

Weekly System Status Report – 2022 Week 30 (25/07/2022 – 31/07/2022)

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 25/Jul/2022	31,912	0	31,496	30,533	4.5%	4.5%	3.2%
Tue 26/Jul/2022	33,542	0	31,637	31,236	7.4%	7.4%	1.3%
Wed 27/Jul/2022	34,348	0	31,620	30,756	11.7%	11.7%	2.8%
Thu 28/Jul/2022	34,522	0	30,514	29,861	15.6%	15.6%	2.2%
Fri 29/Jul/2022	32,386	0	29,374	28,018	15.6%	15.6%	4.8%
Sat 30/Jul/2022	31,339	0	29,253	27,844	12.6%	12.6%	5.1%
Sun 31/Jul/2022	30,808	0	29,122	28,675	7.4%	7.4%	1.6%

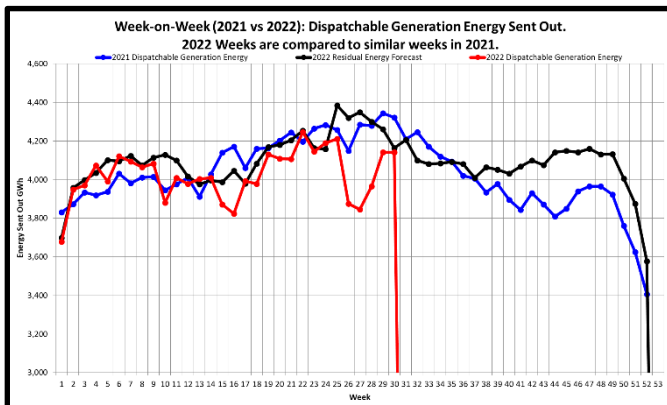
Date	Total Available Generation Incl Renewables (MW)	Non-commercial Generation (MW)	RSA Contracted Load Forecast (MW)	Actual RSA Contracted Demand (MW) Incl IOS	Operating Reserve Margin (Excl Non-Commercial Units)	Operating Reserve Margin (Incl Non-Commercial Units)	Forecast vs. Actual (RSA Contracted Demand)
Mon 25/Jul/2022	33,850	0	32,946	32,472	4.2%	4.2%	1.5%
Tue 26/Jul/2022	34,575	0	32,852	32,269	7.1%	7.1%	1.8%
Wed 27/Jul/2022	35,878	0	32,683	32,286	11.1%	11.1%	1.2%
Thu 28/Jul/2022	36,465	0	32,582	31,805	14.7%	14.7%	2.4%
Fri 29/Jul/2022	36,007	0	30,964	29,905	20.4%	20.4%	3.5%
Sat 30/Jul/2022	32,546	0	30,649	29,051	12.0%	12.0%	5.5%
Sun 31/Jul/2022	32,111	0	30,380	29,978	7.1%	7.1%	1.3%

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) = 50 025 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 30 : Dispatchable Generation Energy Sent Out Statistics

Energy Sent Out	4,142	GWh
Week-on-Week Growth	-4.17	%
Year-on-Year Growth (Year-to-Date) Annual	-1.83	%

Note:

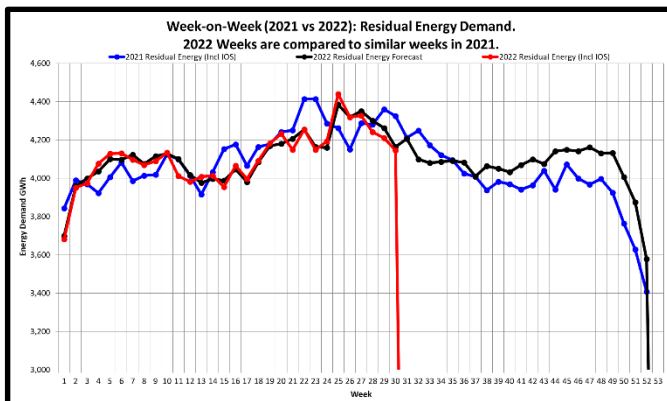
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Dispatchable Generation Energy Sent Out Statistics

