

Weekly System Status Report – 2022 Week 22 (30/05/2022 – 05/06/2022)

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 30/May/2022	31,103	549	31,754	32,320	-3.8%	-2.1%	-1.8%
Tue 31/May/2022	32,844	550	31,904	32,320	1.6%	3.3%	-1.3%
Wed 01/Jun/2022	33,255	0	31,640	31,822	4.5%	4.5%	-0.6%
Thu 02/Jun/2022	33,214	0	31,916	31,849	4.3%	4.3%	0.2%
Fri 03/Jun/2022	31,416	0	30,556	29,549	6.3%	6.3%	3.4%
Sat 04/Jun/2022	31,730	0	29,609	29,436	7.8%	7.8%	0.6%
Sun 05/Jun/2022	32,350	0	29,756	29,385	10.1%	10.1%	1.3%

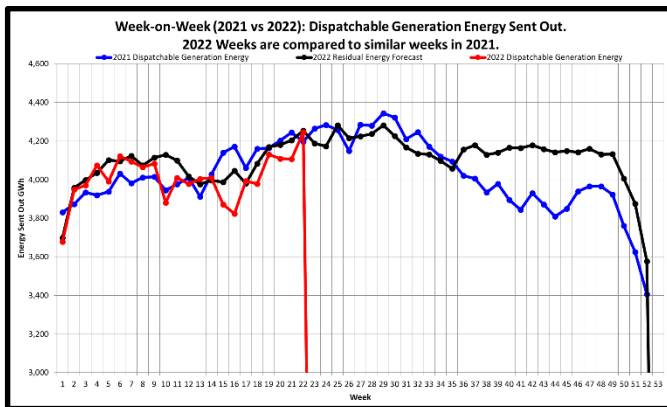
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 30/May/2022	31,961	549	32,706	33,178	-3.7%	-2.0%	-1.4%
Tue 31/May/2022	34,055	550	33,194	33,532	1.6%	3.2%	-1.0%
Wed 01/Jun/2022	34,010	0	32,503	32,578	4.4%	4.4%	-0.2%
Thu 02/Jun/2022	33,915	0	32,637	32,549	4.2%	4.2%	0.3%
Fri 03/Jun/2022	32,517	0	31,637	30,650	6.1%	6.1%	3.2%
Sat 04/Jun/2022	32,862	0	30,868	30,568	7.5%	7.5%	1.0%
Sun 05/Jun/2022	33,804	0	31,083	30,839	9.6%	9.6%	0.8%

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) = 50 022 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

[2022 weeks compared to similar 2021 weeks]



Week 22 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	4,246	GWh
Week-on-Week Growth	1.18	%
Year-on-Year Growth (Year-to-Date) Annual	-0.65	%

Note:

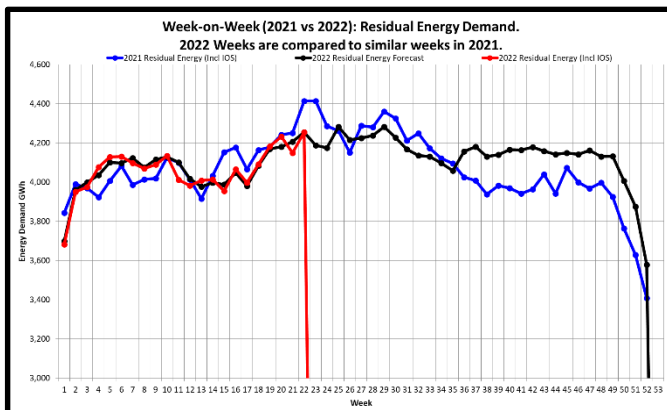
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 05 Jun Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	95,949	225,203	GWh
2018	95,223	224,202	GWh
2019	93,814	219,563	GWh
2020	85,994	206,725	GWh
2021	89,639	210,022	GWh
2022 (YTD)	89,112		GWh

Week-on-Week Residual Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 22 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,254	GWh
Week-on-Week Growth	-3.61	%
Year-on-Year Growth (Year-to-Date) Annual	-0.43	%

Note:

