

# Weekly System Status Report - 2021 Week 1 (04/01/2021 - 10/01/2021)

#### 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.

#### Disclaimer

The Data published here is for information purposes only. The content is subject to verification and validation. Eskom shall not be held responsible for any errors or it being misleading or incomplete and accepts no liability whatsoever for any loss, damages or expenses, howsoever, incurred or suffered, resulting or arising, from the use of this Data or any reliance placed on it.

#### 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 04/Jan/2021	28,566	1,445	26,401	26,279	8.7%	14.2%	0.5%
Tue 05/Jan/2021	28,311	1,444	26,689	26,057	8.6%	14.2%	2.4%
Wed 06/Jan/2021	28,372	1,268	26,746	25,368	11.8%	16.8%	5.4%
Thu 07/Jan/2021	28,079	1,178	26,346	26,494	6.0%	10.4%	-0.6%
Fri 08/Jan/2021	28,305	1,139	24,968	25,735	10.0%	14.4%	-3.0%
Sat 09/Jan/2021	28,385	1,292	24,519	25,044	13.3%	18.5%	-2.1%
Sun 10/Jan/2021	28,695	1,181	24,840	24,735	16.0%	20.8%	0.4%

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 04/Jan/2021	29,585	1,445	26,988	27,298	8.4%	13.7%	-1.1%
Tue 05/Jan/2021	29,619	1,444	28,049	27,365	8.2%	13.5%	2.5%
Wed 06/Jan/2021	30,110	1,268	28,201	27,293	10.3%	15.0%	3.3%
Thu 07/Jan/2021	29,773	1,178	28,166	28,188	5.6%	9.8%	-0.1%
Fri 08/Jan/2021	30,084	1,139	27,066	27,515	9.3%	13.5%	-1.6%
Sat 09/Jan/2021	30,697	1,292	26,639	27,356	12.2%	16.9%	-2.6%
Sun 10/Jan/2021	30,900	1,181	26,772	26,940	14.7%	19.1%	-0.6%

#### 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 1 : Dispatchable Generation Energy Sent Out Statistics				
Energy Sent Out	3,831	GWh		
Week-on-Week Growth	-4.80	%		
Year-on-Year Growth (Year-to-Date) Annual	-4.80	%		

Note:

2019

2020

2021 Weeks are compared to similar weeks in 2020.

5,527

5,477

5,305

### (2021 week 1 ~ 2020 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics				
Year	01 Jan to 10 Jan Energy	Annual Energy (01 Jan to 31 Dec)	Unit	
2016	5,754	226,721	GWh	
2017	5,677	225,203	GWh	
2018	5,619	224,202	GWh	

219,563

206,724

-6.38

%

GWh

GWh

GWh

### Week-on-Week Residual Energy Demand



#### [2021 weeks compared to similar 2020 weeks]

Week 1 : Residual Energy Demand Statistics (Incl IOS)				
Energy Demand	3,843	GWh		
Week-on-Week Growth	-6.38	%		

Year-on-Year Growth (Year-to-Date) Annual 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 10 Jan Energy	Annual Energy (01 Jan to 31 Dec)	Unit	
2016	5,757	226,808	GWh	
2017	5,678	225,248	GWh	
2018	5,620	224,594	GWh	
2019	5,532	220,924	GWh	
2020	5,585	208,150	GWh	
2021 (YTD)	5,317		GWh	

### Week-on-Week RSA Contracted Energy Demand



#### [2021 weeks compared to similar 2020 weeks]

Week 1 : RSA Contracted Energy Demand Statistics (Incl IOS)				
Energy Demand	4,104	GWh		
Week-on-Week Growth	-5 24	%		

Week-on-Week Growth	-5.24	%
Year-on-Year Growth (Year-to-Date) Annual	-5.24	%

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 10 Jan Energy	Annual Energy (01 Jan to 31 Dec)	Unit		
2016	6,052	238,069	GWh		
2017	6,050	235,426	GWh		
2018	5,986	235,482	GWh		
2019	5,911	232,511	GWh		
2020	5,918	220,629	GWh		
2021 (YTD)	5,706		GWh		



### Week-on-Week Dispatchable Generation Peak Demand



[2021 weeks compared to similar 2020 weeks]

