

Weekly System Status Report – 2021 Week 16 (19/04/2021 – 25/04/2021)

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

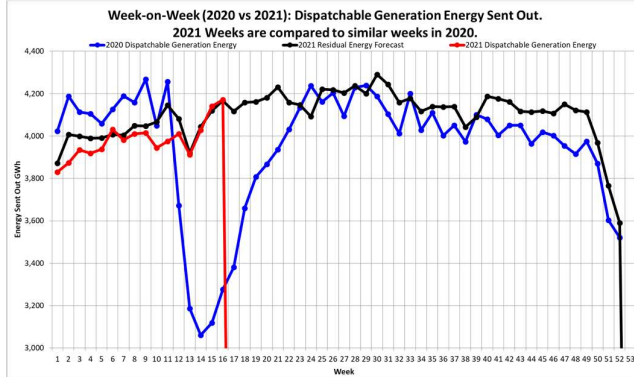
Date	Available Dispatchable Generation (MW)	Non-commercial Generation (MW)	Residual Load Forecast (MW)	Actual Residual Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (Residual Demand)
Mon 19/Apr/2021	33,360	722	29,495	29,935	11.4%	13.9%	-1.5%
Tue 20/Apr/2021	32,652	721	30,120	30,551	6.9%	9.2%	-1.4%
Wed 21/Apr/2021	32,519	614	30,373	30,751	5.7%	7.7%	-1.2%
Thu 22/Apr/2021	32,406	550	30,272	30,166	7.4%	9.2%	0.4%
Fri 23/Apr/2021	33,656	548	28,854	29,182	15.3%	17.2%	-1.1%
Sat 24/Apr/2021	33,271	342	28,183	28,560	16.5%	17.7%	-1.3%
Sun 25/Apr/2021	33,673	547	28,284	28,379	18.7%	20.6%	-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 19/Apr/2021	34,768	722	31,031	31,343	10.9%	13.2%	-1.0%
Tue 20/Apr/2021	33,751	721	31,125	31,650	6.6%	8.9%	-1.7%
Wed 21/Apr/2021	33,254	614	31,440	31,486	5.6%	7.6%	-0.1%
Thu 22/Apr/2021	33,631	550	31,447	31,391	7.1%	8.9%	0.2%
Fri 23/Apr/2021	34,786	548	30,116	30,312	14.8%	16.6%	-0.6%
Sat 24/Apr/2021	33,988	342	29,005	29,276	16.1%	17.3%	-0.9%
Sun 25/Apr/2021	34,182	547	29,000	28,888	18.3%	20.2%	0.4%

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) = 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]

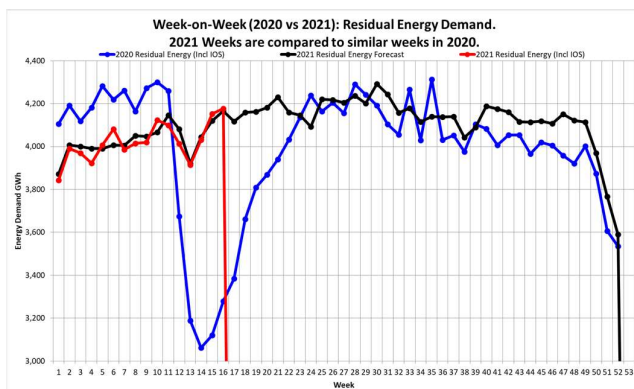
Week 16 : Dispatchable Generation Energy Sent Out Statistics		
Energy Sent Out	4,172	GWh
Week-on-Week Growth	27.30	%
Year-on-Year Growth (Year-to-Date) Annual	3.02	%

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 25 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	71,612	226,721	GWh
2017	69,753	225,203	GWh
2018	69,498	224,202	GWh
2019	68,293	219,563	GWh
2020	63,973	206,725	GWh
2021 (YTD)	65,192		GWh

Week-on-Week Residual Energy Demand



[2021 weeks compared to similar 2020 weeks]

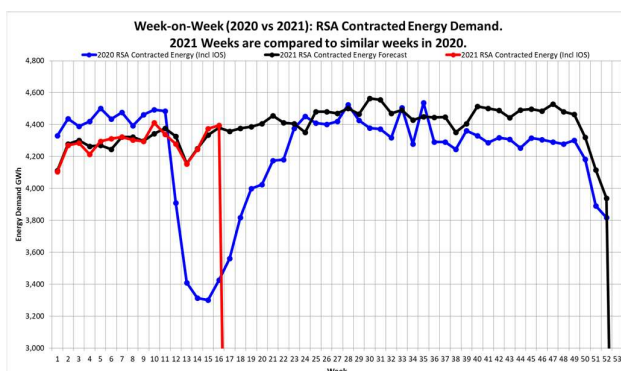
Week 16 : Residual Energy Demand Statistics (Incl IOS)		
Energy Demand	4,176	GWh
Week-on-Week Growth	27.35	%
Year-on-Year Growth (Year-to-Date) Annual	2.65	%

