

## Weekly System Status Report – 2021 Week 5 (01/02/2021 – 07/02/2021)

### 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 01/Feb/2021	29,096	909	27,013	26,539	9.6%	13.1%	1.8%
Tue 02/Feb/2021	28,729	1,447	27,449	28,385	1.2%	6.3%	-3.3%
Wed 03/Feb/2021	29,440	1,134	27,260	27,488	7.1%	11.2%	-0.8%
Thu 04/Feb/2021	29,744	1,156	27,968	27,706	7.4%	11.5%	0.9%
Fri 05/Feb/2021	29,646	721	26,630	26,565	11.6%	14.3%	0.2%
Sat 06/Feb/2021	28,732	718	25,799	26,038	10.3%	13.1%	-0.9%
Sun 07/Feb/2021	28,294	0	25,121	25,508	10.9%	10.9%	-1.5%

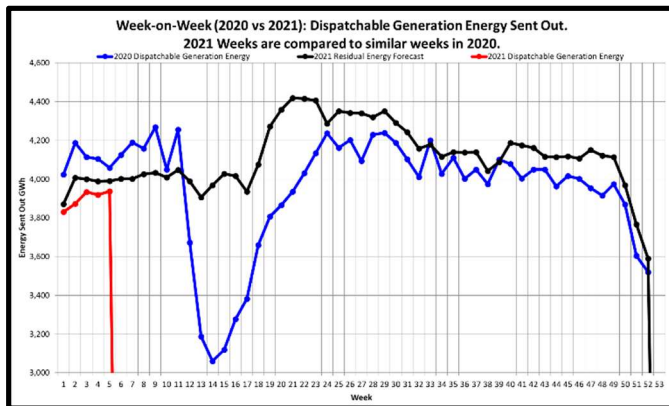
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 01/Feb/2021	30,894	949	28,914	28,568	8.1%	11.5%	1.2%
Tue 02/Feb/2021	29,729	1,446	28,841	29,650	0.3%	5.1%	-2.7%
Wed 03/Feb/2021	31,112	1,134	28,852	29,161	6.7%	10.6%	-1.1%
Thu 04/Feb/2021	31,243	1,156	29,541	29,205	7.0%	10.9%	1.1%
Fri 05/Feb/2021	30,933	479	28,722	28,566	8.3%	10.0%	0.5%
Sat 06/Feb/2021	30,552	718	27,578	27,858	9.7%	12.2%	-1.0%
Sun 07/Feb/2021	30,099	0	26,997	27,312	10.2%	10.2%	-1.2%

### 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) = 48 651 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 5 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	3,937	GWh
Week-on-Week Growth	-2.99	%
Year-on-Year Growth (Year-to-Date) Annual	-4.85	%

#### Note:

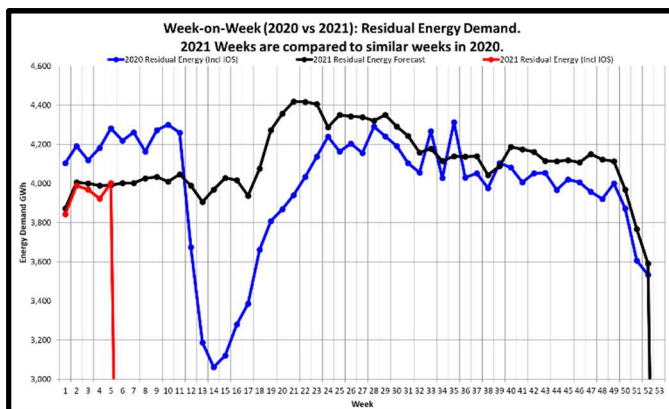
2021 Weeks are compared to similar weeks in 2020.  
(2021 week 1 ~ 2020 week 1)

### Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 07 Feb Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	23,299	226,721	GWh
2017	22,671	225,203	GWh
2018	22,715	224,202	GWh
2019	22,413	219,563	GWh
2020	21,979	206,724	GWh
2021 (YTD)	20,969		GWh

## Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



### Week 5 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,002	GWh
Week-on-Week Growth	-6.55	%
Year-on-Year Growth (Year-to-Date) Annual	-5.52	%

#### Note:

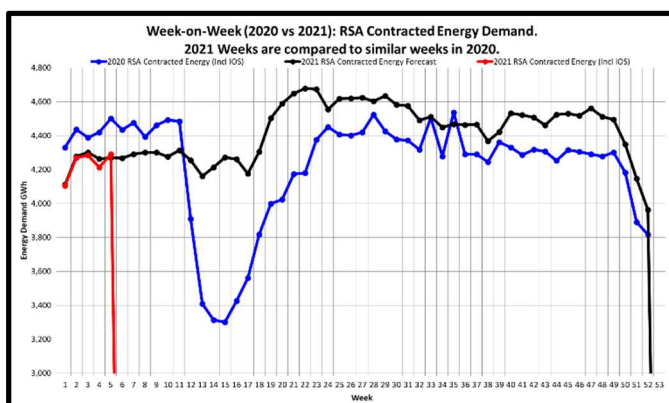
2021 Weeks are compared to similar weeks in 2020.  
(2021 week 1 ~ 2020 week 1)

### Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 07 Feb Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	23,307	226,808	GWh
2017	22,673	225,248	GWh
2018	22,728	224,594	GWh
2019	22,436	220,924	GWh
2020	22,331	208,150	GWh
2021 (YTD)	21,200		GWh

## Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



### Week 5 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,291	GWh
Week-on-Week Growth	-4.69	%
Year-on-Year Growth (Year-to-Date) Annual	-4.14	%

#### Note:

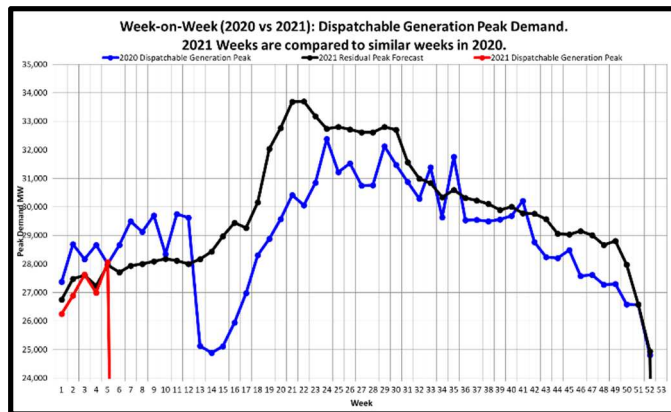
2021 Weeks are compared to similar weeks in 2020.  
(2021 week 1 ~ 2020 week 1)

### Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 07 Feb Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	24,353	238,069	GWh
2017	24,105	235,426	GWh
2018	24,001	235,482	GWh
2019	23,851	232,511	GWh
2020	23,649	220,629	GWh
2021 (YTD)	22,770		GWh

## Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



### Week 5 : Dispatchable Generation Peak Demand Statistics

Peak Demand	28,068	MW
Week-on-Week Growth	0.21	%
Year-on-Year Growth (Year-to-Date) Annual	-2.19	%

#### Note:

2021 Weeks are compared to similar weeks in 2020.

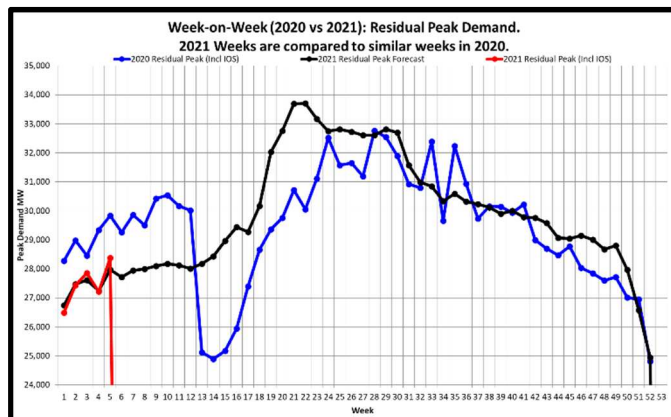
(2021 week 1 ~ 2020 week 1)

