

Weekly System Status Report – 2021 Week 24 (14/06/2021 – 20/06/2021)

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 14/Jun/2021	32,747	412	32,384	30,907	6.0%	7.3%	4.8%
Tue 15/Jun/2021	32,324	267	31,312	30,607	5.6%	6.5%	2.3%
Wed 16/Jun/2021	34,074	415	30,593	30,364	12.2%	13.6%	0.8%
Thu 17/Jun/2021	33,016	476	30,734	30,472	8.4%	9.9%	0.9%
Fri 18/Jun/2021	33,429	592	30,189	29,888	11.8%	13.8%	1.0%
Sat 19/Jun/2021	33,249	549	30,399	29,912	11.2%	13.0%	1.6%
Sun 20/Jun/2021	35,685	728	30,232	29,657	20.3%	22.8%	1.9%

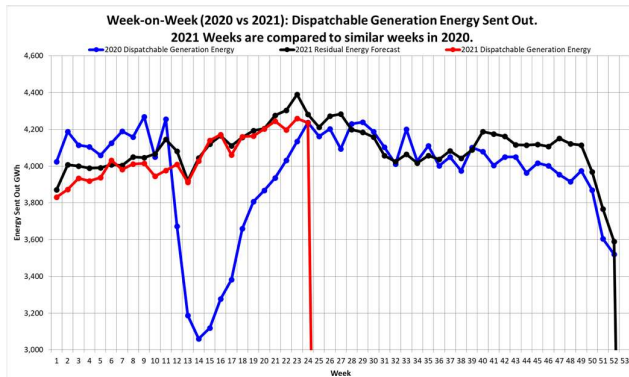
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 14/Jun/2021	34,108	412	33,383	32,268	5.7%	7.0%	3.5%
Tue 15/Jun/2021	33,483	267	32,213	31,766	5.4%	6.2%	1.4%
Wed 16/Jun/2021	34,957	415	31,549	31,247	11.9%	13.2%	1.0%
Thu 17/Jun/2021	34,078	476	31,819	31,533	8.1%	9.6%	0.9%
Fri 18/Jun/2021	34,565	592	31,317	31,024	11.4%	13.3%	0.9%
Sat 19/Jun/2021	34,159	549	31,410	30,822	10.8%	12.6%	1.9%
Sun 20/Jun/2021	36,845	728	31,541	30,817	19.6%	21.9%	2.3%

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 24 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	4,236	GWh
Week-on-Week Growth	-0.02	%
Year-on-Year Growth (Year-to-Date) Annual	4.66	%

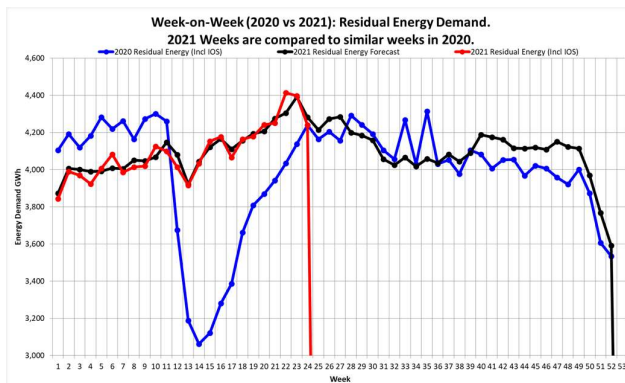
Note:

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 20 Jun Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	106,928	226,721	GWh
2017	105,531	225,203	GWh
2018	104,905	224,202	GWh
2019	103,324	219,563	GWh
2020	94,918	206,725	GWh
2021 (YTD)	98,715		GWh

Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 24 : Residual Energy Demand Statistics (Incl IOS)		
Energy Demand	4,239	GWh
Week-on-Week Growth	-0.01	%
Year-on-Year Growth (Year-to-Date) Annual	4.84	%

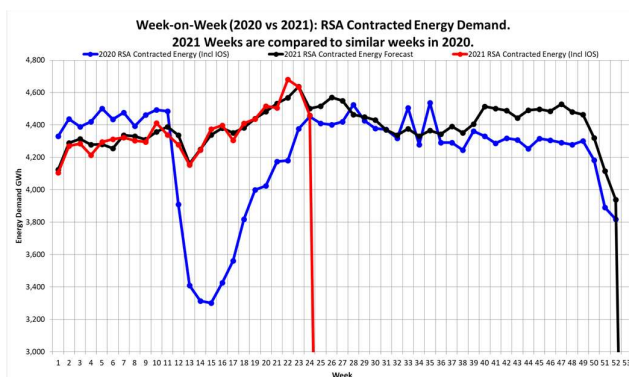
Note:

