

PCKL/ADP/DDP1/ADP9/2019-20/589-96

Date: 14 MAY 2019

**The Secretary**

Central Electricity Regulatory Commission  
3<sup>rd</sup>& 4<sup>th</sup>Floor, Chanderlok Building,  
36, Janpath, New Delhi- 110001

**Sir**

**Sub:** Views/Comments on the proposed Deviation Settlement Mechanism and related matters (DSM) (Fifth Amendment) Regulations, 2019.

The PCKL on behalf of the Distribution Companies of Karnataka, while thanking the Hon'ble Commission for understanding the difficulties faced by the State entities in implementing the 4<sup>th</sup> Amendment Regulations of DSM and proposing to amend the Regulations which are difficult to practically implement in the ground level, would like to furnish the view/comments on the proposed 5<sup>th</sup> Amendment of DSM Regulation.

Also, some of the following submissions are made for kind consideration of the Hon'ble Commission:

1. To increase the existing deviation limit of 250MW to 500MW of schedule in a time block, as Karnataka being RE rich State has an installed capacity of RE more than 13500MW and is expected to add another 2000 to 4000MW by 2022.
2. To order refund of the DSM penalty collected as per the 4<sup>th</sup> amendment DSM Regulations, 2018(from 1<sup>st</sup> Jan-2019 to till date).
3. To consider modifying the Regulations in case of a seller as under:  
The charges for deviation for under/over injection of a seller (of a RE rich State) shall not exceed 12% of scheduled injection or 150MW whichever is lower.

To remove the limitation of 48MW in case the scheduled injection is less than or equal to 400MW.

The Views/Comments annexed and the requests as stated above may kindly be considered.

Thanking you,

Yours faithfully,

 14/5/19

**Managing Director,**

Power Company of Karnataka Limited  
Bengaluru.

Copy to:

- 1) The Managing Director, BESCOM/MESCOM/CESC/HESCOM/GESCOM for information.
- 2) PS to ACS, Energy Department, GoK for placing before the ACS, Energy Department, GoK,
- 3) PS to Chairman PCKL &MD, KPTCL, Kaveri Bhavan, for placing before the Chairman PCKL & MD, KPTCL.

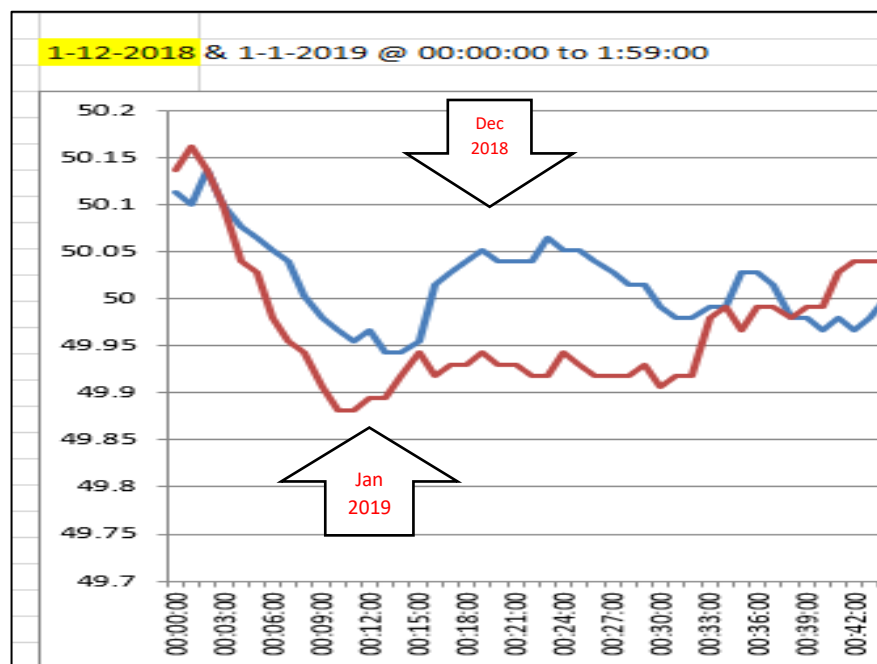
Sl. No	As per draft 5 <sup>th</sup> Amendment Regulation	Remarks / Comments of PCKL, Karnataka.
1	<p>A new sub-clause shall be added after sub-clause (ga) of clause (1) of Regulation 2 of the Principal Regulations, as under :-</p> <p>“(gb) <b>“Daily Base DSM”</b> means the sum of charges for deviations for all time blocks in a day payable or receivable as the case may be, excluding the additional charges under Regulation 7”.</p>	<p>“(gb) <b>“Daily Base DSM Charges”</b> means the sum of charges for deviations for all time blocks in a day payable or receivable as the case may be, excluding the additional charges under Regulation 7”.</p>
2	<p>A new sub-clause shall be added after sub-clause (q) of clause (1) of Regulation 2 of the Principal Regulations, as under :-</p> <p>“(qa) <b>“Time Block DSM”</b> means the charge for deviation for the specific time block in a day payable or receivable as the case may be, excluding the additional charges under Regulation 7”</p>	<p>“(qa) <b>“Time Block DSM Charges”</b> means the charge for deviation for the specific time block in a day payable or receivable as the case may be, excluding the additional charges under Regulation 7”</p>
3	<p><b>Clause (10) of Regulation 7 of the Principal Regulations</b></p>	<p>As per the existing Regulation 4<sup>th</sup> Amendment of DSM Regulations, which came into force from 01-01-2019, the Regional entity shall have to change sign of their deviation from schedule, at least once, after every 6 time blocks.</p>

