

Weekly System Status Report – 2021 Week 15 (12/04/2021 – 18/04/2021)

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 12/Apr/2021	31,740	0	29,537	30,287	4.8%	4.8%	-2.5%
Tue 13/Apr/2021	31,309	0	29,869	30,281	3.4%	3.4%	-1.4%
Wed 14/Apr/2021	31,800	710	30,027	29,896	6.4%	8.7%	0.4%
Thu 15/Apr/2021	30,724	558	29,517	29,196	5.2%	7.1%	1.1%
Fri 16/Apr/2021	32,089	725	28,050	28,515	12.5%	15.1%	-1.6%
Sat 17/Apr/2021	32,921	725	28,185	29,096	13.1%	15.6%	-3.1%
Sun 18/Apr/2021	32,696	535	28,471	28,729	13.8%	15.7%	-0.9%

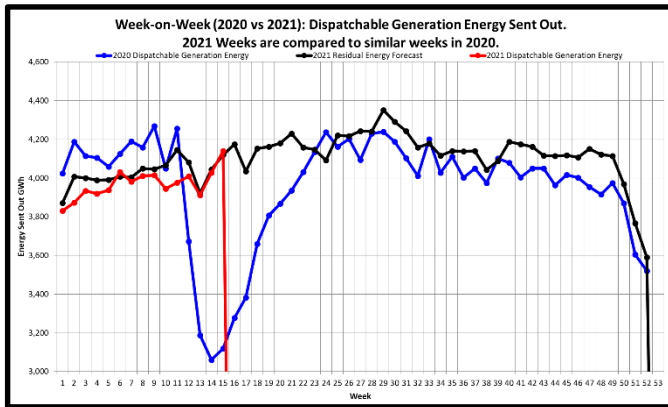
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 12/Apr/2021	32,408	0	30,453	30,955	4.7%	4.7%	-1.6%
Tue 13/Apr/2021	32,022	0	30,782	30,994	3.3%	3.3%	-0.7%
Wed 14/Apr/2021	32,833	710	30,904	30,929	6.2%	8.5%	-0.1%
Thu 15/Apr/2021	32,388	558	31,294	30,860	5.0%	6.8%	1.4%
Fri 16/Apr/2021	33,657	725	29,483	30,083	11.9%	14.3%	-2.0%
Sat 17/Apr/2021	33,451	725	28,876	29,627	12.9%	15.4%	-2.5%
Sun 18/Apr/2021	33,424	535	29,255	29,457	13.5%	15.3%	-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) = 49 591 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 15 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	4,141	GWh
Week-on-Week Growth	32.75	%
Year-on-Year Growth (Year-to-Date) Annual	1.66	%

Note:

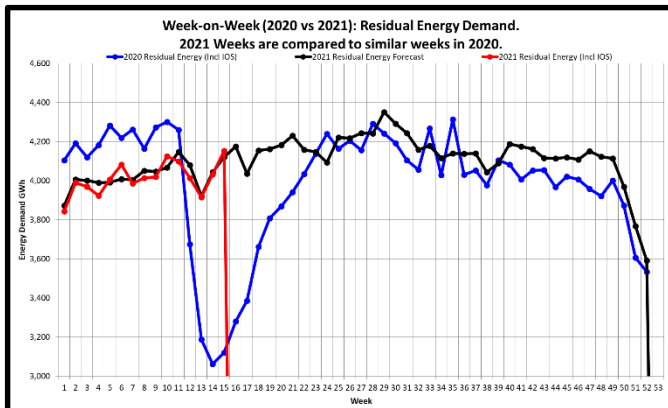
2021 Weeks are compared to similar weeks in 2020.

(2021 week 1 ~ 2020 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics			
Year	01 Jan to 18 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	67,268	226,721	GWh
2017	65,356	225,203	GWh
2018	65,225	224,202	GWh
2019	64,207	219,563	GWh
2020	60,727	206,725	GWh
2021 (YTD)	61,020		GWh

Week-on-Week Residual Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 15 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,152	GWh
Week-on-Week Growth	33.05	%
Year-on-Year Growth (Year-to-Date) Annual	1.29	%

Note:

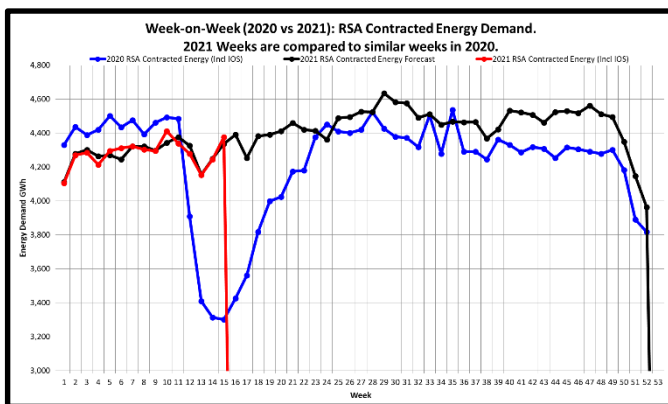
2021 Weeks are compared to similar weeks in 2020.