### 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 02-Feb-2021	28,068	MW

## Week-on-Week Residual Peak Demand

[2021 weeks compared to similar 2020 weeks]



### Week 5 : Residual Peak Demand Statistics (Incl IOS)

Peak Demand	28,385	MW
Week-on-Week Growth	-4.88	%
Year-on-Year Growth (Year-to-Date) Annual	-4.88	%

#### Note:

2021 Weeks are compared to similar weeks in 2020.

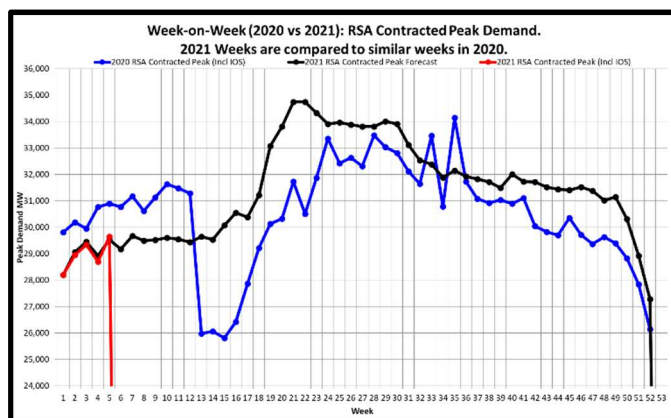
(2021 week 1 ~ 2020 week 1)

### 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 02-Feb-2021	28,385	MW

## Week-on-Week RSA Contracted Peak Demand

[2021 weeks compared to similar 2020 weeks]



### Week 5 : RSA Contracted Peak Demand Statistics (Incl IOS)

Peak Demand	29,650	MW
Week-on-Week Growth	-4.04	%
Year-on-Year Growth (Year-to-Date) Annual	-4.04	%

