CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Coram:

Shri P. K. Pujari, Chairperson

Shri I. S. Jha, Member

Shri Arun Goyal, Member

Shri P. K. Singh, Member

No. L-1/260/2021/CERC **Dated: 1st June, 2022**

In the matter of Central Electricity Regulatory Commission (Deviation Settlement and Related Matters) Regulations, 2022 –Statement of Objects & Reasons (SOR) thereof.

STATEMENT OF REASONS

Introduction

a) The Central Electricity Regulatory Commission (hereinafter referred to as the "CERC" or "the Commission") initiated the process of notifying CERC (Deviation Settlement and Related Matters) Regulations, 2022 (hereinafter referred to as "the DSM Regulations 2022") in exercise of powers conferred under Section 178 read with clauses (c) and (h) of sub-section (1) of Section 79 of the Electricity Act, 2003 (36 of 2003) (here in after referred to as the "the Act")and all other powers enabling it in this behalf. On September 07, 2021, the Commission issued the Draft Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2021 (hereinafter referred to as the "Draft Regulations") along with the Explanatory Memorandum for the same wherein the reasons and analysis relied upon

for framing the Draft Regulations were explained.

b) **Comments/suggestions/objections** from the stakeholders and interested persons on the Draft Regulations were sought by October 08, 2021, which was extended till October 22, 2021 based on the request of stakeholders. In response, the Commission received submissions from eighty seven (87) stakeholders. The list of stakeholders is attached as **Annexure I** to this document. Subsequently, Public Hearing on the Draft Regulations was conducted on November 24, 2021 through video conferencing. The list of stakeholders who presented during the Public Hearing is attached as **Annexure II.**

c) The Commission, complying with the provisions of the Act and the Electricity (Procedure for Previous Publication) Rules, 2005 proceeded to finalize the DSM Regulations 2022. The Commission considered the comments of the stakeholders on the Draft Regulations, views of the participants in the Public Hearing as well as their written submissions received during and after the Public Hearing. The Regulations have been finalized after due consideration of various issues raised. The analysis of the issues and findings of the Commission thereon are discussed in the subsequent paragraphs.

d) On March 14, 2022, the Commission has notified the DSM Regulations 2022, keeping in view the mandate of the Act and the submissions of the stakeholders. However, the Commission will notify separately the date from which these Regulations will come into force.

e) It may be noted that all the suggestions given by the stakeholders have been considered, and the Commission has attempted to elaborate all the suggestions as well as the Commission's decisions on each suggestion in the Statement of Reasons. However, in case any suggestion is not specifically elaborated, it does not mean that the same has not been considered. Wherever possible, the comments and suggestions have been summarised clause-wise, along with the Commission's analysis and ruling on the same. However, in some cases, due to overlapping of the issues/comments, two clauses have been combined in order to minimise repetition. The Commission has also made certain suo-motu consequential changes in order to ensure consistency among clauses.

f) The main issues raised during the public consultation process, and the Commission's analysis and decisions on the issues, which underlie the Regulations as finally notified, are given in the subsequent paragraphs.

1. Short title and commencement

1.1. Short title and commencement [Regulation 1 (2)]

The Commission had proposed the following in Clause 2 of Regulation 1 of the Draft Regulations:

Commission's Proposal

(2) These regulations shall come into force on such date as may be notified by the Commission separately.

Comments received

UPERC, IIT-K suggested that as the Ancillary Service (in short "AS") Regulations 2021 shall have a bearing on the DSM Regulations, the AS Regulations should be published first along with methodology and computations.

TSTRANSCO, APPrequested to postpone the implementation of the draft Regulations till the full implementation/ maturity of the AS market as the introduction of draft Regulations would deprive the DSCOMS from the receivables of hundreds of crores for under drawal and would place penalty for over drawal which in turn will impact consumer tariff.

Various stakeholders (Adani Power (Mundra), APP, BASK Research and RE Connect) suggested a trial run period for 6 months after 1 year from the date of finalization of AS Regulations 2021 on various grounds including smooth transition of linking 'Normal Deviation Charges' to 'Weighted Average Ancillary Service Charges' methodology; development of better understanding of the market; deviation bands and energy settlement etc.

Analysis and Decisions

The Commission has gone through the suggestions made by various stakeholders. Some of the stakeholders have suggested to implement the AS regulations before finalising the draft Regulations, while others have suggested to postpone the implementation of draft Regulations till the full implementation/ maturity of the AS market. Some stakeholdersalso suggested to undertake trial run of the draft Regulations.The Commission reiterates that the provision enabling notification of the

date of effect of these regulations as decided by the Commission is aimed at ensuring that implementation aspects are duly taken care of, before bringing the regulations into effect. As such, no change is required in the clause regarding 'Short title and commencement'.

2. Definitions and Interpretation

2.1. Definition of Available Capacity (Regulation 3(1)(g))

Commission's Proposal

The Commission had proposed the following definition of Available Capacity in Regulation 3(1)(g) of the Draft Regulations:

(g) 'Available Capacity' for power projects based on wind or solar which are regional entities, is the cumulative capacity rating of wind turbines or solar inverters that are capable of generating power in a given time block

Comments received

PCKL suggested that the available capacity should be the cumulative capacity rating of the wind turbine or solar inverter or hybrid capable of generating power in a given time block.

Vector Green suggested that the definition should be broadened to include and align it with changing technologies such as hybrid Solar and Wind with or without storage.

Analysis and Decisions

The Commission has noted the suggestion(s) and made suitable change in the definition of "Available Capacity" in the final regulations (DSM Regulations 2022) to provide for wind or solar or hybrid of wind-solar resources.

2.2. Definition of Contract rate (Regulation 3(1)(j))

Commission's Proposal

The Commission had proposed the following definition of Contract rate in Regulation 3(1)(j) of the Draft DSM:

(j) 'Contract rate' means the tariff for sale or purchase of power, as determined under Section 62 or adopted under Section 63 or approved under Section 86(1)(b) of the Act by the Appropriate Commission or the price as discovered in the Power Exchange, as the case may be.

Comments received

Tata Power suggested to include price as indicated under Bilateral Power Purchase

Agreements, signedbetween Consumers (including group captive and captive consumers) and generators in the definition.

PCKL suggested to include the phrase "or the rate declared by the AS provider" in the definition.

Analysis and Decisions

The Commission has gone through the comments and is of the view that the definition is adequate and needs no change. Bilateral contracts between discoms and generators are generally approved under section 86(1) (b) of the Act and hence covered under the definition. The cases where contract rates are not available (for instance, in respect of captive consumers, etc.) are also suitably dealt with, at appropriate places in the regulations. The suggestion relating to the 'rate as declared by the AS provider' is not relevant in the context of the definition of'contract rate.'

2.3. Definition of Renewable Rich State (Regulation 3(1)(t))

Commission's Proposal

The Commission had proposed the following definition of Renewable Rich State in Regulation 3(1)(t) of the Draft Regulations:

(t) 'Renewable Rich State' or 'RE-rich State' means a State whose combined installed capacity of solar and wind power projects under the control area of the State is 1,000 MW or more.

Comments received

SLDC (Gujarat) suggested to define 'Rich RE States' as the State with combined installed capacity of wind and solar projects to be above 10,000 MW and to define States with installed capacity between 1,000 MW and 10,000 MW as 'Reasonable Rich RE state' and that with less than 1,000 MW combined installed capacity as 'Less RE penetration state'. IWPA suggested to differentiate between Renewable Rich State (1,000 MW and 10,000 MW installed capacity) and Renewable Super Rich state (more than 10,000 MW installed capacity) for differentiating the treatment of infirm power being handled by them. They contested that it wouldbe a real discrimination if 1,000 MW of infirm power is treated in the same manner as 10,000MW of infirm power as far as grid safety and stability is concerned.

