

Ref. No. MSEDCL/Comments/4<sup>th</sup> Amendment/DSM/018275 Date: 30 JUL 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 draft 4<sup>th</sup> amendment to CERC (Deviation Settlement Mechanism and related matters) Regulations, 2014

**Ref:** Ref : Public notice by CERC for Draft 4<sup>th</sup> Amendment to DSM Regulation 2014

Respected Sir,

This is in reference to public notice issued by Hon'ble CERC on 4<sup>th</sup> amendment of CERC (Deviation Settlement Mechanism and related matters) Regulations, 2014. MSEDCL is hereby submitting the comments on the proposed 4<sup>th</sup> Amendment to CERC (Deviation Settlement Mechanism and related matters) Regulations, 2014.

Accordingly, MSEDCL would like to make humble submission to the Hon'ble Commission to consider the following comments / suggestions on proposed 4<sup>th</sup> amendment on CERC (Deviation Settlement Mechanism and related matters) Regulations, 2014.

**A. Amendment related to Change in methodology for DSM charge**

**Regulation- 5 : - Charges for Deviation**

Average Frequency of the time block (Hz)		Charges for Deviation (Paise/kWh)
Below	Not Below	
	50.05	0
50.05	50.04	Slope determined by joining the price at Not Below 50.05 Hz and identified price at 50.00 Hz, and as detailed in the note below this Regulation
50.04	50.03	
50.03	50.02	
50.02	50.01	
50.01	50	Daily average Area Clearing Price discovered in the Day Ahead Market segment of power exchange

50	49.99	Slope determined by joining the price identified at 50.00 Hz and price at below 49.85 Hz, and as detailed in the note below this Regulation
49.99	49.98	
49.98	49.97	
49.97	49.96	
49.96	49.95	
49.95	49.94	
49.94	49.93	
49.93	49.92	
49.92	49.91	
49.91	49.9	
49.9	49.89	
49.89	49.88	
49.88	49.87	
49.87	49.86	
49.86	49.85	
49.85		<b>800</b>

Note:-

- i. The Deviation Settlement Mechanism (DSM) rate vector will have a dynamic slope determined by joining the identified price points at 50 Hz. (daily average ACP), frequency of 49.85 Hz (Rs. 8 per unit) and 50.05 Hz (zero) on a daily basis.
- ii. The maximum ceiling limit applicable for average Daily ACP discovered in the DAM segment of Power Exchange at 50.00 Hz shall be 800 Paise/kWh.
- iii. Charges for deviation for each 0.01 Hz step shall be equivalent to the Slope determined by joining the price at 'Not below 50.05 Hz' and 'identified price at 50.00 Hz' in the frequency range of 50.05-50.00 Hz, and to the Slope determined by joining the 'price identified at 50.00 Hz' and price at 'below 49.85 Hz' in frequency range 'below 50 Hz' to 'below 49.85 Hz'.
- iv. The Day-ahead market price of the Power Exchange having a market share of 80% or more in energy terms on a daily basis shall be taken into consideration for linking to the DSM price vector. If there is no single Power Exchange having a market share 80% or more, the weighted average day-ahead price shall be used for linking to the DSM price.
- v. Daily average Area Clearing Prices (ACP) in the day-ahead market shall be used as the basis for market linked DSM price at 50 Hz.
- vi. Deviation price shall be rounded off to nearest two decimal places."

## **Regulation 5 (2) (b)**

*"(b) The Charge for Deviation corresponding to grid frequency interval of 'below 50.01 Hz and not below 50.0 Hz' shall be daily average Area Clearing Price discovered in the Day-Ahead Market (DAM) segment of Power Exchange. The day-ahead market price of the Power Exchange having a market share of 80% or more in energy terms on a daily basis shall be used for linking to the DSM price. If there is no single Power Exchange having a market share of 80% or more, the weighted average day-ahead price shall be considered".*