<p>shall be substituted as under:</p> <p>"In the event of sustained deviation from schedule in one direction (positive or negative) by any regional entity (buyer or seller), such entity shall correct its position in the manner as specified under clauses (a) and (b) of this Regulation.</p> <p>(a) Up to 31.03.2020, if the sustained deviation from schedule continues for 12 time blocks, the regional entity (buyer or seller), shall correct its position by making the sign of its deviation from schedule changed or by remaining in the range of +/- 10 MW with reference to its schedule, at least once, latest by 13th time block.</p> <p>Provided that each violation of the requirement under this clause shall attract an additional charge of 10% on the time block DSM</p>	<p>The States have experienced hardship in implementing the sign change due to operational difficulties, the same was brought to the kind notice of CERC through letters, SRPC forum and through petitions in High Court.</p> <p>The CERC considering the concerns expressed by the Stakeholders has issued a draft 5<sup>th</sup> Amendment to DSM Regulations.</p> <p><b><u>Since, the CERC has recognized that, there are difficulties in implementation of the 4<sup>th</sup> Amendment Regulations, it is requested to waive the penalties levied on the Regional entities on account of this Regulation from 01-01-2019 to till date.</u></b></p> <p><b>Further, it is submitted that, the sign Change conditions in the DSM Regulations is to be done away with due to the following Reasons.</b></p> <ol style="list-style-type: none"> <li>1. The sign change mandated instead of supporting the Grid security will create more distortion in the frequency bandwidth as stated in the following paras and is contrary to the other Regulations of CERC i.e., some provisions in the DSM Regulation itself and the IEGC, 2010.</li> <li>2. The RE rich States by virtue of Must Run status conferred to the RE Generation are facing hardship in adhering to the mandatory sign change requirements in every 6 time blocks. The adherence to sign change has made the States to deviate much from the schedules than earlier Regulations and this has increased the financial burden also.</li> <li>3. The States are participating in the GoI sponsored Power For All (PFA) program wherein, 24X7 Hrs uninterrupted power is guaranteed to the Consumers. The sign change mandate will result in forced curtailing of power within different pockets of the State and will result in defeating the very spirit of 24X7 Hrs power supply.</li> </ol>
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payable / receivable as the case may be.

