

Weekly System Status Report – 2021 Week 8 (22/02/2021 – 28/02/2021)

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 22/Feb/2021	28,959	765	27,877	27,610	4.9%	7.7%	1.0%
Tue 23/Feb/2021	29,100	1,418	28,305	27,855	4.5%	9.6%	1.6%
Wed 24/Feb/2021	29,496	1,311	28,015	27,702	6.5%	11.2%	1.1%
Thu 25/Feb/2021	30,208	1,241	27,693	27,332	10.5%	15.1%	1.3%
Fri 26/Feb/2021	29,908	927	26,629	26,716	11.9%	15.4%	-0.3%
Sat 27/Feb/2021	29,392	1,249	26,102	25,518	15.2%	20.1%	2.3%
Sun 28/Feb/2021	29,301	1,250	25,862	25,799	13.6%	18.4%	0.2%

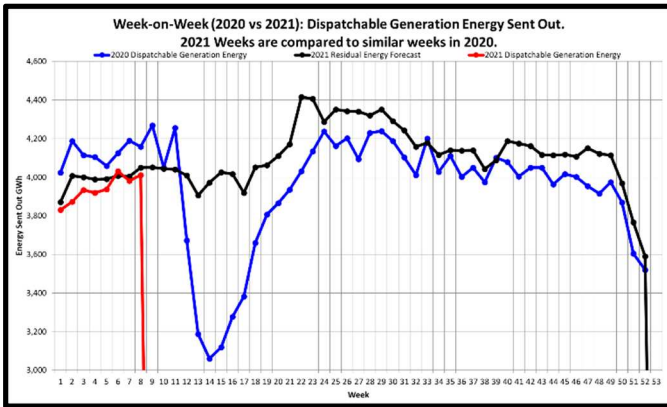
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 22/Feb/2021	30,738	765	29,676	29,389	4.6%	7.2%	1.0%
Tue 23/Feb/2021	30,710	1,418	29,948	29,465	4.2%	9.0%	1.6%
Wed 24/Feb/2021	31,297	1,311	29,767	29,503	6.1%	10.5%	0.9%
Thu 25/Feb/2021	32,354	1,241	29,715	29,478	9.8%	14.0%	0.8%
Fri 26/Feb/2021	32,403	989	28,622	28,329	14.4%	17.9%	1.0%
Sat 27/Feb/2021	31,095	1,249	27,918	27,221	14.2%	18.8%	2.6%
Sun 28/Feb/2021	31,191	1,250	27,305	27,689	12.6%	17.2%	-1.4%

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]



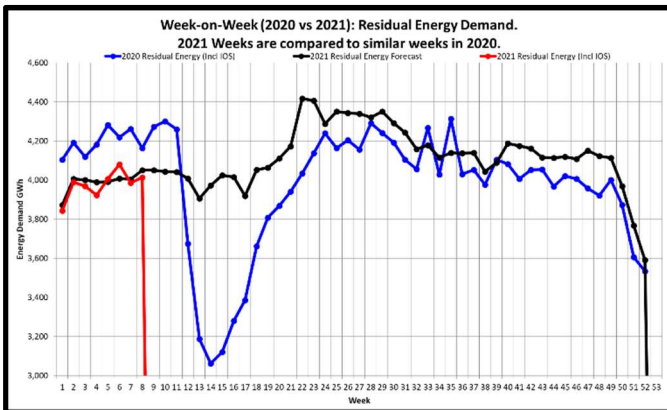
Week 8 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	4,011	GWh
Week-on-Week Growth	-3.55	%
Year-on-Year Growth (Year-to-Date) Annual	-4.38	%

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 Feb Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	37,218	226,721	GWh
2017	35,542	225,203	GWh
2018	35,542	224,202	GWh
2019	35,017	219,563	GWh
2020	34,978	206,724	GWh
2021 (YTD)	32,994		GWh

Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



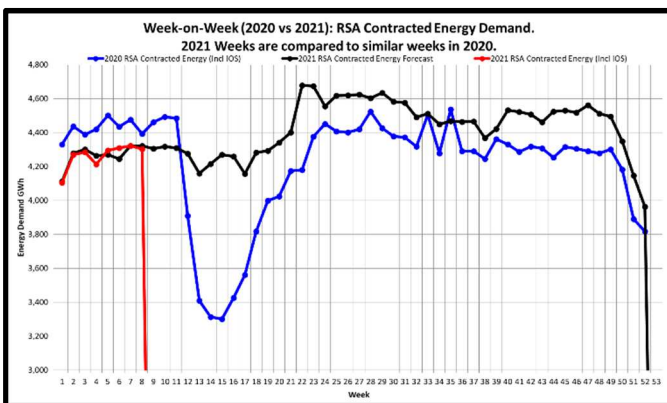
Week 8 : Residual Energy Demand Statistics (Incl IOS)		
Energy Demand	4,014	GWh
Week-on-Week Growth	-3.59	%
Year-on-Year Growth (Year-to-Date) Annual	-5.11	%

