

## **Explanatory Memorandum**

### **Draft Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) (Fifth Amendment) Regulations, 2019**

#### **1. Introduction**

1.1. The Central Electricity Regulatory Commission (hereafter referred to as “the Commission”) notified the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) (Fourth amendment) Regulations, 2018 (herein after referred as ‘DSM (4<sup>th</sup> Amendment) Regulations, 2018’) on 20<sup>th</sup> November, 2018. The objective of amendment to these regulations was to further bring grid discipline, enforce standards with respect to the quality, continuity and reliability of services and to put in place a system of commercial incentives for the utilities to carryout appropriate load forecasting well in advance.

1.2. Maharashtra State Electricity Distribution Company Limited (MSEDCL), CESC Limited, Madhya Pradesh Power Management Company Limited and West Bengal State Electricity Distribution Company Limited (WBSEDCL) filed a petition before the Delhi High Court challenging the legality and validity of certain provisions of the DSM (4<sup>th</sup> Amendment) Regulations, 2018 after it came into force on 1<sup>st</sup> January, 2019. After hearing the parties, the Hon’ble High Court directed the Commission to consider the existing representations with respect to Regulation 7(10) and submissions made regarding other amendments including Regulation 7(11)(a). The excerpts from the Hon’ble Delhi High Court order dated 27.03.2019 are reproduced as below:

“ ...

2. ... the Commission is considering the representations with respect to 20% surcharge leviable via Regulation 7(10).

3. Learned counsel for the petitioners point out that other issues pertaining to the operation of Clauses 7(1), 7(10) and 7(11a) are also causing problem. In these circumstances, apart from considering the existing representations requesting for review of Regulation 7(10), the Commission shall look into other representations with respect to the submissions articulated regarding other amended Regulations including Clause 7(11a). The Commission is directed to complete the task at the earliest, preferably within three weeks. In case, any petitioner wishes to approach the Commission, it shall do so within a week with a comprehensive representation.

....”

1.3. Apart from the objections raised by the petitions in Delhi High Court, the Commission also received comments from various stakeholders highlighting the technical and operational constraints in terms of implementation of certain provisions of the DSM 4<sup>th</sup> Amendment Regulations, 2018. The Commission received representations from WRPC, SRPC, NRPC, ERPC, PPCL, SJVNL, NHPC, Jhajjar, NTPC, GMR, TPREL, APP, ED-GoR, BARC, Torrent Power, and GETCO. Additionally, comment/suggestions were received by the Commission through Ministry of Power (MoP) from TCAPL, SRPC, KSEB, Karnataka SLDC, and TANTRANSCO. Subsequent to the directions of the High Court Order of 27.03.2019, representations have been received from Maharashtra State Electricity Distribution Co Ltd., GRIDCO Ltd, Tata Power Limited-Haldia, PKCL, Tata Power – DDL and West Bengal State Electricity Distribution Company Ltd. The issues raised by these stakeholders have also been examined. In this backdrop, the

Commission has considered to address these concerns raised by various stakeholders and proposes DSM (5<sup>th</sup> amendment) Regulations, 2019.

## **2. Proposed Amendments**

2.1. The objective of introducing the proposed amendments is to take a considered view on technical and operational difficulties raised by the stakeholders in effective implementation of the DSM Regulations. The comments/suggestions/objections by the stakeholders, statutory bodies and individuals, etc., on the existing regulations, and the reasons for the proposed amendments are given in the succeeding paragraphs.

### ***Issue 1: Sign change norms in case of sustained deviation and imposition of additional surcharge for such violation under Regulation 7(10) and 7(11)(a)***

2.2. The Commission in the DSM (4<sup>th</sup> amendment) Regulations, 2018, provided for 6 time blocks for change of sign in case of sustained deviation in one direction. Similarly, a new proviso was added to Regulation 7(10), which stipulates the additional surcharge of 20% on the daily base DSM payable / receivable to be levied for each violation of sign change norms. To this effect, an illustration was also provided for the count of violation in a day under Regulation 7(11)(a).

