

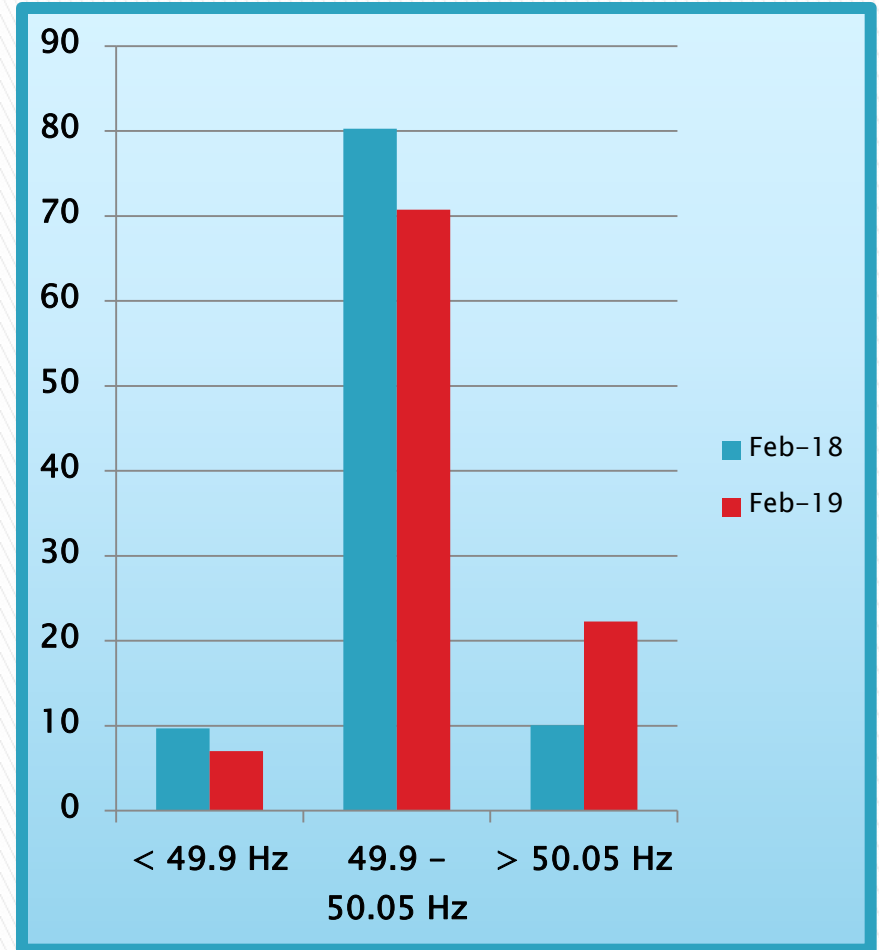
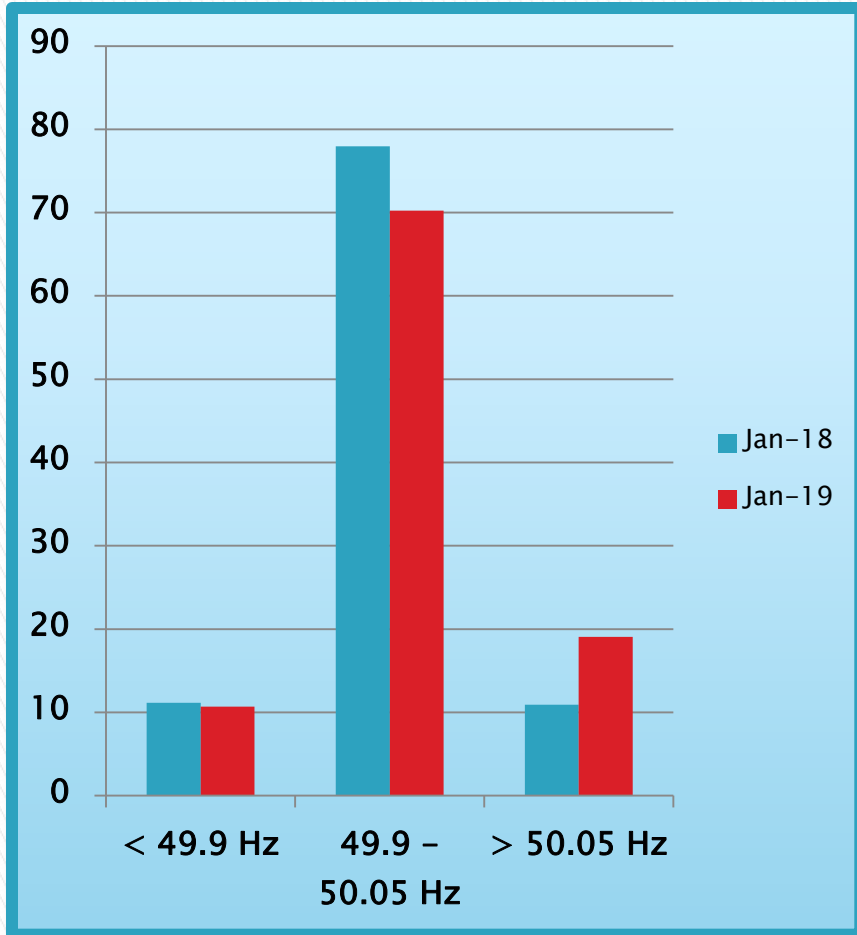
# **PRESENTATION ON DSM**