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 Feb Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	37,237	226,808	GWh
2017	35,542	225,248	GWh
2018	35,561	224,594	GWh
2019	35,226	220,924	GWh
2020	35,565	208,150	GWh
2021 (YTD)	33,284		GWh

Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



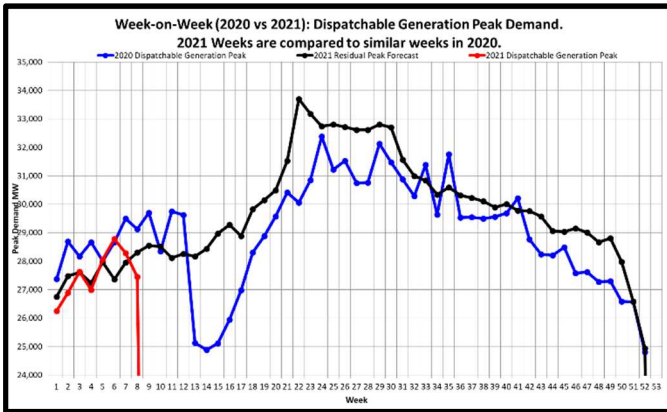
Week 8 : RSA Contracted Energy Demand Statistics (Incl IOS)		
Energy Demand	4,304	GWh
Week-on-Week Growth	-2.03	%
Year-on-Year Growth (Year-to-Date) Annual	-3.61	%

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 Feb Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	38,912	238,069	GWh
2017	37,691	235,426	GWh
2018	37,490	235,482	GWh
2019	37,281	232,511	GWh
2020	37,585	220,629	GWh
2021 (YTD)	35,713		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



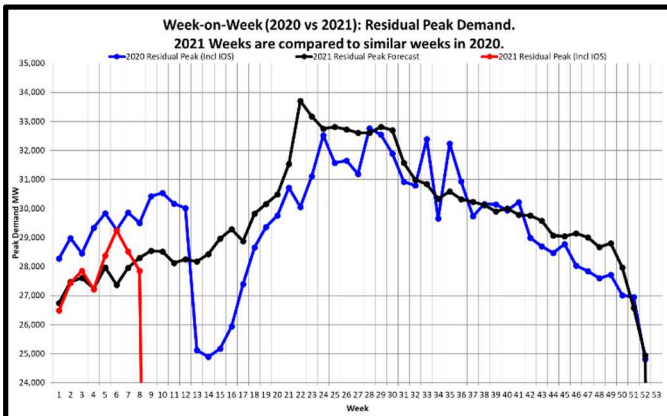
Week 8 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	27,454	MW
Week-on-Week Growth	-5.73	%
Year-on-Year Growth (Year-to-Date) Annual	-2.42	%

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]



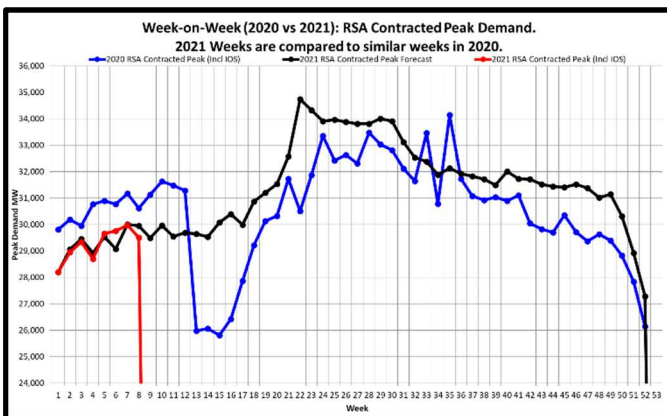
Week 8 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	27,855	MW
Week-on-Week Growth	-5.58	%
Year-on-Year Growth (Year-to-Date) Annual	-2.08	%

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 11-Feb-2021	29,243	MW

Week-on-Week RSA Contracted Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 8 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	29,503	MW
Week-on-Week Growth	-3.66	%
Year-on-Year Growth (Year-to-Date) Annual	-3.83	%