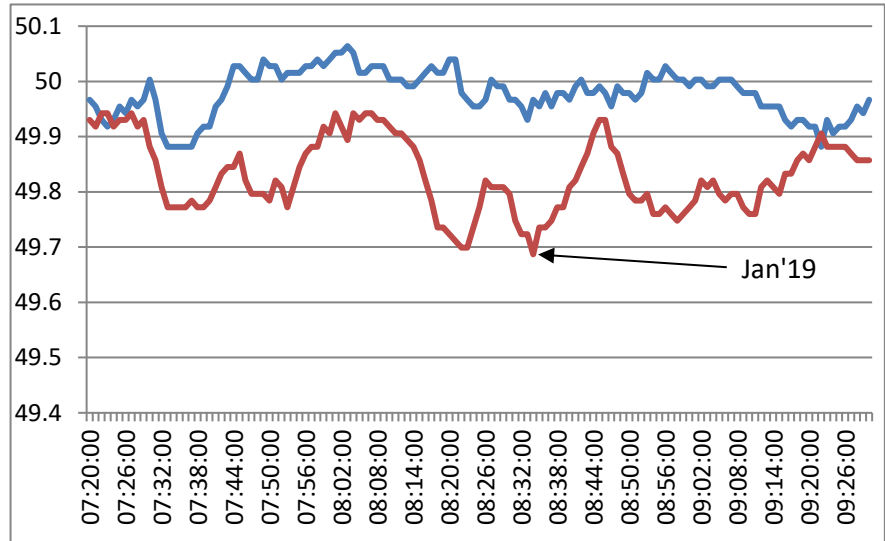
(b) From 01.04.2020, if the sustained deviation from schedule continues for 6 time blocks, the regional entity (buyer or seller), shall correct its position, by making the sign of its deviation from schedule changed or by remaining in the range of +/- 10 MW with reference to its schedule, at least once, latest by 7th time block.

4. Further, the deviation limits of over drawal/under drawal as specified in the DSM Regulation being very low would further deteriorate the situation and do not leave any cushion for the States with high RE power.
5. It is well established fact that, the sustained under drawal at low grid frequency and over drawal during higher frequency is advantageous to the grid security. When a State is supporting the grid by such drawals even beyond the stipulated 6 time blocks period, there is no merit in penalizing such entity in the pretext of Sign Change requirement.
6. Also, it is to be noted that, the Amendments made in DSM Regulations are stated to improve the Grid Security by sign changes. But, in reality the frequency excursions before and after implementation of the 4<sup>th</sup> Amendment to DSM Regulations, when plotted shows that, the frequency variation even after exercising the sign change do not come within the band width stipulated at all. The examples for the same is shown in the following Frequency Vs Time curve.

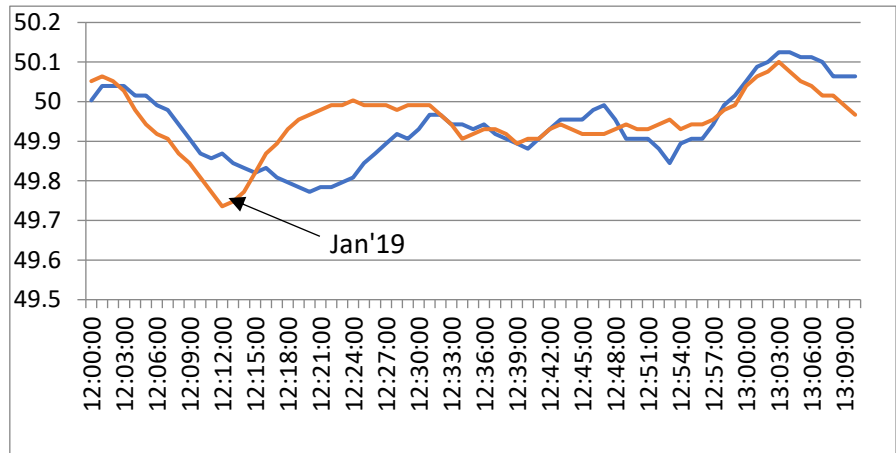


The following are some more examples to show that, in many occasions in a day/month the frequency band width instead of getting tightened within the band width as per Regulation, is found to be deviating indicating a grid security threat.

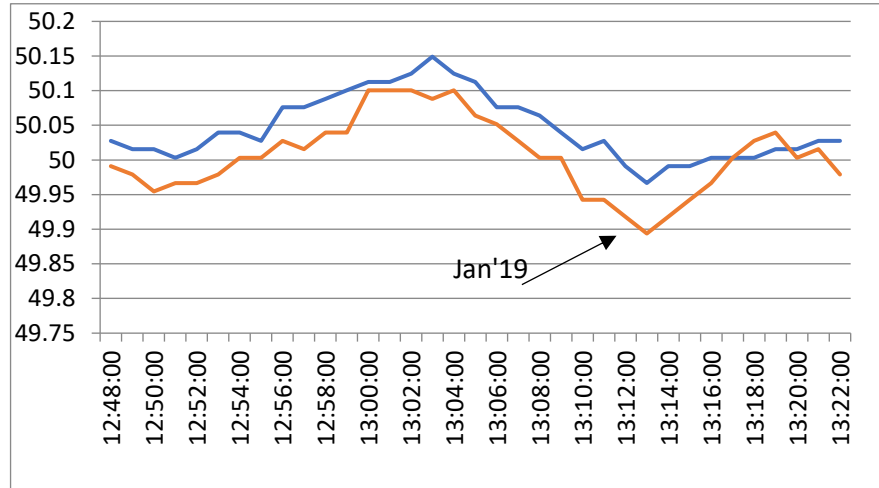
01.12.2018 to 01.01.2019 7:20:00 to 9:30:00