#### 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 02-Feb-2021	29,650	MW

## Weekly Generation Availability

	Week															Annual (Jan - Dec)	
	45	46	47	48	49	50	51	52	53	1	2	3	4	5	YTD	2020	
Energy Availability Factor (Eskom EAF)	65.29	64.36	62.68	59.82	60.31	60.03	60.42	57.84	54.45	56.76	57.57	58.97	58.54	58.19	57.81	65.04	
Planned Outage Factor	16.07	16.69	16.22	17.98	15.71	16.17	17.07	19.11	20.65	14.69	12.97	11.84	10.62	10.77	12.69	11.24	
Unplanned Outage Factor	16.13	16.23	17.19	18.34	20.31	19.41	18.79	19.37	21.64	24.62	25.31	24.97	27.02	26.27	25.44	20.88	
Other Outage Factor	2.51	2.72	3.91	3.86	3.67	4.39	3.72	3.68	3.26	3.93	4.15	4.22	3.82	4.77	4.06	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 (-14200 MW)	MW Likely Risk Scenario (-16200 MW)
08-Feb-21	6	29178	27715	42183	27983	6468	12000		
15-Feb-21	7	29672	27944	41083	26883	7568	12000		
22-Feb-21	8	29491	27999	41340	27140	7311	12000		
01-Mar-21	9	29527	28097	41915	27715	6736	12000		
08-Mar-21	10	29609	28180	41492	27292	7159	12000		
15-Mar-21	11	29551	28121	41220	27020	7431	12000		
22-Mar-21	12	29435	28006	41547	27347	7104	12000		
29-Mar-21	13	29646	28176	41547	27347	7104	12000		
05-Apr-21	14	29543	28433	42452	29252	6199	11000		
12-Apr-21	15	30081	28970	43837	30637	4814	11000		
19-Apr-21	16	30557	29446	43837	30637	4814	11000		
26-Apr-21	17	30381	29270	44022	30822	4629	11000		
03-May-21	18	31211	30162	44697	31497	3954	11000		
10-May-21	19	33084	32035	45159	31959	3492	11000		
17-May-21	20	33816	32767	45634	32434	3017	11000		
24-May-21	21	34741	33692	46896	33696	1755	11000		
31-May-21	22	34752	33703	46816	33616	1835	11000		
07-Jun-21	23	34333	33171	46096	32896	2555	11000		
14-Jun-21	24	33909	32747	45621	32421	3030	11000		
21-Jun-21	25	33971	32809	46251	33051	2400	11000		
28-Jun-21	26	33884	32722	45734	32534	2917	11000		
05-Jul-21	27	33818	32613	46084	32884	2567	11000		
12-Jul-21	28	33818	32613	45894	32694	2757	11000		
19-Jul-21	29	34013	32808	45894	32694	2757	11000		
26-Jul-21	30	33906	32701	45174	31974	3477	11000		
02-Aug-21	31	33120	31572	45174	31974	3477	11000		
09-Aug-21	32	32536	30988	44331	31131	4320	11000		
16-Aug-21	33	32389	30841	43799	30599	4852	11000		
23-Aug-21	34	31883	30335	43609	30409	5042	11000		
30-Aug-21	35	32142	30594	43736	30536	4915	11000		
06-Sep-21	36	31921	30317	43682	30482	4969	11000		
13-Sep-21	37	31833	30228	43132	29932	5519	11000		
20-Sep-21	38	31721	30117	44182	30982	4469	11000		
27-Sep-21	39	31499	29895	43008	29808	5643	11000		
04-Oct-21	40	32009	30007	42953	29753	5698	11000		
11-Oct-21	41	31733	29782	42553	29353	6098	11000		
18-Oct-21	42	31714	29763	43391	30191	5260	11000		
25-Oct-21	43	31526	29575	42367	29167	6284	11000		
01-Nov-21	44	31436	29066	41788	28588	6863	11000		
08-Nov-21	45	31408	29038	42324	29124	6327	11000		
15-Nov-21	46	31522	29153	42255	29055	6396	11000		
22-Nov-21	47	31380	29010	41670	28470	6981	11000		
29-Nov-21	48	31027	28674	42129	28929	6522	11000		
06-Dec-21	49	31147	28807	41537	28337	7114	11000		
13-Dec-21	50	30318	27977	42552	29352	6099	11000		
20-Dec-21	51	28924	26583	41992	28792	6659	11000		
27-Dec-21	52	27281	24940	42359	29159	6292	11000		
03-Jan-22	1	29397	26817	42056	28856	6595	11000		
10-Jan-22	2	30102	27824	41895	28695	6756	11000		
17-Jan-22	3	30280	28002	41564	28364	7087	11000		
24-Jan-22	4	30217	27940	42917	29717	5734	11000		
31-Jan-22	5	30837	28896	42803	29603	5848	11000		
07-Feb-22	6	31327	29386	43586	30386	5065	11000		
14-Feb-22	7	31301	29361	42993	29793	5658	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 (11 000 MW from April 2021)**

**Reserves: OR + UA = 14 200 MW**

**Eskom Installed Capacity: 47 646 MW (Incl. non-comm. Kusile units).**

**Installed Dispatchable Capacity: 48 651 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 - 2020 to 2024. (Published 30 October 2019).

<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	1,929.2	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
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	501.6	1,895.4	2,059.6	3,664.6
	Max Date	28-Jan-2021 11:00	28-Jan-2021 12:00	09-Jan-2021 17:00	19-Jan-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	257,483	664,332	1,033,167	1,969,867

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	1,488
	Max Date	31-Aug-2020 to 01-Sep-2020
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	1,350
	Max Date	02-Jan-2021 to 03-Jan-2021

Current Installed Capacity (MW)	
CSP	500.0
PV	2,157.1
Wind (Eskom+IPP)	2,495.0
Total (Incl other REs)	5,173.9