

## Weekly System Status Report – 2021 Week 2 (11/01/2021 – 17/01/2021)

### 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 11/Jan/2021	29,671	1,397	27,084	27,315	8.6%	13.7%	-0.8%
Tue 12/Jan/2021	28,944	1,453	27,262	26,942	7.4%	12.8%	1.2%
Wed 13/Jan/2021	28,972	1,444	27,237	27,086	7.0%	12.3%	0.6%
Thu 14/Jan/2021	28,703	723	27,474	27,374	4.9%	7.5%	0.4%
Fri 15/Jan/2021	29,054	726	26,336	26,333	10.3%	13.1%	0.0%
Sat 16/Jan/2021	28,549	726	25,527	25,473	12.1%	14.9%	0.2%
Sun 17/Jan/2021	27,068	595	25,397	25,333	6.8%	9.2%	0.3%

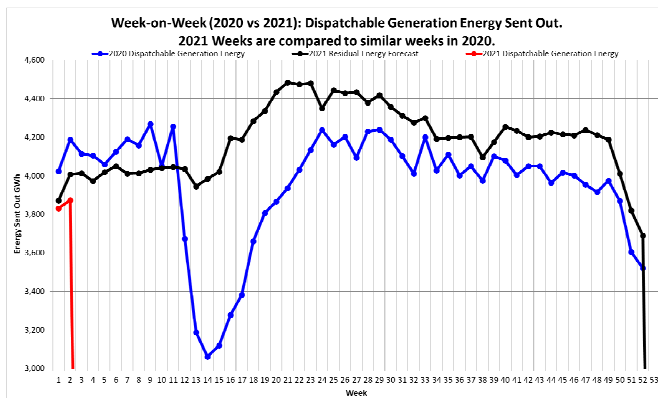
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 11/Jan/2021	31,323	1,397	28,919	28,966	8.1%	13.0%	-0.2%
Tue 12/Jan/2021	30,901	1,453	29,069	28,899	6.9%	12.0%	0.6%
Wed 13/Jan/2021	30,874	1,444	28,752	28,988	6.5%	11.5%	-0.8%
Thu 14/Jan/2021	30,160	723	28,973	28,832	4.6%	7.1%	0.5%
Fri 15/Jan/2021	30,071	725	28,476	28,338	6.1%	8.7%	0.5%
Sat 16/Jan/2021	30,507	726	27,563	27,432	11.2%	13.9%	0.5%
Sun 17/Jan/2021	28,516	595	26,908	26,781	6.5%	8.7%	0.5%

### 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 2 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	3,874	GWh
Week-on-Week Growth	-7.50	%
Year-on-Year Growth (Year-to-Date) Annual	-6.18	%

#### Note:

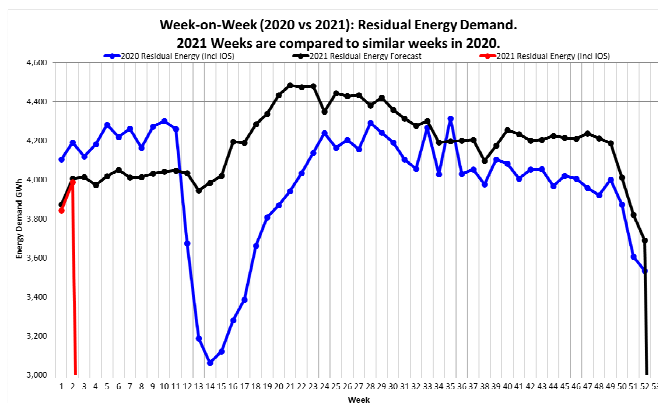
2021 Weeks are compared to similar weeks in 2020.  
(2021 week 1 ~ 2020 week 1)

### Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 17 Jan Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	10,117	226,721	GWh
2017	9,874	225,203	GWh
2018	9,902	224,202	GWh
2019	9,700	219,563	GWh
2020	9,663	206,724	GWh
2021 (YTD)	9,178		GWh

## Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



### Week 2 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	3,988	GWh
Week-on-Week Growth	-4.83	%
Year-on-Year Growth (Year-to-Date) Annual	-5.60	%

