

## Weekly System Status Report – 2021 Week 12 (22/03/2021 – 28/03/2021)

### 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 22/Mar/2021	28,959	581	26,504	26,779	8.1%	10.3%	-1.0%
Tue 23/Mar/2021	29,871	1,136	28,474	28,603	4.4%	8.4%	-0.5%
Wed 24/Mar/2021	29,689	1,094	29,582	29,029	2.3%	6.0%	1.9%
Thu 25/Mar/2021	31,582	1,011	30,179	28,952	9.1%	12.6%	4.2%
Fri 26/Mar/2021	30,205	1,088	27,619	27,196	11.1%	15.1%	1.6%
Sat 27/Mar/2021	28,962	1,059	26,268	25,563	13.3%	17.4%	2.8%
Sun 28/Mar/2021	29,937	1,093	26,257	26,691	12.2%	16.3%	-1.6%

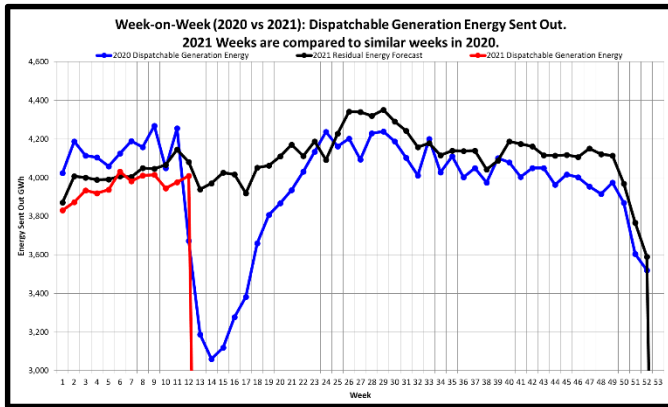
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 22/Mar/2021	30,204	581	27,791	28,024	7.8%	9.9%	-0.8%
Tue 23/Mar/2021	31,556	1,136	29,968	30,288	4.2%	7.9%	-1.1%
Wed 24/Mar/2021	31,226	1,094	30,925	30,567	2.2%	5.7%	1.2%
Thu 25/Mar/2021	33,073	1,011	31,545	30,443	8.6%	12.0%	3.6%
Fri 26/Mar/2021	31,808	1,088	29,311	28,799	10.4%	14.2%	1.8%
Sat 27/Mar/2021	30,790	1,059	28,119	27,391	12.4%	16.3%	2.7%
Sun 28/Mar/2021	31,568	1,093	27,797	28,322	11.5%	15.3%	-1.9%

### 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]



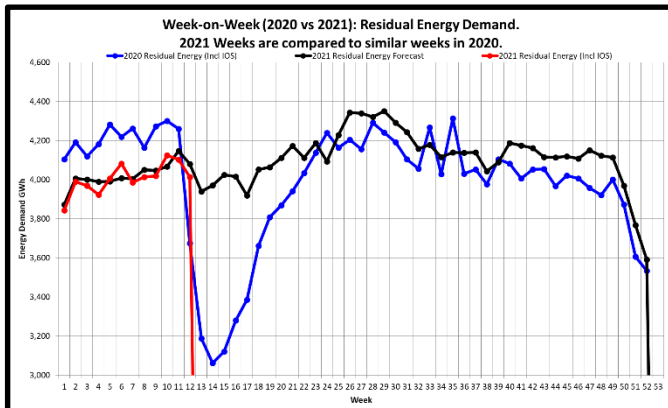
Week 12 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	4,010	GWh
Week-on-Week Growth	9.20	%
Year-on-Year Growth (Year-to-Date) Annual	-3.54	%

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

Annual Dispatchable Generation Energy Sent Out Statistics			
Year	01 Jan to 28 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	54,314	226,721	GWh
2017	52,666	225,203	GWh
2018	52,787	224,202	GWh
2019	51,467	219,563	GWh
2020	51,355	206,725	GWh
2021 (YTD)	48,940		GWh

### Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



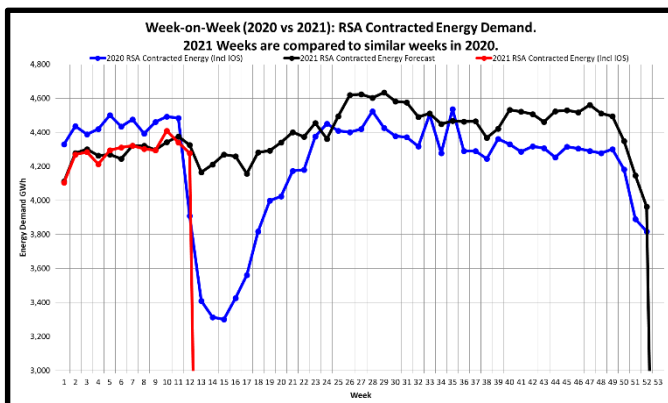
Week 12 : Residual Energy Demand Statistics (Incl IOS)		
Energy Demand	4,013	GWh
Week-on-Week Growth	9.21	%
Year-on-Year Growth (Year-to-Date) Annual	-3.92	%