Year	01 Jan to 31 Jul Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	131,759	225,203	GWh
2018	131,265	224,202	GWh
2019	129,114	219,563	GWh
2020	119,503	206,725	GWh
2021	123,845	210,022	GWh
2022 (YTD)	121,630		GWh

Week-on-Week Residual Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 30 : Residual Energy Demand Statistics (Incl IOS)

Energy Demand	4,145	GWh
Week-on-Week Growth	-4.18	%
Year-on-Year Growth (Year-to-Date) Annual	-0.59	%

Note:

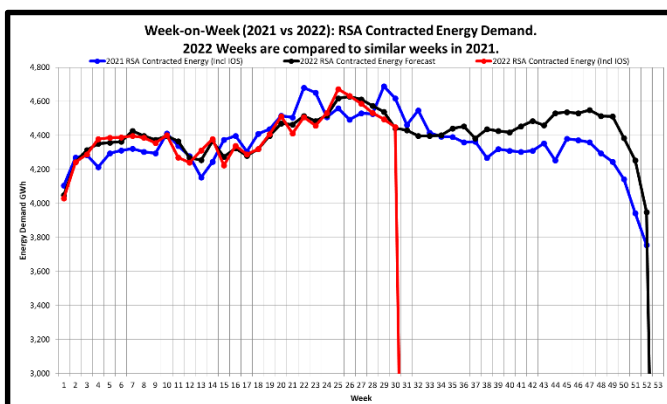
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual Residual Energy Demand Statistics (Incl IOS)

Year	01 Jan to 31 Jul Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	131,767	225,248	GWh
2018	131,368	224,594	GWh
2019	129,826	220,924	GWh
2020	120,506	208,151	GWh
2021	124,929	211,958	GWh
2022 (YTD)	124,235		GWh

Week-on-Week RSA Contracted Energy Demand

[2022 weeks compared to similar 2021 weeks]



Week 30 : RSA Contracted Energy Demand Statistics (Incl IOS)

Energy Demand	4,451	GWh
Week-on-Week Growth	-3.63	%
Year-on-Year Growth (Year-to-Date) Annual	-0.15	%

Note:

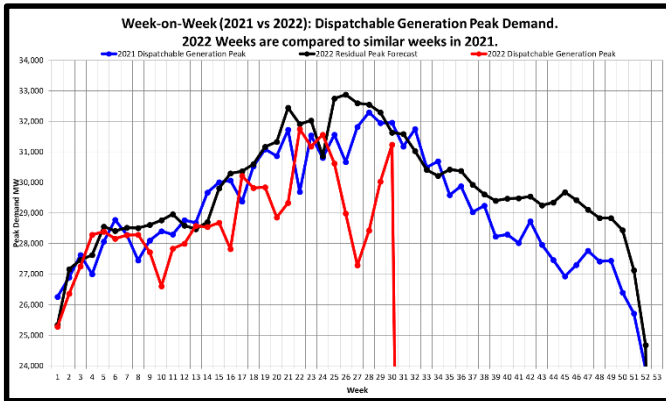
2022 Weeks are compared to similar weeks in 2021.
(2022 week 1 ~ 2021 week 1)

Annual RSA Contracted Energy Demand Statistics (Incl IOS)

Year	01 Jan to 31 Jul Energy	Annual Energy (01 Jan to 31 Dec)	Unit
2017	137,498	235,426	GWh
2018	137,388	235,482	GWh
2019	136,308	232,511	GWh
2020	126,975	220,630	GWh
2021	133,043	227,166	GWh
2022 (YTD)	132,894		GWh

Week-on-Week Dispatchable Generation Peak Demand

[2022 weeks compared to similar 2021 weeks]