Week 1 : Dispatchable Generation Peak Demar	nd Statistic	cs

Peak Demand	20,258	IVIVV
Week-on-Week Growth	-4.10	%
Year-on-Year Growth (Year-to-Date) Annual	-4.10	%
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 07-Jan-2021	26,258	MW

#### Week-on-Week Residual Peak Demand



#### [2021 weeks compared to similar 2020 weeks]

Week 1 : Residual Peak Demand Statistics (Incl IOS)							
Peak Demand	26,494	MW					
Week-on-Week Growth	-6.30	%					
Year-on-Year Growth (Year-to-Date) Annual	-6.30	%					

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 07-Jan-2021	26,494	MW			

### Week-on-Week RSA Contracted Peak Demand



[2021 weeks compared to similar 2020 weeks]

Week 1 : RSA Contracted Peak Demand Statistics (Incl IOS)						
Peak Demand	28,188	MW				
Week-on-Week Growth	-5.45	%				
Year-on-Year Growth (Year-to-Date) Annual	-5.45	%				

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 07-Jan-2021	28,188	MW			



### Weekly Generation Availability

	Week							Annual (	Jan - Dec)							
	41	42	43	44	45	46	47	48	49	50	51	52	53	1	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	54.56	57.00	60.30	57.12	65.04
Planned Outage Factor	13.99	12.92	13.17	16.07	16.69	16.22	17.98	15.71	16.17	17.07	19.11	20.63	14.65	13.36	15.66	11.24
Unplanned Outage Factor	18.98	22.38	20.33	16.13	16.21	17.19	18.33	20.31	19.37	18.75	19.36	21.52	24.42	22.42	23.54	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	3.29	3.93	3.92	3.68	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.

		MW	MW	MW	MW	MW	MW	MW	MW
Week 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)	(-14200 MW)	(-16200 MW)
11-Jan-21	2	29069	27329	40206	26006	8445	12000		
18-Jan-21	3	29337	27488	39879	25679	8772	12000		
25-Jan-21	4	29447	27598	40847	26647	7804	12000		
01-Feb-21	5	29337	27851	40807	26607	7844	12000		
08-Feb-21	6	29784	28297	40300	26100	8351	12000		
15-Feb-21	7	29602	28115	41413	27213	7238	12000		
22-Feb-21	8	29569	28082	41108	26908	7543	12000		
01-Mar-21	9	29717	28274	41584	27384	7067	12000		
08-Mar-21	10	29980	28536	41742	27542	6909	12000		
15-Mar-21	11	29879	28436	41624	27424	7027	12000		
22-Mar-21	12	29979	28536	41742	27542	6909	12000		
29-Mar-21	13	30002	28559	42306	28106	6345	12000		
05-Apr-21	14	30303	29123	42673	28473	5978	12000		
12-Apr-21	15	32217	31038	43858	29658	4793	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:



### 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

Maxin	Maximum Contribution (MW) - based on System Operator data (subject to metering verification)						
Cal Year	Indicator	CSP	PV	Wind (Eskom+IPP)	Total (Incl other REs)		
	Maximum	504.5	1,929.2	2,113.9	4,050.0		
All time	Max Date	25-Nov-2020 12:00	25-Nov-2020 12:00	01-Dec-2020 19:00	24-Nov-2020 13:00		
2010	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		
2010	Maximum	399.7	1,392.1	1,902.3	3,298.9		
2018	Max Date	04-Dec-2018 16:00	03-Oct-2018 12:00	02-Oct-2018 16:00	28-Sep-2018 11:00		
2010	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		

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 Maximum	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		

Maximum Difference between Consecutive Evening Peaks (MW) - based on System Operator data (subject to metering verification)					
Cal Year	Indicator	Total (Incl other REs)			
	Maximum	1,488			
All fille	Max Date	31-Aug-2020 to 01-Sep-2020			
2010	Maximum	828			
Ma	Max Date	30-Aug-2016 to 31-Aug-2016			
2017	Maximum	1,038			
2017	Max Date	19-Jun-2017 to 20-Jun-2017			
2010	Maximum	1,336			
2018	Max Date	01-Sep-2018 to 02-Sep-2018			
2010	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			

Current Installed Capacity (MW)					
CSP	500.0				
PV	2,107.1				
Wind (Eskom+IPP)	2,495.0				
Total (Incl other REs)	5,123.9				