## **MSEDCL Comments**

### **Base rate at 50 Hz should not be linked to Area clearing price. Reason**

1. Since Average rate of IEX during FY2017-18 were in range of Rs. 3 to 4, changes in methodology will increase DSM burden on DISCOM by 70% to 300%.
2. Energy requirement met through IEX is presently less than 5% even though there is power shortage on account of coal & overall all India demand rise of 13%. Hence rate discovered through IEX is not indication of actual real-time prices of Power purchase of India.
3. The shortfall in power in recent months is mainly due to coal shortage. This has lead to increase in power purchase through Market. As market clearing prices are depend on power requirement & supply, area clearing prices are bound to change in case of increase in Demand. In case, frequency rate are linked to ACP, then in order to avoid financial burden on account of DSM & to avoid load shedding, DISCOM will be forced to buy power at whatever rate available from market. Thus there are risk of increase in rate ; particularly by merchant generators.
4. Hence, the base DSM rate for 50HZ frequency may be increased but it should be limited to average power purchase cost at each regional level/all India level from Thermal Power station & same shall not be linked to area clearing price of IEX.
5. DSM rate shall be different for different region & shall be based on Transmission congestion

## **B. Amendment related to change in frequency Band & related regulation**

### **Regulation 5 (2) (c)**

*The Deviation Price Vectors shall accordingly, be in steps for a frequency interval of 0.01 Hz between grid frequency of (i) 50.05 Hz and „below 50.01 Hz and not below 50.0 Hz" and (ii) below 50.01 Hz and not below 50.0 Hz" and „below 49.85 Hz*

### **Regulation 5 (2) (d)**

*"(d) The Charge for Deviation at grid frequency 'below 49.85 Hz' shall be 800 Paise/KWh."*

*In clause (2) of Regulation 7 of the Principal Regulations, the words "49.70 Hz or above and below 50.10 Hz" shall be substituted by the words "49.85 Hz or above and below 50.05 Hz".*

*In Proviso (i) to sub-clause (b) to clause (2) of Regulation 7 of the Principal Regulations, the words "49.70 Hz or above and below 50.10 Hz" shall be substituted by the words "49.85 Hz or above and below 50.05 Hz".*

*In Proviso (iii) to sub-clause (b) to clause (2) of Regulation 7 of the Principal Regulations, the words "below 49.70 Hz" shall be substituted by the words "below 49.85 Hz" and the words "50.10 Hz and above" shall be substituted by the words "50.05 Hz and above".*

*In Proviso (v) to sub-clause (b) to clause (2) of Regulation 7 of the Principal Regulations, the words "49.70 Hz and above" shall be substituted by the words "49.85 Hz and above".*

*In clause (3) of Regulation 7 of the Principal Regulations, the words "49.70 Hz and above" shall be substituted by the words "49.85 Hz and above".*

*In Proviso (i) to clause (3) of Regulation 7 of the Principal Regulations, the words "49.70 Hz and above" shall be substituted by the words "49.85 Hz and above".*

*In clause (4) of Regulation 7 of the Principal Regulations, the words "50.10 Hz and above" shall be substituted by the words "50.05 Hz and above".*

*In clause (6) of Regulation 7 of the Principal Regulations, the words "below 49.70 Hz in accordance with the methodology specified in clause(8) of this regulation and the same shall be equivalent to 100% of the Charge for Deviation of 824.04 Paise / kWh corresponding to the grid frequency of „below 49.70 Hz" " shall be substituted by the words "below 49.85 Hz in accordance with the methodology specified in clause (8) of this regulation and the same shall be equivalent to 100% of the Charge for Deviation of 800 Paise / kWh corresponding to the grid frequency of below 49.85 Hz" ".*

*In clause (7) of Regulation 7 of the Principal Regulations, the words "49.70 Hz and above" shall be substituted by the words "49.85 Hz and above".*

*In clause (8) of Regulation 7 of the Principal Regulations, the words "below 49.70 Hz" shall be substituted by the words "below 49.85 Hz".*

*In provision to clause (8) of Regulation 7 of the Principal Regulations, the words "below 49.70 Hz" shall be substituted by the words "below 49.85 Hz".*

In clause (9) of Regulation 7 of the Principal Regulations, the words "49.70 Hz and above" shall be substituted by the words "49.85 Hz and above".