**EASTERN REGIONAL POWER COMMITTEE, KOLKATA**

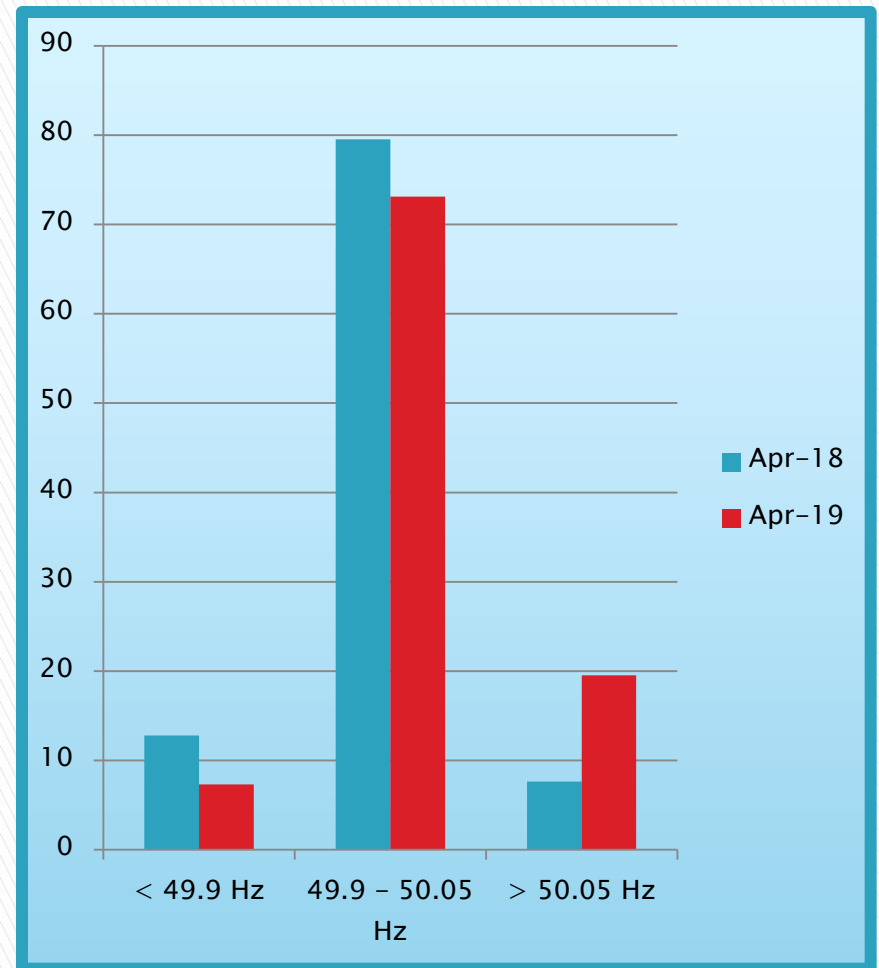
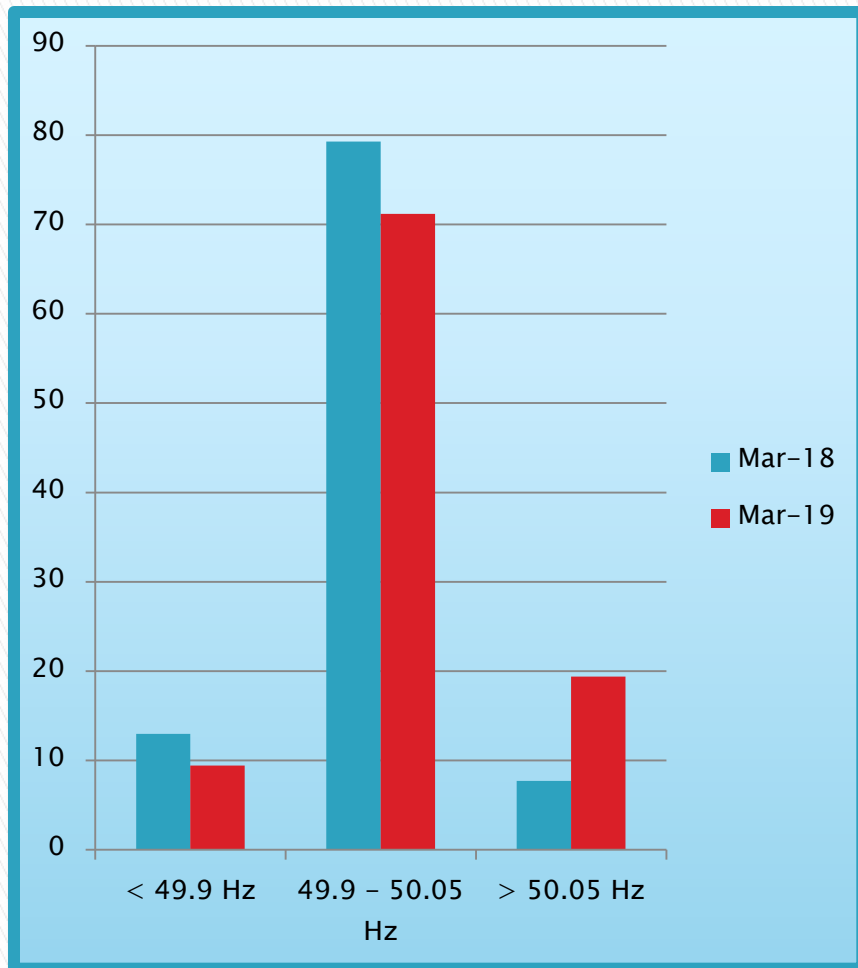
## **EXPERIENCE GATHERED WHILE IMPLEMENTING THE 4<sup>TH</sup> DSM AMENDMENT**

- ▶ % OF TIME FREQUENCY LYING WITHIN IEGC BAND HAS DECREASED
- ▶ % OF TIME FREQUENCY LYING IN THE HIGH FREQUENCY REGION HAS INCREASED
- ▶ SUSTAINED OVERDRAWAL HAS SIGNIFICANTLY DECREASED