(2021 week 1 ~ 2020 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)			
Year	01 Jan to 18 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	67,298	226,808	GWh
2017	65,354	225,248	GWh
2018	65,264	224,594	GWh
2019	64,864	220,924	GWh
2020	61,579	208,151	GWh
2021 (YTD)	61,639		GWh

Week-on-Week RSA Contracted Energy Demand

[2021 weeks compared to similar 2020 weeks]



Week 15 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,376	GWh
Week-on-Week Growth	32.51	%
Year-on-Year Growth (Year-to-Date) Annual	2.31	%

Note:

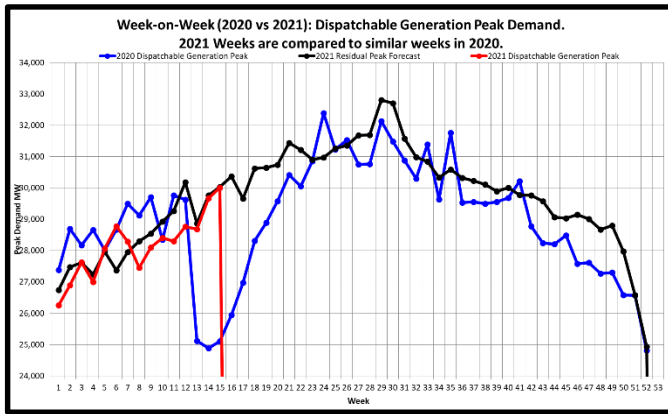
2021 Weeks are compared to similar weeks in 2020.

(2021 week 1 ~ 2020 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)			
Year	01 Jan to 18 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	70,404	238,069	GWh
2017	68,861	235,426	GWh
2018	68,466	235,482	GWh
2019	68,349	232,511	GWh
2020	65,086	220,630	GWh
2021 (YTD)	65,817		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



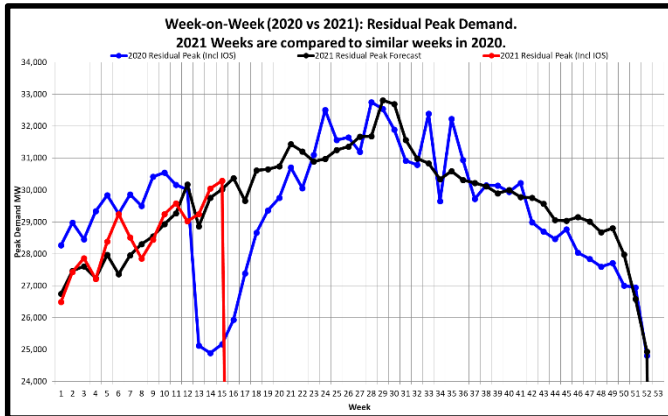
Week 15 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	30,004	MW
Week-on-Week Growth	19.48	%
Year-on-Year Growth (Year-to-Date) Annual	0.82	%

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 13-Apr-2021	30,004	MW

Week-on-Week Residual Peak Demand

[2021 weeks compared to similar 2020 weeks]



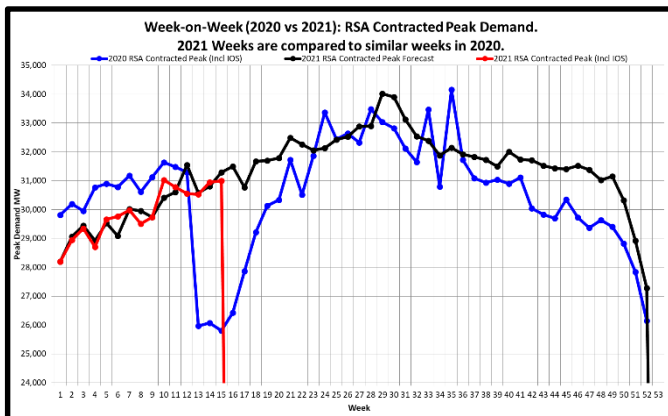
Week 15 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	30,287	MW
Week-on-Week Growth	20.34	%
Year-on-Year Growth (Year-to-Date) Annual	-0.84	%

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)	Mon 12-Apr-2021	30,287	MW

Week-on-Week RSA Contracted Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 15 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	30,994	MW
Week-on-Week Growth	20.09	%
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 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	31,022	MW