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 20 Jun Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	106,975	226,808	GWh
2017	105,535	225,248	GWh
2018	104,996	224,594	GWh
2019	104,022	220,924	GWh
2020	95,790	208,151	GWh
2021 (YTD)	99,763		GWh

Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 24 : RSA Contracted Energy Demand Statistics (Incl IOS)		
Energy Demand	4,459	GWh
Week-on-Week Growth	0.15	%
Year-on-Year Growth (Year-to-Date) Annual	5.85	%

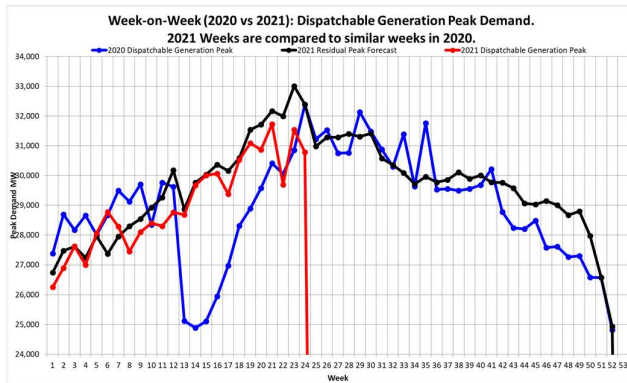
Note:

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 20 Jun Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	111,757	238,069	GWh
2017	110,344	235,426	GWh
2018	109,904	235,482	GWh
2019	109,206	232,511	GWh
2020	100,972	220,630	GWh
2021 (YTD)	106,167		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 24 : Dispatchable Generation Peak Demand Statistics			
Peak Demand	30,788	MW	
Week-on-Week Growth	-4.93	%	
Year-on-Year Growth (Year-to-Date) Annual	-2.03	%	

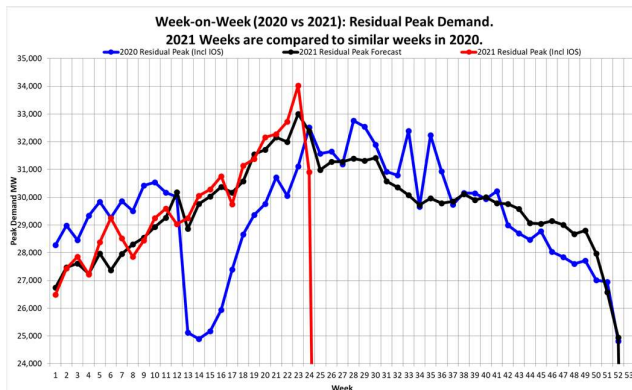
Note:

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 25-May-2021	31,727	MW

Week-on-Week Residual Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 24 : Residual Peak Demand Statistics (Incl IOS)			
Peak Demand	30,907	MW	
Week-on-Week Growth	-4.94	%	
Year-on-Year Growth (Year-to-Date) Annual	4.65	%	

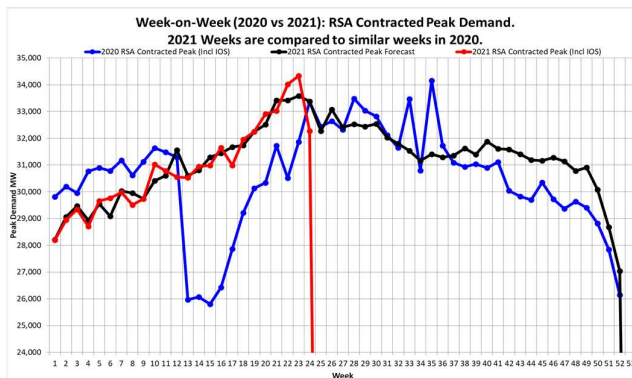
Note:

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 24 : RSA Contracted Peak Demand Statistics (Incl IOS)			
Peak Demand	32,268	MW	
Week-on-Week Growth	-3.28	%	
Year-on-Year Growth (Year-to-Date) Annual	2.92	%	