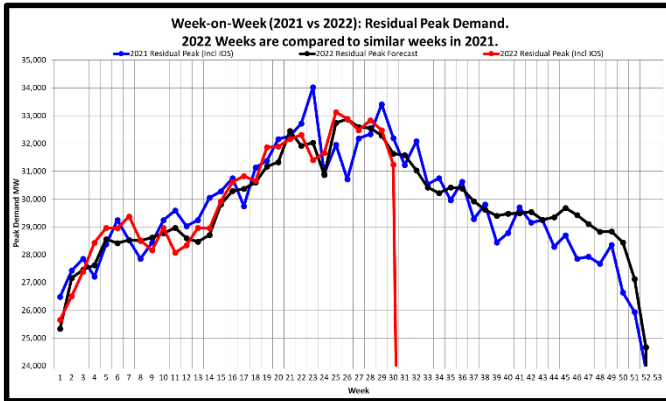
Week 30 : Dispatchable Generation Peak Demand Statistics		
Peak Demand	31,236	MW
Week-on-Week Growth	-2.28	%
Year-on-Year Growth (Year-to-Date) Annual	-1.66	%

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]



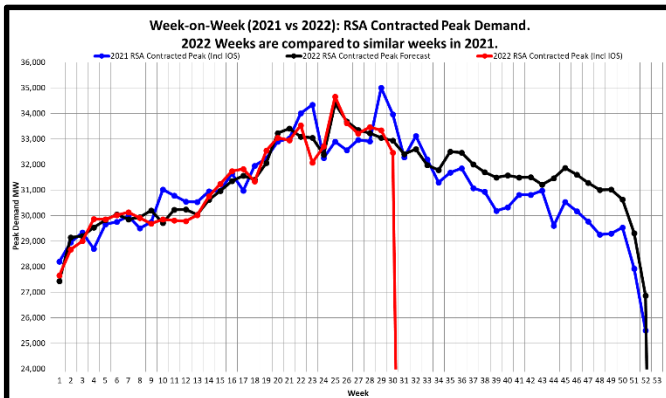
Week 30 : Residual Peak Demand Statistics (Incl IOS)		
Peak Demand	31,236	MW
Week-on-Week Growth	-2.99	%
Year-on-Year Growth (Year-to-Date) Annual	-2.62	%

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 30 : RSA Contracted Peak Demand Statistics (Incl IOS)		
Peak Demand	32,472	MW
Week-on-Week Growth	-4.42	%
Year-on-Year Growth (Year-to-Date) Annual	-0.97	%

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	35,789	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