Greenko Group suggested that a State should be termed as RE rich State only if 1000

MW and more of RE generation is connected with the transmission network of the State. This is because the RE generators connected with CTU may be selling power to other States and thus not contributing in the consumption of the State in which they are generated.

Jhabua Power suggested to define a State as RE rich if the RE installed capacity for the State is greater than 20% of its total installed capacity plus central sector drawal.

PCKL suggested to link the definition with an installed capacity of 5,000 MW or more in order to meet the goal of GoI to achieve 450 GW of renewable energy target by 2030. EAL – IIT(Kanpur) suggested to defined Renewable Rich with reference to the contracted capacity of variable renewable energy (VRE) by all entities connected to the 'control area of the State' as variability and uncertainty associated with the schedule of a State depends on the 'contracts that it handles for consumption within the state.'

Prayas Energy Group suggested to link the definition of Renewable Rich State as a percentage (i.e. 10% or 20%) of the total installed capacity in the State. Mahindra

Susten suggested to link the definition to percentage of total consumption in previous financial year and hence it should be dynamic based on yearly basis.

HPSEBL suggested that States with installed capacity of hydro above a certain limit should also be classified as RE rich state.

PCKL suggested that states with installed capacity for WS power of 5000 MW or more should be termed as RE rich state.

Analysis and Decisions

Various stakeholders have suggested that the definition of the RE rich State should be revisited. New categories such as 'Reasonable Rich RE State', RE super rich States etc. have been suggested depending upon the installed capacity of RE. Some of the stakeholders have suggested that the definition of RE should be made dynamic and should be linked to the percentage of installed capacity of the State or with reference

to the contracted capacity ofVRE by all the entities connected to the 'control area of the State' to capture variability and uncertainty associated with the schedule of a State demand or with percentage of total consumption in previous financial year. It was also suggested to include hydro projects in the computation of RE installed capacity.

The Commission introduced the concept of RE rich states through the 3rd Amendment of the DSM Regulations, 2014 to enable such states tomanage higher capacity of variable RE sources like wind and solar. However, the Commission had, in the SoR for the said Amendment Regulations, also highlighted the importance of better forecasting, scheduling and balancing capability for handling the intermittent nature of RE. To this end the Commission introduced the Framework on Forecasting, Scheduling and Deviation Settlement of Wind and Solar projects (regional entities) in 2015.

The Commission also laid the ground for the introduction of spinning reserves and ancillary services for the management of RE integration. The introduction of AS Regulations is a step towards operationalisation of market for reserves. The Commission is of the view that the introduction of AS framework and maintenance of reserves at the State level would help in better management of the grid in the wake of addition of infirm RE capacity in the system. The Real Time Market will also go a long way in managing the variability of RE.

The Commission would like to reiterate that these measures and not the relaxation of DSM band is the way forward for RE integration. However, to manage the transition to large scale penetration of infirm RE, the special dispensation for RE rich States has been provided. Further, given the fact that the country has set the target of RE capacity addition to the tune of 450 GW by 2030, most of the States having potential for RE would far outreach the threshold level of 1000 MW and as such, the Commission does not find any rationale behind further sub-categorisation of States based on different levels of RE penetration. The Commission would also like to clarify that the definition of RE rich State or for that matter the special dispensation for RE rich States, has been provided with due regard to the variability of these resources and as such the Commission is not inclined to consider any resource other than wind and solar for the purpose of definition of RE rich State.

Thus, the Commission feels there is no need for revisiting the definition of RE rich State.

2.4. Definition of Run-of-River Generating Station (Regulation 3(1)(v))

Commission's Proposal

The Commission had proposed the following definition of Run-of-River Generating Station in Regulation 3(1)(v) of the Draft Regulations:

(v) 'Run-of-River Generating Station' or 'RoR generating station' means a hydro generating station which does not have upstream pondage.

Comments received

AD Hydro suggested to include small hydro projects with pondage of about 3 hours as RoR projects as generation from such small hydro project is completely governed by the upstream projects and the impact of pondage is insignificant. It is thus suggested to include such projects under Wind and Solar or to introduce separate section for RoR projects having an immediate downstream project.

EAL (IIT- K) suggested to rename the RoR seller as "Constrained Dispatchable seller".

Analysis and Decisions

The Commission has examined the suggestions and would like to clarify that the definition of RoR generating station has been adopted from the CERC Regulations on Terms and Conditions of Tariff. Further, special dispensation has been carved out in the DSM Regulations for these generating stations with due regard to their constraints arising out of absence of upstream pondage. Accordingly, the Commission does not find any need for revisiting this definition or renaming this term.

2.5. Definition of Area Clearing Price (Regulation 3(1)(f))

Commission's Proposal

The Commission had proposed the following definition of 'Area Clearing Price'in Regulation 3(1) (f) of the Draft Regulations:

(f) 'Area Clearing Price' or 'ACP' means the price of electricity contract for a

time-block transacted on a Power Exchange after considering all valid buy and sale bids in particular area(s) after market-splitting.

Comments received

O2 Power suggested to link the ACP with in Real Time Market (RTM) or any other contract which is closerto the delivery.

Analysis and Decisions

The Commission is of the view that the definition of ACP is adequate and does not need any change. At appropriate places in the DSM Regulations 2022, the term ACP has been used with reference to DAM or RTM, as the case may be.

2.6. Definition of Seller (Regulation 3(1)(y))

Commission's Proposal

The Commission had proposed the following definition of Seller as proposedin Regulation 3(1) (y) of the Draft Regulationsis extracted below:

(y) ''Seller" means a person, including a generating station, supplying electricity through a transaction scheduled in accordance with the Grid Code;

Comments received

IWPA suggested to provide clarity whether "captive wind and solar generators" have been included under the definition of seller.

Analysis and Decisions

The Commission would like to clarify that as per the provisions of the Act read with the Electricity Rules, 2005, a power plant qualifies to be a captive generating plant if at least 51% of the electricity generated from the plant is consumed for the captive use. Beyond this limit of 51% of generation, the said captive generation plant can sell electricity like any other generating station. The definition of "Seller" in the DSM Regulations 2022 need be interpreted in the light of these provisions of the Act and the Rules.

2.7. Definition of General seller (Regulation 3(1)(m))

Commission's Proposal

The Commission had proposed the following definition of "General seller"in Regulation 39(1) (m) of the Draft Regulations:

(m) 'General seller' means a seller in case of a power project based on other than wind or solar resources.

Comments received

SRPC suggested to include, under the definition of General seller, the thermal generators participating under the scheme for Flexibility in Generation and Scheduling of Thermal Power Stations to reduce emissions as per MoP letter dated 05.04.2018 as these thermal generators may sell the solar generation from the plants being installed at their premises under STOA/PX.

EAL (IIT- K) suggested to rename General Seller as "Dispatchable seller"

PCKLsuggested to redefine general seller as "a seller in case of a power project based on other than wind or solar resources or hybrid of wind and solar."

