MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.
(A Govt. of Maharashtra Undertking)
CIN: U40109MH2005SGC153645

Maharashtra State Electricity Distribution Co. Ltd.
Office of the Director (Commercial)
'Prakashgad', 6th Floor, Station Road, Bandra (E), Mumbai-400 051.
Tel.: (P) 26476743 Extn: 2066, (O) 26474211
Email: directorcomm@mahadiscom.in • Website : www.mahadiscom.in

Ref. No. MSEDCL/Comments/RTM / 20783 DATE: 29.08.2018

To,
The Secretary,
Central Electricity Regulatory Commission,
3 rd & 4th Floor, Chandralok Building,
36, Janpath, New Delhi -110 001.

Sub: Submission of comments / suggestions / objections on Discussion Paper on Re-designing Real Time Electricity Markets in India.

Ref: Public notice by CERC for Discussion paper on Re-designing Real Time Electricity Markets in India dated 25th July 2018

Respected Sir,

This is in reference to public notice issued by Hon'ble CERC on Discussion Paper on Re-designing Real Time Electricity Markets in India. MSEDCL is hereby submitting the comments on the proposed draft amendment, which are given as under:-

Issues of objection:

2.2 .... The discoms and the generators tended to use DSM as an avenue for real time energy procurement and sale.

2.7..... A number of factors are cited to be responsible for such low response to this market segment - e.g., inertia of discoms and absence of delegation of decision making power at operators' level etc.

3.4 RE generation along with issues related to its integration, over-dependence on DSM / UI by the utilities

MSEDCL's Comments

The above statements in this discussion paper indicate bias thinking against DISCOMs. It's welcome move that commission want to bring real time market concept, so that real time shortfall & surplus can be managed. But it is unfortunate that instead of investigating/studying root causes which lead to deviation by DISCOMs, above such allegation & statements are made. There are 'N' numbers of reason behind deviation by DISCOM on which commission should seriously look into for solution some of these are highlighted as under:

1. **Effect of weather**: The weather has significant effect on demand & accurate assessment of impact of weather is certainly not possible with present infrastructure. The data of Indian Metrological department, GOI is used for weather forecast & on many occasions weather forecast found to be incorrect. Moreover demand needs to be forecast on 15 minute time block & commission desire that in future forecast to be in five minute basis. However 15min time block-wise weather forecasting is presently not available; moreover accurate impact of rainfall on agricultural load is practically impossible to ascertain & there is no study as such. The agricultural load depends on number of factors like water requirement for crop, crop pattern, ground water availability etc. The switching on or off of Agricultural pumpset is solely in hand of farmers. In Maharashtra, agricultural load is almost 35% with total agricultural load of more than 9000 MW. Due to agricultural load management scheme in Maharashtra, the maximum agricultural load at a time may even more than 4500 MW out of total peak demand of almost 20000 MW of MSEDCL. The impact of agricultural demand is also depending on area where rainfall occurred. MSEDCL would like to put its own case of recent days. on 14th August 2018, MSEDCL peak demand was recorded as 17401 MW with catered energy 385Mus & same was reduced to 14834 MW on 16th Aug & 14687 MW on 17 Aug 2018 and in energy term demand dropped to 318 MUs on 16th Aug 2018 & 311 MUs on 17th Aug 2018. This was mainly due to sudden heavy rainfall on 16th & 17th Aug 2018 in Marathwada & Madhya Maharashtra region of Maharashtra. The rainfall data & MSEDCL demand data from Aug 2018 is attached herewith for ready reference. Further residential load is almost 28.47 % of connected load. There is also impact of weather i.e. temperature, humidity etc. on residential load and accurate estimation of impact of weather on residential load also not possible.

2. **Effect of agitation**: The industrial, residential as well as other load also affected due to agitation. The severity of agitation & its impact on demand cannot be forecast beforehand. For example in recent due agitation on 9th August 2018, peak demand of MSEDCL dropped to 17358 MW from previous day peak demand of 18292MW and this demand again shoot to 17985 MW on 10th August.2018. In fact, there was no much change in rainfall on all these day . However when agitation happed on 27th July 2018 for same purpose by same people, no much demand change observed. Thus it clearly indicate that impact of any agitation on demand of DISOCM cannot be estimated.

3. **SCADA data visibility**: The real time operations of system are managed with data fetch from SCADA system. However it is observed that on many occasions, SCADA data visibility got disturbed due to one or more reason. Further RE generation which mainly contribute to DISOCM deviation are not yet 100% having SCADA visibility. The SCADA data on which real time decision are taken are found to be inaccurate at least in 25% of time. The analysis done by MSEDCL

on SCADA data & its financial impact are already informed to Hon'ble commission in comments submitted on 4th amendment of DSM regulation.

4. **Effect of special day on demand** : Some of special day like Republic day, 1st May, 15th August, Dasara, Diwali has large effect of demand catered and said impact is also cannot be calculated accurately. For example impact of 1st May & 15th August on demand of MSEDCL in last five year is attached herewith. It can be seen that there is variation in the impact of special day.

5. **Forecasting problem of Distributed generation**: Due to implementation of Solar roof top, some of demand is met at distribution level but actual generation from such distributed generation is not known & forecasting of demand of distributed generation also vested with DISCOM. Further OA consumers deviation using captive RE generation are also to be absorbed by DISCOM. Forecasting of generation from such captive RE plant is also lies with DISCOM.

6. **Intermittent RE Generation** : In Maharashtra, RE installed capacity is as under

Sr No	Type	Total Installed Capacity (MW)
1	Solar	832
2	Wind	3765
3	Bio-Mass	182
4	Bagasse Based Co-Gen	1954
5	Other RE	119

In view of dependency of weather condition on generation from Solar & wind, commission has allowed % error limit of 15% without any DSM penalty to RE generators and penalty which is imposed is also very less as compared to penalty which is imposed for DISCOM under DSM regulation. Further as far as generation particularly from bagasse is considered, it total depends on sugarcane production and moreover generation from these source is only limited for some period of time and also unpredictable. On contrary, for DISCOM there is no any kind of free DSM and it has to match its LGB in view of above such uncertianities. The overdrawing from grid or over injecting into grid under DSM is not intentional from DISCOM. Further in real time inspite of such uncertainties, DISCOMs tries to maintain its LGB & not intentionally uses DSM rather than purchasing from Market & also has no any kind of inertia for purchase of power from Market. Infact MSEDCL has purchased 4019.70 MUs of power from Market costing almost Rs. 1435.31 Crs in FY-2017-18 & 1618.35 MUs of power from Market costing almost Rs. 699.42 Crs in FY-2018-19 (till July 2018)

Issues of error in load forecasting may to some extent improve with measure like load forecasting software with weather forecasting. However even with software support, because of complex composition of load pattern and weather parameters, high accuracy load forecasting cannot be achieved particularly as desired for Maharashtra with peak demand of almost 24000 MW & required accuracy of more than 99%.

Issues of objection:

2.8.... Given that the discoms commit to bear the fixed cost for such plants, they claim to have inherent right to recall and any such request is to be honoured from the fourth time block ahead.