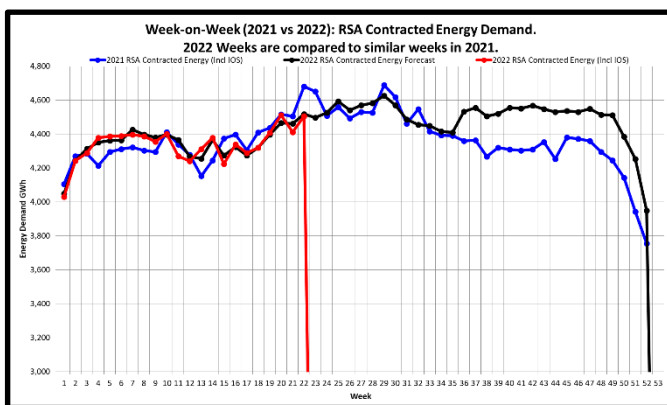
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 05 Jun Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	95,953	225,248	GWh
2018	95,286	224,594	GWh
2019	94,505	220,924	GWh
2020	86,861	208,151	GWh
2021	90,541	211,958	GWh
2022 (YTD)	90,214		GWh

Week-on-Week RSA Contracted Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 22 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,507	GWh
Week-on-Week Growth	-3.75	%
Year-on-Year Growth (Year-to-Date) Annual	0.01	%

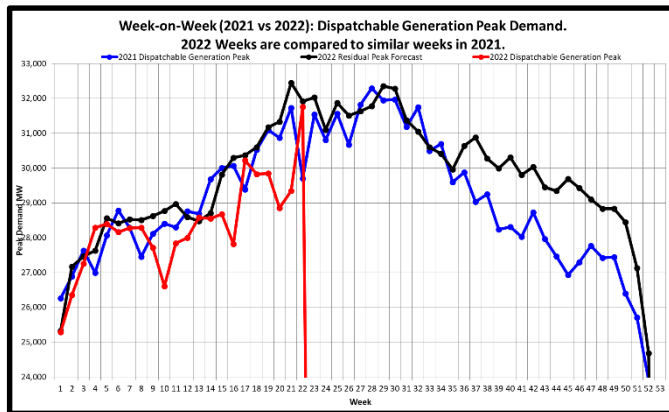
Note:

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 05 Jun Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	100,392	235,426	GWh
2018	99,747	235,482	GWh
2019	99,244	232,511	GWh
2020	91,574	220,630	GWh
2021	96,436	227,166	GWh
2022 (YTD)	96,525		GWh

Week-on-Week Dispatchable Generation Peak Demand



[2022 weeks compared to similar 2021 weeks]

Week 22 : Dispatchable Generation Peak Demand Statistics

Peak Demand	31,756	MW
Week-on-Week Growth	6.92	%
Year-on-Year Growth (Year-to-Date) Annual	0.09	%

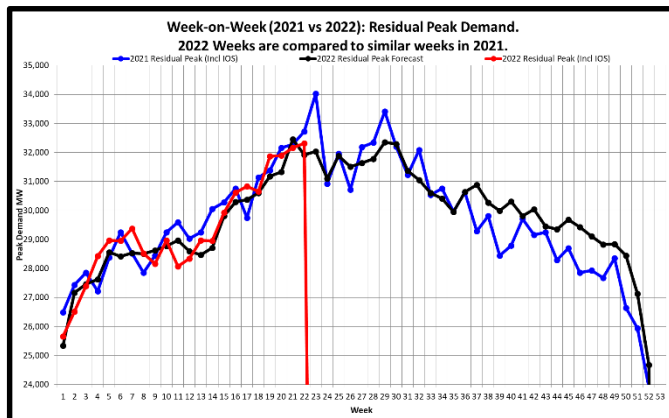
Note:

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

Annual Dispatchable Generation 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 22 : Residual Peak Demand Statistics (Incl IOS)

Peak Demand	32,320	MW
Week-on-Week Growth	-1.24	%
Year-on-Year Growth (Year-to-Date) Annual	-1.24	%

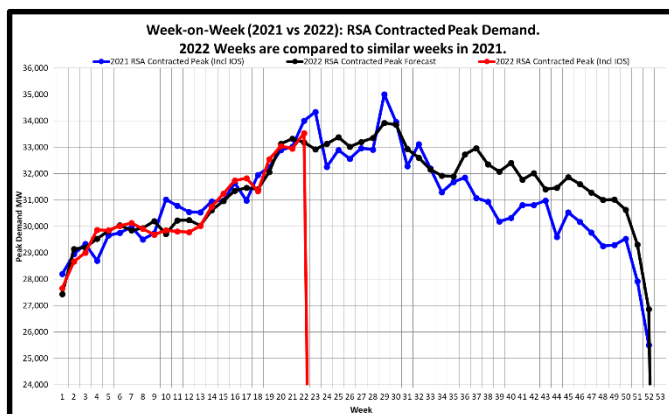
Note:

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)	Tue 31-May-2022	32,320	MW

Week-on-Week RSA Contracted Peak Demand



[2022 weeks compared to similar 2021 weeks]

Week 22 : RSA Contracted Peak Demand Statistics (Incl IOS)

Peak Demand	33,532	MW
Week-on-Week Growth	-1.42	%
Year-on-Year Growth (Year-to-Date) Annual	-1.42	%

Note:

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)	Tue 31-May-2022	33,532	MW

Weekly Generation Availability

	Week																Annual (Jan - Dec)	
	9	10	11	12	13	14	15	16	17	18	19	20	21	22	2022	2021		
Energy Availability Factor (Eskom EAF)	58.75	56.39	60.04	60.02	59.08	60.27	56.01	55.60	58.96	59.74	60.50	59.64	60.89	62.73	59.17	61.79		
Planned Outage Factor	11.80	13.91	11.89	12.83	14.18	12.13	11.88	11.21	10.29	8.74	5.19	5.70	6.94	5.97	10.86	10.81		
Unplanned Outage Factor	28.09	28.34	26.86	25.83	25.42	26.66	30.60	31.77	29.36	30.44	33.41	33.94	31.36	30.61	28.64	24.53		
Other Outage Factor	1.36	1.36	1.21	1.32	1.32	0.94	1.51	1.42	1.39	1.08	0.90	0.72	0.81	0.69	1.33	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)

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	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)
06-Jun-22	23	32931	32028	47580	33380	2442	12000		
13-Jun-22	24	33139	31102	45992	31492	4330	12000		
20-Jun-22	25	33388	31874	45992	31792	4030	12000		
27-Jun-22	26	33025	31511	45851	31651	4171	12000		
04-Jul-22	27	33205	31632	45903	31703	4119	12000		
11-Jul-22	28	33350	31777	45966	31766	4056	12000		
18-Jul-22	29	33925	32352	46559	32359	3463	12000		
25-Jul-22	30	33858	32285	46541	32341	3481	12000		
01-Aug-22	31	32940	31375	45878	31678	4144	12000		
08-Aug-22	32	32610	31045	45172	30972	4850	12000		
15-Aug-22	33	32166	30601	44822	30622	5200	12000		
22-Aug-22	34	31929	30410	44573	30373	5449	12000		
29-Aug-22	35	31893	29957	44573	30373	5449	12000		
05-Sep-22	36	32729	30641	44443	29243	5579	13000		
12-Sep-22	37	32971	30883	44703	29503	5319	13000		
19-Sep-22	38	32359	30272	44323	29123	5699	13000		
26-Sep-22	39	32080	29992	44071	28871	5951	13000		
03-Oct-22	40	32414	30308	44938	29738	5084	13000		
10-Oct-22	41	31774	29809	43388	28188	6634	13000		
17-Oct-22	42	32028	30038	44128	28928	5894	13000		
24-Oct-22	43	31415	29451	43176	27976	6846	13000		
31-Oct-22	44	31472	29346	43142	27942	6880	13000		
07-Nov-22	45	31872	29689	43016	27816	7006	13000		
14-Nov-22	46	31613	29430	42996	27796	7026	13000		
21-Nov-22	47	31292	29109	42729	27529	7293	13000		
28-Nov-22	48	31015	28832	41931	26731	8091	13000		
05-Dec-22	49	31023	28837	42343	27143	7679	13000		
12-Dec-22	50	30633	28446	42810	27610	7212	13000		
19-Dec-22	51	29318	27132	42681	27481	7341	13000		
26-Dec-22	52	26867	24680	39802	24602	10220	13000		
02-Jan-23	1	28588	26066	40952	25752	9070	13000		
09-Jan-23	2	29704	27670	42175	26975	7847	13000		
16-Jan-23	3	30496	28461	42538	27338	7484	13000		
23-Jan-23	4	30174	28139	41945	26745	8077	13000		
30-Jan-23	5	30383	28349	41995	26795	8027	13000		
06-Feb-23	6	30997	29208	42567	27367	7455	13000		
13-Feb-23	7	30835	29045	42367	27167	7655	13000		
20-Feb-23	8	30909	29119	42424	27224	7598	13000		
27-Feb-23	9	30721	29153	43102	27902	6920	13000		
06-Mar-23	10	31153	29585	43921	28721	6101	13000		
13-Mar-23	11	30805	29237	43937	28737	6085	13000		
20-Mar-23	12	31014	29366	43897	28697	6125	13000		
27-Mar-23	13	30853	29206	43257	28057	6765	13000		
03-Apr-23	14	32219	30573	44885	30685	5137	12000		
10-Apr-23	15	32493	30846	45235	31035	4787	12000		
17-Apr-23	16	32984	31338	45996	31796	4026	12000		
24-Apr-23	17	33668	32021	45996	31796	4026	12000		
01-May-23	18	33601	32419	46713	32513	3309	12000		
08-May-23	19	34531	33349	47353	33153	2669	12000		
15-May-23	20	34704	33522	47928	33728	2094	12000		
22-May-23	21	35031	33849	48128	33928	1894	12000		
29-May-23	22	35849	34667	48071	33871	1951	12000		
05-Jun-23	23	35339	33773	47575	33375	2447	12000		
12-Jun-23	24	35340	33774	48090	33890	1932	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 (13000 MW from September 2022)