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 25 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	71,643	226,808	GWh
2017	69,752	225,248	GWh
2018	69,541	224,594	GWh
2019	68,955	220,924	GWh
2020	64,827	208,151	GWh
2021 (YTD)	65,816		GWh

Week-on-Week RSA Contracted Energy Demand



[2021 weeks compared to similar 2020 weeks]

Week 16 : RSA Contracted Energy Demand Statistics (Incl IOS)		
Energy Demand	4,396	GWh
Week-on-Week Growth	28.25	%
Year-on-Year Growth (Year-to-Date) Annual	3.65	%

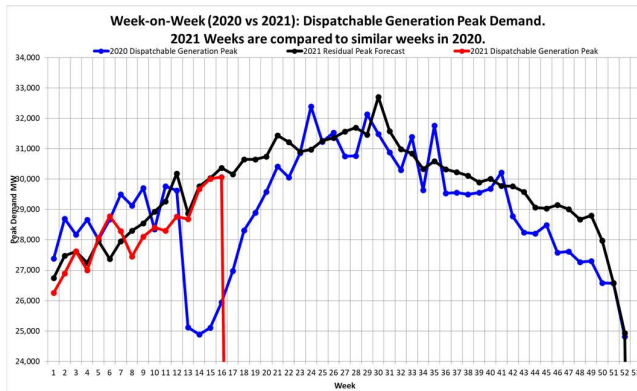
Note:

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 25 Apr Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2016	74,948	238,069	GWh
2017	73,395	235,426	GWh
2018	72,912	235,482	GWh
2019	72,647	232,511	GWh
2020	68,492	220,630	GWh
2021 (YTD)	70,210		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 16 : Dispatchable Generation Peak Demand Statistics			
Peak Demand	30,064	MW	
Week-on-Week Growth	15.89	%	
Year-on-Year Growth (Year-to-Date) Annual	1.02	%	

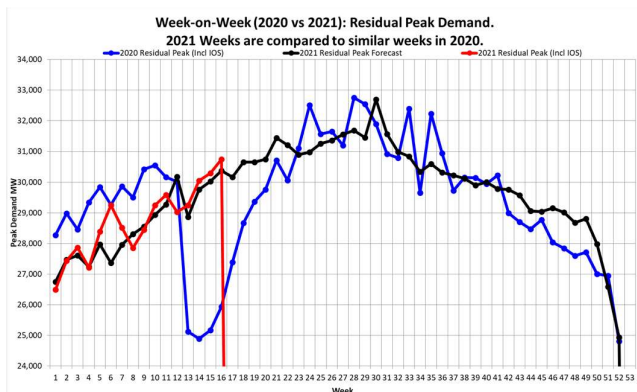
Note:

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)	Wed 21-Apr-2021	30,064	MW

Week-on-Week Residual Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 16 : Residual Peak Demand Statistics (Incl IOS)			
Peak Demand	30,751	MW	
Week-on-Week Growth	18.54	%	
Year-on-Year Growth (Year-to-Date) Annual	0.68	%	

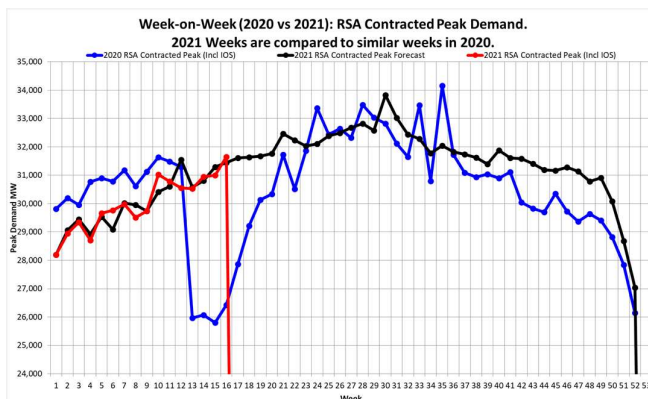
Note:

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 21-Apr-2021	30,751	MW

Week-on-Week RSA Contracted Peak Demand

[2021 weeks compared to similar 2020 weeks]