MSEDCL's Comments

As per provision under long term power purchase agreements with generator, DISCOMs are paying for fixed cost even in case no schedule is given to generator and Discoms has 100% right on contracted capacities. Hence as per provision 6.5 (18) of IEGC-2010, beneficiaries can reschedule power surrendered to match its LGB. Hence above statement is totally illogical

Concept of gate closure :

5.6 *For operationalizing real time markets, the schedules decided at the end of RTM clearing have to be both financially and physically binding. For this, the concept of Gate Closure is to be introduced. For each fifteen minute block in one hour, those with demand for electricity or discoms or traders will assess in advance what the demand will be. They'll then place their bids in the RTM for that volume of electricity. Similarly generators / traders will place their offers. To ensure firmness of such bids and offers, the gate for schedule revision will close before the start of the auction*

MSEDCL's comments/ suggestion:

DISCOM have entered into long term power purchase agreements with generator with view of obtaining firm power commitment to serve 24x7 power supply & also with view to provide cheaper power to its estimated consumers. In view of long term power purchase obligation, DISCOMs are paying fixed cost; even in situation of no schedule to generator in case of its availability. If the Gate Closure criterion is applied for scheduling power from generators having long term PPA, Utility will not be able to make real time revisions before 4 time blocks even in conditions of sudden changes in system due to weather conditions/ breakdowns/shut downs of power plants etc. Further utility will be required to buy same power from market at higher cost; only because of its constraints in accurate forecasting. In proposed concept of RTM it may happen that DISCOM may be purchasing its own contracted power from same generator with which it is having LTA. Due to gate closure concept, on one hand, DISCOM will required to pay fix cost to generator & on other hand it has to purchase power at higher rate either

from same generator (whose its contracted URS power sold in market) or any other generator. This is clear violation of terms & condition of long term PPA. The Hon'ble commission through this gate closure concept tries to circumvent the legal provisions of PPA which are binding on both buyer & seller. The attempt of make regulation to circumvent the PPA terms is not jurisdiction of commission and same may be challenged.

The making real time market is good initiative by commission but surplus power (even though unrequested power) of generator which is contracted under long term must not be used for real time market purpose. However in case any DISCOM gives its consent to generator for sale of power under real time market, then only in such case generator may be allowed to sell the surplus power in market and commercial terms for such sale like commission to generator for selling power shall be left to generator & beneficiary. The commission should not define commercial terms for such transaction also. The merchant generator or generation capacity not tie-up under long term shall only be used for real time market. MSEDCL is strongly opposes gate closure concept for scheduling of power from long term contracted generator.

The another disadvantage of gate closure is that URS power which would be available for RRAS will be very less or marginal which may not be sufficient for handling the real time system.

5.7 **Settlement in the proposed Real Time Market:**

> *All day-ahead schedules (as a matter of principle) are "firm financial commitments". Firm financial commitment means that a supplier (generator or trader) receives revenue from day-ahead schedules regardless of real time output of its generation unit.*
>
> *If a supplier is scheduled 40 MWh on day ahead at a price of INR 2500 / MWh, it receives INR 1,00,000 for sales. Any shortfall or surplus from day ahead generation schedule shall be rebalanced in real time market (unlike in the existing system where such deviations are settled through DSM). If a supplier produces only 30 MWh in real time, it must purchase 10 MWh (to match dayahead commitment) from realtime market at realtime price. This "purchase" by the generator is not for sale to the discom – this must be construed as generator making up for shortfall from its day-ahead commitment (day ahead schedule).*

MSEDCL's comments/ suggestion:

This is good initiative by commission. However Purchase by generator should be made mandatory particularly for merchant generator, who may intentionally under inject. Further there need to make provision in scheduling software to see that bid quantum is technically possible to achieve in real time operation; considering ramp up & ramp down of generator, maximum exportable generation. For example, if there two units of

500 MW each with 470 MW Maximum ex-bus generation, 280 MW Technical minimum & ramp up/down rate of 45 MW each. Now if such generator wish to bid, then scheduling software should see its scheduling for previous time block & check if generation with bid quantum can be possible in next time block. For example, in previous time block schedule is only upto Tech minimum at 560 MW & next time block , its became full 940 MW due to bid quantum in real time market, then technically this is not possible; otherwise generator in real time under inject thereby playing with grid security. Hence generator should not be allowed by software to bid under such circumstances. This will also help in avoiding gaming by generator.

In case of Generator having generation tie-up under LTA, if purchase from RTM, its purchase rate should be capped by its variable cost.

5.7 Scenario 3: Case of generators and discoms tied up in a long term PPA:

If a discom does not requisition / schedule power on day-ahead and until the gate closure, from a generator (with whom it has entered into a long term contract and has committed to pay fixed cost), such generator can sell the un-requisitioned surplus in the Real Time Market.

- *The net revenue earned by such generator, over and above its variable cost, shall be shared with the discom in the ratio of 50:50. However, the fixed cost liability in respect of such generator shall continue to be borne by the discom as per the existing contract.*
- *Before the Gate Closure for any hourly transactions, the discom itself could also choose to sell in the RTM, the un-requisitioned power from the generator, and earn the entire revenue accruing from the sale of such power.*
- *In case, the discom has not, on day-ahead / until the gate closure, requisitioned / scheduled power from the generator and the generator has already sold such un-requisitioned power in the RTM, and the discom needs power closer to real time, then the discom, instead of schedule revision or exercising right to recall the generator, need to go to the RTM to meet its contingency requirement.*

MSEDCL's comments/ suggestion:

- DISCOM's have signed long term power purchase agreements with generators with certain commercial terms & conditions. The role of commission is limited to tariff of power from these generating stations. By proposing sale of URS power without consent of buyer, commission try to circumvent the legal provision of PPA. Further DISCOMs & Generator will mutually decide the commercial arrangement for sharing of any profit between generator & buyer, in case it wants to give consent for sale of URS power in market. Defining any kind commercial arrangement for sale of own contracted power is like deviating legal

terms of PPA & this is like a amendment of PPA from backdoor & it may have to face legal challenge. Moreover in cost plus regime, generator is already benefited through Return on investment; proposing to share profit on account of sale of contracted power in Market on 50:50 basis is like undue financial gain to generator.

- We understand concern of generator particularly NTPC regarding un-utilized URS power. Hence it is suggested that instead of forcefully selling URS power without consent of beneficiaries, URS power shall be allowed to use by any beneficiary having LTA in any Central sector station in India at least to extent of its unscheduled power under LTA. For example suppose 'X' DISCOM is having total LTA quantum of 4000 MW but due to one or more reason total power available to it at any particular instance is only 3200 MW, then that DISCOM should be allowed to use URS from any station atl east to maximum possible extent of unutilized LTA quantum i.e 800MW. This will lead to effective use of pan India URS power.
- Normally URS power is available during off-peak period . However due to sever power shortage, URS availability during March-2018 to June 2018 in western region was very meager; even not available during of off-peak period & most of time, no URS power was available. Hence capacity of real time market needs to be build on surplus capacity available with merchant generator capacity.
- The issues of un-utilisation of URS power will also solve with concept of national MOD, which will also help DISCOM to reduce their power purchase cost. The comments/suggestion of National MOD concept is already submitted by MSEDCL.

5.8 **Transmission Corridor Allocation and Congestion Management :**

Given the shorter duration of transaction in the Real Time Market, it would be desirable that POSOCO declares in advance the transmission corridor margin available for real-time transaction. Accordingly, Power exchanges shall factor in the said margin available while clearing the market in Real time. The congestion management shall be handled as per the existing practice including by way of market splitting.

MSEDCL's comments/ suggestion:

The transmission corridor margin available for real-time transaction should be declared by POSOCO accurately for the optimum benefit of RTM.