Reserves: OR + UA = 14 200 MW

Eskom Installed Capacity: 49 017 MW (Incl. non-comm. Kusile units).

Installed Dispatchable Capacity: 50 022 MW (Incl. Avon and Dedisa).

Medupi Unit 4 capacity of 720MW has been removed from the capacity planning models by including it in the committed PCLF (although it is UCLF).

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 - 2022 to 2026. (Published 30 October 2021).

<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	2,212.1
Wind (Eskom+IPP)	3,303.2
Total (Incl other REs)	6,065.8

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	506.2	2,099.5	2,639.3	4,784.7
	Max Date	15-Mar-2022 15:00	24-Oct-2021 12:00	15-Dec-2021 17:00	01-Nov-2021 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	504.9	2,099.5	2,639.3	4,784.7
	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	2,025.1	2,628.4	4,383.0
	Max Date	15-Mar-2022 15:00	05-Jan-2022 11:00	29-May-2022 13:00	06-Apr-2022 15:00

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	1,656,017	5,069,146	8,359,224	15,208,327
	Total Energy	529,522	2,630,141	3,730,771	6,951,261
2016	Total Energy	687,703	3,324,857	5,081,023	9,198,632
	Total Energy	1,031,288	3,282,124	6,467,095	10,887,902
2017	Total Energy	1,557,151	3,324,989	6,624,642	11,586,945
	Total Energy	1,626,049	4,140,212	6,625,830	12,478,704
2018	Total Energy	1,656,017	5,069,146	8,359,224	15,208,327
	Total Energy	652,359	2,199,852	3,859,888	6,795,370
2019	Total Energy	652,359	2,199,852	3,859,888	6,795,370
	Total Energy	652,359	2,199,852	3,859,888	6,795,370
2020	Total Energy	652,359	2,199,852	3,859,888	6,795,370
	Total Energy	652,359	2,199,852	3,859,888	6,795,370
2021	Total Energy	652,359	2,199,852	3,859,888	6,795,370
	Total Energy	652,359	2,199,852	3,859,888	6,795,370
2022	Total Energy	652,359	2,199,852	3,859,888	6,795,370
	Total Energy	652,359	2,199,852	3,859,888	6,795,370

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	1,744
	Max Date	07-Aug-2021 to 08-Aug-2021
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	1,744
	Max Date	07-Aug-2021 to 08-Aug-2021
2022	Maximum	1,364
	Max Date	15-Feb-2022 to 16-Feb-2022

Maximum proportion that Renewables contributed towards actual hourly energy supplied (%) - based on System Operator data (subject to metering verification)		
Cal Year	Indicator	Total (Incl other REs)
All Time	Maximum	19.1%
	Max Date	01-Nov-2021 13:00
2016	Maximum	9.8%
	Max Date	23-Dec-2016 13:00
2017	Maximum	12.7%
	Max Date	25-Dec-2017 15:00
2018	Maximum	13.1%
	Max Date	01-Jan-2018 14:00
2019	Maximum	13.9%
	Max Date	14-Dec-2019 14:00
2020	Maximum	16.1%
	Max Date	27-Dec-2020 15:00
2021	Maximum	19.1%
	Max Date	01-Nov-2021 13:00
2022	Maximum	18.0%
	Max Date	01-Jan-2022 15:00