

## Weekly System Status Report – 2021 Week 13 (29/03/2021 – 04/04/2021)

### 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 29/Mar/2021	30,528	1,073	28,767	28,628	6.6%	10.4%	0.5%
Tue 30/Mar/2021	31,272	1,091	28,815	29,519	5.9%	9.6%	-2.4%
Wed 31/Mar/2021	31,061	817	28,870	27,734	12.0%	14.9%	4.1%
Thu 01/Apr/2021	29,144	547	27,421	26,897	8.4%	10.4%	1.9%
Fri 02/Apr/2021	29,257	546	24,736	25,186	16.2%	18.3%	-1.8%
Sat 03/Apr/2021	28,706	547	25,350	25,191	14.0%	16.1%	0.6%
Sun 04/Apr/2021	29,579	548	24,469	24,905	18.8%	21.0%	-1.7%

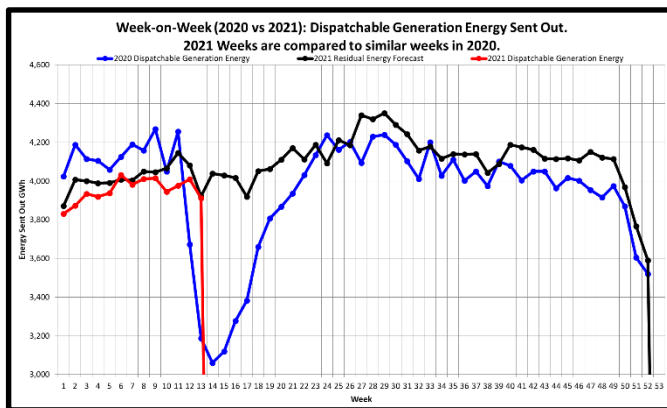
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 29/Mar/2021	31,938	1,073	30,334	30,038	6.3%	9.9%	1.0%
Tue 30/Mar/2021	32,562	1,091	30,304	30,808	5.7%	9.2%	-1.6%
Wed 31/Mar/2021	32,839	817	30,578	29,512	11.3%	14.0%	3.6%
Thu 01/Apr/2021	30,631	547	28,884	28,384	7.9%	9.8%	1.8%
Fri 02/Apr/2021	30,337	546	26,190	26,266	15.5%	17.6%	-0.3%
Sat 03/Apr/2021	29,832	547	26,563	26,317	13.4%	15.4%	0.9%
Sun 04/Apr/2021	31,291	548	26,420	26,616	17.6%	19.6%	-0.7%

### 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) = 48 871 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 13 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	3,911	GWh
Week-on-Week Growth	22.73	%
Year-on-Year Growth (Year-to-Date) Annual	-1.94	%

#### Note:

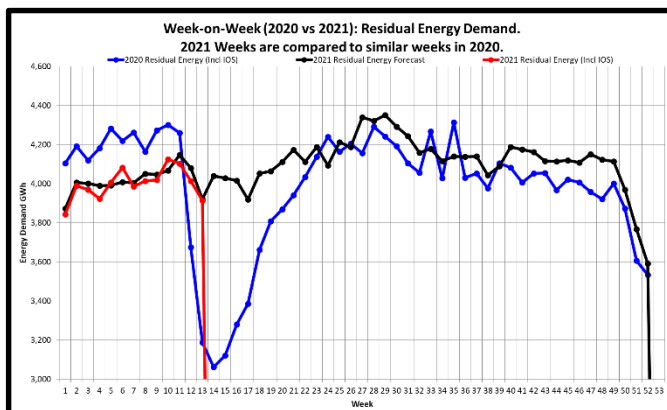
2021 Weeks are compared to similar weeks in 2020.  
(2021 week 1 ~ 2020 week 1)

### Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 04 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	58,605	226,721	GWh
2017	56,970	225,203	GWh
2018	56,765	224,202	GWh
2019	55,676	219,563	GWh
2020	54,548	206,725	GWh
2021 (YTD)	52,852		GWh

## Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



### Week 13 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	3,914	GWh
Week-on-Week Growth	22.79	%
Year-on-Year Growth (Year-to-Date) Annual	-2.32	%

#### Note:

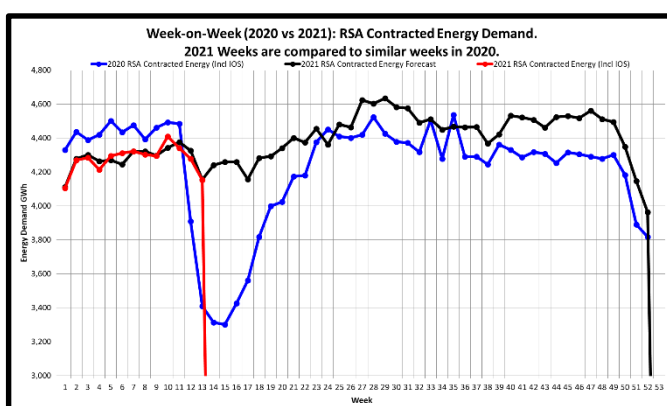
2021 Weeks are compared to similar weeks in 2020.  
(2021 week 1 ~ 2020 week 1)