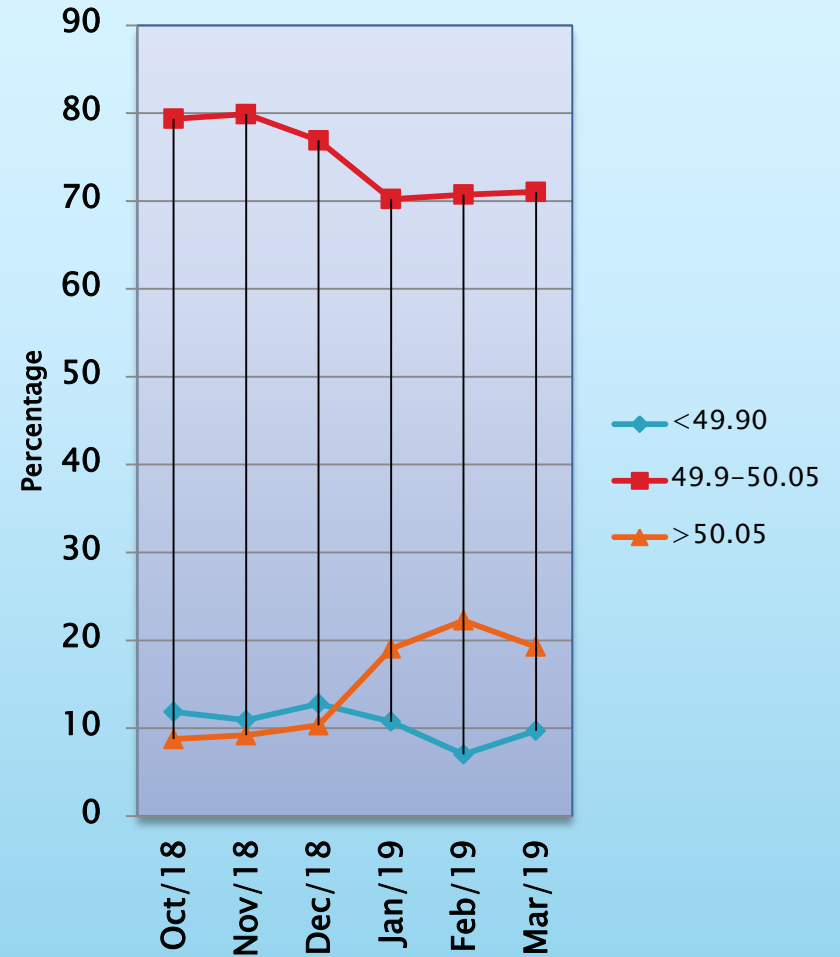
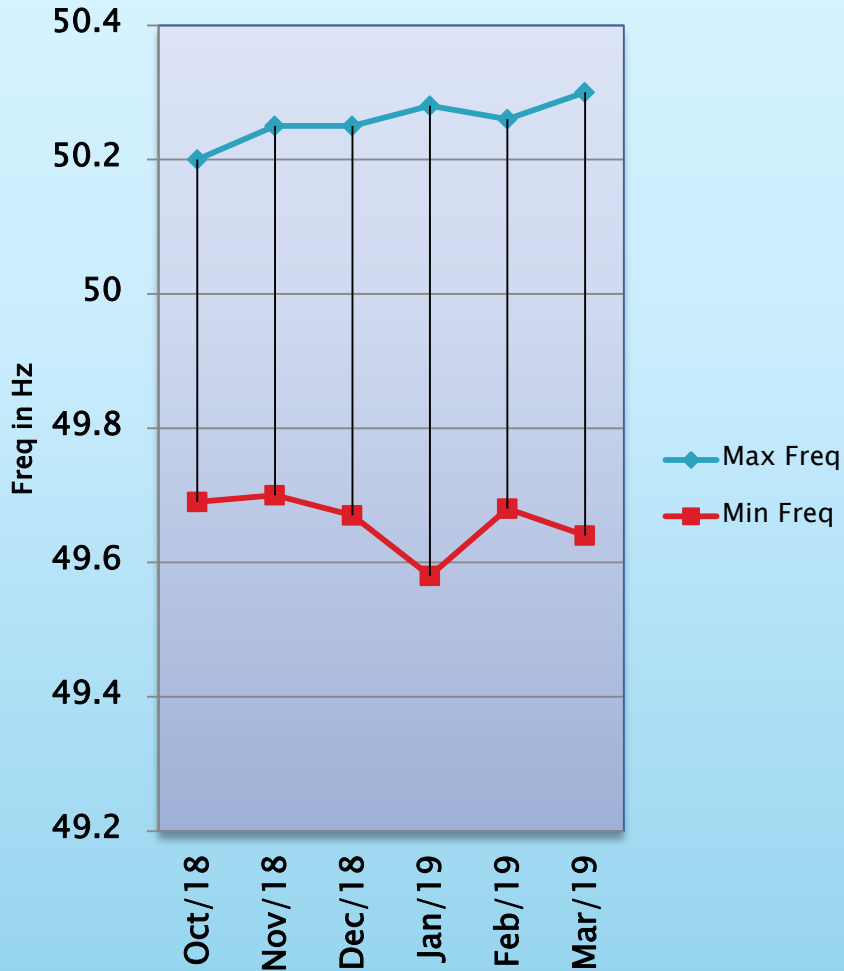
# FREQUENCY PROFILE