If any utility sells the power in the market from the generating station with whom he has already entered into PPA under LTA/MTOA and paid monthly transmission charges under POC mechanism, additional transmission charges for transaction under RTM may not be levied.

6.2

India has unique characteristics of variation in demand pattern in different region due to its climatic and socio-cultural diversity. The following figure 8 shows when the maximum demand met in Northern region (July to August) coincides with minimum demand met in Western Region and vice versa. This diversity in the demand pattern can be utilised effectively with national level organised market given the fact that electricity is more difficult and expensive to store. With National level organised market, possibility of resource optimization across regions to take advantage of cheap resources would increase significantly.

MSEDCL's comments/ suggestion:

Although there is variation in demand pattern in different region, concept of national MOD and suggestion given above in respect of utilisation of URS power (use of URS by any DISOCM having LTA with any of Central sector station or national level MOD) will help in optimum utilisation URS & also help to reduce overall power purchase cost of nation.

Further MSEDCL would also like to brought to notice of commission that load pattern as in western countries are totally different than that of India & moreover it is changing with each place; as load pattern also depends on seasonal variation as well daily weather changes & from place to place. We cannot adopt policy/strategy used by western countries without suitably modifying it.

MSEDCL requests the Hon'ble Commission to kindly consider MSEDCL's comments / suggestions on Discussion Paper on Re-designing Real Time Electricity Markets in India.

With Regards.

Yours Faithfully,

Director (Commercial)

Copy s.w.r.to:

CMD, MSEDCL, Corporate office Mumbai.

MSEDCL Demand drop Analysis 1st May -Maharashtra Din

All values in MW

Hrs.	Year-2013			
	29.04.2013 (Mon.)	30.04.2013 (Tue.)	01.05.2013 (Wed.)	02.05.2013 (Thu.)
1	13376	13505	13579	12455
2	13046	13234	13190	12102
3	12759	13045	13047	11990
4	12537	12983	12662	11866
5	12882	12930	12617	11772
6	13315	13357	12703	12314
7	13559	13376	12561	12389
8	13462	13667	12181	12692
9	13621	13568	12165	13117
10	14131	14092	12452	13611
11	14475	14372	12769	14059
12	14474	14313	12888	14068
13	14162	14064	12818	13854
14	13823	14051	12545	13803
15	13865	14051	12672	13999
16	14283	14413	12657	13744
17	13874	14127	12168	13559
18	12721	12872	10719	12245
19	12651	12232	10336	11817
20	13387	13342	11798	12898
21	13529	13641	12059	13104
22	13329	13552	12152	12936
23	13692	13637	12234	13373
24	13361	13659	12221	13202
MUs	324.314	326.083	297.193	310.969

Year-2013			
Diff(29.04-01.05)	Diff(29.04-02.05)	Diff(30.04-01.05)	Diff(30.04-02.05)
203	-921	74	-1050
144	-944	-44	-1132
288	-769	2	-1055
125	-671	-321	-1117
-265	-1110	-313	-1158
-612	-1001	-654	-1043
-998	-1170	-815	-987
-1281	-770	-1486	-975
-1456	-504	-1403	-451
-1679	-520	-1640	-481
-1706	-416	-1603	-313
-1586	-406	-1425	-245
-1344	-308	-1246	-210
-1278	-20	-1506	-248
-1193	134	-1379	-52
-1626	-539	-1756	-669
-1706	-315	-1959	-568
-2002	-476	-2153	-627
-2315	-834	-1896	-415
-1589	-489	-1544	-444
-1470	-425	-1582	-537
-1177	-393	-1400	-616
-1458	-319	-1403	-264
-1140	-159	-1438	-457
-27.121	-13.345	-28.89	-15.114

Hrs.	Year-2014			
	29.04.2014 (Tue.)	30.04.2014 (Wed.)	01.05.2014 (Thu.)	02.05.2014 (Fri.)
1	14964	15795	15094	13930
2	14743	14444	14711	13630
3	14564	14466	14394	13755
4	14261	14611	14341	14057
5	14671	14849	14307	13906
6	14691	14521	14708	14260
7	15096	15165	14206	14363
8	15194	15116	14146	14256
9	15559	15176	13910	14626
10	16351	15903	13868	14965
11	16582	16589	13620	15662
12	16862	16503	14361	15681
13	16731	16458	14119	15430
14	16867	16392	13983	15387
15	16729	16517	13834	15409
16	16757	16457	14217	15619
17	15777	15733	13678	15417
18	14685	13890	12237	13805
19	14251	13712	12066	12824
20	15108	14564	13284	14131
21	14989	14466	13426	13438
22	14667	13476	13232	14076
23	14653	14452	13447	14127
24	14824	14602	13830	14403
MUs	369.576	363.857	333.019	347.157

Year-2014			
Diff(29.04-01.05)	Diff(29.04-02.05)	Diff(30.04-01.05)	Diff(30.04-02.05)
130	-1034	-701	-1865
-32	-1113	267	-814
-170	-809	-72	-711
80	-204	-270	-554
-364	-765	-542	-943
17	-431	187	-261
-890	-733	-959	-802
-1048	-938	-970	-860
-1649	-933	-1266	-550
-2483	-1386	-2035	-938
-2962	-920	-2969	-927
-2501	-1181	-2142	-822
-2612	-1301	-2339	-1028
-2884	-1480	-2409	-1005
-2895	-1320	-2683	-1108
-2540	-1138	-2240	-838
-2099	-360	-2055	-316
-2448	-880	-1653	-85
-2185	-1427	-1646	-888
-1824	-977	-1280	-433
-1563	-1551	-1040	-1028
-1435	-591	-244	600
-1206	-526	-1005	-325
-994	-421	-772	-199
-36.557	-22.419	-30.838	-16.7

MSEDCL Demand drop Analysis 1st May -Maharashtra Din

	Year-2015			
Hrs.	29.04.2015 (Wed.)	30.04.2015 (Thus.)	01.05.2015 (Fri.)	02.05.2015 (Sat.)
1	15473	15929	14860	14418
2	15156	15093	15148	13853
3	14846	15021	14700	13702
4	14493	14978	14191	13557
5	14465	14454	14213	13536
6	14567	14406	14166	13583
7	14999	15059	14512	14004
8	15019	14709	13902	14302
9	15519	15201	13251	14696
10	16005	15532	13676	15200
11	16465	16211	14054	15738
12	16316	16123	13734	15761
13	16257	15922	13728	15535
14	15464	15569	12925	15506
15	15868	15786	13471	15318
16	15810	15761	13509	15765
17	15804	15563	12964	15278
18	14379	13954	11447	13752
19	13312	13624	11377	12733
20	14062	14785	12615	14492
21	14969	14711	12713	14200
22	14435	13995	13054	14483
23	14822	14638	12978	14757
24	15273	14507	13731	15589
MUs	363.77667	361.52967	324.91767	349.75667

Year-2015			
Diff(29.04-01.05)	Diff(29.04-02.05)	Diff(30.04-01.05)	Diff(30.04-02.05)
-613	-1055	-1069	-1511
-8	-1303	55	-1240
-146	-1144	-321	-1319
-302	-936	-787	-1421
-252	-929	-241	-918
-401	-984	-240	-823
-487	-995	-547	-1055
-1117	-717	-807	-407
-2268	-823	-1950	-505
-2329	-805	-1856	-332
-2411	-727	-2157	-473
-2582	-555	-2389	-362
-2529	-722	-2194	-387
-2539	42	-2644	-63
-2397	-550	-2315	-468
-2301	-45	-2252	4
-2840	-526	-2599	-285
-2932	-627	-2507	-202
-1935	-579	-2247	-891
-1447	430	-2170	-293
-2256	-769	-1998	-511
-1381	48	-941	488
-1844	-65	-1660	119
-1542	316	-776	1082
-38.859	-14.02	-36.612	-11.773