#### Note:

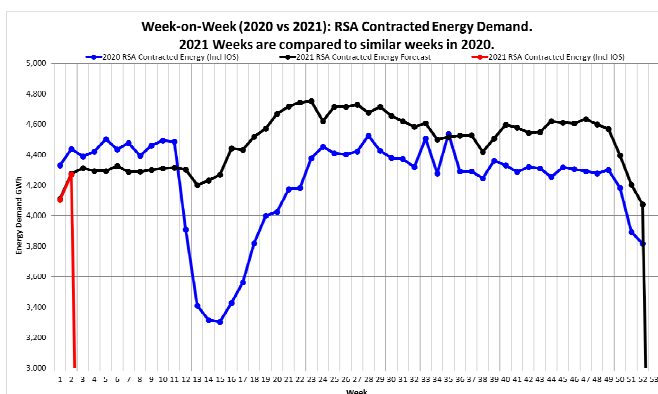
2021 Weeks are compared to similar weeks in 2020.  
(2021 week 1 ~ 2020 week 1)

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

Year	01 Jan to 17 Jan Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	10,120	226,808	GWh
2017	9,875	225,248	GWh
2018	9,906	224,594	GWh
2019	9,708	220,924	GWh
2020	9,774	208,150	GWh
2021 (YTD)	9,305		GWh

## Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



### Week 2 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,271	GWh
Week-on-Week Growth	-3.78	%
Year-on-Year Growth (Year-to-Date) Annual	-4.50	%

#### Note:

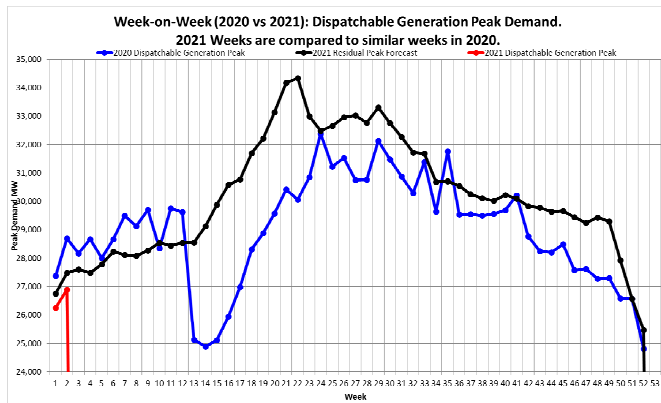
2021 Weeks are compared to similar weeks in 2020.  
(2021 week 1 ~ 2020 week 1)

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

Year	01 Jan to 17 Jan Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	10,592	238,069	GWh
2017	10,521	235,426	GWh
2018	10,509	235,482	GWh
2019	10,339	232,511	GWh
2020	10,341	220,629	GWh
2021 (YTD)	9,977		GWh

## Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 2 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	26,893	MW
Week-on-Week Growth	-6.28	%
Year-on-Year Growth (Year-to-Date) Annual	-6.28	%

**Note:**

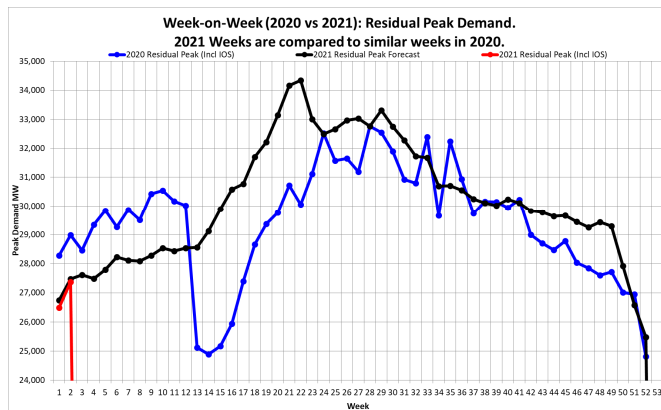
2021 Weeks are compared to similar weeks in 2020.