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

Year	01 Jan to 04 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	58,629	226,808	GWh
2017	56,966	225,248	GWh
2018	56,796	224,594	GWh
2019	56,324	220,924	GWh
2020	55,396	208,151	GWh
2021 (YTD)	53,457		GWh

## Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



### Week 13 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,154	GWh
Week-on-Week Growth	21.83	%
Year-on-Year Growth (Year-to-Date) Annual	-0.99	%

#### Note:

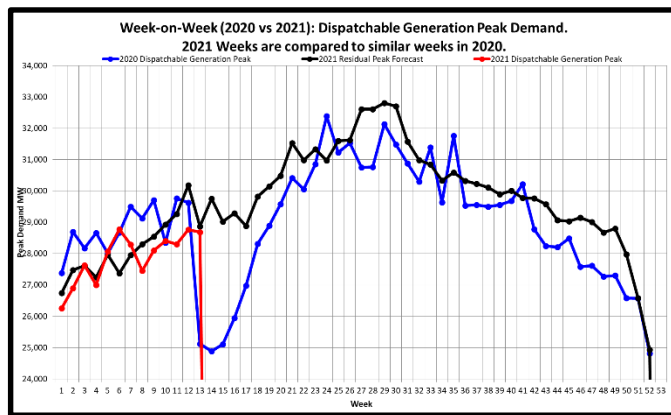
2021 Weeks are compared to similar weeks in 2020.  
(2021 week 1 ~ 2020 week 1)

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

Year	01 Jan to 04 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	61,314	238,069	GWh
2017	60,169	235,426	GWh
2018	59,634	235,482	GWh
2019	59,451	232,511	GWh
2020	58,466	220,630	GWh
2021 (YTD)	57,195		GWh

## Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



### Week 13 : Dispatchable Generation Peak Demand Statistics

Peak Demand	28,690	MW
Week-on-Week Growth	14.19	%
Year-on-Year Growth (Year-to-Date) Annual	-3.29	%

#### Note:

2021 Weeks are compared to similar weeks in 2020.

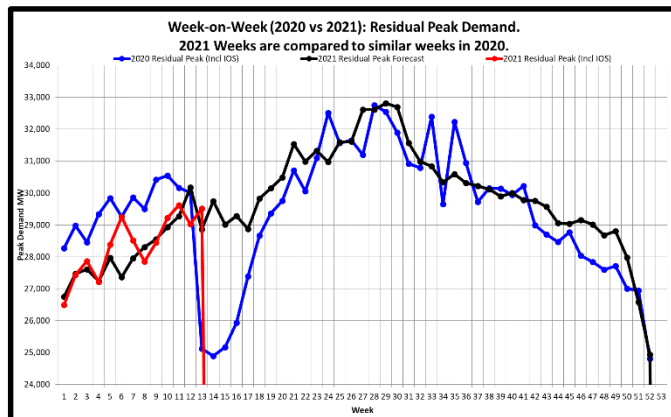
(2021 week 1 ~ 2020 week 1)

### 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 11-Feb-2021	28,780	MW

## Week-on-Week Residual Peak Demand

[2021 weeks compared to similar 2020 weeks]



### Week 13 : Residual Peak Demand Statistics (Incl IOS)

Peak Demand	29,519	MW
Week-on-Week Growth	17.49	%
Year-on-Year Growth (Year-to-Date) Annual	-3.04	%

#### Note:

2021 Weeks are compared to similar weeks in 2020.

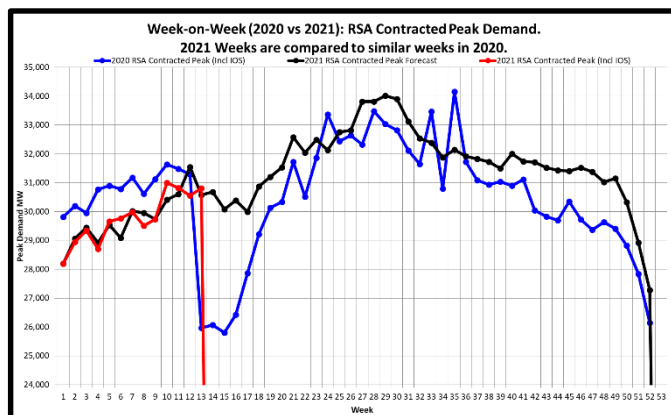
(2021 week 1 ~ 2020 week 1)

### 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)	Wed 17-Mar-2021	29,617	MW

## Week-on-Week RSA Contracted Peak Demand

[2021 weeks compared to similar 2020 weeks]



### Week 13 : RSA Contracted Peak Demand Statistics (Incl IOS)

Peak Demand	30,808	MW
Week-on-Week Growth	18.60	%
Year-on-Year Growth (Year-to-Date) Annual	-2.01	%