Week 16 : RSA Contracted Peak Demand Statistics (Incl IOS)			
Peak Demand	31,650	MW	
Week-on-Week Growth	19.78	%	
Year-on-Year Growth (Year-to-Date) Annual	0.04	%	

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)	Tue 20-Apr-2021	31,650	MW

Weekly Generation Availability

	Week																Annual (Jan - Dec)	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	YTD	2020		
Energy Availability Factor (Eskom EAF)	58.83	58.49	57.95	58.54	59.37	59.17	60.44	60.14	59.61	60.38	59.46	62.24	63.84	66.08	59.96	65.04		
Planned Outage Factor	11.84	10.62	10.79	12.00	13.70	13.42	15.10	14.52	14.56	12.17	12.56	11.51	11.81	9.99	12.78	11.24		
Unplanned Outage Factor	25.06	27.03	26.42	25.31	22.89	23.39	20.43	21.92	22.64	24.43	25.30	23.53	22.24	21.92	23.80	20.88		
Other Outage Factor	4.27	3.86	4.84	4.15	4.04	4.02	4.03	3.42	3.19	3.02	2.68	2.72	2.11	2.01	3.46	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

Week Start	Week	MW 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)
26-Apr-21	17	31606	30163	45480	32280	4111	11000		
03-May-21	18	31634	30652	44311	31111	5280	11000		
10-May-21	19	31675	30653	44692	31492	4899	11000		
17-May-21	20	31767	30745	45011	31811	4580	11000		
24-May-21	21	32462	31439	45446	32246	4145	11000		
31-May-21	22	32236	31214	45560	32750	3641	11000		
07-Jun-21	23	32027	30897	44683	31483	4908	11000		
14-Jun-21	24	32103	30973	44548	31348	5043	11000		
21-Jun-21	25	32391	31261	46120	32920	3471	11000		
28-Jun-21	26	32489	31359	45314	32114	4277	11000		
05-Jul-21	27	32683	31560	46670	33470	2921	11000		
12-Jul-21	28	32813	31690	46670	33470	2921	11000		
19-Jul-21	29	32580	31457	47001	33801	2590	11000		
26-Jul-21	30	33824	32701	46670	33470	2921	11000		
02-Aug-21	31	33018	31572	45500	32300	4091	11000		
09-Aug-21	32	32434	30988	45310	32110	4281	11000		
16-Aug-21	33	32287	30841	45099	31899	4492	11000		
23-Aug-21	34	31781	30335	44659	31459	4932	11000		
30-Aug-21	35	32040	30594	44814	31614	4777	11000		
06-Sep-21	36	31822	30317	44779	31579	4812	11000		
13-Sep-21	37	31733	30228	44204	31004	5387	11000		
20-Sep-21	38	31621	30117	44204	31004	5387	11000		
27-Sep-21	39	31399	29895	43999	30799	5592	11000		
04-Oct-21	40	31883	30007	43804	30704	5687	11000		
11-Oct-21	41	31607	29782	43774	30574	5817	11000		
18-Oct-21	42	31588	29763	43774	30574	5817	11000		
25-Oct-21	43	31400	29575	44002	30802	5589	11000		
01-Nov-21	44	31194	29066	43062	29862	6529	11000		
08-Nov-21	45	31167	29038	43464	30264	6127	11000		
15-Nov-21	46	31281	29153	42960	29760	6631	11000		
22-Nov-21	47	31139	29010	42345	29145	7246	11000		
29-Nov-21	48	30786	28674	42804	29604	6787	11000		
06-Dec-21	49	30908	28807	42827	29627	6764	11000		
13-Dec-21	50	30078	27877	42179	28979	7412	11000		
20-Dec-21	51	28684	26583	41514	28314	8077	11000		
27-Dec-21	52	27041	24940	41636	28436	7955	11000		
03-Jan-22	1	29304	26817	41431	28231	8160	11000		
10-Jan-22	2	30021	27824	41774	28574	7817	11000		
17-Jan-22	3	30199	28002	41443	28243	8148	11000		
24-Jan-22	4	30136	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	31598	29725	44846	31646	4745	11000		
14-Mar-22	11	31415	29492	44846	31646	4745	11000		
21-Mar-22	12	31216	29161	44375	31175	5216	11000		
28-Mar-22	13	31470	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		
02-May-22	18	32895	31659	45892	32692	3699	11000		

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.

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
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	582,070	1,663,296	2,277,643	4,563,384

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	2,211.1
Wind (Eskom+IPP)	2,612.7
Total (Incl other REs)	5,349.4