(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)	Mon 11-Jan-2021	26,893	MW

## Week-on-Week Residual Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 2 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	27,378	MW
Week-on-Week Growth	-5.53	%
Year-on-Year Growth (Year-to-Date) Annual	-5.53	%

**Note:**

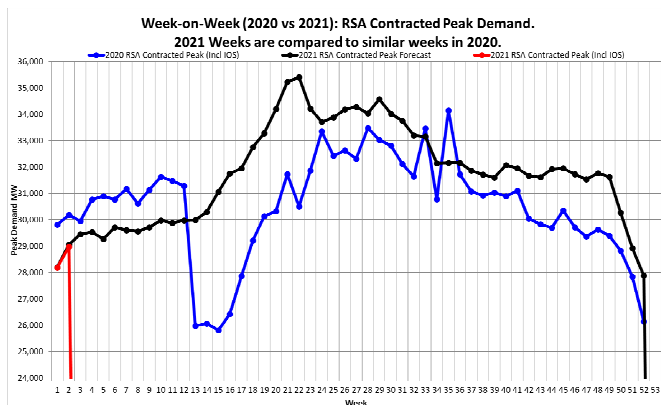
2021 Weeks are compared to similar weeks in 2020.

(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)	Thu 14-Jan-2021	27,378	MW

## Week-on-Week RSA Contracted Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 2 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	28,988	MW
Week-on-Week Growth	-4.00	%
Year-on-Year Growth (Year-to-Date) Annual	-4.00	%

**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 13-Jan-2021	28,988	MW

## Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	42	43	44	45	46	47	48	49	50	51	52	53	1	2	YTD	2020
Energy Availability Factor (Eskom EAF)	65.37	62.64	64.67	65.29	64.37	62.67	59.81	60.30	60.02	60.42	57.85	54.57	57.00	57.72	57.35	65.04
Planned Outage Factor	13.99	12.92	13.17	16.07	16.69	16.21	17.98	15.71	16.17	17.07	19.11	20.63	15.40	12.96	14.71	11.24
Unplanned Outage Factor	18.98	22.38	20.33	16.13	16.21	17.20	18.33	20.31	19.37	18.75	19.36	21.52	23.68	25.27	24.15	20.88
Other Outage Factor	1.66	2.06	1.83	2.51	2.73	3.92	3.88	3.68	4.44	3.76	3.68	3.28	3.92	4.05	3.79	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	RSA Contracted Forecast	Residual Forecast	Available Dispatchable Capacity	Available Capacity (Less OR and UA)	Planned Maintenance	Unplanned Outage Assumption (UA)	Planned Risk Level (-14200 MW)	Likely Risk Scenario (-16200 MW)
18-Jan-21	3	29449	27612	40151	25951	8500	12000		
25-Jan-21	4	29539	27483	40204	26004	8447	12000		
01-Feb-21	5	29273	27786	40949	26749	7702	12000		
08-Feb-21	6	29719	28232	40882	26682	7769	12000		
15-Feb-21	7	29602	28115	41093	26893	7558	12000		
22-Feb-21	8	29569	28082	41150	26950	7501	12000		
01-Mar-21	9	29717	28274	41261	27061	7390	12000		
08-Mar-21	10	29980	28536	41292	27092	7359	12000		
15-Mar-21	11	29879	28436	42139	27939	6512	12000		
22-Mar-21	12	29979	28536	41737	27537	6914	12000		
29-Mar-21	13	30002	28559	42377	28177	6274	12000		
05-Apr-21	14	30303	29123	42027	27827	6624	12000		
12-Apr-21	15	31064	29885	43412	29212	5239	12000		
19-Apr-21	16	31760	30581	43412	29212	5239	12000		

### 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**

**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.

Download the Medium-Term System Adequacy Outlook 2020 to 2024 (Published 30 October 2019).

## 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	498.0	1,805.3	2,064.1	3,587.3
	Max Date	07-Jan-2021 10:00	17-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	127,149	350,296	623,854	1,111,113

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	1,348
	Max Date	02-Jan-2021 to 03-Jan-2021

Current Installed Capacity (MW)	
CSP	500.0
PV	2,107.1
Wind (Eskom+IPP)	2,495.0
Total (Incl other REs)	5,128.6