# FREQUENCY PROFILE



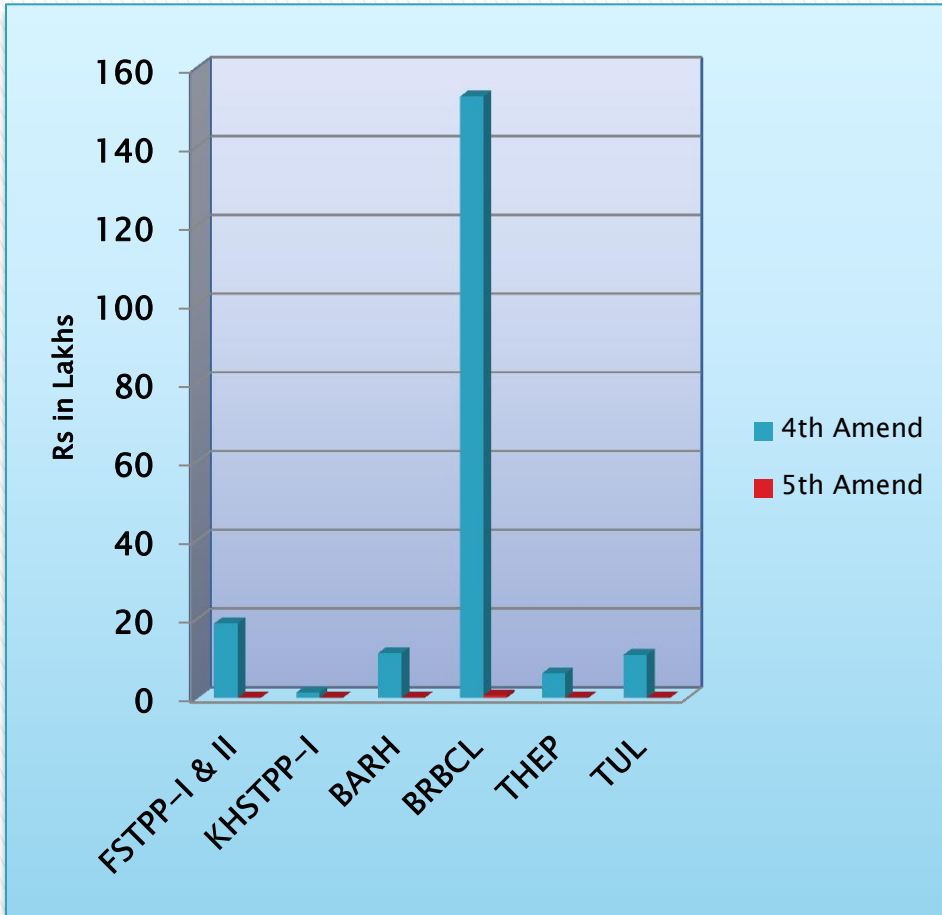
# FREQUENCY PROFILE OCT-18 to MAR-19



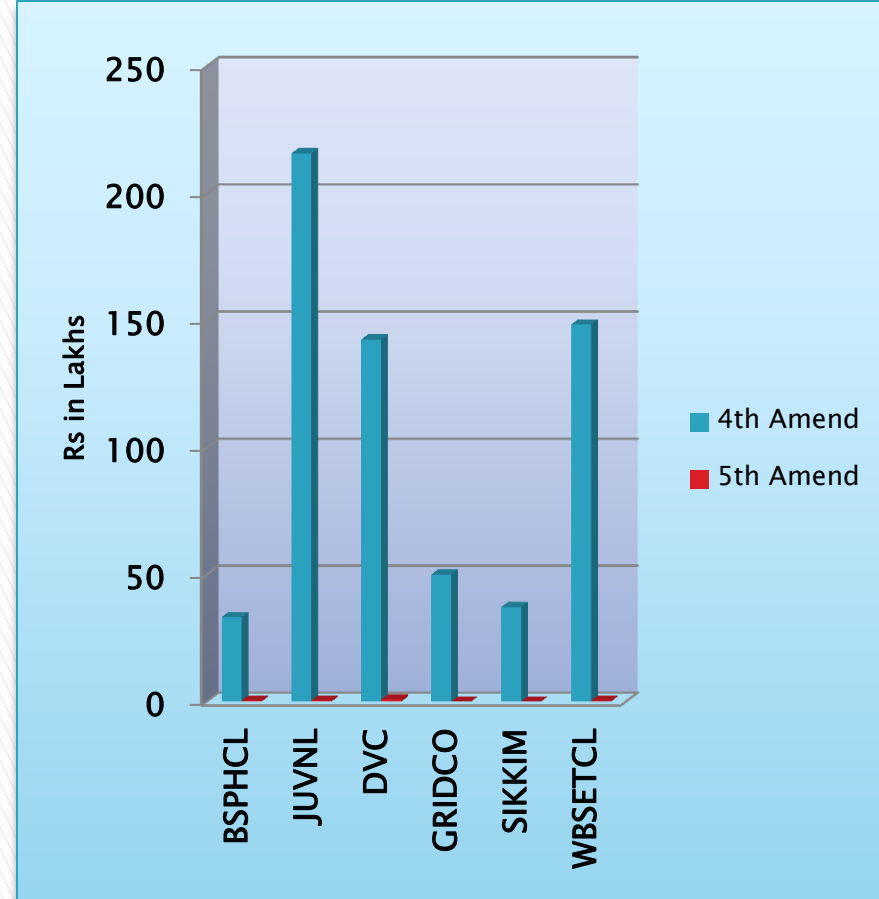
# COMMENTS ON PROPOSED DSM 5<sup>TH</sup> AMENDMENT

- ▶ INSTEAD OF RELAXATION OF  $\pm$  10 MW ON SCHEDULE, **RELAXATION BASED ON % OF SCHEDULE SHALL BE GIVEN.**
- ▶ **NO. OF METER READINGS** REQUIRED FOR FINDING THE ACTUAL VALUE OF DRAWAL/ INJECTION SHOULD BE CONSIDERED FOR GIVING THE RELAXATION.
- ▶ RELAXATION OF SIGN CHANGE PENALTY (FROM 6<sup>TH</sup> TO 12<sup>TH</sup> TIME BLOCK) WOULD HAVE ADVERSE EFFECT ON MANAGING FREQUENCY. POSSIBILITY OF **GAMING** CAN NOT BE RULED OUT.
- ▶ IT IS APPREHENDED THAT THE % TIME THE **FREQUENCY REMAINING BELOW 49.9 HZ SHALL INCREASE.**
- ▶ **POOL BALANCE MAY BE NEGATIVE IN MANY WEEKS**