**Amendment of Annexure-I (Methodologies for the computation of Charges of Deviation for each regional entity for crossing the volume limits specified for the over-drawal / under-injection by Buyer / Seller [except Renewable Rich State]) of the Principal Regulation:**

- In clause 1 of Annexure-I to the Principal Regulations, the words "49.70 Hz and above" shall be substituted by the words "49.85 Hz and above".
- In Note under Illustration B in clause 1(B)(iii) of Annexure-I to the Principal Regulations, the words "49.70 Hz and above" shall be substituted by the words "49.85 Hz and above".
- In clause 2 of Annexure-I to the Principal Regulations, the words "below 49.70 Hz" shall be substituted by the words "below 49.85 Hz".
- In clause 2 of Annexure-I to the Principal Regulations, the words "824.04 Paise / kWh" shall be substituted by the words "800 Paise / kWh".
- In Note under clause 2 of Annexure-I to the Principal Regulations, the words "below 49.70 Hz" shall be substituted by the words "below 49.85 Hz".

**Amendment of Annexure-I-A (Methodologies for the computation of Charges of Deviation applicable to Renewable Rich States for crossing the volume limits specified for the over-drawal / underinjection) of the Principal Regulation:**

- In clause 2 of Annexure-I-A to the Principal Regulations, the words "49.70 Hz and above" shall be substituted by the words "49.85 Hz and above".
- In clause 2 of Annexure-I-A to the Principal Regulations, the words "824.04 Paise / kWh" shall be substituted by the words "800 Paise / kWh".

**Amendment of Annexure-II (Methodologies for the computation of Charges of Deviation for each regional entity for crossing the volume limits specified for the over-drawal / under-injection by Buyer / Seller [except Renewable Rich State]) of the Principal Regulation:**

- In clause C of Annexure-II to the Principal Regulations, the words "50.10 Hz or above" shall be substituted by the words "50.05 Hz or above".

**Amendment of Annexure-II-A (Methodologies for the computation of Charges of Deviation applicable to Renewable Rich States for crossing the volume limits specified for the over-drawal / underinjection) of the Principal Regulation:**

- In clause C of Annexure-II-A to the Principal Regulations, the words "50.10 Hz or above" shall be substituted by the words "50.05 Hz or above".

**MSEDCL Comments**

**Change in IEGC frequency Band from 49.90-50.05 to 49.95-50.05 should not be done & existing frequency band may be continued. Reason as under:-**

1. Basic aim of DSM is to keep frequency near to 50Hz & manage load generation balance. But as there is still not much accuracy in load forecasting as well as RE forecasting, fuel issues like availability of gas, coal etc for conventional generation, tightening frequency band at present will not be beneficial to system grid & this will only increase financial burden on DISCON and thereby consumer of DISCOMs.
2. The work of establishment of Renewable energy management cell is still under progress and forecasting error is also not yet ascertained. Further DSM regulation for RE forecasting in many states is also not yet finalized.

In view above mentioned difficulties, it is requested that existing frequency band may please be continued.

**C. Amendment related to change in methodology for DSM cap in respect of generating stations regulated by CERC using coal/lignite or gas supplied under Administered Price Mechanism (APM) as the fuel**

**Regulation : 5 (1) i**

*Provided that— the charges for the Deviation for the generating stations regulated by Commission using coal or lignite or gas supplied under Administered Price Mechanism (APM) as fuel, when actual injection is higher or lower than the scheduled generation, shall not exceed the Cap Rate as per the methodology specified in clause (3) of this regulation:*

**Regulation 5(3)**

*The Cap rate for the charges for the Deviation for the generating stations regulated by CERC using coal/lignite or gas supplied under Administered Price Mechanism (APM) as the fuel," shall be equal to its energy charges as billed for the previous month".*

*In Table-II in clause (3) of Regulation 7 of the Principal Regulations, the words "Cap Rate for Deviation of 303.04 Paise / kWh" wherever they are appearing, shall be substituted by the words "Cap Rate being equivalent to the energy charges as billed for the previous month".*