Analysis and Decisions

The Commission noted the suggestions of the stakeholders and has decided to include the expression "hybrid of wind-solar" in the definition of General seller and has modified the definition accordingly in the final Regulations as under:-

"(m) 'General seller' means a seller in case of a generating station based on other than wind or solar or hybrid of wind-solar resources;"

However, the Commission is of the view that there is no need for re-naming the term "General Seller".

2.8. Definition of Buyer (Regulation 3(1)(h))

Commission's Proposal

The Commission had proposed the following definition of Buyer in Regulation 3(1) (h)of the Draft Regulations:

(h) 'Buyer' means a person purchasing electricity through a transaction

scheduled in accordance with the Grid Code.

Comments received

BRPL suggested to clarify whether buyer would include a Distribution Licensee or the SLDC.

Analysis and Decisions

The Commission has examined the comments and is of the view that the definition of "Buyer" is amply clear. Buyer includes any person purchasing electricity as per the Act. SLDC does not engage in purchase and sale of electricity as per the Act.

2.9. Definition of WS seller (Regulation 3(1) (aa))

Commission's Proposal

The Commission had proposed the following definition of WS seller in Regulation 3(1) (aa) of the Draft Regulations:

(aa) 'WS seller' means a seller in case of a power project based on wind or solar energy.

Comments received

SRPC suggested to include, hybrid wind-solar projects under the definition of WS seller. EAL (IIT-K) suggested to rename the WS seller as "Non- Dispatchable Seller" and also suggested to provide clarity on the deviation charges applicable for hybrid projects (based on wind, solar and MSW).

PCKL suggested to redefine WS seller as 'a seller in case of a power project based on wind or solar energy or hybrid of wind and solar.'

Analysis and Decisions

The Commission has gone through the suggestions and is of the view that there is no need to re-name the term "WS Seller." However, the Commission has accepted the suggestion of including the expression "hybrid of wind-solar resources", and the definition has thus been modified as under:-

"(bb) 'WS seller' means a seller in case of a generating station based on wind or solar or hybrid of wind-solar resources"

2.10. Definition of Deviation (Regulation 3(1)(k))

Commission's Proposal

The Commission had proposed the following definition of Deviation in Regulation 3(1) (k) of the Draft Regulations:

(k) Deviation' in a time block for a seller of electricity means its total actual injection minus its total scheduled generation including the schedule for Ancillary Services; and for a buyer of electricity means its total actual drawal minus its total scheduled drawal including the schedule for Ancillary Services, and shall be computed as per Regulation 6 of these regulations;

Comments received

Adani Power, APP suggested that deviation due to grid disturbance should not be considered as deviation by the entity.

SRPC suggested to exclude the reference "including the schedule for Ancillary Service" in the definition of "Deviation" as the definition of "Scheduled Generation" & "Scheduled Drawal" have explicitly taken care of schedule for Ancillary Services.

Analysis and Decisions

The Commission has analysed the suggestions of the stakeholders. Adani Power and APP suggested that deviation due to grid disturbance should not be considered as deviation by the entity. The Commission would like to clarify that grid disturbance is an exceptional situation and the treatment of schedule revision in case of grid disturbance is dealt with in the Grid Code. Deviation is computed with reference to schedule after factoring in the revision in schedule, if any, as per the provisions of the Grid Code.

SRPC has suggested to exclude the reference "including the schedule for Ancillary Service" in the definition of "Deviation". The Commission has accepted the suggestion of the SRPC and has modified the definition of Deviation in the final Regulations as under:-

> *"(k) 'Deviation' in a time block for a seller of electricity means its total actual injection minus its total scheduled generation; and for a buyer of electricity means its total actual drawal minus its total scheduled drawal, and shall be*

computed as per Regulation 6 of these regulations;"

2.11. Definition of Regional Entity

Commission's Proposal

The Commission had proposed the definition of 'Regional Entity' in the draft Regulations as under:-

'Regional Entity' means a person whose metering and energy accounting are done at the regional level by Regional Load Despatch Centre;

Comments received

UPCL suggested that definition of Regional Entity should be retained as per CERC (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations 2019.

Analysis and Decisions

The Commission has examined the comment and would like to clarify that the definition of Regional Entity has been taken from the Grid Code and is in consonance with that in the CERC (Fees) and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2019.

3. Scope

3.1. Scope (Regulation 4)

The Commission had proposed the following in Regulation 4 of the Draft Regulations:

Commission's Proposal

These regulations shall be applicable to all grid connected regional entities and other entities engaged in inter-State purchase and sale of electricity.

Comments received

BRPL suggested to make effective the proposed Regulations after one year of implementation of AS Regulations.

APP, Azure Power, FICCI, APRAAVA Energy, Hero Future Group, Mytrah suggested that the proposed Regulations should be applied prospectively to new RE projects only as the existing RE projects have submitted their bids after working out a

threshold tariff considering penalties as per the existing DSM framework. If the existing projects are brought under the proposed Regulations there would a situation of policy uncertainty resulting from the breach of the doctrine of promissory estoppel and almost 60,000 MW of WS projects are going to be adversely impacted. Further, FICCI suggested that upcoming RE projects should be allowed to buy/sell power from power markets (using real time/ancillary markets) so as to correct their position on real time basis and to reduce the impact of deviations on grid and optimize their portfolio.

ERPC suggested to include the phrase *"and cross border"* after the word 'purchase' in the scope as Eastern Region is connected with other countries and Deviation Accounts are also issued for these cross-border transactions.

CEEW suggested to expedite the implementation of SAMAST to bring in uniformity and automation in energy accounting for successful implementation of these DSM regulations.

CEEW suggested to clarify the process of accounting for deviations of SRAS and TRAS providers who are connected to the ISTS because as per the Draft Regulations, the deviation accounting of such SRAS and TRAS providers shall be done by the RLDC but they are also subject to the state level deviation settlement regulations where accounting is done by the SLDCs.

DNS GL Energy suggested to introduce frequency linked DSM rates beyond IEGC range for SLDC also so they can also support during contingency.

IEXpointed out that the proposed mechanism will work properly only if there is enough deterrent in terms of higher deviation charges for the entities to not deviate from their schedule. The proposal to levy deviation charges at 110% of the normal rate may not act as a strong deterrent for the entities. The deviation charges should be at higher level, say at 150% -200% of the normal rate.

Analysis and Decisions

The Commission has gone through the suggestions. Some of the stakeholders (APP,

Azure Power, FICCI, APRAAVA Energy, Hero Future Group, and Mytrah etc.) suggested that the proposed Regulations should be applied prospectively to the new RE projects only, else this will be against the doctrine of promissory estoppel. The Commission is of the view that this contention does not sustain as it does not apply against legislative action. The principles of estoppel cannot override the provisions of a statute or law. Where a statute imposes a duty by positive action, estoppel cannot prevent it. In the instant case, DSM is in the nature of a deterrent charge against violation of grid discipline and special dispensation in regard to payment of DSM charges cannot be claimed to be a promise or a right in perpetuity. Furthermore, by these regulations any substantive rights of the stakeholders are not getting infringed. The Regulations are subject to periodic change and the investors are expected to factor in these realities before making any investment.

CEEW suggested to clarify the process of accounting for deviations of ISTS connected SRAS and TRASproviders where accounting of such SRAS and TRAS services rendered shall be done by the RLDC but they, being connected by ISTSare subject to accounting done by the SLDCs. The Commission would like to clarify that these procedural aspects shall be suitably addressed in the detailed procedure of the nodal agency designated for Ancillary Services.