### **Stakeholders Comments:**

2.3. Many stakeholders pointed out that decision in real time are taken to avoid deviation between the scheduled drawl and the actual drawl based on the SCADA data. However, the actual DSM settlement bill is prepared on the basis of SEM

meter data which is different from the SCADA data and hence, it is in-appropriate to levy an additional charge of 20%.

2.4. It has also been contended that generation from the atomic energy sources are exempted from the DSM charges and the schedule of the beneficiary is revised on post facto basis considering the actual generation & share in respective atomic generation station. Hence, levying additional charge for sign change on such post facto revision of schedule is not appropriate and an entity with atomic energy in its portfolio should be exempted from DSM sign change requirement and charges. Some stakeholders have highlighted instances of double financial losses under different clauses of the DSM Regulation at certain grid frequencies.

2.5. It has also been argued that demand forecast is not within the control of a distribution licensee as it depends upon the real time market demand from consumers. Also, as per the prevailing market conditions a gap of four hours are required for the distribution licensee to arrange power in case of over drawl by the consumers. Distribution licensee has to either over draw from the schedule or resort to load shedding. Further, technical constraints like technical minimum, frequent tipping and transmission constraints like overload affect the generating in the long run. It has also been contended that for complying with the sign change violations at frequent intervals, there is an increase in ramp up & back down instruction from SLDC. This has resulted in a rise in number of daily revision during Jan-Mar, 2019 vis-à-vis Jan-Mar, 2018. This could be detrimental to the life of costly equipment of thermal generating stations.

2.6. It has been argued that the sign change violation should not be applicable for the RE generation. It has also been stated that the endeavor to change the sign by different utilities (simultaneously) could also result in impairing the grid parameters. Additionally, the utilization of limited hydro resources for effecting sign change is only placing additional burden on utilities. Some States not having their own generation have expressed difficulty in adherence to sign change requirement. Some stakeholders have also requested to exempt the stations based on heat recovery from the gases produced in coke ovens to generate steam. This technology of extracting heat from flue gases comes with very little flexibilities.

#### Commission's Proposition

2.7. The Commission observes that worldwide, in large grids like the US and Continental Europe, the sustained deviation from the schedule is allowed for maximum 15 minutes (Continental Europe) and 30 minutes (in the US). As per the existing regulation (as amended), it is required that each regional entity changes its sign of deviation at least once after every 6 time blocks which corresponds to 90 minute duration. The intent of the Commission is to create a framework seeking to discourage the entities from leaning on the grid to meet their demand supply gap.

2.8. Further, the Commission is of the view that any mismatch between the SCADA and SEM meter data must be resolved by coordinating with the entity responsible for maintaining such infrastructure. The Commission has already laid down Regulations for Communication Infrastructure in Power Sector for augmenting and strengthening the existing communication infrastructure. The

Commission, hereby, directs all stakeholders to maintain accuracy of both SCADA and SEM data in the interest of secure and reliable grid operation.

2.9. Further, the Commission is of the view that great progress has been made in the load forecasting tools and techniques in the developed power markets as it plays vital role in grid management system. Precise load forecasting enables an electrical utility to create proper unit commitment, plan reserves and helps system operator to secure grid operation. In regard to the time lag in power procurement in the contingency market, the Commission reiterates the need for maintaining reserves to meet contingent requirement. The utility needs to plan its power procurement well in advance which should be a mix of contracts on long-term, medium-term and short-term basis along with appropriate reserves to meet the last minute contingency demand. The Commission believes that a distribution utility is required to maintain reserves to meet any contingency, in the same manner as a system operator maintains reserves as a contingency against grid disturbance.

2.10. The security of the grid is of paramount importance and compliance to grid standards, IEGC and all relevant regulations of the Commission are extremely essential. As such, the Commission has primarily taken note of the technical and operational constraints not affecting the overall grid security and proposes the following amendments to the regulation on sign change requirement.

