

Weekly System Status Report – 2022 Week 49 (05/12/2022 – 11/12/2022)

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 05/Dec/2022	28,813	0	26,635	27,196	5.9%	5.9%	-2.1%
Tue 06/Dec/2022	26,139	0	26,917	27,503	-5.0%	-5.0%	-2.1%
Wed 07/Dec/2022	24,269	0	26,954	27,218	-10.8%	-10.8%	-1.0%
Thu 08/Dec/2022	26,632	0	26,967	27,156	-1.9%	-1.9%	-0.7%
Fri 09/Dec/2022	27,116	0	26,323	26,319	3.0%	3.0%	0.0%
Sat 10/Dec/2022	25,787	0	25,270	25,876	-0.3%	-0.3%	-2.3%
Sun 11/Dec/2022	26,819	0	25,833	25,879	3.6%	3.6%	-0.2%

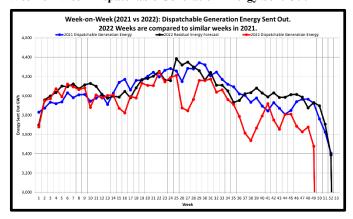
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non- Commercial Units)	Operating Reserve Margin (Incl Non- Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 05/Dec/2022	30,766	0	28,612	29,149	5.5%	5.5%	-1.8%
Tue 06/Dec/2022	27,639	0	28,491	29,003	-4.7%	-4.7%	-1.8%
Wed 07/Dec/2022	26,365	0	28,825	29,314	-10.1%	-10.1%	-1.7%
Thu 08/Dec/2022	29,093	0	29,152	29,617	-1.8%	-1.8%	-1.6%
Fri 09/Dec/2022	29,594	0	28,417	28,798	2.8%	2.8%	-1.3%
Sat 10/Dec/2022	27,964	0	27,199	27,523	1.6%	1.6%	-1.2%
Sun 11/Dec/2022	28,750	0	27,621	27,810	3.4%	3.4%	-0.7%

Notes:

- Available Dispatchable Generation means all generation resources that can be dispatched by Eskom and includes capacity available from all emergency generation resources.
- 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) = 49 191 MW.
- 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



[2022 weeks compared to similar 2021 weeks]

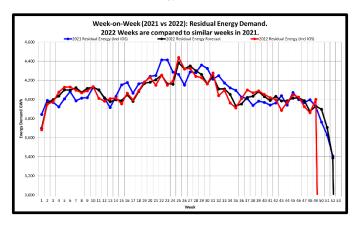
Week 49 : Dispatchable Generation Energy Sent Out Statistics					
Energy Sent Out	3,478	GWh			
Week-on-Week Growth	-11.32	%			
Year-on-Year Growth (Year-to-Date) Annual	-3.03	%			

Note:

2022 Weeks are compared to similar weeks in 2021. (2022 week 1 ~ 2021 week 1)

	Annual Dispatchable Generation Energy Sent Out Statistics					
Year	01 Jan to 11 Dec Energy	Annual Energy (01 Jan to 31 Dec)	Unit			
2017	213,876	225,203	GWh			
2018	212,916	224,202	GWh			
2019	208,733	219,563	GWh			
2020	196,131	206,725	GWh			
2021	199,636	210,022	GWh			
2022 (YTD)	193,619		GWh			

Week-on-Week Residual Energy Demand



[2022 weeks compared to similar 2021 weeks]

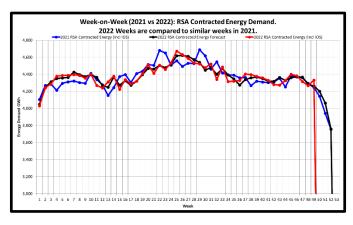
Week 49 : Residual Energy Demand Statistics (Incl IOS)					
Energy Demand	4,001	GWh			
Week-on-Week Growth	1.92	%			
Year-on-Year Growth (Year-to-Date) Annual	-0.49	%			

Note

2022 Weeks are compared to similar weeks in 2021. (2022 week 1 ~ 2021 week 1)

	Annual Residual Energy	y Demand Statistics (Incl IOS)	
Year	01 Jan to 11 Dec Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	213,918	225,248	GWh
2018	213,298	224,594	GWh
2019	210,014	220,924	GWh
2020	197,516	208,151	GWh
2021	201,565	211,958	GWh
2022 (YTD)	200,601		GWh

Week-on-Week RSA Contracted Energy Demand



[2022 weeks compared to similar 2021 weeks]