ERPC suggested to include the phrase *"and cross border"* after the word purchase in the scope. The Commission would like to clarify that the treatment of deviation in respect of cross-border transactions is already covered under clause (4) of Regulation 8 of the DSM Regulations 2022.

DNS GL Energy suggested to introduce frequency linked DSM rates beyond IEGC range for SLDC also so they can also support during contingency. CEEW suggested to expedite the implementation of SAMAST to bring in uniformity and automation in energy accounting for successful implementation of these DSM regulations. The Commission feels, these are under the jurisdiction of the State Commissions and the Commission has been sensitising the State Commissions through the Forum of Regulators, on the need for matching mechanism at the State level in the larger interest of grid security.

The Commission also feels that there must be a balance between the wrong doing and the penalty imposed against such wrong doing, and the Commission feels the deterrent charges stipulated under the DSM Regulations 2022 would be sufficient to ensure grid discipline.

4. Adherence to Schedule and Deviation

4.1. Adherence to Schedule and Deviation (Regulation 5)

The Commission had proposed the following under Regulation 5 of the Draft DSM:

Commission's Proposal

(1) Every grid connected regional entity shall adhere to its schedule as per the Grid Code and shall not deviate from its schedule, thereby adversely affecting the secure and stable operation of the grid.

(2) Any deviation shall be managed by the Load Despatch Centre as per the Ancillary Service Regulations, and the computation, charges and related matters in respect of such deviation shall be dealt with as per the following provisions of these regulations.

Comments received

NTPC submitted that "No Deviations" from the Scheduled Generation, is neither technically possible nor operationally feasible as inadvertent and natural deviations are part of operation of thermal power plants.

DVC suggested that there should be more clarity on areas covered under the AS Regulations and computation of various charges for entities like DVC which has an integrated business operation in power generation, transmission & distribution.

PGCIL requested that power allocation for HVDC sub-stations of POWERGRID may be exempted from proposed DSM Regulations and billing for HVDC sub-station may be considered based on actual consumption of electricity.

SLDC Odissa suggested that charges for under drawl/ over injection at 50.10 and above should be continued.

Torrent Power suggested that the existing market price-linked mechanism for DSM should continue. Further, Ancillary service market should not be considered as a reference point for Normal Rate.

Analysis and Decisions

The Commission has considered the submissions of the stakeholders. The Commission does share the understanding that it may not be technically or operationally feasible for the generators to ensure zero deviation all the time, and has accordingly made suitable provisions in the DSM Regulations 2022 to address this concern. However, the effort of all the grid connected entities should be to adhere to and not deviate from the schedule.

In the context of the comment of DVC, the Commission would to clarify that the status of DVC being an integrated entity is already defined in the Grid Code and its scheduling as a regional entity is also governed as per the provisions of the Grid Code. As such, deviation for DVC would be treated with reference to the schedule finalised as per the Grid Code.

As regards the comments of PGCIL in relation to its HVDC sub-stations, the Commission would like to reiterate that the requirement of consumption by these sub-stations has to be anticipated in advance and contractual arrangements for scheduled transaction should be entered into, to avoid reliance on the DSM for meeting such consumption requirement.

In reference to the suggestion of Odissa SLDC that charges for under drawl /over injection at 50.10 and above should be continued, the Commission would like to clarify that this suggestion no longer remains relevant in view of the fact that the DSM Regulations 2022 do away with the linkage of DSM Charges from the frequency.

Torrent Power suggested that Ancillary service market should not be considered as a reference point for Normal Rate, and instead the existing market price-linked mechanism for DSM should continue. In this context, the Commission would like to reiterate that the basic philosophy of the DSM Regulations 2022 is that all grid

connected entities shall adhere to their schedules and deviation, if any, shall be managed by the system operator through ancillary services and charges for such deviation shall be governed by the DSM Regulations. When the grid is managed by the operator through the deployment of Ancillary Services, it becomes incumbent on the operator to pay for the AS procured from the Deviation and Ancillary Service Pool Account. However, during the transition period the DSM charge is already linked to the market price.

5. Computation of Deviation

5.1. Computation of Deviation (Regulation 6)

The Commission had proposed the following under Regulation 6 of the Draft Regulations:

Commission's Proposal

(1) Deviation in a time block for general sellers shall be computed as follows:

Deviation-general seller (in MWh) = [(Actual injection in MWh) – (Scheduled generation in MWh)].

Deviation-general seller (in %) = 100 x [(Actual injection in MWh) – (Scheduled generation in MWh)] / [(Scheduled generation in MWh)].

(2) Deviation in a time block for WS sellers shall be computed as follows:

Deviation-WS seller (in MWh) = [(Actual Injection in MWh) – (Scheduled generation in MWh)].

Deviation-WS seller (in %) = 100 x [(Actual Injection in MWh) – (Scheduled generation in MWh)] / [(Available Capacity)]

(3) Deviation in a time block for buyers shall be computed as follows:

Deviation- buyer (in MWh) = [(Actual drawal in MWh) – (Scheduled drawal in MWh)].

Deviation- buyer (in %) = 100 x [(Actual drawal in MWh) – (Scheduled drawal in MWh)] / [(Scheduled drawal in MWh)]

Comments received

PXIL suggested to compute deviation in case of WS seller similar to a general seller.

TANTRANSCO, EAL (IIT-K), MSEDCL suggested to use scheduled generation instead of available capacity for the computation of Deviation - WS seller (in %) in order to give real picture of forecasting error.

Tata Power also suggested deviation caused due to transmission constrains should not be considered as deviation. Further, Tata Power, BALCO, Adani Power, NTPC suggested that deviation caused during Ramping up (synchronisation or else) and Ramping down should not be penalised.

CESC suggested to clarify that the unit of Available capacity is MWh where as India Grid Trust suggested it to be clarified as MW.

Enel Green Power, Vector Green Energy and IWPA (Norther Region) suggested that Pooling station concept should be adopted for forecasting and the QCAs should be responsible for forecasting on behalf of RE developers connected to a pooling station. Regional balancing will ensure better and efficient utilization of Wind and Solar technologies by allowing them a larger collective margin for deviation. Thus, the deviation for WS sellers should be computed on regional basis and the net deviation charges shall be apportioned among the WS sellers of respective regions.

Prayas suggested that the Commission should set a definitive timeline or a sunset clause (say March, 2023/24) by which all W-S generators will have to align their deviation accounting to their scheduled generation rather than their available capacity.

BASK Research indicated that term ‘buyer’ over archingly covers all buyers, including the distribution utilities and also the open access consumers. Considering the difference in volume and flexibility of adistribution utility and open access consumers, the deviations charges should be defined for both separately.

Analysis and Decisions

The Commission has considered the suggestions of the stakeholders.

Some of the stakeholders have suggested to align the formula of deviation for WS seller with that of General seller or draw a sunset clause in this regard. The Commission would like to clarify that this formula (with Available Capacity instead of scheduled generation in the denominator) is based on the existing practice and has been retained in the DSM Regulations 2022 in due recognition of the uncertainty that still goes with wind and solar generation. Reference in this context is invited to the Statement of Reasons (SOR) of the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) (Second Amendment) Regulations, 2015 through which this formula of deviation was introduced. The relevant extract from the SOR is quoted below:

"6.2.2 The Commission has noted that with the current definition, instances such as low/no generation cases cannot be covered. With due regard to these constraints and with a view to ensuring optimum and genuine forecasting, the Commission has decided to define the error percentage normalized to available capacity, instead of schedule. This will ensure that the error quantity corresponds to the physical MW impact on the grid, the forecasting models are aligned to minimize the actual MW deviations, and the error definition holds valid in all seasons. Revised definition shall be: Error(%) = (Actual Generation – Scheduled Generation) / (Available Capacity)x100 Where, Available Capacity (AvC) is the cumulative capacity rating of the wind turbines/ solar inverters that are capable of generating power in a given timeblock. A suitable procedure along with appropriate format shall be developed by the NLDC for the submission of Available Capacity by the wind/solar generators to the concerned RLDC.