	Year-2016			
Hrs.	29.04.2016 (Fri.)	30.04.2016 (Sat.)	01.05.2016 (Sun.)	02.05.2016 (Mon.)
1	15423	15282	15330	14031
2	14742	14349	15129	13883
3	14747	14872	14919	13913
4	14655	14707	14959	13692
5	14893	14830	14901	13535
6	15145	14964	14963	14000
7	15347	15101	14302	14588
8	15537	14976	14033	14778
9	15244	15074	13897	14841
10	15597	15852	13812	15669
11	15449	15953	13923	16384
12	15613	15971	13550	16070
13	15305	15680	13382	16144
14	15100	15621	13229	16010
15	14901	15752	13418	15906
16	15051	15956	13335	16096
17	14283	15309	13025	15305
18	13509	14380	12506	14211
19	14010	14346	12096	13966
20	14682	14876	13379	15250
21	14832	15094	13460	15314
22	14726	14841	13263	15217
23	14543	14692	13352	15289
24	15184	15238	14009	15447
MUs	358.50998	363.70798	332.16398	359.53098

Year-2016			
Diff(29.04-01.05)	Diff(29.04-02.05)	Diff(30.04-01.05)	Diff(30.04-02.05)
-93	-1392	48	-1251
387	-859	780	-466
172	-834	47	-959
304	-963	252	-1015
8	-1358	71	-1295
-182	-1145	-1	-964
-1045	-759	-799	-513
-1504	-759	-943	-198
-1347	-403	-1177	-233
-1785	72	-2040	-183
-1526	935	-2030	431
-2063	457	-2421	99
-1923	839	-2298	464
-1871	910	-2392	389
-1483	1005	-2334	154
-1716	1045	-2621	140
-1258	1022	-2284	-4
-1003	702	-1874	-169
-1914	-44	-2250	-380
-1303	568	-1497	374
-1372	482	-1634	220
-1463	491	-1578	376
-1191	746	-1340	597
-1175	263	-1229	209
-26.346	1.021	-31.544	-4.177

MSEDCL Demand drop Analysis 1st May -Maharashtra Din

Hrs.	Year-2017			
	29.04.2017 (Sun.)	30.04.2017 (Mon.)	01.05.2017 (Tue.)	02.05.2017 (Wed.)
1	16211	15507	16203	15492
2	16544	15348	16127	15229
3	16555	15915	15691	15252
4	16637	16157	15629	15362
5	16670	16118	15693	15494
6	17127	15804	16273	16199
7	16301	15814	16652	16911
8	16435	16624	15819	16994
9	17372	16575	15384	17226
10	16911	16322	15010	17099
11	17076	16817	15426	17324
12	17272	17485	16021	17806
13	17000	17530	16306	17206
14	16753	16832	16074	17454
15	17304	17406	16032	17940
16	17438	17687	16315	17662
17	16827	16587	15730	17097
18	16304	15171	15028	17322
19	15949	14820	14507	16564
20	16226	15207	14939	16772
21	15992	14816	14973	16782
22	16180	14955	14896	16337
23	15650	15468	15295	16576
24	15749	16021	15431	16349
MUs	398.483	386.986	375.45629	400.45195

Year-2017			
Diff(29.04-01.05)	Diff(29.04-02.05)	Diff(30.04-01.05)	Diff(30.04-02.05)
-8	-719	696	-15
-417	-1315	779	-119
-864	-1303	-224	-663
-1008	-1275	-528	-795
-977	-1176	-425	-624
-854	-928	469	395
351	610	838	1097
-616	559	-805	370
-1988	-146	-1191	651
-1901	188	-1312	777
-1650	248	-1391	507
-1251	534	-1464	321
-694	206	-1224	-324
-679	701	-758	622
-1272	636	-1374	534
-1123	224	-1372	-25
-1097	270	-857	510
-1276	1018	-143	2151
-1442	615	-313	1744
-1287	546	-268	1565
-1019	790	157	1966
-1284	157	-59	1382
-355	926	-173	1108
-318	600	-590	328
-23.02671	1.96895	-11.52971	13.46595

Hrs.	Year-2018			
	29.04.2018 (Sun.)	30.04.2018 (Mon.)	01.05.2018 (Tue.)	02.05.2018 (Wed.)
1	18100	17873	17340	16222
2	18058	18020	17485	16073
3	17822	17685	17436	16351
4	17870	17577	17359	16197
5	17619	17768	17237	16155
6	18519	17836	17698	16755
7	18897	18518	18338	17954
8	18526	18189	17237	17774
9	18138	18042	15832	17772
10	18299	18131	15777	17801
11	18510	18681	15927	18233
12	19346	19543	16745	19000
13	19330	19396	17652	19001
14	19122	19054	17717	19173
15	19273	18847	17271	19214
16	19200	19197	17554	19384
17	19167	19276	17514	19255
18	18253	18712	16521	18588
19	17320	17085	14921	16954
20	17113	17077	15500	17136
21	17061	17099	15058	16679
22	16877	17065	15126	16883
23	17268	17270	15750	17006
24	17082	17392	15508	17259
MUs	436.77	435.333	400.503	422.819

Year-2018			
Diff(29.04-01.05)	Diff(29.04-02.05)	Diff(30.04-01.05)	Diff(30.04-02.05)
-760	-1878	-533	-1651
-573	-1985	-535	-1947
-386	-1471	-249	-1334
-511	-1673	-218	-1380
-382	-1464	-531	-1613
-821	-1764	-138	-1081
-559	-943	-180	-564
-1289	-752	-952	-415
-2306	-366	-2210	-270
-2522	-498	-2354	-330
-2583	-277	-2754	-448
-2601	-346	-2798	-543
-1678	-329	-1744	-395
-1405	51	-1337	119
-2002	-59	-1576	367
-1646	184	-1643	187
-1653	88	-1762	-21
-1732	335	-2191	-124
-2399	-366	-2164	-131
-1613	23	-1577	59
-2003	-382	-2041	-420
-1751	6	-1939	-182
-1518	-262	-1520	-264
-1574	177	-1884	-133
-36.267	-13.951	-34.83	-12.514

MSEDCL Demand drop Analysis 15th August

All values in MW

	Year-2013			
Hrs.	13.08.2013 (Tue.)	14.08.2013 (Wed.)	15.08.2013 (Thu.)	16.08.2013 (Fri.)
1	10358	10312	10269	9328
2	10182	10199	10085	9267
3	10022	10237	10025	9404
4	9907	10120	10013	9532
5	9996	10130	10584	9783
6	10592	10456	11229	9843
7	11250	11105	11244	10301
8	11628	11184	10899	10902
9	11618	11192	10111	10972
10	11558	11294	10182	11540
11	11474	11228	9774	10863
12	11094	11116	9774	11155
13	10854	10867	9626	10892
14	10744	10665	9564	10675
15	10742	10855	9482	10555
16	10912	10945	9511	10681
17	10611	10653	8991	10428
18	10326	10148	8674	9758
19	10614	10744	9055	10810
20	11564	11671	10441	11475
21	11307	11500	10479	11497
22	11011	11203	9881	10970
23	10580	11212	9906	10706
24	10722	10555	9437	10781
MUs	259.666	259.591	239.236	252.118