*In proviso to clause (6) of Regulation 7 of the Principal Regulations, the words "below 49.70 Hz" shall be substituted by the words "below 49.85 Hz" and the words "Cap Rate for Deviations of 303.04 Paise / kWh" shall be substituted by the words "Cap Rate being equivalent to the energy charges as billed for the previous month".*

*In Note under Illustration B in clause 1(B)(iii) of Annexure-I to the Principal Regulations, the words "Cap Rate for Deviations of 303.04 Paise / kWh" shall be substituted by the words "Cap Rate being equivalent to the energy charges as billed for the previous month".*

*In clause 2 of Annexure-I to the Principal Regulations, the words "cap rate for deviations of 303.04 Paise / kWh" shall be substituted by the words "Cap Rate as specified in clause 5(3) of these Regulations".*

#### **MSEDCL Comments**

1. Change in frequency is directly related to demand deviation and generation deviation. Generation deviation is controllable, as generator can change its generation by increasing or decreasing input to turbine. Moreover, in case on account technical reason, if generation could not be achieved as per schedule, then generator can revise its availability and thus it will be DISCOM responsibility to achieve its LGB to avoid deviation.
2. In case of most of the generators, capacity of generating of station is less than 1500MW & deviation limit of 12% or 150MW (whichever min) is available. This deviation limit is more than sufficient for generator to gain undue advantage from DSM pool by managing its generation. Hence DSM limit for generator needs to be tightened.
3. DSM cap rate for additional UI charges for generating stations regulated by Commission using coal or lignite or gas supplied under Administered Price Mechanism (APM) is proposed to capped at Energy charges as billed for the previous month. Hence in case of generator having low variable cost (less than Rs.2 per kWh), market linked price methodology will not have any financial burden. Further there will be risk of low injection at whatever frequency. Thus very purpose of DSM will be deviated.

**D. Amendment related to total deviation limit & new provision for additional penalty on account of exceeding daily deviation in energy term**

**Regulation 7(1) :** *The over-drawals / under drawals of electricity by any buyer (Except renewable rich states) during a time block shall not exceed 12% of its scheduled drawal or 150 MW, whichever is lower, when grid frequency is "49.85 Hz and above and below 50.05 Hz "*

*Provided over-drawals / under drawals of electricity by renewable rich states during a time block shall not exceed limits as specified in Annexure-III, when grid frequency is "49.85 Hz and above and below 50.05 Hz*

*Provided that no overdrawal of electricity by any buyer shall be permissible when grid frequency is "below 49.85 Hz" and no underdrawal by any buyer shall be permissible when grid frequency is 50.05 HZ and above*

*"Provided also that the total deviation from schedule in energy terms during a day shall not be in excess of 3% of the total schedule for the drawee entities and 1% for the generators and additional charge of 20% of the daily base DSM payable / receivable shall be applicable in case of said violation."*

**MSEDCL comments**

- Demand is variable in nature & its depend on many variable such as Residential, commercial, industrial load pattern, Ag load, weather, festivals etc. The consumer load demand is not controllable factor unless there is smart grid technology & this will be a very costly affair for most of states.
- The weather forecast in 15 min time block is not available. Hence forecasting on such data will certainly have impact on forecasted demand of state, particularly for states like Maharashtra where Agricultural load is almost 30%.
- In most of states, there is still no 100% SCADA data available for Demand. Further any problem in SCADA data visibility will affect the Demand calculation and thereby demand forecasting
- Deviation limit for states having demand of 1250 MW and 20,000MW is same i.e 150MW. Since in case of states having high demand, like Maharashtra even 1% error in Demand forecasting will have deviation of almost 250MW. In view of increasing RE Generation in future, the deviation of DISCOM will increase as deviation of RE are not frequency linked & hence its deviation will certainly affect DISCOM availability & thereby its deviation.

In view of above, existing deviation limit need to reviewed & it should be based on Demand of state and Renewable energy quantum of state. The Deviation limit should not on any specific percentage or cap limit.



