.81	20.39	21.30	21.74	24.85	21.87	18.50	21.05	22.56	19.44	21.14	24.52	23.58	20.88
Other Outage Factor	2.35	1.95	1.78	2.32	2.60	2.48	2.30	2.39	2.11	2.35	2.35	2.54	2.48	2.57	2.98	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.

		MW	MW	MW	MW	MW	MW	MW	MW
Week Start	Week	RSA	Residual	Available	Available	Planned	Unplanned	Planned	Likely Risk
		Contracted	Forecast	Dispatchable	Capacity (Less	Maintenance	Outage	Risk Level	Senario
		Forecast		Capacity	OR and UA)		Assumption (UA)	(-14200 MW)	(-16200 MW)
13-Sep-21	37	31147	29350	45201	31001	4389	12000		
20-Sep-21	38	31131	29433	43411	29211	6179	12000		
27-Sep-21	39	31014	29496	43906	29706	5684	12000		
04-Oct-21	40	31110	29268	43461	29261	6129	12000		
11-Oct-21	41	31261	29419	43521	29321	6069	12000		
18-Oct-21	42	31095	29253	43561	29361	6029	12000		
25-Oct-21 01-Nov-21	43	30982 30818	29140 28689	43126 42884	28926 28684	6464 6706	12000 12000		
08-Nov-21	44	30818	28689	42884	28684 29466	5924	12000		
15-Nov-21	46	30682	28553	43000	30737	4653	12000		
22-Nov-21	47	30962	28834	43157	28957	6433	12000		
29-Nov-21	48	30628	28527	43648	29448	5942	12000		
06-Dec-21	49	30294	28193	42958	28758	6632	12000		
13-Dec-21	50	30078	27977	43852	29652	5738	12000		
20-Dec-21	51	28684	26583	42240	28040	7350	12000		
27-Dec-21	52	27041	24940	43102	28902	6488	12000		
03-Jan-22	1	29054	26537	42307	28107	7283	12000		
10-Jan-22	2	29675	27479	42792	28592	6798	12000		
17-Jan-22	3	30014	27818	43431	29231	6159	12000		
24-Jan-22	4	30149	27953	42233	28033	7357	12000		
31-Jan-22	5	30660	28504	42813	28613	6777	12000		
07-Feb-22	6	31070	28914	43036	28836	6554	12000		
14-Feb-22	7	31222	29066	42742	28542	6848	12000		
21-Feb-22	8	31028	28872	42871	28671	6719	12000		
28-Feb-22	9	31137	29264	43273	29073	6317	12000		
07-Mar-22	10	31398	29525	43659	29459	5931	12000		
14-Mar-22	11	31249	29375	43797	29597	5793	12000		
21-Mar-22	12	31216	29161	42913	28713	6677	12000		
28-Mar-22	13	31470	29415	43726	29526	5864	12000		
04-Apr-22	14	31552	30175	44157	30957	5433	11000		
11-Apr-22	15	31814	30437	44537	31337	5053	11000		
18-Apr-22	16	32020	30642	45257	32057	4333	11000		
25-Apr-22	17	32052	30674	45257	32057	4333	11000		
02-May-22	18	32553	31122	45542	32342	4048	11000		
09-May-22	19	33309	31878	46211	33011	3379	11000		
16-May-22	20	33997	32566	46211	33011	3379	11000		
23-May-22	21	33899	32468	46401	33201	3189	11000		
30-May-22 06-Jun-22	23	35359 34352	33928 32786	46254 45134	33054 31934	3336 4456	11000 11000		
13-Jun-22	24	34352	32620	45134	32065	4325	11000		
13-Jun-22 20-Jun-22	25	34186	32620	45265 44118	32065	4325 5472	11000		
27-Jun-22	26	34450	32884	44858	31658	4732	11000		
04-Jul-22	27	34574	33000	45181	31981	4409	11000		
11-Jul-22	28	34644	33071	44698	31498	4892	11000		
18-Jul-22	29	35023	33450	44508	31308	5082	11000		
25-Jul-22	30	34323	32750	44033	30833	5557	11000		
01-Aug-22	31	33489	31924	43421	30221	6169	11000		
08-Aug-22	32	33039	31474	43312	30112	6278	11000		
15-Aug-22	33	33212	31647	44071	30871	5519	11000		
22-Aug-22	34	32861	31323	44071	30871	5519	11000		
29-Aug-22	35	32397	30878	44636	31436	4954	11000		
05-Sep-22	36	32427	30641	44176	30976	5414	11000		
12-Sep-22	37	32669	30883	44456	31256	5134	11000		
19-Sep-22	38	32058	30272	43774	30574	5816	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): 12 000 MW (11000 MW from April '22)

Reserves: OR + UA = 14200 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 Definitively 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%20202.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	4,097.7		
All Time	Max Date	25-Nov-2020 12:00	20-Feb-2021 12:00	21-Jun-2021 13:00	31-Aug-2021 13:00		
2010	Maximum	200.9	1,350.5	1,229.8	2,576.3		
2016	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		
2017	Max Date	07-Nov-2017 10:00	27-Oct-2017 12:00	25-Dec-2017 18:00	13-Dec-2017 13:00		
2010	2018 Maximum 399.7		1,392.1	1,902.3	3,298.9		
2010	Max Date	04-Dec-2018 16:00	03-Oct-2018 12:00	02-Oct-2018 16:00	28-Sep-2018 11:00		
2010	Maximum	502.1	1,375.6	1,872.0	3,530.6		
2019	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		
2020	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	4,097.7		
2021	Max Date	11-Mar-2021 15:00	20-Feb-2021 12:00	21-Jun-2021 13:00	31-Aug-2021 13:00		

Annual E	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 Maximum	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				
2017	Total Energy	687,703	3,324,857	5,081,023	9,198,632				
2018	Total Energy	1,031,288	3,282,124	6,467,095	10,887,902				
2019	Total Energy	1,557,151	3,324,989	6,624,642	11,586,945				
2020	Total Energy	1,626,049	4,140,212	6,625,830	12,478,704				
2021	Total Energy	1,052,540	3,437,494	5,768,352	10,347,652				

Maximum Difference between Consecutive Evening Peaks (MW) - based on System Operator data (subject to metering verification)						
Cal Year	ear Indicator Total (Incl other REs)					
All Times	Maximum	1,744				
All Time	Max Date	07-Aug-2021 to 08-Aug-2021				
2016	Maximum	828				
2016	Max Date	30-Aug-2016 to 31-Aug-2016				
2017	Maximum	1,038				
2017	Max Date	19-Jun-2017 to 20-Jun-2017				
2018	Maximum	1,336				
2010	Max Date	01-Sep-2018 to 02-Sep-2018				
2019	Maximum	1,464				
2019	Max Date	05-Jul-2019 to 06-Jul-2019				
2020	Maximum	1,488				
Max Date		31-Aug-2020 to 01-Sep-2020				
2021	Maximum	1,744				
2021	Max Date	07-Aug-2021 to 08-Aug-2021				

Current Installed Capacity (MW)					
CSP	500.0				
PV	2,212.1				
Wind (Eskom+IPP)	2,785.4				
Total (Incl other REs)	5,523.1				