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	34,337	MW

Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	11	12	13	14	15	16	17	18	19	20	21	22	23	24	YTD	2020
Energy Availability Factor (Eskom EAF)	59.57	60.32	59.33	61.98	63.60	65.79	64.20	64.81	63.94	64.97	63.61	64.66	65.58	67.06	61.54	65.04
Planned Outage Factor	14.56	12.17	12.58	11.62	11.88	10.07	10.55	7.53	7.95	6.04	5.73	5.27	3.68	6.60	10.74	11.24
Unplanned Outage Factor	22.68	24.49	25.41	23.63	22.35	22.04	22.59	24.05	25.04	25.70	26.96	27.93	28.50	24.44	24.45	20.88
Other Outage Factor	3.19	3.02	2.68	2.77	2.17	2.10	2.66	3.61	3.07	3.29	3.70	2.14	2.24	1.90	3.27	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 Scenario (-13200 MW)	MW Likely Risk Scenario (-15200 MW)
21-Jun-21	25	32277	30984	45952	32752	3644	11000		
28-Jun-21	26	33072	31283	45718	32518	3878	11000		
05-Jul-21	27	32409	31286	45513	32313	4083	11000		
12-Jul-21	28	32522	31398	46168	32968	3428	11000		
19-Jul-21	29	32436	31313	47196	33996	2400	11000		
26-Jul-21	30	32543	31419	46290	33090	3306	11000		
02-Aug-21	31	32024	30578	45505	32305	4091	11000		
09-Aug-21	32	31801	30355	44764	31564	4832	11000		
16-Aug-21	33	31531	30084	44384	31184	5212	11000		
23-Aug-21	34	31168	29721	44381	31181	5215	11000		
30-Aug-21	35	31406	29960	45404	32204	4192	11000		
06-Sep-21	36	31285	29781	45147	31947	4449	11000		
13-Sep-21	37	31358	29854	44809	31609	4787	11000		
20-Sep-21	38	31621	30117	45194	31994	4402	11000		
27-Sep-21	39	31399	29895	44187	30987	5409	11000		
04-Oct-21	40	31883	30007	44537	31337	5059	11000		
11-Oct-21	41	31607	29782	43440	30240	6156	11000		
18-Oct-21	42	31588	29763	44565	31365	5031	11000		
25-Oct-21	43	31400	29575	43773	30573	5823	11000		
01-Nov-21	44	31194	29066	43306	30106	6290	11000		
08-Nov-21	45	31167	29038	43159	29959	6437	11000		
15-Nov-21	46	31281	29153	45091	31891	4505	11000		
22-Nov-21	47	31139	29010	43904	30704	5692	11000		
29-Nov-21	48	30786	28674	42744	29544	6852	11000		
06-Dec-21	49	30908	28807	43549	30349	6047	11000		
13-Dec-21	50	30078	27977	42008	28808	7590	11000		
20-Dec-21	51	29894	26583	41241	28041	8355	11000		
27-Dec-21	52	27041	24940	41491	28291	8105	11000		
03-Jan-22	1	29304	26817	41874	28674	7722	11000		
10-Jan-22	2	30021	27824	41733	28533	7863	11000		
17-Jan-22	3	30199	28002	42372	29172	7224	11000		
24-Jan-22	4	30136	27940	42864	29664	6732	11000		
31-Jan-22	5	31053	28896	42833	29633	6763	11000		
07-Feb-22	6	31542	29386	43481	30281	6115	11000		
14-Feb-22	7	31517	29361	43859	30659	5737	11000		
21-Feb-22	8	31330	29174	43813	30613	5783	11000		
28-Feb-22	9	31272	29375	43722	30522	5874	11000		
07-Mar-22	10	31598	29725	43557	30357	6039	11000		
14-Mar-22	11	31415	29492	43732	30532	5864	11000		
21-Mar-22	12	31216	29161	43261	30061	6335	11000		
28-Mar-22	13	31470	29415	44181	30981	5415	11000		
04-Apr-22	14	31793	30416	44173	30973	5423	11000		
11-Apr-22	15	32222	30845	43155	29955	6441	11000		
18-Apr-22	16	32476	31098	41930	28730	7666	11000		
25-Apr-22	17	32052	30674	42545	29345	7051	11000		
02-May-22	18	33091	31659	44307	31107	5289	11000		
09-May-22	19	33798	32367	44307	31107	5289	11000		
16-May-22	20	34173	32742	44707	31507	4889	11000		
23-May-22	21	34752	33321	45472	32272	4124	11000		
30-May-22	22	35718	34287	45675	32475	3921	11000		
06-Jun-22	23	34846	33256	45677	32477	3919	11000		
13-Jun-22	24	34034	32544	45528	33328	3068	11000		
20-Jun-22	25	34591	33201	46636	33436	2960	11000		
27-Jun-22	26	34594	33204	46931	33731	2865	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 000MW – 2 000MW Definitely short to meet Reserves and possibly Demand
Red	> 2 000MW 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	2,280.1	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	2,280.1	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
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	762,364	2,350,543	3,694,666	6,871,070

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	1,553
	Max Date	07-Jun-2021 to 08-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	1,553
	Max Date	07-Jun-2021 to 08-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