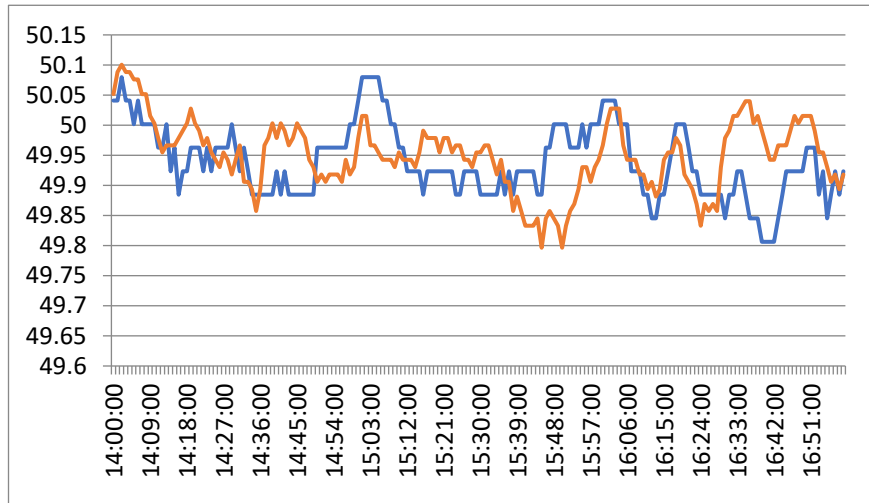
10-12-2018 & 10-1-2019 @ 12:00:00 to 13:08:00



05.12.18 to 05.1.209 @12:48:00 to 13:22:00



11.12.2018 to 11.1.2019



**From the above curves it can be noted that, the system frequency stability is not supported by the sign change mandated by the Regulation, instead it has further distorted the waveform which may create threat to grid security. Hence, the sign change Regulation which is not technically supporting the grid need not be continued in the guise of grid security.**

7. Sign Change Regulation is at present implemented by States based on SCADA data whereas, all Commercial implications are drawn based on SEM data. There is lot of difference in the SCADA data and the SEMs data and the decision taken as per SCADA data results in errors due to

the mismatch and will ultimately make the implementing State to enter into penalty regime as explained in the previous submissions which is once again Annexed to this submission as **Annexure-1**.

8. Another practical difficulty is: **the sign change Regulation compels the States to increase State owned generations or curtail the load in order to effect the sign change every 6 time blocks. The States which do not have sufficient spinning reserve would have to resort to load shedding as they cannot source the power from the contingency market of power exchanges which is made available only after 3 to 4 hours after the bids have been placed. Also, the load shedding is against the spirit of extending 24X7 Hrs power supply to the consumers.**
9. Also, the Karnataka being a RE rich State and having a provision to deviate only 250MW from the schedule in a time block, finds it very difficult to control its deviations due to the variable nature of RE generations. Further, to accommodate sign change the State has to increase generation of high cost energy which have less priority as per MOD, resulting in increased tariff to the end consumers which is against the provisions of Electricity Act, 2003 which envisages cheaper power to end consumers.