6.2.3 AvC would be equal to the Installed Capacity, unless one or more turbines/inverters are under maintenance or shutdown. Any attempt at misdeclaration, that is declaration of capacity when it is actually not available due to reasons of maintenance or shutdown etc would be treated as gaming and would be liable to action under appropriate provisions of the Act or the Regulations."

The Commission believes, this rationale still holds good and any departure from this practice at this stage of development of RE sector would be counter-productive and might adversely affect RE integration. Further, from system operation point of view what matters is the MW deviation in a time block which is reflected in the numerator of the formula. It is expected that the wind and solar generators would be encouraged by this dispensation, improve forecasting and minimise the deviation in the numerator. Hence, the Commission has decided to retain the formula in the final regulations.

Tata Power has suggested that the deviation caused due to transmission constraints should not be considered as deviation. Further, some of the stakeholders suggested that deviation caused during Ramping up (synchronisation or else) and Ramping down should not be penalised. The Commission would like to clarify that the circumstances under which schedule can be revised, are specified in the Grid Code. Deviation under the DSM Regulations shall be computed with reference to the schedule or revised schedule finalised as per the Grid Code.

As regards the suggestion of aggregation through pooling station or QCA, the Commission would like to under score that this is a subject matter of the Grid Code and beyond the scope of the DSM Regulations.

6. Normal Rate of Charges for Deviations

6.1. Normal Rate of Charges for Deviations (Regulation 7(1))

Commission's Proposal

The Commission had proposed Normal Rate of Charges for Deviation in Regulation 7(1) of the Draft Regulations, as follows:

"The Normal rate of charges for deviation for a time block shall be equal to the Weighted Average Ancillary Service Charge (in paise/ kWh) computed based on the total quantum of Ancillary Services deployed and the total charges payable to the Ancillary Service Providers for all the Regions for that time block.

Provided that for a period of one year from the date of effect of these regulations or such further period as may be notified by the Commission, the normal rate of charges for deviation for a time block shall be equal to the highest of [the weighted average

ACP of the Day Ahead Market segments of all the Power Exchanges; or the weighted average ACP of the Real Time Market segments of all the Power Exchanges; or the Weighted Average Ancillary Service Charge of all the regions] for that time block:
Provided further that in case of non-availability of ACP for any time block on a given day, ACP for the corresponding time block of the last available day shall be considered."

Comments received

MSEDCL suggested that linking charges for deviation with RTM of all the markets will require implementation of better IT enabled services for informed decision making. Development of such services will require time and resources.

EAL (IIT-K), Jhabua Power suggested that the normal rate for charges for deviation should be linked to a product which is close to real time i.e. RTM and AS markets and not the DAM.

EAL (IIT-K) also suggested that in case of market splitting 'weighted average price' across all market areas/regions should be used for the calculation of normal rate of charges for deviation.

Tata Power suggested to use ACP of DAM only when ACP of AS is not available.

HPPC (Haryana), JITPL, Adani Power, Adhunik Power, Tata Power, Kreat Energy suggested to clarify and provide detailed illustration/calculation of "Weighted AverageAncillary Service Charge" and "Charges for Deviation" and "weighted average ancillary service charges of all the regions".

IEX suggested to clarify as to how normal rate of charges for deviation would be determined if no Ancillary Services are deployed during a time block or if due to lower demand in the system the System Operator issues TRAS down instructions and the Ancillary Service Provider pays to the Deviation and Ancillary Services pool, thereby leading to a situation where there is inflow rather than outflow from the DSM pool.

HPPC (Haryana), UPERC, BRPL, Greenko Group, Prayas, Penna Cement suggested to link normal rate of charges for deviation to the lowest of all the three segments (AS, DAM, RTM) for all the regions for that time block during the interim period because due to volatility, linking normal rate charges with highest of all the three segments will lead to exposure to higher cost.

Adhunik Power suggested to provide pre-defined charges of deviation.

Adani Power, APP, BALCO, MB Power, NLCILsuggested to define an agency and platform where daily block-wise ancillary service charges and Normal rate of charges for deviation are published in detail and in advance.

Dhariwal Infrastructure suggested that charges of deviation should be published prior to the start of the respective time block.

Some of the stakeholders (FICCI. SLDC Odisha, Adani Power, Azure Power, SRPC, TANTRANSCO, BALCO, Dhariwal Infrastructure, MPPGCL, Prayas etc.) suggested the charges for deviation should be equal to or be capped at

a) percentage of the project tariff or the contract rate, or
b) weighted average of all the regions of AS charges rate and RTM rate, or
c) energy cost of the respective plants, or
d) combination of the rates of all the PPA and the market discover rate through exchange, or
e) the contract rate at which it has been paid based on schedule/ contract rate and in the absence of such rate at the rate of ACP of the DAM, or
f) ACP of the DAM (i.e. existing DSM rate)

so as to provide certainty and visibility of penalty which they can take into consideration while bidding.

Some of the stakeholders (ISMA, HPPC, NLCIL, SRPC, ERPC, Balco, ISMA, HPPC, TANTRANSCO) suggested to put a cap on charges of deviationwhich should be

a) equal to Rs 3.034/ kWh or as determined by the Commission, or

b) equal to Rs 8/ kWh, or
c) to provide different cap rates for buyer (Rs 8.00/ kWh) and seller (Rs 3.03/ kWh)

due to limited participation of the generators in AS market and highly volatile nature of the market where the price is driven primarily by the buyers, or due to supply demand mismatch, or due to coal shortage scenario.

Kreat Eenrgy suggested that deviation charges applicable for a period of one year from effective date of regulation may have an upper capping.

UPERC, Greenko Group suggested that the normal rate of charges for deviation should be linked to "net" charges payable to AS providers and not to "total" charges payable to such providers as there may be a situation when charges are paid to AS provider for Up service in some regions while charges are paid by AS provider for down service in some other regions.

Advance publication for Charges for Deviation was also suggested by some other stakeholders (APP, WIPPA, NLCI, NTPL, BALCO).

Mr Asit Singh suggested that all the deviations of nuclear stations (which are not under ABT) should be settled by the beneficiaries with the pool based on share allocation % as per the available billing rates which will ensure net neutrality of nuclear station deviation's for nuclear stations and for its beneficiaries and pool account.

CESC suggested to clarify whether in the absence of ACP of any of the three proposed segments on a particular day, the ACP for the corresponding time block of the last available day shall be considered.

CEEW suggested to have a dedicated public portal to track deviation and associated penalty across States, and also to provide a transition mechanism or fund that addresses the financial burden, especially for the stressed discoms.

M/S Deloitte suggested that the proposed framework may inadvertently result in

higher relaxation for WS Sellers at certain time periods, when the normal rate of charges of deviation are discovered to be relatively less.

Dhariwal Infrastructure suggested that linking charges for deviation with AS charges should not be implemented till the Market reflects a larger participation in the country.