Weekly Generation Availability

	Week															Annual (Jan - Dec)	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	YTD	2020	
Energy Availability Factor (Eskom EAF)	57.56	58.83	58.49	57.95	58.54	59.37	59.17	60.44	60.14	59.61	60.38	59.47	62.23	63.87	59.56	65.04	
Planned Outage Factor	12.97	11.84	10.62	10.79	12.00	13.70	13.42	15.10	14.52	14.56	12.17	12.56	11.51	11.82	12.97	11.24	
Unplanned Outage Factor	25.34	25.06	27.03	26.42	25.31	22.89	23.39	20.43	21.92	22.64	24.43	25.30	23.54	22.36	23.91	20.88	
Other Outage Factor	4.13	4.27	3.86	4.84	4.15	4.04	4.02	4.03	3.42	3.19	3.02	2.67	2.72	1.95	3.56	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)
19-Apr-21	16	31499	30373	43081	29881	6510	11000		
26-Apr-21	17	30774	29664	42598	29398	6993	11000		
03-May-21	18	31669	30620	44427	31227	5164	11000		
10-May-21	19	31701	30653	45403	32203	4188	11000		
17-May-21	20	31793	30745	45728	32528	3863	11000		
24-May-21	21	32488	31439	45578	32378	4013	11000		
31-May-21	22	32262	31214	45950	32750	3641	11000		
07-Jun-21	23	32059	30897	45188	31988	4403	11000		
14-Jun-21	24	32135	30973	45188	31988	4403	11000		
21-Jun-21	25	32423	31261	46760	33560	2831	11000		
28-Jun-21	26	32521	31359	46860	33660	2731	11000		
05-Jul-21	27	32883	31678	46670	33470	2921	11000		
12-Jul-21	28	32895	31690	46670	33470	2921	11000		
19-Jul-21	29	34013	32808	47001	33801	2590	11000		
26-Jul-21	30	33906	32701	46670	33470	2921	11000		
02-Aug-21	31	33119	31572	45500	32300	4091	11000		
09-Aug-21	32	32535	30988	45310	32110	4281	11000		
16-Aug-21	33	32388	30841	45099	31899	4492	11000		
23-Aug-21	34	31882	30335	44659	31459	4932	11000		
30-Aug-21	35	32141	30594	44814	31614	4777	11000		
06-Sep-21	36	31921	30317	44779	31579	4812	11000		
13-Sep-21	37	31832	30228	44204	31004	5387	11000		
20-Sep-21	38	31721	30117	44204	31004	5387	11000		
27-Sep-21	39	31498	29895	43999	30799	5592	11000		
04-Oct-21	40	32009	30007	43904	30704	5687	11000		
11-Oct-21	41	31732	29782	43774	30574	5817	11000		
18-Oct-21	42	31714	29763	43774	30574	5817	11000		
25-Oct-21	43	31525	29575	44002	30802	5589	11000		
01-Nov-21	44	31435	29066	43062	29862	6529	11000		
08-Nov-21	45	31408	29038	43464	30264	6127	11000		
15-Nov-21	46	31522	29153	42960	29760	6631	11000		
22-Nov-21	47	31379	29010	42345	29145	7246	11000		
29-Nov-21	48	31027	28674	42804	29604	6787	11000		
06-Dec-21	49	31147	28807	42827	29627	6764	11000		
13-Dec-21	50	30318	27977	42179	28979	7412	11000		
20-Dec-21	51	28924	26583	41514	28314	8077	11000		
27-Dec-21	52	27280	24940	41636	28436	7955	11000		
03-Jan-22	1	29396	26817	41431	28231	8160	11000		
10-Jan-22	2	30101	27824	41774	28574	7817	11000		
17-Jan-22	3	30279	28002	41443	28243	8148	11000		
24-Jan-22	4	30216	27940	43681	30481	5910	11000		
31-Jan-22	5	31053	28896	42927	29727	6664	11000		
07-Feb-22	6	31542	29386	43732	30532	5859	11000		
14-Feb-22	7	31517	29361	44063	30863	5528	11000		
21-Feb-22	8	31330	29174	44207	31007	5384	11000		
28-Feb-22	9	31272	29375	44321	31121	5270	11000		
07-Mar-22	10	31528	29725	44846	31646	4745	11000		
14-Mar-22	11	31342	29492	44846	31646	4745	11000		
21-Mar-22	12	31144	29161	44375	31175	5216	11000		
28-Mar-22	13	31398	29415	45086	31886	4505	11000		
04-Apr-22	14	31778	30416	45183	31983	4408	11000		
11-Apr-22	15	32207	30845	43975	30775	5616	11000		
18-Apr-22	16	32460	31098	42750	29550	6841	11000		
25-Apr-22	17	32036	30674	43365	30165	6226	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: 48 586 MW (Incl. non-comm. Kusile units).

Installed Dispatchable Capacity: 49 591 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 - 2021 to 2025. (Published 30 October 2020).

<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
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	601,029	1,638,101	2,198,636	4,478,182

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)	2,714.7
Total (Incl other REs)	5,452.4