**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 28 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	54,335	226,808	GWh
2017	52,662	225,248	GWh
2018	52,815	224,594	GWh
2019	52,111	220,924	GWh
2020	52,204	208,151	GWh
2021 (YTD)	49,543		GWh

### Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



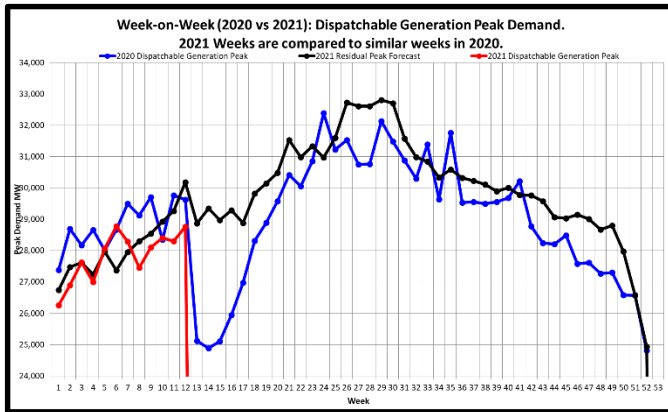
Week 12 : RSA Contracted Energy Demand Statistics (Incl IOS)		
Energy Demand	4,278	GWh
Week-on-Week Growth	9.41	%
Year-on-Year Growth (Year-to-Date) Annual	-2.46	%

**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 28 Mar Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	56,816	238,069	GWh
2017	55,705	235,426	GWh
2018	55,521	235,482	GWh
2019	55,041	232,511	GWh
2020	55,055	220,630	GWh
2021 (YTD)	53,041		GWh

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

[2021 weeks compared to similar 2020 weeks]



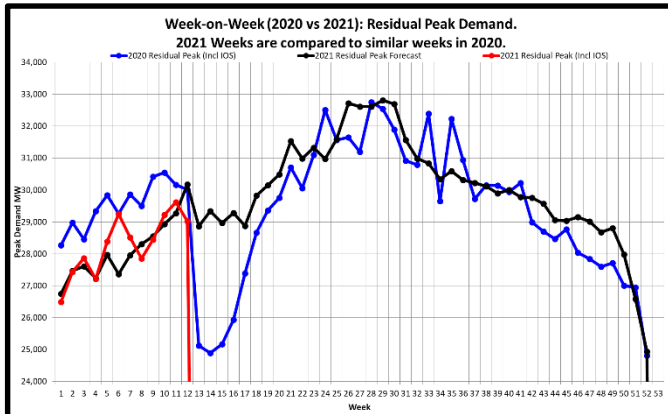
Week 12 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	28,763	MW
Week-on-Week Growth	-2.90	%
Year-on-Year Growth (Year-to-Date) Annual	-3.29	%

**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]



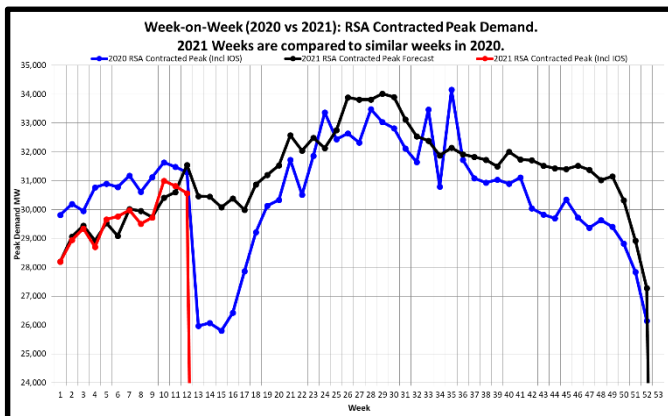
Week 12 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	29,029	MW
Week-on-Week Growth	-3.30	%
Year-on-Year Growth (Year-to-Date) Annual	-3.04	%

**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 12 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	30,567	MW
Week-on-Week Growth	-2.30	%
Year-on-Year Growth (Year-to-Date) Annual	-2.00	%