Year-2013			
Diff (15.08-13.08)	Diff(16.08-13.08)	Diff (15.08-14.08)	Diff (16.08-14.08)
-89	-1030	-43	-984
-97	-915	-114	-932
3	-618	-212	-833
106	-375	-107	-588
588	-213	454	-347
637	-749	773	-613
-6	-949	139	-804
-729	-726	-285	-282
-1507	-646	-1081	-220
-1376	-18	-1112	246
-1700	-611	-1454	-365
-1320	61	-1342	39
-1228	38	-1241	25
-1180	-69	-1101	10
-1260	-187	-1373	-300
-1401	-231	-1434	-264
-1620	-183	-1662	-225
-1652	-568	-1474	-390
-1559	196	-1689	66
-1123	-89	-1230	-196
-828	190	-1021	-3
-1130	-41	-1322	-233
-674	126	-1306	-506
-1285	59	-1118	226
-20.43	-7.548	-20.355	-7.473

	Year-2014			
Hrs.	13.08.2014 (Wed.)	14.08.2014 (Thu.)	15.08.2014 (Fri.)	16.08.2014 (Sat.)
1	12737	12776	12737	11443
2	12510	12457	12396	11604
3	12613	12517	12480	11488
4	12159	12171	12345	11471
5	12336	12261	12726	11498
6	13057	13093	13438	12091
7	13795	13834	14168	12743
8	14064	14070	13609	13260
9	14442	14252	13201	13835
10	14483	14336	12603	14143
11	14326	14031	12773	13974
12	14115	13911	12707	13920
13	13899	13682	12591	14159
14	13907	13368	12106	13802
15	13718	13655	12193	13798
16	13693	13408	12372	13723
17	13581	13246	11603	13430
18	12687	12265	10737	12691
19	12680	12697	10746	12034
20	13676	13593	11877	13133
21	13202	13551	11955	13415
22	12730	13152	11485	12888
23	12294	12897	11678	13056
24	12307	13007	11750	12703
MUs	319.011	318.23	296.276	310.302

Year-2014			
Diff (15.08-13.08)	Diff(16.08-13.08)	Diff (15.08-14.08)	Diff (16.08-14.08)
0	-1294	-39	-1333
-114	-906	-61	-853
-133	-1125	-37	-1029
186	-688	174	-700
390	-838	465	-763
381	-966	345	-1002
373	-1052	334	-1091
-455	-804	-461	-810
-1241	-607	-1051	-417
-1880	-340	-1733	-193
-1553	-352	-1258	-57
-1408	-195	-1204	9
-1308	260	-1091	477
-1801	-105	-1262	434
-1525	80	-1462	143
-1321	30	-1036	315
-1978	-151	-1643	184
-1950	4	-1528	426
-1934	-646	-1951	-663
-1799	-543	-1716	-460
-1247	213	-1596	-136
-1245	158	-1667	-264
-616	762	-1219	159
-557	396	-1257	-304
-22.735	-8.709	-21.954	-7.928

MSEDCL Demand drop Analysis 15th August

	Year-2015			
Hrs.	13.08.2015 (Thu)	14.08.2015 (Fri.)	15.08.2015 (Sat.)	16.08.2015 (Sun.)
1	12456	12488	12412	11426
2	12340	12342	12044	11019
3	12218	12167	12140	11278
4	12111	12197	12280	11272
5	11923	12100	12276	11577
6	12631	12554	13047	11760
7	13429	13688	12863	12401
8	13895	14123	12683	13282
9	13979	14132	12770	13834
10	13896	13823	12429	14099
11	13971	13668	12763	13605
12	13795	13469	12083	13685
13	13249	12919	12289	13827
14	12890	12856	11690	13168
15	12891	12487	11531	13466
16	13027	12721	11476	13214
17	12703	12137	11135	13048
18	11964	11591	10052	11929
19	12285	11603	10482	11754
20	13461	13248	11695	13063
21	13410	12926	11811	13204
22	13033	12642	11488	12178
23	12604	12438	11546	12357
24	13017	12589	11505	12657
MUs	311.178	306.908	286.49	303.103

Year-2015			
Diff (15.08-13.08)	Diff(16.08-13.08)	Diff (15.08-14.08)	Diff (16.08-14.08)
-44	-1030	-76	-1062
-296	-1321	-298	-1323
-78	-940	-27	-889
169	-839	83	-925
353	-346	176	-523
416	-871	493	-794
-566	-1028	-825	-1287
-1212	-613	-1440	-841
-1209	-145	-1362	-298
-1467	203	-1394	276
-1208	-366	-905	-63
-1712	-110	-1386	216
-960	578	-630	908
-1200	278	-1166	312
-1360	575	-956	979
-1551	187	-1245	493
-1568	345	-1002	911
-1912	-35	-1539	338
-1803	-531	-1121	151
-1766	-398	-1553	-185
-1599	-206	-1115	278
-1545	-855	-1154	-464
-1058	-247	-892	-81
-1512	-360	-1084	68
-24.688	-8.075	-20.418	-3.805

	Year-2016			
Hrs.	13.08.2016 (Sat.)	14.08.2016 (Sun.)	15.08.2016 (Mon.)	16.08.2016 (Tue.)
1	11243	11595	11472	10557
2	11119	11617	11251	10359
3	10966	11383	11263	10367
4	11237	11418	11278	10498
5	11710	11598	11364	10877
6	12016	11998	12562	11285
7	12765	12717	12735	12263
8	13048	13175	12571	13213
9	13044	13337	12079	13715
10	13116	13229	11125	13308
11	13098	12905	11253	13291
12	12686	12815	10888	12812
13	12251	12256	10460	12456
14	11734	11932	10318	12283
15	12027	11960	10010	12410
16	11985	11963	10388	12441
17	11885	11713	9876	12642
18	11449	11109	9364	11951
19	11788	11780	9656	12333
20	13607	12738	11499	13314
21	13279	12983	11636	13446
22	12607	12596	11101	12747
23	12090	12110	10861	12306
24	11938	11771	10482	11810
MUs	292.688	292.698	265.492	292.684

Year-2016			
Diff (15.08-13.08)	Diff(16.08-13.08)	Diff (15.08-14.08)	Diff (16.08-14.08)
229	-686	-123	-1038
132	-760	-366	-1258
297	-599	-120	-1016
41	-739	-140	-920
-346	-833	-234	-721
546	-731	564	-713
-30	-502	18	-454
-477	165	-604	38
-965	671	-1258	378
-1991	192	-2104	79
-1845	193	-1652	386
-1798	126	-1927	-3
-1791	205	-1796	200
-1416	549	-1614	351
-2017	383	-1950	450
-1597	456	-1575	478
-2009	757	-1837	929
-2085	502	-1745	842
-2132	545	-2124	553
-2108	-293	-1239	576
-1643	167	-1347	463
-1506	140	-1495	151
-1229	216	-1249	196
-1456	-128	-1289	39
-27.196	-0.004	-27.206	-0.014