# Sign Change Violation Penalty (01/04/19-07/04/19)

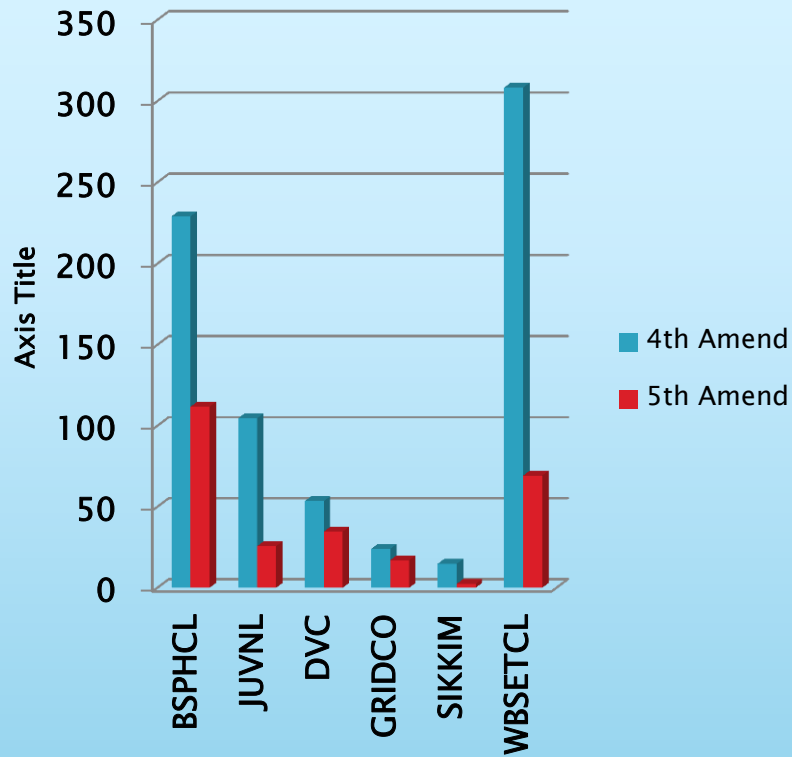


**GENERATORS**

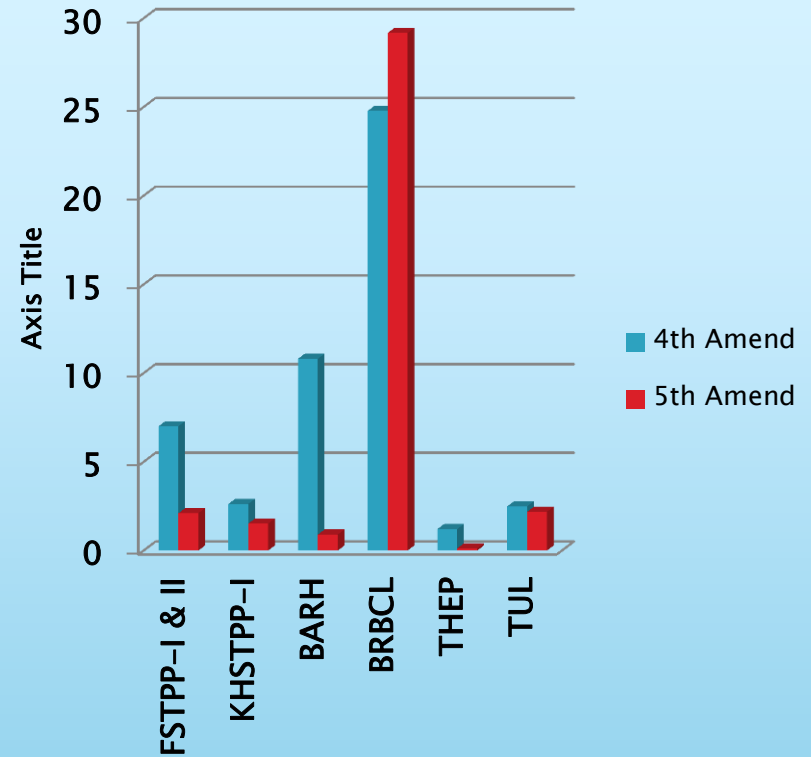


**UTILITIES**

# Block-wise violation Penalty (01/04/19-07/04/19)



## UTILITIES



## GENERATORS



# Comparative DSM Pool A/c of Eastern Region ( for 01 /04 /19-07 /04 /19 )

	01/04/19-07/04/19	
	4th Amend	5th Amend
Payable to the Pool	6830.94383	6884.40613
Receivable from the Pool	7565.67761	7590.31139
Diff amt due capping of Gen Stations	-734.73379	-705.90526
ADC due to Block-wise Violation	869.2135	312.29302
ADC due to sign change Violation	973.74302	2.67272
<b>POOL BALANCE(ER)</b>	<b>1108.22273</b>	<b>-390.93952</b>
Payable to RRAS Provider	94.21664	94.21664
Receivable from RRAS Provider	94.53347	94.53347
Payable to FRAS Provider	0.173	0.173
<b>TOTAL POOL BALANCE(ER)</b>	<b>1108.36656</b>	<b>-390.79569</b>

# PROPOSAL-I

## DYNAMIC VOLUME LIMIT WITHIN A BLOCK

- ▶ The volume limit for deviation may be made dynamic.
- ▶ For the 1<sup>st</sup> time block of the day (i.e. 00.00 hrs), the volume limit for deviation (positive or negative deviation) shall be 12% of Schedule of the 1<sup>st</sup> time block or 150MW whichever is less.
- ▶ Subsequently from 2<sup>nd</sup> time block onwards, the allowable volume limit for deviation shall decrease for deviation in the same direction and shall be made zero at the 12<sup>th</sup> time block.
- ▶ For time blocks between 1<sup>st</sup> and 12<sup>th</sup> time blocks, the volume limit for deviation shall decrease linearly at the rate of 8.33% of Schedule of that time block or 12.5MW whichever is less.
- ▶ Additional Deviation Charges at the rate of 50% of Deviation rate of the corresponding time block shall be payable by an entity for violation of volume limit in case of over-drawal/under-injection.