#### 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)	Wed 10-Mar-2021	31,001	MW

## Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	53	1	2	3	4	5	6	7	8	9	10	11	12	13	YTD	2020
Energy Availability Factor (Eskom EAF)	57.83	54.46	56.76	57.58	58.86	58.50	57.94	58.60	59.38	59.19	60.65	60.49	59.91	60.59	59.01	65.04
Planned Outage Factor	19.11	20.65	14.69	12.97	11.84	10.62	10.79	12.00	13.70	13.42	15.08	14.47	14.49	12.13	13.13	11.24
Unplanned Outage Factor	19.40	21.63	24.65	25.32	25.03	27.02	26.43	25.25	22.88	23.37	20.26	21.63	22.44	24.30	24.11	20.88
Other Outage Factor	3.66	3.26	3.90	4.13	4.27	3.86	4.84	4.15	4.04	4.02	4.01	3.41	3.16	2.98	3.75	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)
05-Apr-21	14	30812	29764	44481	31281	4390	11000		
12-Apr-21	15	30407	29399	41746	28546	7125	11000		
19-Apr-21	16	30393	29283	43264	30064	5607	11000		
26-Apr-21	17	29992	28882	42975	29775	5896	11000		
03-May-21	18	30874	29826	43381	30181	5490	11000		
10-May-21	19	31200	30151	44680	31480	4191	11000		
17-May-21	20	31537	30489	45685	32485	3186	11000		
24-May-21	21	32579	31531	47130	33930	1741	11000		
31-May-21	22	32038	30989	44638	31438	4233	11000		
07-Jun-21	23	32493	31331	44933	31733	3938	11000		
14-Jun-21	24	32135	30973	45555	32355	3316	11000		
21-Jun-21	25	32760	31599	46285	33085	2586	11000		
28-Jun-21	26	32823	31618	46140	32940	2731	11000		
05-Jul-21	27	33818	32613	45950	32750	2921	11000		
12-Jul-21	28	33818	32613	45950	32750	2921	11000		
19-Jul-21	29	34013	32808	46281	33081	2590	11000		
26-Jul-21	30	33906	32701	45950	32750	2921	11000		
02-Aug-21	31	33119	31572	44780	31580	4091	11000		
09-Aug-21	32	32535	30988	44590	31390	4281	11000		
16-Aug-21	33	32388	30841	44379	31179	4492	11000		
23-Aug-21	34	31882	30335	43939	30739	4932	11000		
30-Aug-21	35	32141	30594	44094	30894	4777	11000		
06-Sep-21	36	31921	30317	44059	30859	4812	11000		
13-Sep-21	37	31832	30228	43484	30284	5387	11000		
20-Sep-21	38	31721	30117	43484	30284	5387	11000		
27-Sep-21	39	31498	29895	43279	30079	5592	11000		
04-Oct-21	40	32009	30007	43184	29984	5687	11000		
11-Oct-21	41	31732	29782	43054	29854	5817	11000		
18-Oct-21	42	31714	29763	43054	29854	5817	11000		
25-Oct-21	43	31525	29575	43282	30082	5589	11000		
01-Nov-21	44	31435	29066	42248	29048	6623	11000		
08-Nov-21	45	31408	29038	42744	29544	6127	11000		
15-Nov-21	46	31522	29153	42240	29040	6631	11000		
22-Nov-21	47	31379	29010	41625	28425	7246	11000		
29-Nov-21	48	31027	28674	42084	28884	6787	11000		
06-Dec-21	49	31147	28807	42107	28907	6764	11000		
13-Dec-21	50	30318	27977	41459	28259	7412	11000		
20-Dec-21	51	28924	26583	40794	27594	8077	11000		
27-Dec-21	52	27280	24940	40916	27716	7955	11000		
03-Jan-22	1	29396	26817	40711	27511	8160	11000		
10-Jan-22	2	30101	27824	41054	27854	7817	11000		
17-Jan-22	3	30279	28002	40723	27523	8148	11000		
24-Jan-22	4	30216	27940	42961	29761	5910	11000		
31-Jan-22	5	31053	28896	42207	29007	6664	11000		
07-Feb-22	6	31542	29386	43012	29812	5859	11000		
14-Feb-22	7	31517	29361	43343	30143	5528	11000		
21-Feb-22	8	31330	29174	43487	30287	5384	11000		
28-Feb-22	9	31272	29375	43601	30401	5270	11000		
07-Mar-22	10	31528	29725	44126	30926	4745	11000		
14-Mar-22	11	31342	29492	44126	30926	4745	11000		
21-Mar-22	12	31144	29161	43655	30455	5216	11000		
28-Mar-22	13	31398	29415	44366	31166	4505	11000		
04-Apr-22	14	31778	30416	44463	31263	4408	11000		
11-Apr-22	15	32207	30845	43255	30055	5616	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: 47 866 MW (Incl. non-comm. Kusile units).**

**Installed Dispatchable Capacity: 48 871 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	1,961.3	2,113.9	4,064.8
	Max Date	25-Nov-2020 12:00	20-Feb-2021 12:00	01-Dec-2020 19:00	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	2,111.6	4,064.8
	Max Date	11-Mar-2021 15:00	20-Feb-2021 12:00	10-Mar-2021 17:00	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
Maximum					
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	536,921	1,453,441	2,006,315	4,031,042

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	2,212.1
Wind (Eskom+IPP)	2,612.7
Total (Incl other REs)	5,350.4