NTPC pointed that Deviation Charges are designed to be a centralized concept i.e. same rate would apply to Deviations happening in all the Region, whereas the AS Mechanismis essentially a regional concept though procurement is proposed to bedone at a centralized market. Hence it is not clear how the Regional Chargeswould be made applicable for Deviations happening across all the Regions.

PCKL suggested to use MCP instead of ACP as interregional rate.

PXIL suggested to include the following proviso *"Provided that in case of congestion in transmission corridor, market splitting shall beadopted. Provided further entities shall settle deviations at deviations charges considering market splitting even if such entities have not transacted during such time block where market splitting has occurred."*

SLDC Gujarat, POSOCO and IIT-K suggested that the hybrid model for charge of DSM should be adopted. The charges for deviation should be frequency linked as well as the methodology proposed in the regulation. WBSEDCL suggested to review the frequency independent grid regulation.

UPPCL suggested that normal rate of charges for deviation should be equal to the least of all the prices discovered in order to decrease the financial hardship on DISCOMs.

TCCL commented that AS market has not matured enough and suggested to continue with the present methodology.

Torrent Power submitted that the existing mechanism should continue and suggested

that the normal rate of charges for deviation for the period of 1 year or further period as notified should be 'lower' of the weighted average ACP of the Day Ahead Market; or the weighted average ACP of the Real Time Market; or the Weighted Average Ancillary Service Charge for that time block.

WBSEDCL requested to postpone the implementation of the proposed DSM Regulation till the full implementation/maturity of the AS market.

WRPC suggested that "while considering the "Weighted Average Ancillary Service Charge", the ancillary services provided by the gas stations based on competitive gas, RLNG and Liquid Gas generation may be omitted, if the quantum of generation from these services is more than say, 30% of the total Ancillary Service quantum.

Analysis and Decisions

The Commission has examined the suggestions made by the stakeholders. The suggestions received from UPERC and Greenko Group for normal rate of charges for deviation should be linked to "net" charges payable to AS providers and not on "total" charges payable to such providers has been noted and the Commission has accordingly modified the Regulation.

Some stakeholders have suggested that the DSM Charges should be designed on hybrid mode by combining the methodology of the proposed regulation and the frequency linked rate. Others suggested to view the decision of delinking DSM charge from frequency.

In this context, the Commission would like to reiterate that the aspect of, and the rationale behind delinking DSM Charges from frequency has been dealt with extensively in the Explanatory Memorandum to the draft Regulations. Here, the Commission would like to add that the country has already paid heavy price for indiscriminate unscheduled interchange induced by commercial considerations as is reflected in the Reporton the Grid Disturbance on 30th July 2012 and Grid Disturbance on 31st July 2012 (submitted by CEO, POSOCO and CMD, CTU), the relevant extract is quoted below:

"*Para 2.10*

Observations from the antecedent conditions

It may be seen from the data in the table and the enclosed exhibits that

*• The **frequency and voltage** in the entire NEW grid were **within the standards** prescribed in the Indian Electricity Grid Code.*

….

*•There was **extremely heavy over-drawal** by the constituents of NR grid and **heavy under-drawal/ over-injection** by the constituents of WR."*

The Report goes on to explain the causes and consequences of grid indiscipline. Relevant extract is quoted below:

"Para 9.3

Grid indiscipline

***The Regulations allow deviations from the schedule as long as the operating parameters are within the prescribed standards. There have been occasions when the utilities have continued to overdraw/ under inject even at low frequency or over generate/ under draw at high frequency.** The various instances of grid indiscipline in the form of noncompliance of various provisions of the IEGC and the directions of RLDCs have been brought to the notice of the Hon'ble CERC in the form of petitions. The Hon'ble Commission has imposed penalties in large number of case. Yet the problem of grid indiscipline continues to be a large concern. On 30th July 2012 at 02:30 hrs, just before the disturbance the under drawal/over injection by the constituents of Western Region and the overdrawal by the constituents of Northern Region was as under:*

*The under drawal/over injection by the Western Region constituents and the over drawal by the Northern Region constituents continued despite several appeals and directions to restrict the deviation from schedule by the utilities indulging in grid indiscipline. **Thus grid indiscipline was a major cause for both the grid disturbances. Grid discipline is of paramount importance and needs to be adhered to by all Users."***

In fact, the report of the Enquiry Committee constituted under the Chairmanship of Chairperson, CEA had also emphasised on the need for phasing out frequency control

through Unscheduled Interchange (UI). The relevant extract is quoted below:

"REPORT OF THE ENQUIRY COMMITTEE ON GRID DISTURBANCE IN NORTHERN REGION ON 30th July 2012 AND IN NORTHERN, EASTERN & NORTH-EASTERN REGION ON 31st JULY 2012

"Recommendations

9.2 ***Frequency Control through Generation reserves/Ancillary services***

9.2.1 Frequency band needs to be further tightened and brought close to 50 Hz. POSOCO may file an urgency application in Supreme Court for early resolution of the issue in view of the recent grid disturbances. (Action: POSOCO Time Frame: 1 month)

9.2.2 A review of UI mechanism should be carried out in view of its impact on recent grid disturbances. ***Frequency control through UI may be phased out in a time bound manner and Generation reserves/Ancillary services may be used for frequency control.*** *Appropriate regulatory mechanism needs to be put in place for this purpose. POSOCO should take up the matter with CERC. (Action: POSOCO Time Frame: 3 months)"*

Over the period, several developments have taken place. For instance, the Commission has introduced the AS Regulations which envisage that after the gate closure, the system operator shall take over and manage the system imbalances or deviations through deployment of ancillary services. It is also felt that the co-existence of centralised ancillary services and frequency linked DSM could be counter-productive. While ancillary services are deployed centrally by the system operator to restore and maintain system frequency closer to 50 Hz, the frequency linked DSM price is a decentralised tool of controlling frequency. Existence of both centralised mode of frequency regulation through Ancillary Services and decentralised mode of controlling frequency through frequencylinked DSM could lead to avoidable conflict in system operation. The Commission believes that frequency management should not be left to the market participants whose behaviour is driven by commercial consideration. The message through the DSM Regulations 2022 is that all grid connected entities should adhere to schedules and that deviations

should only be inadvertent to be managed by the system operator through deployment of Ancillary Services.

Some stakeholders have suggested that the normal rate for charges for deviation should be linked to a product which is close to real time (i.e. RTM and AS markets), while others have suggested AS still being at its infancy should not be the basis for determination of DSM Charge. Some others have suggested that the normal DSM rate should be linked to the lowest and not the highest of the market based charges.

The Commission would like to reiterate that a natural corollary to the philosophy that deviation is to be managed by the system operator through deployment of ancillary services, is that the charges for deviation should be such that the costs of deploying ancillary services are recovered. Accordingly, the normal rate of charges for deviation for a time block has been proposed to be equal to the Weighted Average Ancillary Service Charge (in paise/ kWh) computed based on the total quantum of Ancillary Services deployed and the total charges payable to the Ancillary Service Providers for all the Regions for that time block.

As the AS is deployed on real time basis to manage the imbalance in the grid, the suggestions of the stakeholders to link the DSM Charge to a product closer to real time will get addressed once this provision is rolled out. However, as the Ancillary Service framework is still in the development phase, the Commission has decided that for the transition period of at least one year from the date of effect of the DSM Regulations, 2022, the normal rate of charges for deviation for a time block shall be equal to the highest of the weighted average Area Clearing Price (ACP) of the Day Ahead Market segments of all the Power Exchanges; or the weighted average ACP of the Real Time Market segments of all the Power Exchanges; or the Weighted Average Ancillary Service Charge of all the regions. The rationale behind linkage to the highest of different market prices is to create deterrent and discourage the grid connected entities from resorting to DSM for meeting their energy need.