MSEDCL Demand drop Analysis 15th August

	Year-2017			
Hrs.	13.08.2017 (Sun.)	14.08.2017 (Mon.)	15.08.2017 (Tue.)	16.08.2016 (Wed.)
1	15181	14940	14106	13212
2	14938	14569	13784	12670
3	14682	14349	13757	12800
4	14914	14524	13491	12789
5	15168	14720	14240	13029
6	16297	15722	14851	14397
7	16205	16733	15486	15385
8	16197	16782	14955	16130
9	16237	17104	14721	16455
10	15604	16358	13602	15940
11	16088	16313	13641	16135
12	16536	17312	14227	16761
13	16848	17420	14145	16848
14	16798	16856	14038	16687
15	16514	16906	13807	16536
16	16823	16733	13733	16723
17	16239	16114	13156	16414
18	16111	15182	12747	15626
19	15180	14777	12542	14875
20	15582	14871	12688	15644
21	16022	14599	12869	15469
22	15372	14210	12662	15103
23	15034	14178	12555	14613
24	15171	14235	12654	14867
MUs	379.741	375.507	328.457	365.108

Year-2017			
Diff (15.08-13.08)	Diff(16.08-13.08)	Diff (15.08-14.08)	Diff (16.08-14.08)
-1075	-1969	-834	-1728
-1154	-2268	-785	-1899
-925	-1882	-592	-1549
-1423	-2125	-1033	-1735
-928	-2139	-480	-1691
-1446	-1900	-871	-1325
-719	-820	-1247	-1348
-1242	-67	-1827	-652
-1516	218	-2383	-649
-2002	336	-2756	-418
-2447	47	-2672	-178
-2309	225	-3085	-551
-2703	0	-3275	-572
-2760	-111	-2818	-169
-2707	22	-3099	-370
-3090	-100	-3000	-10
-3083	175	-2958	300
-3364	-485	-2435	444
-2638	-305	-2235	98
-2894	62	-2183	773
-3153	-553	-1730	870
-2710	-269	-1548	893
-2479	-421	-1623	435
-2517	-304	-1581	632
-51.284	-14.633	-47.05	-10.399

	Year-2018			
Hrs..	13.08.2018 (Mon.)	14.08.2018 (Tue.)	15.08.2018 (Wed.)	16.08.2018 (Thu.)
1	14362	14084	14640	12381
2	14150	14305	15018	12088
3	14169	14398	14709	11922
4	14156	14132	14791	11996
5	14428	14644	15135	12167
6	15390	15650	16347	13006
7	16633	16916	17136	14152
8	16951	17401	16397	14763
9	16634	17329	15560	14671
10	16761	17226	15165	14834
11	16495	17060	14802	14371
12	16718	17119	14706	14108
13	16912	17180	14793	13301
14	16530	16991	14545	13249
15	16705	16752	14324	12905
16	16684	17238	14153	13081
17	16062	17034	13757	12744
18	15975	15955	13240	13237
19	15984	16162	13143	13717
20	15889	16546	13274	14278
21	15363	15722	13176	13437
22	14774	15559	12999	13105
23	14700	15212	12569	12407
24	14267	14784	12459	12007
MUs	376.692	385.399	346.838	317.927

Year-2018			
Diff (15.08-13.08)	Diff(16.08-13.08)	Diff (15.08-14.08)	Diff (16.08-14.08)
278	-1981	556	-1703
868	-2062	713	-2217
540	-2247	311	-2476
635	-2160	659	-2136
707	-2261	491	-2477
957	-2384	697	-2644
503	-2481	220	-2764
-554	-2188	-1004	-2638
-1074	-1963	-1769	-2658
-1596	-1927	-2061	-2392
-1693	-2124	-2258	-2689
-2012	-2610	-2413	-3011
-2119	-3611	-2387	-3879
-1985	-3281	-2446	-3742
-2381	-3800	-2428	-3847
-2531	-3603	-3085	-4157
-2305	-3318	-3277	-4290
-2735	-2738	-2715	-2718
-2841	-2267	-3019	-2445
-2615	-1611	-3272	-2268
-2187	-1926	-2546	-2285
-1775	-1669	-2560	-2454
-2131	-2293	-2643	-2805
-1808	-2260	-2325	-2777
-29.854	-58.765	-38.561	-67.472

Hourly Catered Demand by MSEDCL for Month of July 2018 from 21st July 2018 to 31st July 2018-(Data from SLDC DSR report)

Hrs	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul
1	12586	12735	12372	12665	12721	12897	12718	13146	13454	13818	14189
2	12699	12698	12546	12352	12808	12650	12304	12224	13489	13788	13969
3	12363	12612	12238	12366	12691	12711	12327	12431	13312	13819	14111
4	12506	12714	12186	12543	12723	12520	12480	12442	13545	13858	14028
5	12915	12903	13034	12973	13351	13050	13031	13092	13745	14156	14464
6	13935	13746	13515	13701	13968	14119	14158	13861	14348	14864	14997
7	14744	14525	14605	14858	15321	15156	15119	15241	15373	16186	16857
8	14894	14885	15168	15724	15604	15712	15754	15407	15819	16809	16980
9	15169	14792	15355	15456	15560	15338	15455	15496	15833	16494	17106
10	14786	14909	15174	15221	15291	15118	15360	15261	15859	16738	16906
11	14456	14750	15013	14976	14515	14533	14548	14841	15530	16093	16370
12	14507	14516	14502	14672	14403	14362	14719	14945	15766	16478	16564
13	14188	14393	14200	14114	14017	14088	14445	15053	15682	16415	16558
14	13987	13685	13879	14167	13886	13958	14131	14932	15476	16467	16454
15	14161	13787	14125	13686	13836	13587	13770	14824	15289	16276	16509
16	14006	13626	14063	13997	13667	13822	13761	15210	15422	16197	16168
17	13925	13328	13950	13905	13786	13846	13748	14842	15203	16079	16154
18	14055	13531	14040	14068	13822	13618	13704	14647	14699	15792	15745
19	14358	13747	14205	14257	14289	14130	13699	14600	14566	14928	15607
20	14972	14112	14437	14624	14575	14464	14477	15209	14829	15514	15788
21	14474	13751	14110	14171	14684	13943	13886	14992	15053	15287	15712
22	14020	13592	13795	13952	14111	13311	13620	14756	14618	15172	15218
23	13623	13261	13316	13798	13728	13261	13371	14235	14065	14988	14926
24	13052	12583	12826	12924	13094	12676	12918	13606	13973	14282	14634
Energy (MUS)	334	329	333	335	336	333	334	345	355	370	376
Peak Demand	**15169**	**14909**	**15355**	**15724**	**15604**	**15712**	**15754**	**15496**	**15859**	**16809**	**17106**

Hourly Catered Demand by MSEDCL for Month of August 2018 from 7th August to 19th August (Data from SLDC DSR report)