**It may be noted that, during Rainy/monsoon season even after backing down ISGS share to the possible extent, the net ISGS schedule will be around 1800 MW and RE generation will reach around 6500 MW with must-run hydro generation of 1000 MW, totaling to 7500 MW. Even after shutdown of all the State-owned thermal units, the total minimum generation on bar will be around 9300 MW. Usually during monsoon season, demand of Karnataka drops down to around 5000 MW.**



		<p><b><u>In this scenario Karnataka will be under-drawing around 1000 to 2800 MW continuously even after trading power to an extent of 1500-2000 MW. The trading of power through IEX/PXIL depends on the market condition on that particular day. If the bid volume is not cleared in the exchange / unable to sell under bilateral transaction then Karnataka will be continuously under drawing to an extent of 1500-4300MW. Hence, sign change after six time blocks in the event of deviation in one direction is impossible to adhere in such scenario.</u></b></p>
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**Additional Director (Projects)  
PCKL, Bengaluru**



**The statement showing the differences in sign Change violations as per SCADA and SEM DATA(SRPC DATA) on some of the days from Jan-19 to March-19.**

**ANNEXURE-I**

date	time	SEM data			SCADA data			Difference in UI recorded between SCADA and SEM	Difference in Schedule recorded between SCADA and SEM	Sign Change	
		Schedule	Drawal	UI	Schedule	Drawal	UI			SEM	SCADA
01-01-2019	13:00:00	2644	2373	-272	2644	2386	-258	14	-1	YES	YES
01-01-2019	15:30:00	2568	2541	-27	2557	2576	17	44	-12	YES	
01-01-2019	21:30:00	2795	2744	-50	2795	2759	-36	14	1	YES	YES
01-01-2019	23:00:00	2856	2685	-171	2785	2675	-110	61	-70	YES	YES
02-01-2019	03:15:00	2148	2152	4	2136	2150	16	12	-12	YES	YES
02-01-2019	08:45:00	2961	2821	-141	2963	2844	-119	21	2	YES	
02-01-2019	12:45:00	2418	2361	-56	2419	2362	-57	-1	1	YES	
02-01-2019	21:00:00	3055	2872	-183	3055	3040	-14	168	0	YES	
02-01-2019	22:30:00	3621	3433	-188	3621	3687	66	254	0	YES	
03-01-2019	16:15:00	2890	2839	-51	2890	2863	-27	24	1	YES	
04-01-2019	09:15:00	3077	2853	-225	3078	2860	-217	8	0	YES	YES
08-01-2019	15:45:00	2901	3193	292	2897	2874	-18	-310	-4	YES	
09-01-2019	17:15:00	3113	3239	126	3115	3260	144	18	2	YES	
12-01-2019	01:30:00	3021	2860	-161	3020	2852	-168	-7	0	YES	
12-01-2019	06:30:00	3561	3726	165	3561	3729	168	2	0	YES	YES
16-01-2019	03:00:00	2968	2872	-96	2968	2855	-112	-16	0	YES	YES
17-01-2019	22:30:00	3472	3273	-199	3471	3274	-196	3	0	YES	
21-01-2019	16:30:00	3577	3554	-23	3577	3637	59	82	1	YES	
21-01-2019	22:30:00	3386	3552	166	3385	3441	56	-110	-1	YES	
22-01-2019	04:30:00	3282	3375	93	3282	3470	187	94	0	YES	
23-01-2019	10:30:00	3854	3706	-148	3854	3650	-203	-55	0	YES	
24-01-2019	05:45:00	3679	3632	-47	3679	3783	104	152	0	YES	
24-01-2019	08:45:00	3590	3337	-253	3590	3406	-185	68	0	YES	
25-01-2019	02:15:00	3256	3371	115	3257	3288	31	-84	0	YES	
25-01-2019	20:45:00	3568	3460	-108	3568	3553	-15	93	0	YES	
26-01-2019	04:00:00	3389	3405	16	3388	3276	-113	-129	-1	YES	
26-01-2019	07:30:00	3836	3689	-146	3836	3779	-56	90	0	YES	YES
26-01-2019	12:00:00	3896	3763	-133	3890	3654	-235	-102	-7	YES	
29-01-2019	17:00:00	3175	3399	224	3174	3052	-123	-347	0	YES	
29-01-2019	18:30:00	3151	3387	237	3151	3144	-7	-244	0	YES	
03-02-2019	02:15:00	2178	2452	274	2451	2429	-22	-296	273	YES	
03-02-2019	03:45:00	1977	2151	174	2209	2122	-83	-257	232	YES	
04-02-2019	02:00:00	1626	1736	110	1811	1714	-97	-207	185	YES	
05-02-2019	02:00:00	2326	2542	216	2555	2520	-35	-251	229	YES	
06-02-2019	04:00:00	3388	3452	64	3386	3433	50	-14	-2	YES	
07-02-2019	07:45:00	3382	3510	129	3383	3501	118	-10	1	YES	YES
10-02-2019	08:45:00	3677	3349	-327	3677	3359	-318	9	0	YES	
10-02-2019	18:15:00	3656	3513	-143	3650	3351	-296	-153	-6	YES	
12-02-2019	01:30:00	2938	2906	-32	2940	3039	99	131	2	YES	
12-02-2019	04:00:00	3361	3227	-135	3361	3356	-4	130	0	YES	
12-02-2019	05:30:00	3395	3161	-234	3395	3238	-157	76	1	YES	
12-02-2019	12:00:00	2836	2567	-269	2828	2780	-48	221	-8	YES	
12-02-2019	20:45:00	3217	2875	-342	3217	3064	-153	189	0	YES	
17-02-2019	15:00:00	1739	1428	-311	1748	1438	-311	0	9	YES	YES
20-02-2019	09:45:00	3651	3583	-68	3657	3578	-78	-10	5	YES	
21-02-2019	19:45:00	2958	3264	306	2958	3170	212	-93	0	YES	
23-02-2019	20:00:00	3254	3359	104	3253	3293	40	-65	-2	YES	YES
24-02-2019	11:00:00	2797	2907	110	2798	2840	41	-68	1	YES	
26-02-2019	02:45:00	3687	3865	178	3686	3800	114	-64	0	YES	
26-02-2019	20:00:00	2760	2980	220	2759	2893	135	-85	-1	YES	YES
27-02-2019	02:45:00	3731	3873	142	3731	3795	64	-78	0	YES	
01-03-2019	19:45:00	3498	3510	12	3498	3403	-95	-107	0	YES	
02-03-2019	03:30:00	3903	4044	141	3903	3980	77	-64	0	YES	
02-03-2019	20:00:00	3393	3459	67	3393	3361	-32	-98	0	YES	
03-03-2019	04:00:00	3753	4027	274	3753	3970	218	-56	0	YES	