As regards the suggestion to provide detailed illustration/calculation of “Weighted Average Ancillary Service Charge”, “Charges for Deviation” and “weighted average ancillary service charges of all the regions”, the Nodal Agency shall provide necessary details and illustrations (including the treatment of cases when the ACP or

the AS rate for a particular time block is not available) in the detailed procedure under the DSM Regulations 2022.

Several stakeholders have suggested to define an agency and platform where daily block-wise ancillary service charges and Normal rate of charges for deviation are published in detail and in advance. At the outset, the Commission would like to state that ex-ante publication of DSM rate has the potential of inducing perverse incentive to lean on DSM in the event of DSM charge being lower than a contract rate. It can also create an opportunity of arbitrage between the DSM and other market based products. The Commission has emphasised time and again that the grid connected entities should adhere to and not deviate from schedule. As such, knowledge of DSM rate in advance might not be of any relevance for the grid connected entities so long as they adhere to this principle. However, the NLDC shall publish the normal rate of Charges for DSM in its website at regular intervals and at the earliest once all components of charges for a particular time block are available with it.

Various stakeholders have suggested to link or to cap the charges of deviation w.r.t. various rates or a fixed rate. The Commission feels that capping could also lead to perverse incentive for over-drawing from the grid in situations when the DSM rate because of capping is lower than the market price or the AS price. The DSM charge has been designed based on the principle that AS would be deployed to manage deviation and the costs towards deployment of AS would be recovered from the causers of deviation. As such, any cap imposed could also lead to under-recovery of such costs towards ancillary services. Accordingly, the Commission has decided not to accept the suggestion of any cap on DSM rate.

7. Charges for Deviations

7.1. For a general seller other than an RoR generating station or a generating stationbased on municipal solid waste (Regulation 8 (1))

The Commission had proposed the Charges for deviation in a time block payable by a general seller other than an RoR generating station or a generating station based on municipal solid waste seller, in Regulation 8(1) as under:

"*Deviation by way of over injection*

(i) Zero up to 12% Deviation-general seller (in %);

(ii) @ 10% of the normal rate of charges for deviation beyond 12% Deviation-general seller (in %)

Deviation by way of under injection

(i) @ normal rate of charges for deviation up to 12% Deviation-general seller (in %);

(ii) @ 110% of the normal rate of charges for deviation beyond 12% Deviation-general seller (in %).''

Comments received

Adani Power, APP, DVC suggested to review the prescribed deviation limit of 2% as any fall in grid frequency, generation from the unit should increase as per generator droop up to a maximum of 5% of the generation subject to a ceiling limit of 105% of the MCR of the unit having regard to machine capability as per clause 5.5(a) of the IEGC (5th amendment) regulations and also due to differences between meter readings of SCADA – SEM.

Mr Asit Singh suggested to provide a bandwidth of +/- 20 MW due to variation between SCADA (used for system operations accounting) and SEM (used for energy accounting) values.

NHDC, NHPC pointed out that under IEGC hydro generators are mandated to increase generation upto 110% of their MCR when the frequency falls below certain level. Further, the action of Governors would respond upto 110% of the rated load on reduction in grid frequency. Thus, the limit of 2% band width should be revisited.

Tata Power, Adani Power, BALCO, NTPC suggested that it is difficult to maintain exact zero deviation because of real-time coal quality (including wet coal during rainy seasons), periodical soot blowing and ambient parameter variation, mill changeover, etc. Due to the above indicated factors, Tata Power suggested not to introduce penalty for deviation in the range of +/- 2%.

JITPL suggested to provide a bandwidth of +/-20 MW with payment to generator for over injection and payment from the generator for under injection being at 3.034/

kWh under this bandwidth.

NTPC suggested to provide an operational margin of +/-3% with no deviation penalty. Further, under this bandwidth the generators should be paid for over injection or should be charged for under injection with ECR.

Adani suggested to extend the facility of scheduled revision to short-term generators on lines of long-term/medium-term PPA based generators, in case of partial generation on account of technical abnormality. They also suggested that in case unit trips from one station, an option of supplying power from the fleet should be allowed.

Dhariwal Infrastructure suggested to provide suitable cap rate for underinjection by generating station in case of unit tripping till the timeschedule is revised to zero.

NTPC, Kreate Energy suggested that penalty provisions may not be made applicable incase of Unit tripping.

It was also suggested by Adani Power that when the station/unit is under reserve shut down (RSD), any import may be net off with subsequent export, as RSD is proposed by LDC.

Adani Power suggested that in case of forced outage declaration,there should be no charges for deviation and revision in schedule should be allowed from the 2nd time block itself.

Tata Power, Adhunik Power suggested that in such cases the charges for deviation should be 50% of normal rate upto 6th time block.

BALCO suggested that the charges for deviation to be levied in case of forced outage should be determined as a combinationof the rates of all the PPAs and the market discovered ratethrough exchange.

Torrent Power suggested there should not be any penalty to a seller for over injection beyond 2%. Since the proposed regulation has already provided for Zero recovery of

charges [as specified in subclause 8(1)(i)] for over injection by a general seller, such Zero charge itself is a sufficient deterrent for restricting any generator from over-injection.

Adani Power, Tata Power, MSPDC, Dhariwal Infrastructure, APP, Nabha Power, NTPC, NLCIL suggested that no penalty should be levied for variation on account of RGMO. Instead the generator should be compensated for over injection due to RGMO action. WBPDCL suggested to relax the norms up to 5% in both the directions due to RGMO action.

Mr. ShivamPuri suggested to pay the deviation charges upto 5 % of deviation which is bound to occur by virtue of governor action. POSOCO suggested that due to RGMO there will be deviation which under the draft Regulations would result in penalty to the generators.

Tata power also suggested that over injection penalty should be linked to the PPA of the plant.

BALCO suggested that charges for deviation should not belevied on generators for over injection when gridfrequency is below 50 Hz. Further, over- injection due toFGMO there should an incentive and not any penalty. NLCIL, MSPDCL also suggested not to penalise for deviation due to FGMO action. It was also suggested that the proposed provision (which provides only disincentive to the generators) is contrary to the ABT mechanism. Thus, the proposed bandwidth of 2% should be done away with.

MPPGCL suggested that considering metering errors and governor response the proposed deviation limit of 2% may be increased to 4%.

Indicating that due to high spot market prices, the impact of deviation would be much higher on the plants selling power under LTOA/ MTOA than on the plants selling power under market, Dhariwal Infrastructure suggested to cap the charges for deviation (both for over injection and under injection) at least for deviation upto 5%.

DNV GL Energy suggested that for non-dispatchable generators, both payable and receivables should have limits, up to which they are not penalised.

ERPC suggested that upto 12% over injection, charges for deviation should be zero and beyond this limit it may be kept at 10% of normal charges for deviations. EPRC also suggested that forced outage period due to Force Majeure events maybe excluded from the ambit of DSM penalty and the payment received by such generators during that period may be returned to Deviation and Ancillary Service Pool Account.

ERPC also suggested not to penalise generators for over injection when the grid frequency is low (49.80 Hz).

EAL (IIT-K) suggested to provide compensation to the generators at the normal rate of charges for deviation for over injection up to 2%.