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)	Thu 18-Feb-2021	29,980	MW

Weekly Generation Availability

	Week														Annual (Jan - Dec)	
	48	49	50	51	52	53	1	2	3	4	5	6	7	8	YTD	2020
Energy Availability Factor (Eskom EAF)	59.81	60.28	60.02	60.43	57.82	54.45	56.76	57.59	58.86	58.38	58.23	58.97	59.67	59.41	58.44	65.04
Planned Outage Factor	17.98	15.71	16.17	17.07	19.11	20.65	14.69	12.97	11.84	10.62	10.77	11.97	13.62	13.41	12.91	11.24
Unplanned Outage Factor	18.35	20.34	19.42	18.79	19.39	21.64	24.63	25.31	25.08	27.18	26.22	25.01	22.73	23.32	24.64	20.88
Other Outage Factor	3.86	3.67	4.39	3.71	3.68	3.26	3.92	4.13	4.22	3.82	4.78	4.05	3.98	3.86	4.01	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)
01-Mar-21	9	29496	28550	41050	26850	7601	12000		
08-Mar-21	10	29965	28520	41202	27002	7449	12000		
15-Mar-21	11	29550	28121	41107	26907	7544	12000		
22-Mar-21	12	29685	28256	41152	26952	7499	12000		
29-Mar-21	13	29646	28176	41812	27612	6839	12000		
05-Apr-21	14	29543	28433	41442	28242	7209	11000		
12-Apr-21	15	30080	28970	42212	29012	6439	11000		
19-Apr-21	16	30393	29283	42805	29605	5846	11000		
26-Apr-21	17	29992	28882	43423	30223	5228	11000		
03-May-21	18	30874	29826	44460	31260	4191	11000		
10-May-21	19	31200	30151	45752	32552	2899	11000		
17-May-21	20	31537	30489	46577	33377	2074	11000		
24-May-21	21	32579	31531	46577	33377	2074	11000		
31-May-21	22	34751	33703	46497	33297	2154	11000		
07-Jun-21	23	34333	33171	46096	32896	2555	11000		
14-Jun-21	24	33909	32747	46096	32896	2555	11000		
21-Jun-21	25	33970	32809	45531	32331	3120	11000		
28-Jun-21	26	33884	32722	45734	32534	2917	11000		
05-Jul-21	27	33818	32613	45734	32534	2917	11000		
12-Jul-21	28	33818	32613	45544	32344	3107	11000		
19-Jul-21	29	34013	32808	45544	32344	3107	11000		
26-Jul-21	30	33906	32701	45544	32344	3107	11000		
02-Aug-21	31	33119	31572	44824	31624	3827	11000		
09-Aug-21	32	32535	30988	44089	30889	4562	11000		
16-Aug-21	33	32388	30841	44089	30889	4562	11000		
23-Aug-21	34	31882	30335	43871	30671	4780	11000		
30-Aug-21	35	32141	30594	43386	30186	5265	11000		
06-Sep-21	36	31921	30317	43682	30482	4969	11000		
13-Sep-21	37	31832	30228	43107	29907	5544	11000		
20-Sep-21	38	31721	30117	43132	29932	5519	11000		
27-Sep-21	39	31498	29895	43008	29808	5643	11000		
04-Oct-21	40	32009	30007	42953	29753	5698	11000		
11-Oct-21	41	31732	29782	43146	29946	5505	11000		
18-Oct-21	42	31714	29763	42671	29471	5980	11000		
25-Oct-21	43	31525	29575	42367	29167	6284	11000		
01-Nov-21	44	31435	29066	41788	28588	6863	11000		
08-Nov-21	45	31408	29038	42284	29084	6367	11000		
15-Nov-21	46	31522	29153	42255	29055	6396	11000		
22-Nov-21	47	31379	29010	41670	28470	6981	11000		
29-Nov-21	48	31027	28674	42129	28929	6522	11000		
06-Dec-21	49	31147	28807	41672	28472	6979	11000		
13-Dec-21	50	30318	27977	41374	28174	7277	11000		
20-Dec-21	51	28924	26583	40814	27614	7837	11000		
27-Dec-21	52	27280	24940	41766	28566	6885	11000		
03-Jan-22	1	29396	26817	41481	28281	7170	11000		
10-Jan-22	2	30101	27824	41895	28695	6756	11000		
17-Jan-22	3	30279	28002	41564	28364	7087	11000		
24-Jan-22	4	30216	27940	42917	29717	5734	11000		
31-Jan-22	5	31052	28896	42803	29603	5848	11000		
07-Feb-22	6	31541	29386	42993	29793	5658	11000		
14-Feb-22	7	31516	29361	42993	29793	5658	11000		
21-Feb-22	8	31329	29174	43608	30408	5043	11000		
28-Feb-22	9	31271	29375	43722	30522	4929	11000		
07-Mar-22	10	31516	29725	43897	30697	4754	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	4,050.0
	Max Date	25-Nov-2020 12:00	20-Feb-2021 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	502.2	1,961.3	2,059.6	3,888.6
	Max Date	20-Feb-2021 10:00	20-Feb-2021 12:00	09-Jan-2021 17:00	15-Feb-2021 13:00

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	371,518	977,837	1,443,365	2,812,882

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