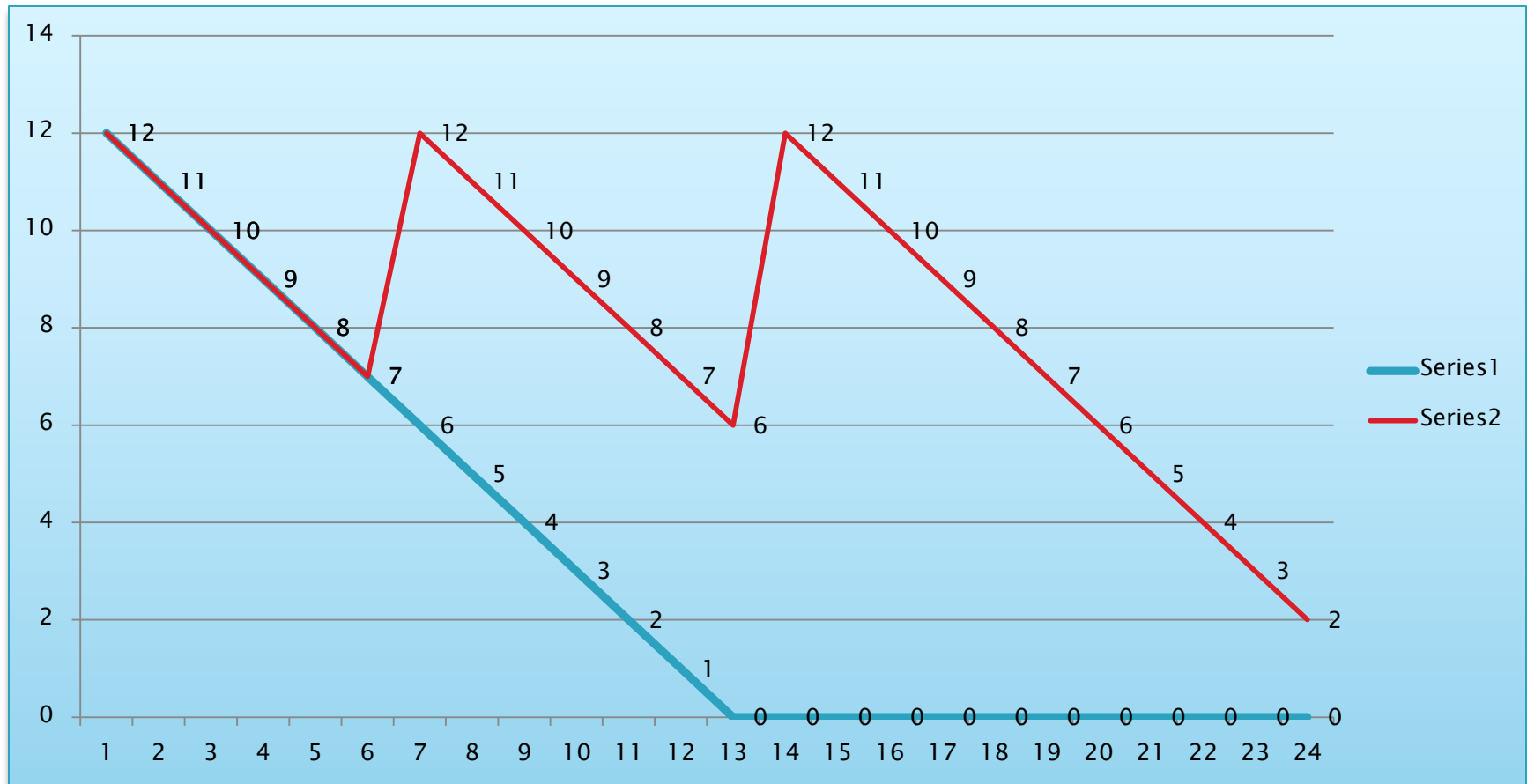
## Contd.

- ▶ No Deviation Charges shall be receivable by an entity for violation of volume limit in case of under-drawal/over-injection.
- ▶ For sustained deviation beyond 12<sup>th</sup> time block, additional deviation charges at the rate of 100% of Deviation rate of the corresponding time block shall be payable by an entity for any negative deviation (Over-drawal/under-injection)
- ▶ For sustained deviation beyond 12<sup>th</sup> time block, no deviation charges shall be receivable by an entity for any positive deviation (Under-drawal/Over-injection)