## Comments on 20% additional penalty

- In respect of proposed additional penalty of 20% total payable/receivable on account of exceeding total deviation by 3% in energy term on day basis for DISCOM, it is to submit that clarification is required i.e whether total energy will be calculated based on absolute value of Unscheduled interchange. For example , underdrawal energy & overdrawal energy has same quantum but if its summation with sign is taken then net energy will be zero, however if it is summation of absolute value then it may exceed deviation limit proposed in this draft regulation.
- Since DSM is settled on actual meter data, if penalty on account of exceeding scheduled energy limit is due to SCADA data problem, then entity responsible for maintaining SCADA visibility shall be held responsible for such deviation and said penalty shall be imposed on concern entity i.e CTU/STU.
- MSEDCL would like to bring own case study in respect of its deviation. The MSEDCL has carried out study on DSM UI and SCADA UI from 28<sup>th</sup> April 2018 to 15<sup>th</sup> July 2018. In Maharashtra, system UI is managed based on drawal computed by SCADA data from various drawal points of Maharashtra. The SCADA data of CTU is used to compute Maharashtra drawal. The Maharashtra drawal is also computed at MSLDC based on SCADA data provided by STU. There is always some difference between two drawal values computed at MSLDC end and at WRLDC end. Whenever, huge difference is noticed, same is intimated to both MSLDC as well as WRLDC end. By the time any action is taken, system is managed with drawal computed at WRLDC end only. In spite of having check on drawal computation of Maharashtra drawal, following results have been obtained from study of DSM UI and SCADA UI from 28<sup>th</sup> April 2018 to 15<sup>th</sup> July 2018.

Analysis of Difference between UI computed on SCADA data at WRLDC end & UI computed on SEM data for period 28th April 2018 to 15th July 2018				
Particular	Positive Difference	Negative Difference	% of Positive Difference w.r.to total	% of Negative Difference w.r.to total
Less than 50MW	1243	1393	16.4%	18.4%
51 MW to 100 MW	727	1218	9.6%	16.1%
101MW to 150MW	478	714	6.3%	9.4%
151MW to 250MW	496	626	6.5%	8.3%
251MW to 500MW	266	324	3.5%	4.3%
501 MW to 750MW	9	76	0.1%	1.0%
750 MW to 1000 MW	0	13	0.0%	0.2%
more than 1000 MW	0	1	0.0%	0.0%

Even considering % error loss for CT/PT & meter, difference between drawal computed by SCADA & SEM should not exceed  $\pm 50$  MW. (Average drawal during above period was 5485 MW & CT/PT/meter % error compensation as 0.5%). However it can be seen that for almost 65% of time, said difference was more than  $\pm 50$  MW; infact for almost 24% of time said difference was more than  $\pm 150$  MW. The data related to above study s attached herewith for ready reference.

Further financial analysis of UI bills for FY2017-18 & FY2018-19 (upto 15<sup>th</sup> July - 2018) is also done. In said analysis, UI charges are worked out on basis of SCADA UI data and same compared with WRPC UI charges for respective months. The financial analysi of same is as under:

**For FY2017-18**

Month	WRPC Bill			SCADA			Net Financial Loss
	OD Units	UD Units	Net payable or receivable	OD Units	UD Units	Net payable or receivable	
	MUS	MUS	Rs. In Lac	MUS	MUS	Rs. In Lac	Rs. In Lac
Apr-17	83	-56	1354	88	-43	1266	88
May-17	113	-85	2252	92	-44	1235	1018
Jun-17	91	-87	1341	78	-98	753	588
Jul-17	99	-57	1388	66	-82	195	1194
Aug-17	101	-64	1538	55	-87	-105	1643
Sep-17	74	-57	1028	57	-65	274	754
Oct-17	77	-81	1043	54	-85	152	891
Nov-17	72	-54	1020	52	-62	204	816
Dec-17	44	-102	-313	45	-88	-184	-129
Jan-18	66	-59	711	50	-62	36	675
Feb-18	66	-52	977	45	-60	93	885
Mar-18	74	-60	956	50	-68	-94	1050
<b>Total</b>	<b>959</b>	<b>-815</b>	<b>13296</b>	<b>732</b>	<b>-844</b>	<b>3824</b>	<b>9472</b>