**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	31,003	MW

## Weekly Generation Availability

	Week												Annual (Jan - Dec)			
	52	53	1	2	3	4	5	6	7	8	9	10	11	12	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	58.95	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	13.19	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	24.03	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	3.83	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)
29-Mar-21	13	30466	28870	42809	28609	5842	12000		
05-Apr-21	14	30455	29345	42831	29631	5820	11000		
12-Apr-21	15	30080	28970	42431	29231	6220	11000		
19-Apr-21	16	30393	29283	43639	30439	5012	11000		
26-Apr-21	17	29992	28882	43586	30386	5065	11000		
03-May-21	18	30874	29826	43158	29958	5493	11000		
10-May-21	19	31200	30151	46750	33550	1901	11000		
17-May-21	20	31537	30489	46395	33195	2256	11000		
24-May-21	21	32579	31531	46910	33710	1741	11000		
31-May-21	22	32038	30989	44668	31468	3983	11000		
07-Jun-21	23	32493	31331	44713	31513	3938	11000		
14-Jun-21	24	32135	30973	45335	32135	3316	11000		
21-Jun-21	25	32760	31599	46065	32865	2586	11000		
28-Jun-21	26	33884	32722	45920	32720	2731	11000		
05-Jul-21	27	33818	32613	45730	32530	2921	11000		
12-Jul-21	28	33818	32613	45730	32530	2921	11000		
19-Jul-21	29	34013	32808	46061	32861	2590	11000		
26-Jul-21	30	33906	32701	45730	32530	2921	11000		
02-Aug-21	31	33119	31572	44560	31360	4091	11000		
09-Aug-21	32	32535	30988	44370	31170	4281	11000		
16-Aug-21	33	32388	30841	44159	30959	4492	11000		
23-Aug-21	34	31882	30335	43719	30519	4932	11000		
30-Aug-21	35	32141	30594	43874	30674	4777	11000		
06-Sep-21	36	31921	30317	43839	30639	4812	11000		
13-Sep-21	37	31832	30228	43264	30064	5387	11000		
20-Sep-21	38	31721	30117	43264	30064	5387	11000		
27-Sep-21	39	31498	29895	43059	29859	5592	11000		
04-Oct-21	40	32009	30007	42964	29764	5687	11000		
11-Oct-21	41	31732	29782	42834	29634	5817	11000		
18-Oct-21	42	31714	29763	42834	29634	5817	11000		
25-Oct-21	43	31525	29575	43062	29862	5589	11000		
01-Nov-21	44	31435	29066	42028	28828	6623	11000		
08-Nov-21	45	31408	29038	42524	29324	6127	11000		
15-Nov-21	46	31522	29153	42020	28820	6631	11000		
22-Nov-21	47	31379	29010	41405	28205	7246	11000		
29-Nov-21	48	31027	28674	41864	28664	6787	11000		
06-Dec-21	49	31147	28807	41887	28687	6764	11000		
13-Dec-21	50	30318	27977	41239	28039	7412	11000		
20-Dec-21	51	28924	26583	40574	27374	8077	11000		
27-Dec-21	52	27280	24940	40696	27496	7955	11000		
03-Jan-22	1	29396	26817	40491	27291	8160	11000		
10-Jan-22	2	30101	27824	40834	27634	7817	11000		
17-Jan-22	3	30279	28002	40503	27303	8148	11000		
24-Jan-22	4	30216	27940	42741	29541	5910	11000		
31-Jan-22	5	31053	28896	41987	28787	6664	11000		
07-Feb-22	6	31542	29386	42792	29592	5859	11000		
14-Feb-22	7	31517	29361	43123	29923	5528	11000		
21-Feb-22	8	31330	29174	43267	30067	5384	11000		
28-Feb-22	9	31272	29375	43381	30181	5270	11000		
07-Mar-22	10	31516	29725	43906	30706	4745	11000		
14-Mar-22	11	31283	29492	43906	30706	4745	11000		
21-Mar-22	12	30987	29161	43435	30235	5216	11000		
28-Mar-22	13	31240	29415	44146	30946	4505	11000		
04-Apr-22	14	31778	30416	44243	31043	4408	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	1,961.3	2,113.9	4,058.3
	Max Date	25-Nov-2020 12:00	20-Feb-2021 12:00	01-Dec-2020 19:00	10-Mar-2021 15:00
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	2,102.3	4,058.3
	Max Date	20-Feb-2021 10:00	20-Feb-2021 12:00	10-Mar-2021 17:00	10-Mar-2021 15:00

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	471,572	1,273,579	1,831,578	3,606,129

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
<b>Total (Incl other REs)</b>	<b>5,350.4</b>