date	time	SEM data			SCADA data			Difference in UI recorded between SCADA and SEM	Difference in Schedule recorded between SCADA and SEM	Sign Change	
		Schedule	Drawal	UI	Schedule	Drawal	UI			SEM	SCADA
06-03-2019	20:00:00	3938	4087	149	3938	3973	35	-115	0	YES	
07-03-2019	23:30:00	3700	3743	44	3699	3657	-42	-86	0	YES	
09-03-2019	15:45:00	3385	3575	190	3385	3497	111	-78	0	YES	
10-03-2019	04:30:00	2707	2788	81	2707	2714	6	-75	0	YES	
10-03-2019	23:30:00	3584	3793	209	3584	3708	125	-83	0	YES	
12-03-2019	11:15:00	3332	3697	365	3337	3626	285	-79	6	YES	
13-03-2019	16:15:00	3887	4091	205	3893	4010	118	-87	7	YES	
13-03-2019	21:00:00	3580	3753	173	3580	3685	104	-69	1	YES	
13-03-2019	23:30:00	3560	3767	207	3560	3690	130	-77	0	YES	
14-03-2019	02:45:00	3937	4062	125	3937	3989	52	-73	0	YES	
15-03-2019	06:30:00	3661	3748	87	3661	3687	26	-61	0	YES	
17-03-2019	02:00:00	3121	3491	370	3122	3400	277	-92	1	YES	
19-03-2019	08:30:00	3196	3093	-103	3195	3167	-28	75	-1	YES	
25-03-2019	14:00:00	3211	3040	-171	3211	3213	1	172	0	YES	
27-03-2019	05:00:00	4424	4011	-414	4424	4228	-196	218	-1	YES	
27-03-2019	08:30:00	3351	3460	109	3352	3326	-26	-135	1	YES	
27-03-2019	20:15:00	3689	3694	5	3690	3689	0	-5	1	YES	
27-03-2019	23:30:00	3764	3872	108	3763	3855	93	-14	-1	YES	YES
28-03-2019	20:15:00	3645	3952	307	3646	3936	291	-16	1	YES	YES
28-03-2019	22:30:00	3218	3888	670	3218	3884	666	-3	0	YES	YES
29-03-2019	16:45:00	3498	3847	349	3499	3849	351	2	0	YES	
30-03-2019	04:45:00	3260	3797	537	3260	3790	529	-7	0	YES	YES
30-03-2019	11:45:00	3103	2673	-430	3103	2751	-353	77	0	YES	