	Week														Annual (Jan - Dec)	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	2022	2021
Energy Availability Factor (Eskom EAF)	58.95	59.70	60.30	59.60	60.88	62.45	62.99	60.73	59.68	57.24	57.00	60.35	62.52	64.53	59.50	61.79
Planned Outage Factor	10.29	8.74	5.19	5.70	6.94	6.43	5.73	8.51	8.06	6.77	8.40	8.89	6.07	5.01	9.94	10.81
Unplanned Outage Factor	29.37	30.45	33.55	33.92	31.33	30.17	30.07	29.62	27.46	28.46	32.25	29.30	30.53	28.92	28.86	24.53
Other Outage Factor	1.39	1.11	0.96	0.78	0.85	0.95	1.21	1.14	4.80	7.53	2.35	1.46	0.88	1.54	1.70	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 (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 (-14200 MW)	MW Likely Risk Scenario (-16200 MW)
01-Aug-22	31	32411	31584	45414	31214	4611	12000		
08-Aug-22	32	32601	31036	44608	30408	5417	12000		
15-Aug-22	33	31984	30419	44825	30625	5200	12000		
22-Aug-22	34	31782	30217	44916	30716	5109	12000		
29-Aug-22	35	32514	30427	44346	30146	5679	12000		
05-Sep-22	36	32469	30382	44364	29164	5661	13000		
12-Sep-22	37	32016	29929	44364	29164	5661	13000		
19-Sep-22	38	31704	29616	43624	28424	6401	13000		
26-Sep-22	39	31491	29403	43477	28277	6548	13000		
03-Oct-22	40	31580	29475	43694	28494	6331	13000		
10-Oct-22	41	31500	29486	44222	29022	5803	13000		
17-Oct-22	42	31511	29546	44131	28931	5894	13000		
24-Oct-22	43	31222	29258	43819	28619	6206	13000		
31-Oct-22	44	31472	29346	43821	28621	6204	13000		
07-Nov-22	45	31872	29689	43682	28482	6343	13000		
14-Nov-22	46	31613	29430	43614	28414	6411	13000		
21-Nov-22	47	31292	29109	42942	27742	7083	13000		
28-Nov-22	48	31015	28832	42519	27319	7506	13000		
05-Dec-22	49	31023	28837	42346	27146	7679	13000		
12-Dec-22	50	30633	28446	42795	27595	7230	13000		
19-Dec-22	51	29318	27132	41420	26220	8605	13000		
26-Dec-22	52	28867	24680	39805	24605	10220	13000		
02-Jan-23	1	28588	26066	40380	25180	9645	13000		
09-Jan-23	2	29704	27670	41603	26403	8422	13000		
16-Jan-23	3	30496	28461	41966	26766	8059	13000		
23-Jan-23	4	30174	28139	41948	26748	8077	13000		
30-Jan-23	5	30383	28349	41980	26780	8045	13000		
06-Feb-23	6	30997	29208	42570	27370	7455	13000		
13-Feb-23	7	30835	29045	42370	27170	7655	13000		
20-Feb-23	8	30909	29119	42427	27227	7598	13000		
27-Feb-23	9	30721	29153	43105	27905	6920	13000		
06-Mar-23	10	31153	29585	43924	28724	6101	13000		
13-Mar-23	11	30805	29237	43355	28155	6670	13000		
20-Mar-23	12	31014	29366	43900	28700	6125	13000		
27-Mar-23	13	30853	29206	43260	28060	6765	13000		
03-Apr-23	14	32219	30573	44888	30688	5137	12000		
10-Apr-23	15	32493	30846	45238	31038	4787	12000		
17-Apr-23	16	32984	31338	45999	31799	4026	12000		
24-Apr-23	17	33668	32021	45999	31799	4026	12000		
01-May-23	18	33601	32419	46716	32516	3309	12000		
08-May-23	19	34531	33349	47356	33156	2669	12000		
15-May-23	20	34704	33522	47356	33156	2669	12000		
22-May-23	21	35031	33849	47556	33356	2469	12000		
29-May-23	22	35849	34667	48074	33874	1951	12000		
05-Jun-23	23	35053	33773	47578	33378	2447	12000		
12-Jun-23	24	35055	33774	48093	33893	1932	12000		
19-Jun-23	25	34886	33605	48046	33846	1979	12000		
26-Jun-23	26	35391	34110	48343	34143	1682	12000		
03-Jul-23	27	35110	33662	47897	33697	2128	12000		
10-Jul-23	28	35084	33636	47866	33666	2159	12000		
17-Jul-23	29	35200	33751	47714	33514	2311	12000		
24-Jul-23	30	35245	33797	47755	33555	2270	12000		
31-Jul-23	31	34433	32985	47195	32995	2830	12000		
07-Aug-23	32	34026	32460	46633	32433	3392	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: 49 020 MW (Incl. non-comm. Kusile units).

Installed Dispatchable Capacity: 50 025 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)	3,442.6
Total (Incl other REs)	6,205.2

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	2,922.6	4,784.7
	Max Date	15-Mar-2022 15:00	24-Oct-2021 12:00	01-Jul-2022 13:00	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	2,922.6	4,420.4
	Max Date	15-Mar-2022 15:00	05-Jan-2022 11:00	01-Jul-2022 13:00	01-Jul-2022 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	Annual Energy	1,656,017	5,069,146	8,359,224	15,208,327
	Maximum				
2016	Total Energy	529,522	2,630,141	3,730,771	6,951,261
	Maximum				
2017	Total Energy	687,703	3,324,857	5,081,023	9,198,632
	Maximum				
2018	Total Energy	1,031,288	3,282,124	6,467,095	10,887,902
	Maximum				
2019	Total Energy	1,557,151	3,324,989	6,624,642	11,586,945
	Maximum				
2020	Total Energy	1,626,049	4,140,212	6,625,830	12,478,704
	Maximum				
2021	Total Energy	1,656,017	5,069,146	8,359,224	15,208,327
	Maximum				
2022	Total Energy	758,715	2,746,647	5,358,977	8,973,427
	Maximum				

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	1,467
	Max Date	12-Jul-2022 to 13-Jul-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