2.11. After considering the suggestions/comments/objections from various stakeholders, with respect to the technical and operational constraints to implement the Regulation 7(10) as amended in the DSM (4th Amendment) Regulations, 2018,

the Commission has proposed to introduce allowable range of +/-10 MW from schedule, which would be a subset of the existing deviation flexibility of 150 MW/200MW/250MW as provided under Regulation 7(1) &7(2). It is felt that this tolerance band would be sufficient to subsume various inevitable deviations which include, *inter alia*, deviation due to having inflexible generation from Nuclear Plants in the portfolio of a buyer, the auxiliary consumption by the generating stations during shutdown, HVDC load, the difficulties faced by the States not having their own generation, and stations based on heat recovery from flue gases etc. Every grid connected entity is expected to adhere to schedule to avoid situations leading to over drawal/under drawal or over injection/under injection against the grid requirement and consequent incidence of financial losses under different clauses of the DSM Regulation at certain grid frequencies. However, certain technical and operational constraints, if any, are expected to be addressed by the proposed tolerance band of +/-10 MW. It is decided that up to 31st March, 2020, in case of sustained deviation in one direction beyond the range of +/-10 MW from schedule, the entity shall correct its position by remaining within the allowable range or change the sign of deviation, at least once, after 12 time blocks of sustained deviation. Violation to the above requirement shall attract an additional charge of 10% on the time block DSM payable/receivable as the case may be.

2.12. From 1st April, 2020, in case of sustained deviation in one direction beyond the range of +/-10 MW from schedule, the entity shall correct its position by remaining within the allowable range or change the sign of deviation at least once, after 6 time blocks of sustained deviation. Further, an additional charge at the rate

of 3%, 5% and 10% of the daily base DSM payable/receivable for first to fifth, sixth to tenth, and eleventh & above violations respectively shall be charged.

2.13. The Commission has also considered to clearly provide exemption from the sign change requirement for the generation from RE sources, inter regional deviations, deviations as a result of forced outages in case of collective transactions on Power Exchanges, drawl of power for startup activities, and any infirm injection of power from the generating station prior to achieving the CoD of a unit during testing and commissioning activities.

2.14. The Commission expects good utility practices from all concerned and expects them to undertake without further loss of time, appropriate measures for energy accounting of generators and load entities connected to the State Grid, to create a DSM pool and implement the ABT mechanism, ring fence the SLDCs, undertake the capacity building mechanism, and maintain reserves to meet the demand supply gap closer to real time. This has been reiterated time and again vide, report of Enquiry Committee under the chairmanship of Chairperson, CEA constituted post grid failure in 2012; Statutory advice of CERC to GoI, dated 2<sup>nd</sup> November, 2015; Report of Expert Committee constituted by CERC to review and suggest measures for bringing Power System Operation closer to National Reference Frequency (November, 2017). Adequate time has already been given to the utilities to adopt the measures seeking to ensure safe and secure grid operation as mentioned above. As such, it is expected that such measures shall be put in place by all concerned by 2020, by which time the sign change requirement of six time blocks shall be implemented.



### Proposed Amendments

2.15. The Commission proposes to amend the clauses (10) and (11) of Regulation 7, and delete clause (11)(a) of Regulation 7 of the principal regulation. Further, the Commission proposes to add new definitions as sub-clauses 2(1) (gb), 2(1) (qa) to the principal regulation.

### ***Issue 2: Daily Deviation limit and additional charge for its violation under Regulation 7(1)***

2.16. The Commission has specified through the 4<sup>th</sup> amendment to DSM Regulations a daily volume limit of 3% of the total schedule for the drawee entity and 1% for the generators for deviation from schedule in energy terms during a day under Regulation 7(1). In addition to this, an additional charge of 20% of the daily base DSM payable/receivable for such violation was prescribed.

### Stakeholder Comments

2.17. Stakeholders have contended that on account of universal supply obligation, uncertainty of weather forecasting, time lag in availability of power in contingency market etc. it is difficult to restrict the deviation within the specified daily deviation limit. Therefore they have sought relaxation from the amended stipulation under regulation 7(1). It has been argued that the forecast for demand of electricity of the consumers is beyond the control of the Discoms and in the absence of the Real time markets, hourly gate closure, demand response schemes, high vintage of plants, generation unit tipping etc. the deviation margin of 3% prescribed in DSM (4<sup>th</sup> amendment) cannot be complied.