**For FY2018-19 upto 15<sup>th</sup> July 2018**

Month	WRPC Bill			SCADA			Net Financial Loss
	OD Units	UD Units	Net payable or receivable	OD Units	UD Units	Net payable or receivable	
	MUS	MUS	Rs. In Lac	MUS	MUS	Rs. In Lac	Rs. In Lac
Apr-18	83	-60	1503	44	-69	-218	1721
May-18	95	-53	1912	78	-56	1063	849
Jun-18	58	-108	178	59	-88	274	-96
Jul-18	32	-53	109	23	-56	-287	396
<b>Total</b>	<b>267</b>	<b>-274</b>	<b>3702</b>	<b>203</b>	<b>-270</b>	<b>832</b>	<b>2870</b>

From above, it can be seen that on account of SCADA data problem, Maharashtra has paid almost Rs. 95 Crs for FY2017-18 extra and for FY2018-19(till 15<sup>th</sup> July 2018) the financial loss is almost Rs. 29Crs. Thus it can be seen that on account of problem in SCADA data visibility, there is unnecessary financial loss to DISCOMs.

Hence it is proposed that in real time operation, if state doesn't violate limit for daily UI energy but on account of SCADA problem, if state is being liable for additional 20% DSM charges as per SEM data, then said additional 20% charges shall be recovered from concerned utility ie. STU/CTU as SCADA data visibility is responsibility of these utility.

**E. New provision introduced for additional penalty for change in sign of UI**

**Clause (10) of Regulation 7 of the Principal Regulations shall be substituted as under:**

*"In the event of sustained deviation from schedule in one direction (positive or negative) by any regional entity, such regional entity (buyer or seller) shall have to make sign of their deviation from schedule changed, at least once, after every 6 time blocks. To illustrate, if a regional entity has positive deviation from schedule from 07.30 hrs to 09.00 hrs, sign of its deviation from schedule shall be changed in the 7th time block i.e. 09.00 hrs to 09.15 hrs from positive to negative or negative to positive as the case may be.*

*Provided that violation of the requirement under this clause shall attract an additional surcharge of 20% on the daily base DSM payable / receivable as the case may be."*

**MSEDCL Comments:**

- Since demand is unctrollable factor, due to any changes in demand or availability, to control UI, revision in generator schedule needs to be done and it takes almost 4 time block for revision to become effective. During this time period, if there is any further change in availability (most possible on account of variable RE Generation) , then it may possible that sign reversal may not be achieved in 6 time block. Hence existing provision of 12 time block may be continued for DISCOMs. However since deviation are well controllable for generator, revised provision may be imposed for Generators.
- Further as pointed out earlier, deviation are calculated based on actual meter reading from SEMs and real time system operations are done on basis of SCADA data. Hence in real time operation, if state doesn't violate sign change compulsion provision but on account of SCADA problem, if state is liable for additional 20% DSM

charges as per SEM data, then said additional 20% charges shall be recovered from concerned utility ie. STU/CTU as SCADA data visibility is responsible for same.

### **MSEDCL suggestions**

#### **A. Nation level project for load forecasting:**

The expert committee report on spinning reserve has recommended (21.8, page 52) that load forecasting be done at each discom level, at each SLDC/State level and each RLDC/Regional level and finally at NLDC/country level. Further clause 5.3(e) of IEGC 2010 states that "*while demand estimation for operational purpose is to be done on daily/weekly/monthly basis, mechanism and facilities at SLDC shall be created at earliest but not later than 01.01.2011 to facilitate on-line estimation of demand for daily operational use for each time block of 15 min.*"

However presently, real time basis load forecasting is not done by many SLDCs. Moreover as mandated under above clause of IEGC-2010, there is no provision available for online estimation of demand at many of the SLDCs. The Hon'ble commission may seek compliance report with regard to compliance of clause 5.3(e) of IEGC 2010 from each SLDCs to have clear idea on the aspect. Further as per section 32 of Electricity Act 2003, SLDC is responsible for optimum scheduling and despatch of electricity within a State, in accordance with the contracts entered into with the licensees or the generating companies operating in that State.