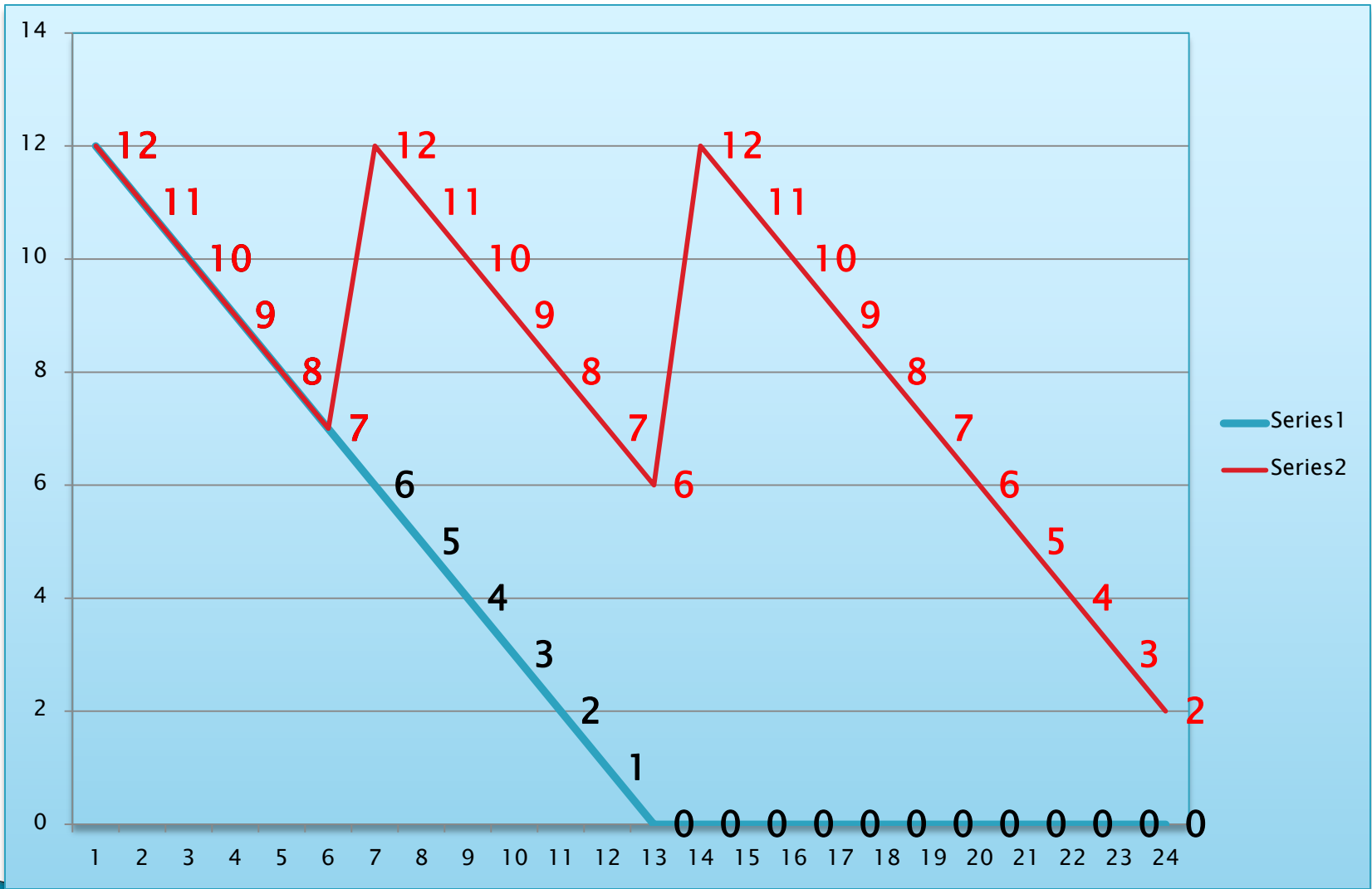
## Contd.

- ▶ When an entity changes its sign of deviation (from negative to positive or vice-versa) in any of the 12 time blocks, the allowable volume limit for deviation and the applicable penalty shall then be calculated as proposed above by considering time block in which the sign change occurred as the 1<sup>st</sup> time block.
- ▶ All existing provisions of different slabs for calculation of Additional Deviation charges for violation of volume limits and sign change may be done away with.