### Commission's Proposition

2.18. The Commission observes that the frequency band in the countries of Europe and United States of America have been fixed in a very narrow range in order to ensure supply of quality power to the consumers and for the protection of the generating stations, transmissions systems, electrical equipment and appliances. The daily deviation limit was also intended to bring about the desired discipline in grid operation. The arguments put forth by the stakeholders are on similar lines to those for sign change requirement. The Commission would like to reiterate that it is necessary on the part of the utilities to comply with the policy instructions of the Government and the regulatory requirements in terms of securing adequate generation resources in different time horizons to meet demand, rather than relying on grid as provider of reserves.

2.19. The Commission in the DSM (4<sup>th</sup> amendment) Regulations, 2018, however had provided a future date for implementation of deviation volume limit during a day for drawee and generating entity along with additional charge for non-fulfilment of the above requirement. The intent in any case was to implement this provision at a later date after duly considering the stakeholder's views and the implementation experience of the DSM 4<sup>th</sup> amendment. However, given that the Commission in any case did not intend to give effect to this provision in immediate future, it has been decided to allay the concerns by deleting the provision as of now.

### Proposed Amendment

2.20. In view of the above, the Commission proposes to delete the clause 7(1) of the principal regulation.

### ***Issue 3: Other comments by Stakeholders***

2.21. Some stakeholders have sought clarification on the mechanism to arrive at Area Clearing Price (ACP) in case of injection/drawal in multiple bid areas by a single entity (e.g. Puducherry, which draws power from Puducherry, Karaikal, Yanam and Mahe, that fall in different bid areas) and in case of inter-regional and inter-national exchange. Also, clarification with respect to the applicability of cap rate under Regulation 5(3) for the hydro generating stations has been sought. As per the fourth amendment, cap rate equivalent to the ECR billed for previous month has been made applicable for all generators whose tariff is determined by the Commission. Hydro stations having zero energy charge were of the view that the same provision is not applicable for them and hence a clarification is sought in this regard. Similarly, methodology for calculation of cap rate for gas generating stations needs to be clarified as the gas based generating stations provide for different ECR for different fuels. Some stakeholders have also sought clarity with regard to the calculation of additional charges for over injection by the Central Generating Stations/IPPs in case when the frequency is above 50.05 Hz. Other stakeholders have stated that additional charge for deviation can be introduced in stages.

### **Commission's Proposition**

2.22. The Commission is of the view that DSM charges for an entity falling in different bid areas should be computed based on the daily average ACP of the bid area in which the entity has the largest proportion of its demand. Similarly, the

charges for inter-regional deviation and cross-border and for deviation in respect of cross-border transactions should be computed on the basis of the unconstrained market clearing price in Day Ahead Market.

2.23. It is further clarified that the Cap rate for the charges for deviation for the generating stations, irrespective of the fuel type and whether such generating stations are regulated by the Commission or not, shall not exceed 303.04 Paise/kWh. The Commission has decided to continue with the already available reference of 303.04 Paise/kWh.

2.24. Further, to discourage over-injection during high grid frequency, a generating station shall not be paid for over-injection if the frequency is between 50.05 Hz and 50.10 Hz, and any over-injection when the grid frequency is 50.10 Hz and above, shall attract the payment of DSM charges equivalent to frequency at 50 Hz or the cap rate of 303.04 Paise/kWh whichever is lower.

#### Proposed Amendments

2.25. In view of the above, the Commission proposes to amend clause 5(3), 7(3), 7(1), 7(4), 7(6) and Illustration B in sub-clause (B)(iii) of Annexure-I. Further, the Commission proposes to add new clause viz. 5(2)(e) and 5(2)(f). Changes are also made to reflect the amendments proposed in Table II of Regulation 7(3).

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