Week 49 : RSA Contracted Energy Demand Statistics (Incl IOS)				
Energy Demand	4,333	GWh		
Week-on-Week Growth	2.07	%		
Year-on-Year Growth (Year-to-Date) Annual	-0.04	%		

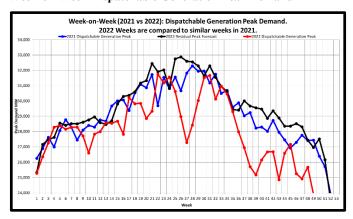
Note:

2022 Weeks are compared to similar weeks in 2021. (2022 week 1 ~ 2021 week 1)

	Annual RSA Contracted Energy Demand Statistics (Incl IOS)					
Year	01 Jan to 11 Dec Energy	Annual Energy (01 Jan to 31 Dec)	Unit			
2017	223,415	235,426	GWh			
2018	223,510	235,482	GWh			
2019	220,852	232,511	GWh			
2020	209,156	220,630	GWh			
2021	215,787	227,166	GWh			
2022 (YTD)	215,725		GWh			



Week-on-Week Dispatchable Generation Peak Demand



[2022 weeks compared to similar 2021 weeks]

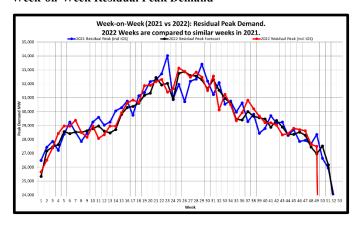
Week 49 : Dispatchable Generation Peak Demand Statistics					
Peak Demand	23,925	MW			
Week-on-Week Growth	-12.82	%			
Year-on-Year Growth (Year-to-Date) Annual -1.66 %					

2022 Weeks are compared to similar weeks in 2021.

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2022	week 1	1 ~ :	2021	week	1)	

	Annual Dispatchable Gener	ation Peak Demand Statistics	
Year	Peak Date	Annual Peak	Unit
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	Thu 15-Jul-2021	32,292	MW
2022 (YTD)	Thu 02-Jun-2022	31,756	MW

Week-on-Week Residual Peak Demand



[2022 weeks compared to similar 2021 weeks]

Week 49 : Residual Peak Demand Statistics (Incl IOS)					
Peak Demand	27,503	MW			
Week-on-Week Growth	-2.99	%			
Year-on-Year Growth (Year-to-Date) Annual	-2.62	%			

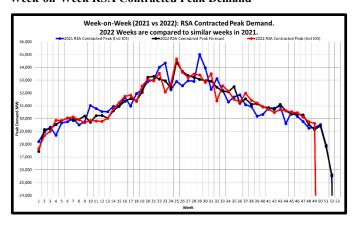
Note:

2022 Weeks are compared to similar weeks in 2021.

(2022 week 1 ~ 2021 week 1)

	Annual Residual Peak Demand Statistics (Incl IOS)					
Year	Peak Date	Annual Peak	Unit			
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	Tue 08-Jun-2021	34,029	MW			
2022 (YTD)	Thu 23-Jun-2022	33,136	MW			

Week-on-Week RSA Contracted Peak Demand



[2022 weeks compared to similar 2021 weeks]

Week 49 : RSA Contracted Peak Demand Statis	stics (Incl IC	OS)
Peak Demand	29,617	MW
Week-on-Week Growth	1.10	%
Year-on-Year Growth (Year-to-Date) Annual	-0.97	%

2022 Weeks are compared to similar weeks in 2021.

(2022 week 1 ~ 2021 week 1)

Annual RSA Contracted Peak Demand Statistics (Incl IOS)						
Year	Peak Date	Annual Peak	Unit			
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	Thu 22-Jul-2021	35,005	MW			
2022 (YTD)	Thu 23-Jun-2022	34,666	MW			



Weekly Generation Availability

							We	ek							Annual (J	lan - Dec)
	36	37	38	39	40	41	42	43	44	45	46	47	48	49	2022	2021
Energy Availability Factor (Eskom EAF)	56.27	52.70	53.16	55.42	56.91	58.36	55.31	56.64	59.05	55.24	56.47	56.52	54.49	51.55	58.49	61.79
Planned Outage Factor	11.06	13.56	10.44	11.43	13.33	11.11	11.58	12.05	9.62	11.35	9.89	12.19	9.13	11.47	10.31	10.81
Unplanned Outage Factor	31.95	33.13	35.36	32.12	28.54	29.23	31.91	29.82	29.24	31.37	31.56	29.06	34.48	35.31	29.67	24.53
Other Outage Factor	0.72	0.61	1.04	1.03	1.22	1.30	1.20	1.49	2.09	2.04	2.08	2.23	1.90	1.67	1.53	2.87