Hrs	7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug
1	15057	14983	14916	14475	15035	14324	14362	14084	14640	12381	11482	12541	12891
2	14957	15164	14893	14303	14665	14750	14150	14305	15018	12088	11529	12178	12710
3	14899	15176	14886	14351	14638	14577	14169	14398	14709	11922	11538	12369	12638
4	14631	14971	14823	14405	14520	14348	14156	14132	14791	11996	11150	12348	12835
5	15295	15211	15365	15047	15244	14549	14428	14644	15135	12167	11505	12751	12825
6	16458	16446	15939	15687	15641	15461	15390	15650	16347	13006	11967	13472	13748
7	17716	17464	16925	17002	17198	16519	16633	16916	17136	14152	12931	14590	14385
8	18116	18292	17358	17775	17465	16883	16951	17401	16397	14763	13537	14979	15049
9	17559	17816	16712	17895	17711	16808	16634	17329	15560	14671	13766	14941	15132
10	17453	17657	16425	17495	17310	16933	16761	17226	15165	14834	13896	14845	14855
11	17157	17374	16711	17124	17087	16801	16495	17060	14802	14371	13612	14547	14625
12	17465	17406	16300	17337	17215	16883	16718	17119	14706	14108	13145	14342	14373
13	17630	17449	16705	17136	17352	16989	16912	17180	14793	13301	13093	13999	14429
14	17297	16887	16289	16802	16907	16377	16530	16991	14545	13249	12883	13781	13863
15	17324	16788	16150	16494	16834	16203	16705	16752	14324	12905	12900	13733	14160
16	17414	16560	16091	16706	16452	16210	16684	17238	14153	13081	12982	13652	13784
17	17086	16453	15514	15888	16590	15934	16062	17034	13757	12744	12853	14042	13545
18	16513	15950	15328	15659	15951	15458	15975	15955	13240	13237	13400	14019	13461
19	16424	16170	14442	15464	15427	15091	15984	16162	13143	13717	13944	14364	14059
20	16262	16144	14976	15978	16090	15734	15889	16546	13274	14278	14687	14888	14652
21	16210	15691	14658	15267	15370	15182	15363	15722	13176	13437	14094	14575	14448
22	15546	15316	14345	15103	14999	14766	14774	15559	12999	13105	13682	13956	13967
23	15296	15228	14392	14783	14497	14481	14700	15212	12569	12407	13453	13622	13386
24	15122	15047	14425	14531	14493	14181	14267	14784	12459	12007	12651	13138	12872
Energy (MUS)	**395**	**392**	**375**	**383**	**385**	**375**	**377**	**385**	**347**	**318**	**311**	**332**	**333**
Peak Demand	18116	18292	17358	17895	17711	16989	16951	17401	17136	14834	14687	14979	15132

Rainfall Data from Maharain.gov.in website of GoM, for period 16th July 2018 to 31st July 2018

Sr	District	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	Thane	143.2	67.6	36.6	15.8	11.1	31.5	29.6	15	8.8	8.5	6.9	4.3	3.9	1.1	0.7	4
2	Raigadh	67.5	48.7	32.6	27.7	22.2	37.2	24	14.1	10.2	7.1	5.1	5.9	5.3	1.3	0.4	1.5
3	Ratnagiri	54.5	60.2	57.8	28.3	42.2	34.2	26.4	20.3	15	14.8	10.7	14.2	12	5.6	1.9	3.6
4	Sindhudurg	53.5	43.1	27.2	19	28	28.2	24.6	27.9	15.7	10.8	12.8	6.8	5.3	4.5	1.5	1.2
5	Palghar	129.5	68.5	32.1	21.9	12.4	50.2	34.6	10.1	7.4	7.6	2.9	3.2	2.1	0.2	0.5	-
6	Nasik	26.9	31.7	18.2	5.2	10.1	14.2	16.6	7.2	5.6	5.1	2.4	1.5	0.7	0.1	0.1	0.5
7	Dhule	10.4	2.6	5.4	0.6	1.9	11.7	2.7	6.7	9.8	5.8	2	0.7	0	0	0	-
8	Nandurbar	5.7	5.1	4.4	2.9	3.2	31.5	6.2	4.1	11.4	22.2	7.4	2.1	0.3	0	0	10.5
9	Jalgaon	3.4	5	4.5	0.5	3.8	3.9	4.9	6.5	9.3	4	2.7	0.5	0.2	0	0	0
10	Ahamadnagar	3.9	16.2	3.3	0.9	0.4	1.7	2.6	1	1	1.2	0.6	0.5	0.3	0	0	0
11	Pune	31.1	50.3	18.5	9.4	6.3	11.2	11.2	9.6	4.2	5.2	2.7	2.6	3.2	0.5	0.1	-
12	Solapur	0.9	8.8	0.2	0.1	2.4	0.1	0	0.2	0.4	0.1	0	0.1	0	0	0	-
13	Satara	31.9	56.4	29.3	13.2	11.3	9.9	8.7	6.1	5.7	5.2	3.1	5.3	5.2	1.4	0.9	1.2
14	Sangli	7	19.6	14	2	6.6	4.2	1.9	1.1	1.5	1.6	1.1	2.6	1.7	0.4	0.1	-
15	Kolhapur	42.1	69.9	39.4	14.7	19	16.5	19	12.5	11.4	10.3	8.2	7.3	7.9	4.1	1.6	2.6
16	Aurangabad	2.1	14.4	0.4	0	0.5	5.1	0.8	3	1.9	0.2	0.2	0.1	0	0	0	0
17	Jalna	1.8	14.6	0.4	0	0.6	10.2	2	4.9	2.3	0.6	0	0	0	0	0	0
18	Beed	1.2	15.4	0.2	0	0.1	0.3	0	2.2	0.2	0	0	0	0	0	0	0
19	Latur	3.6	11.6	1.2	0.8	0.8	2.3	0.1	4.8	0.5	0.3	0.1	0	0	0	0	0
20	Osmanabad	5.5	15.7	1.1	0.7	3	0.6	0	2.2	0.8	0.5	0	0	0.1	0	0	0
21	Nanded	7.5	19.5	3.3	0.7	1.8	7.5	1.2	2.2	0.1	2	0.3	0	0	0	0	0
22	Parabhani	1.1	30.6	1.1	0.1	2.9	6.4	1.2	1.2	0	0.5	0	0	0	0	0.1	-
23	Hingoli	5.6	20.4	4.8	0.1	0.4	5.1	6.1	4.2	0	7.4	0	0	0	0	0	-
24	Buldhana	9.3	4.3	1.2	0.5	1.4	4.5	1.3	11.8	10.2	1.7	2.4	0.1	0	0	0	0
25	Akola	7	2.5	1.4	0	1.7	2.3	4.2	6.9	10.1	3.3	4	0.2	0	0	0	-
26	Washim	13.1	9.5	5.1	1	4.8	4.2	2.3	16.7	3.2	2.8	1.4	0.2	0.2	0	0	6
27	Amravati	2.4	5.8	8.1	0.9	0.4	0.1	2.3	11.2	7	2.6	2.5	0.8	0.5	0	0	0.3
28	Yavatmal	8.3	11.3	0.8	0.2	2.8	3	1.6	9.4	2.8	1.8	1.4	0.2	1.1	0	0	0.6
29	Wardha	5.1	10.8	3.3	0.5	0	0.2	2.7	17.7	3.2	0.1	1.3	0.3	1.2	0.1	0	0
30	Nagpur	11.4	45	11.2	0.3	0	0.9	6.5	23.3	1.1	0.3	1	0.5	0.9	0	0	0
31	Bhandara	28.4	76.8	12.7	2.3	0.2	1.8	11.7	32.4	0.9	0.6	4.2	1.2	2.3	0.3	0	0
32	Gondia	92.5	98.6	20.2	1.1	0.6	0.3	6.7	42.4	2.3	0.4	8.2	1.8	1.9	5.2	0.7	0.4
33	Chandrapur	28.2	32	0.5	1.6	1.7	2.1	3.3	11.3	2.2	0.6	1.3	0.9	2.7	0	0	0.1
34	Gadchiroli	71.3	44.8	5.6	7.6	5.3	9.8	16.4	18.5	4.6	3.8	5.1	2.6	3.9	0.2	0.2	-
	State Avg	**21.9**	**28.1**	**11.7**	**5**	**6.2**	**9**	**7.4**	**9.7**	**5**	**3.7**	**2.7**	**1.9**	**1.9**	**0.7**	**0.3**	**0.9**