Since SLDCs are not having real time demand forecasting (mandated by IEGC 2010), how it will be possible for SLDCs to carry out optimum scheduling and despatch of electricity. The wrong scheduling & delayed action by SLDC is one of main reason for deviation by states and on account of default by SLDCs, heavy DSM charges are required to be paid by DISCOM & finally by the consumer of DISCOM.

The CERC has made provision for RE forecasting and also under REMC project, work of SCADA visibility for RE generation is in progress & software based forecasting will also be done at each SLDC.

On the similar line, in order bring frequency to closer to 50Hz, it is also equally important that accuracy in load forecasting; particularly in real time operation needed. The accuracy in demand forecast mainly depend on all Load data of all state on real time basis (SCADA installation & 100% accuracy in visibility), Areawise Weather data . This can be achieved with software based load forecasting.

For improved forecasting, instead of individual forecasting module for each RLDC, SLDC & DISCOM, project at national level through PSDF shall be implemented for real time visibility of Load point & forecasting demand on basis of weather data through software support. This software support shall be extended to each RLDC, SLDC & DISCOM for forecasting at individual level. This will help in achieving greater system stability & optimum utilization of sources.

**B. Provision for Monetary penalty for SCADA visibility:**

The real time decisions regarding scheduling are taken based on SCADA data visibility. In Maharashtra, it is many occasions observed that due to SCADA visibility issues, state drawal was not computed correctly. In fact in Maharashtra, central Sector drawal is computed based on SCADA of PGCIL & SCADA of STU. The difference is communicated to both SLDC & WRLDC. Till corrective action taken, UI is managed with wrong drawal data.

Thus it can be seen that SCADA visibility plays important role in managing UI thereby DSM charges. Similar SCADA data visibility of many RE generators is intermittent, leading to wrong computation of Demand. However in present regulation (both at CERC & SERC), there is no monetary penalty for SCADA data availability. This provision is need of time to ensure 100% SCADA visibility & to improve grid frequency on account of wrong decision taken due to SCADA data.

**C. Provision of monetary penalty for non-compliance of RGMO:**

Regulation 5.2(i) of IEGC 2010 mandate generator for RGMO. However till date said provision is still violated by many generators connected to grid. There is provision for penal actions for Non-compliance of FGMO/RGMO provision is liable for penal actions under Section 142 / reduction of 1% on RoE. Since action not initiated, many generators are still under non-compliance. Hence action needs to be enforced. The report of WRLDC presented in 507th OCC on compliance of RGMO is attached for reference. The expert committee report on spinning reserve has also recommended (21.5, page 51) that Primary reserves of 4000 MW would be maintained on an All India basis considering 4000 MW generation outage as a credible contingency. The same would be provided by generating units in line with the IEGC provisions.

Generator are being incentivise for secondary & Tertiary reserve by commission. But as there is no provision of monetary incentive for RGMO, many generators are under non-compliance for RGMO. Hence monetary penalty need to be introduce so that as per expert committee report on "Spinning reserve in India " primary reserve of 4000MW can be obtained from RGMO.

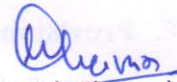
**D. Need for different approach to tackle deviation of RE :**

With increase in RE generation in future, there may be vast changes in frequency but the factor responsible for such frequency changes are excluded from DSM mechanism. Hence DISCOM will be unnecessarily penalised for deviation based on frequency changes which are attributed due to variation in RE generation. Hence DSM for RE generators has to be based on frequency. However looking into practical difficulty in variation of RE generation, which are based on Solar & wind, it is necessary that commission shall find out some different approach so as to reduce the burden of deviation of RE generation on DISCOM. The formula for deviation calculation of RE generators shall be based on scheduled generation & not available capacity, as it will be practically difficult to monitor & verify the blockwise availability of RE generators. Further RE generations which can varied such as RE based on biomass, shall be brought into DSM based on frequency.

MSEDCL requests the Hon'ble Commission to kindly consider MSEDCL's comments / suggestions on the Draft Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) (Fourth Amendment) Regulations, 2018.

With Regards,

Yours Faithfully,



(Satish Chavan)

Director (Commercial)

**Copy s.w.r.to:**

Chairman & Managing Director, MSEDCL, Corporate office Mumbai.