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)

52 Week Outlook

This is the forecast demand vs. available generating capacity for each week for 52 weeks ahead. Colour codes ranging from Green (no shortage) to Red

		MW	MW	MW	MW	MW	MW	MW	MW
Neek Start	Week	RSA	Residual	Available	Available	Planned	Unplanned	Planned	Likely Risk
		Contracted	Forecast	Dispatchable	Capacity (Less	Maintenance	Outage	Risk Level	Senario
		Forecast		Capacity	OR and UA)		Assumption (UA)	(-15200 MW)	(-16700 MW
12-Dec-22	50	29426	27519	43158	27958	6033	13000		
19-Dec-22	51	27831	26167	40685	25485	8506	13000		
26-Dec-22	52	25623	23436	41031	25831	8160	13000		
02-Jan-23	1	27829	25795	42478	27278	6713	13000		
09-Jan-23	2	28986	26952	43063	27863	6128	13000		
16-Jan-23	3	29491	27456	43016	27816	6175	13000		
23-Jan-23	4	29873	27838	42999	27799	6192	13000		
30-Jan-23	5	29869	28079	43402	28202	5789	13000		
06-Feb-23	6	30146	28356	43392	28192	5799	13000		
13-Feb-23	7	30285	28495	43692	28492	5499	13000		
20-Feb-23	8	30157	28367	43734	28534	5457	13000		
27-Feb-23	9	30006	28307	44523	29323	4668	13000		
06-Mar-23	10	30575	29007	44523	29323	4668	13000		
13-Mar-23	11	30805	29237	44523	29323	4668	13000		
20-Mar-23	12	31014	29366	44523	29323	4668	13000		
27-Mar-23	13	30853	29206	44523	29323	4668	13000		
03-Apr-23	14	32219	30573	44523	29323	4668	13000		
10-Apr-23	15	32493	30846	44823	29623	4368	13000		
17-Apr-23	16	32984	31338	45408	30208	3783	13000		
24-Apr-23	17	33668	32021	46023	30823	3168	13000		
01-May-23	18	33601	32419	46213	31013	2978	13000		
08-May-23	19	34531	33349	46987	31787	2204	13000		
15-May-23	20	34704	33522	46987	31787	2204	13000		
22-May-23	21	35031	33849	47177	31977	2014	13000		
29-May-23	22	35849	34667	47377	32177	1814	13000		
05-Jun-23	23	35053	33773	47229	32029	1962	13000		
12-Jun-23	24	35055	33774	47177	31977	2014	13000		
19-Jun-23	25	34886	33605	47177	31977	2014	13000		
26-Jun-23	26	35391	34110	47100	31900	2091	13000		
03-Jul-23	27	35153	33662	47642	32442	1549	13000		
10-Jul-23	28	35127	33636	47642	32442	1549	13000		
17-Jul-23	29	35242	33751	47970	32770	1221	13000		
24-Jul-23	30	35288	33797	47622	32422	1569	13000		
31-Jul-23	31	34476	32985	47047	31847	2144	13000		
07-Aug-23	32	34154	32460	46407	31207	2784	13000		
14-Aug-23	33	33807	32114	45860	30660	3331	13000		
21-Aug-23	34	33730 33641	32037	46179	30979	3012	13000		
28-Aug-23 04-Sep-23	35 36	33478	31961 31791	45734 45901	30534	3457 3290	13000 13000		
11-Sep-23		33126	31440	45901	30701 30706	3285	13000		
11-Sep-23 18-Sep-23	37	32252	30565	45906	30706	3285	13000		
	38	32232	30561	43366	29150	4841	13000		
25-Sep-23 02-Oct-23	39 40	32438	30361	43970	28770	5221	13000		
02-Oct-23	41	31837	29871	44060	28860	5131	13000		
16-Oct-23	42	31305	29362	43776	28576	5415	13000		
23-Oct-23	42	30945	29362	43776	27763	6228	13000		
30-Oct-23	44	31008	29125	43133	27933	6058	13000		
06-Nov-23	45	30887	28819	42377	27177	6814	13000		
13-Nov-23	46	30757	28689	42377	27290	6701	13000		
20-Nov-23	46	30574	28506	42490	26707	7284	13000		
27-Nov-23	48	30574	28459	41780	26580	7411	13000		
04-Dec-23	49	30588	28401	43132	27932	6059	13000		
11-Dec-23	50	30007	27820	43132	26739	7252	13000		
18-Dec-23	51	28906	26719	40390	25190	8801	13000		
10-060-23	91	20300	20119	40000	20100	0001	13000		

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 1500 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): 13 000

Reserves: OR + UA = 15200 MW

Eskom Installed Capacity: 48 186 MW.