Rainfall Data from Maharain.gov.in website of GoM, for period 1st August 2018 to 20th August 2018

Sr	District	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Thane	4.1	5.3	3.6	15	13.1	4	4.4	3.8	7.6	11.2	10.3	17.6	19.2	13.5	7	14.3	26.4	16.3	17.6	13.5
2	Raigadh	5.8	15.2	11.2	18.8	19.8	3.8	2.5	5.6	8	10.6	12.2	17.9	26	19	12.5	21.7	26.2	20.5	25.5	31.2
3	Ratnagiri	5.8	25.1	11.3	28.5	43.3	11.4	13.6	9.3	17.2	8.1	13.5	29	36.8	32.6	16.2	24	21.8	21.1	49.2	28.4
4	Sindhudurg	3.7	4.3	5.1	10.2	20	11.4	9	7.2	6.8	7.1	9.3	26.9	26.6	29.3	24.1	41	41.5	36.2	14.4	14
5	Palghar	2.8	3.4	3.4	26.8	8.5	2.8	1.5	2.2	6.1	10.1	7.7	14.9	13.9	6.5	3.4	9.8	18.3	12	14.7	8.3
6	Nasik	1.2	1.1	0.5	3.9	21.4	0.9	0.8	1	2.8	4.7	3.1	6.7	5.2	4.5	2.2	2.9	44.1	8.4	6.6	3.8
7	Dhule	0	0	0.1	0.3	1.9	0	0	0	1.3	0.9	0.4	0.6	1.1	1	0.4	0.5	77.8	1.5	0.9	0.6
8	Nandurbar	0.7	0	0.4	2.5	0	0.2	0.7	1.5	3.4	1.5	0.3	2.6	9.9	4.7	2.4	3.4	58.6	4.1	1.9	1.3
9	Jalgaon	0	0	0.1	0	0	0	0.1	0	0	0	0.3	0	0.9	0.9	0	4.5	75	0.7	4.8	2.7
10	Ahamadnagar	0.3	0.3	0	0.4	0.6	0.2	0.2	0.3	0.7	0.8	0.5	1.4	1.8	1.7	0.4	2.7	41.6	2.5	1.5	0.6
11	Pune	1.4	2.5	2.2	2.9	7.3	1.5	2.2	2.1	3.3	2.7	4.4	9.1	9.6	9.2	5.4	7.1	22.4	7.8	9.7	8.7
12	Solapur	0	0	0	0.2	0.1	0	0	0	0	0.1	0	0.5	0.2	0.5	0.2	14.6	10.9	0.4	0.5	0
13	Satara	2.3	6.3	2.3	6.6	4.2	2.3	2.6	3.3	5.5	2.8	4.5	8.9	14	11.4	6.5	7.6	11.4	9.1	11.6	8.3
14	Sangli	1.2	1.6	0.9	3.4	3.8	1.3	2.6	1.6	1.7	0.4	0.9	3.4	4.6	7.3	2	3.3	3.5	1.6	5.7	2.6
15	Kolhapur	3.7	5	3.5	6.9	20.1	9.2	7.7	6.9	11.8	5.2	6.3	16.9	25	27.9	12.8	14.4	15.4	20	18.3	14.2
16	Aurangabad	0.4	0.2	0	0	0.5	0	0	0	0	0.2	0.4	0.2	0.6	0.6	0	4	102.8	1.4	0.4	0.5
17	Jalna	0	0	0	0.2	0	0.3	0	0	0	1.5	0.3	0.2	0.5	0	0	10.7	112.7	1.9	0.2	9.3
18	Beed	1.9	0.3	0	0	0	0.1	0	0	0.1	0	0	0.2	0.3	0.4	0.1	21.5	44.1	3.9	0	0.8
19	Latur	0.6	10.1	0.1	0.1	0.8	0.1	0	0	5.3	0	1.5	6.3	1	0.9	0.1	24.7	28.1	4.2	0.2	7.9
20	Osmanabad	0.1	0	0	0	0.3	0	0	0	0	0	0	1.2	0.2	2.3	0.2	49.6	25	3.7	0.1	0.3
21	Nanded	1.7	9.1	0.8	1.4	1.6	0.3	0.3	0.4	0.5	0.5	2.4	25.3	3.1	2.1	1.2	29.8	73	5	3.5	35.1
22	Parabhani	0.4	3.1	0	0.1	0.2	0.2	0	0	0.1	2	0	3.8	0.6	0.4	0.2	25.5	72.5	2.8	0	11.4
23	Hingoli	0.1	3.5	0.1	0.3	2.9	0.2	0	0	0.4	1.3	0.7	5.5	0.3	0.5	0.5	35.7	65.2	5.2	6.6	13.1
24	Buldhana	1.6	0.1	0	1	0.4	0.1	0	0	1	1.7	4.4	0.6	0.3	0.3	0.4	14.9	80.1	0.7	2	10.6
25	Akola	0	0	0	0	0.1	0	0	0	0.4	0.7	6	0.5	0.5	2.1	0	9.9	83.3	4	4.8	18
26	Washim	0.4	1.3	0	0.5	1.2	0.1	0.3	0	0	0.4	2.7	0.8	1.8	1.3	0.2	23.3	94.1	1.4	11.4	10.2
27	Amravati	0.5	0	0	0.4	0	0	0.2	0.9	2.6	2.9	3.6	0.7	1.1	2.6	0.8	11.8	34.7	25.9	28.2	4.9
28	Yavatmal	0.2	0.7	0.7	0.7	0.7	0.2	0.4	0.5	0.8	1.8	5.1	15.7	5.4	10.8	0.3	34.1	59.2	5.3	4.7	8.8
29	Wardha	0	0.2	0	0.1	0	0	0	0.6	4	1.7	10.1	6.1	0.5	3.7	0	27.3	10.3	11.5	0.7	5
30	Nagpur	0	0	0	0	0	0	0.1	1.8	0.6	0.3	2.2	5.1	3.4	1.4	0.2	25.9	6.3	6.6	6.1	12.4
31	Bhandara	0	2	0	0.5	0	0.7	0.4	12	1.4	0.5	2.1	12	1.2	0.2	6.3	69.1	8.8	0.8	12.1	10.6
32	Gondia	0	3.8	0	0.2	0	0.6	12.9	8.6	5.4	1.2	5.3	7	12.4	10.2	17.5	56.7	10.1	0.3	12.1	3.1
33	Chandrapur	1.1	0.2	0.8	0.1	0.1	0.2	0.4	2.3	2.8	1.4	10.5	22.6	8.5	6.5	2.8	56.2	18.7	10.5	1.9	13.6
34	Gadchiroli	2.2	6	0	0.1	0.3	2.1	3.6	21.3	3.8	2.3	10.1	75.6	16	5.1	3	81.1	15.3	11.3	7.5	42.7
	State Avg	**1.3**	**3.2**	**1.4**	**3.5**	**5.3**	**1.5**	**1.7**	**2.3**	**2.9**	**2.3**	**3.9**	**9.2**	**7**	**6.5**	**3.4**	**19.9**	**42.5**	**7.8**	**8.5**	**10**