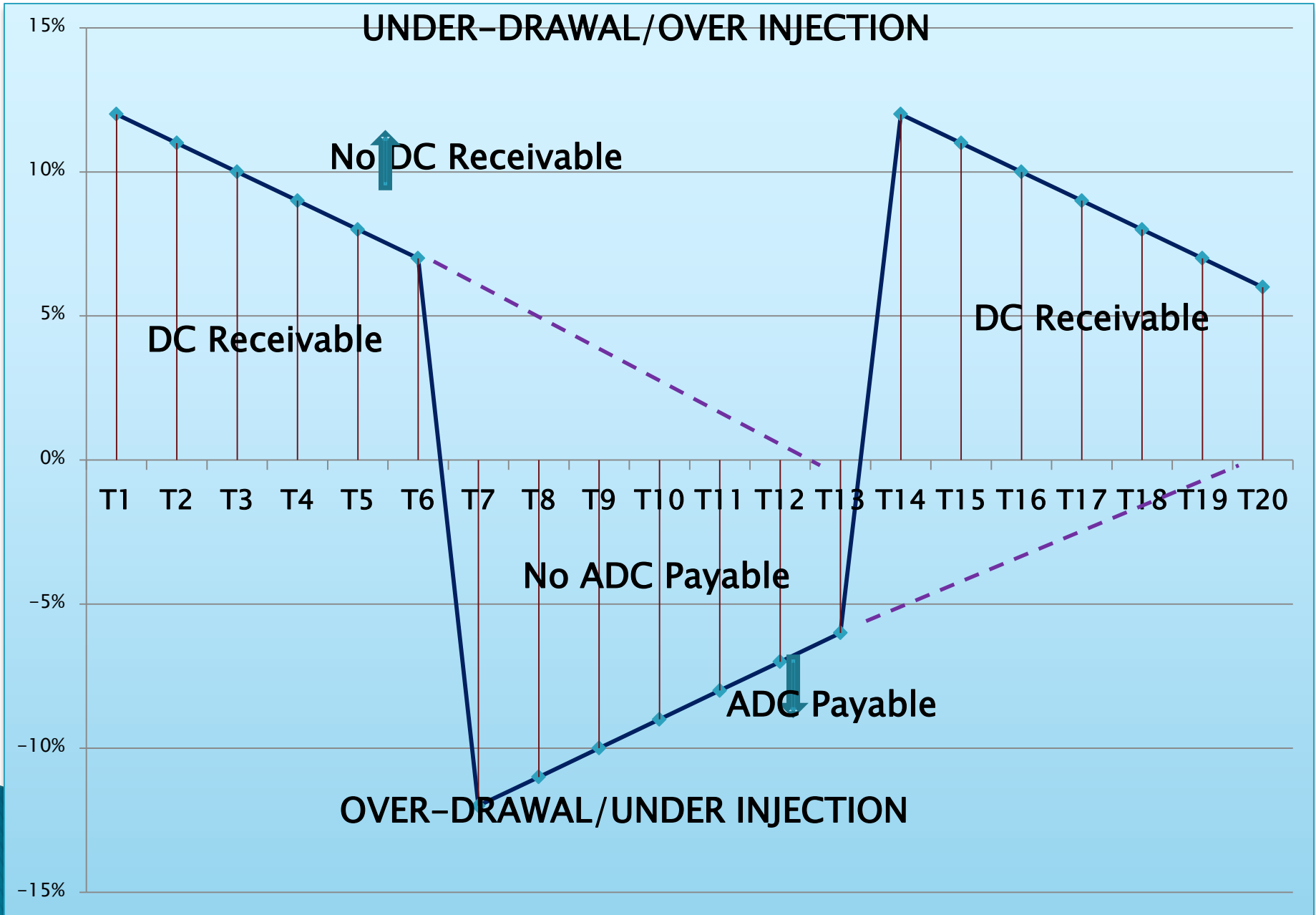
# EXAMPLE



# EXAMPLE



# EXAMPLE



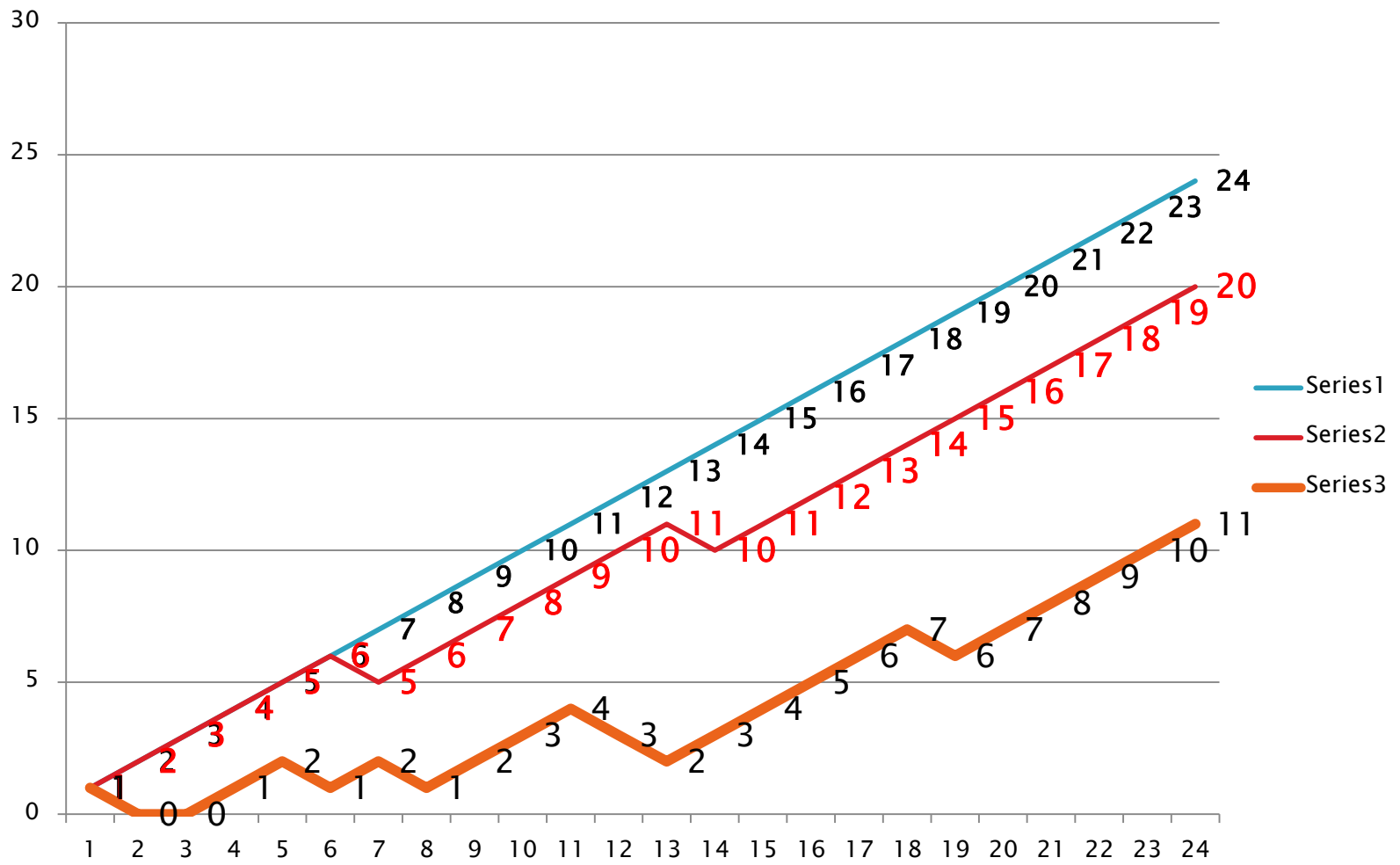
# Alternative Proposal-II

## Dynamic Score

- ▶ For first time block, score will be **zero**.
- ▶ For **deviation in the same direction**, score will increase by one **point** for each time block.
- ▶ For **change in direction of deviation**, score will reduce by one **point** ( Minimum Score would be **ZERO**).
- ▶ For any day(96 blocks), total score will be computed. **Graded penalty beyond a threshold score** (say 12) may be thought of.







**Thank you**