Installed Dispatchable Capacity: 49 191 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 Definitively 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 - 2022 to 2026. (Published 30 October 2021).

 $\underline{https://www.eskom.co.za/wp-content/uploads/2021/11/MediumTermSystemAdequacyOutlook2022-2026.pdf}$

or

https://www.eskom.co.za/eskom-divisions/tx/system-adequacy-reports/



Renewable Energy Statistics

Note: Times are expressed as hour beginning

Current Installed Capacity (MW)				
CSP	500.0			
PV	2,287.1			
Wind (Eskom+IPP)	3,442.6			
Total (Incl other REs)	6,280.2			

Maxin	num Contril	bution (MW) - based	on System Operator (data (subject to mete	ring verification)
Cal Year	Indicator	CSP	PV	Wind (Eskom+IPP)	Total (Incl other REs)
All Time	Maximum	506.2	2,099.5	2,921.0	5,126.1
All fille	Max Date	15-Mar-2022 15:00	24-Oct-2021 12:00	01-Jul-2022 13:00	05-Sep-2022 12:00
2016	Maximum	200.9	1,350.5	1,229.8	2,576.3
2016	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
2017	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
2016	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
2019	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
2020	Max Date	25-Nov-2020 12:00	25-Nov-2020 12:00	01-Dec-2020 19:00	24-Nov-2020 13:00
2021	Maximum	504.9	2,099.5	2,639.3	4,784.7
2021	Max Date	30-Nov-2021 16:00	24-Oct-2021 12:00	15-Dec-2021 17:00	01-Nov-2021 13:00
2022	Maximum	506.2	2,048.8	2,921.0	5,126.1
2022	Max Date	15-Mar-2022 15:00	20-Nov-2022 11:00	01-Jul-2022 13:00	05-Sep-2022 12:00

Annual Er	nergy Contr	ribution (MWh) - bas	ed on System Operato	or data (subject to me	etering verification)
Cal Year	Indicator	CSP	PV	Wind (Eskom+IPP)	Total (Incl other REs)
All Time Maximum	Annual Energy	1,656,017	5,069,146	9,320,734	15,524,235
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	1,656,017	5,069,146	8,359,224	15,208,327
2022	Total Energy	1,348,648	4,644,134	9,320,734	15,524,235

	Maximum Difference between Consecutive Evening Peaks (MW) - based on System Operator data (subject to metering verification)					
Cal Year		Total (Incl other REs)				
All Time	Maximum	1,744				
All Time	Max Date	07-Aug-2021 to 08-Aug-2021				
2016	Maximum	828				
2016	Max Date	30-Aug-2016 to 31-Aug-2016				
2017	Maximum	1,038				
2017	Max Date	19-Jun-2017 to 20-Jun-2017				
2018	Maximum	1,336				
2018	Max Date	01-Sep-2018 to 02-Sep-2018				
2019	Maximum	1,464				
2019	Max Date	05-Jul-2019 to 06-Jul-2019				
2020	Maximum	1,488				
2020	Max Date	31-Aug-2020 to 01-Sep-2020				
2021	Maximum	1,744				
2021	Max Date	07-Aug-2021 to 08-Aug-2021				
2022	Maximum	1,523				
2022	Max Date	07-Aug-2022 to 08-Aug-2022				

Supplied	(%) - based oi	n System Operator data (subject to metering verification)
Cal Year	Indicator	Total (Incl other REs)
All Time	Maximum	19.3%
All Time	Max Date	05-Sep-2022 12:00
2016	Maximum	9.8%
2010	Max Date	23-Dec-2016 13:00
2017	Maximum	12.7%
2017	Max Date	25-Dec-2017 15:00
2018	Maximum	13.1%
2018	Max Date	01-Jan-2018 14:00
2019	Maximum	13.9%
2019	Max Date	14-Dec-2019 14:00
2020	Maximum	16.1%
2020	Max Date	27-Dec-2020 15:00
2024	Maximum	19.1%
2021	Max Date	01-Nov-2021 13:00
2022	Maximum	19.3%
2022	Max Date	05-Sep-2022 12:00