Kreat Energy suggested that Deviation Percentage (%) should be gradually reduced after reviewing the performance for 1-2 years.
Jhabua Power, Adani, BALCO suggested that graded system with varying charges for deviation against each grade should be adopted with incentive for over injection.

MSPDCL also suggested that there should be multiple slabs applicable for deviation. Further, due to technical issues, which are quite frequent, the supply of gas by ONGC and others is not constant, which impacts the generation from gas units. Thus, the gas units should not be penalised for deviation in generation due to such variation in gas availability.

MB Power suggested to keep the deviation bandwidth at 10%. Further, in the event of simultaneous over-injection by a generating station and over drawl by a buyer, levy of deviation charges on both such generating station and buyer will result in unreasonable payment into the deviation charge pool account. Thus, till the maturity of the AS market certain incentives be allowed for the generators for over-injection in grid during low frequency and/or under-injection in grid during high frequency and these incentives may be phased out in a staggered manner.

MB Power also suggested that generators should not be penalized in case of deviation resulting from transmission line outage. Further, no deviation charges be levied on those generators who are not given Technical Minimum schedule by their beneficiaries, as in such case, the generator will have no option but toover inject for efficient operations of the generating station. It was also suggested that if the generating station/unit is under RSD, any import may be net off with subsequent export, and the generator should not be penalized for RSD auxiliaryconsumption in terms of deviation charges.

NTPC indicated that as per the laid down Procedures, the generator has an option to go for RSD whenever schedules are given below their technical minimum levels. But practically it is not possible as the stations are given low schedules only for a short period of time (few blocks) and the generator is expected to ramp up to higher schedules (many time full schedules) during other blocks. The station has to be kept on-bar to meet the peak demands. Thus, any deviations arising due to scheduling below Technical Minimum limits by beneficiaries need to be exempted for the purpose of DSM. It is submitted that while calculating the deviations in such cases, SG (Scheduled generation) should be taken as Technical Minimum for those blocks while calculating deviations.

NTPL suggested that blocks where the schedule ramp in preceding block was less than 0.5%/ min and for block where there is change in the direction of schedule ramp rate, the achievement of 50% ramping may be considered as no deviation.

NTPC also suggested that the generators which are under SCED have a varying schedule most of the time. These stations get the final schedule due to SCED optimization in just the last block before delivery block leaving them with no time to adjust themselves as per final schedule and to avoid deviation.

NHPC suggested to retain the provision of the existing Regulations pertaining to over injection by sellers. Further, calculation of deviation payable by the generators till 7^{th} or 8^{th} time block should also be retained as per the existing Regulations.

NTPL suggested that it is impossible to achieve scheduled generation and maintain AG/SG as 100% due to the intervention of NLDC under AGC scheduling under RLDC (i.e. RLDC scheduling in one direction and AGC scheduling in opposite direction), SCED scheduling, RRAS scheduling, and URS Power sales in RTM. Thus, for over- injection upto 2% generators should be paid at the previous month ECR. Further, under-injection upto 2% should be penalised at 100% of the normal rate of charges for deviation capped to previous month ECR and deviation beyond 2% should be penalised at 110% of normal rate of charges for deviation.

Sitapuram Power Limited stated that for generating stations below 50MW, the 2% deviation of over-injection is very low and requested to increase it to 10%.

Shree Cement suggested that the payment should be made to the generators based on normal rate of charges for deviation upto 2%. Penalty should not be imposed for over-injection beyond 2% of schedule as sometime it would not be in the hands of generators to operate below their technical minimum operation limit.

Analysis and Decisions

Several suggestions have been received to increase the deviation limit upto 4% or 5% or +/- 20 MW due to variation between SCADA and SEM values, due to reason attributed to error in meter readings of SCADA and SEM.

The Commission reiterates that the SCADA-SEM mismatch etc. are operational issues and must be resolved at the earliest by the concerned stakeholders. Grid security cannot be compromised on account of inactions on such issues. The Commission is of the view that any mismatch between the SCADA and SEM meter data must be resolved in an appropriate manner by coordinating with the entities responsible for maintaining such infrastructure. It is expected that all stakeholders shall maintain accuracy of both SCADA and SEM data in the interest of secure and reliable grid operation. The Commission based on discussion with the experts feels that the bandwidth of 2% provided by the commission would be sufficient to take care of the SCADA-SEM mismatch.

NHDC and NHPC indicated that action of Governors would respond upto 110% of

rated load on reduction in grid frequency. Many stakeholders suggested providing a bandwidth of 5% with payment for over injection within this bandwidth due to RGMO/ FGMO actions or no levy of charges for deviation on generator for over injection when gridfrequency is below 50 Hz. Some stakeholders suggested to provide a band width of 2% or 3% or 10% or +/- 20 MW, without penalty and with payment to generators for over injection within this band on account of technical challenges such as real-time coal quality (including wet coal during rainy seasons), periodical soot blowing and ambient parameter variation, mill changeover, etc. Some stakeholders suggested that over injection beyond 2% should not attract charges for deviation as no payment for over-injection is itself a sufficient penalty. NTPL suggested that it is impossible to maintain AG/SG as 100% due to the intervention of NLDC under AGC scheduling under RLDC (i.e. RLDC scheduling in one direction and AGC scheduling in opposite direction), SCED scheduling, RRAS scheduling, and URS Power sales in RTM. Thus, for over injection upto 2% generators should be paid at the previous month ECR. Further, under injection upto 2% should be penalised at 100% of the normal rate of charges for deviation capped to previous month ECR and deviation beyond 2% should be penalised at 110% of normal rate of charges for deviation.

It is important to note that the sellers (Other than those based on RoR, MSW and WS) have much better control over their generation. Therefore, they are expected to better manage their generation and stick to their schedule. However, there may be some deviation due to technical reasons beyond their control as made out by the generators, especially on account of FGMO/RGMO, primary response requirement, etc. Based on the suggestions of experts on the subject and comments of stakeholders the Commission has decided that no deviation charges shall be levied within band of +/- 2%. Further, within this band the generators would have to pay back to the Deviation and Ancillary service pool account for under injection or will get paid from the Pool Account, for over injection, as the case may be, based on the energy charge rate/reference charge rate as defined under these Regulations. This will not only address the technical constraints beyond the control of the generators but will also suitably compensate them for inadvertent over-injection.

Some stakeholders suggested to provide the facility of scheduled revision to short-

term generators in case of partial generation on account of technical abnormality, option for revision of schedule from two time blocks in case of forced outage, option of supplying power from other stations of the fleet in case of tripping of a unit, removal/ capping of penalty (Rs 3.034/ kWh/ 50% of normal rate/ combination of the rates of all the PPA and the market discover rate through exchange) in case of Unit tripping/ under injection in case of unit tripping till the time schedule is revised to zero.

The schedule revision to short-term generators is beyond the scope of present Regulations. Further, Unit tripping due to any reason is a forced outage condition and can be prevented with proper O&M/ R&M. Unit tripping would result in deployment of AS by the system operator which involves costwhich must be recovered from those causing deployment of such ancillary services. Pertinently, the generator is paid based on schedule despite Unit tripping until the schedule is revised. So, it's a trade off between DSM Charge and Energy Charge and the generator has to factor this in while maintaining the generating station. In fact, on the demand side the discoms also face vagaries of load variation but are not exempted from payment of DSM Charge due to such variation. As such, the suggestion of the generators for a special dispensation to take care of the Unit tripping cannot be agreed to.

Some stakeholders suggested to introduce graded system with varying charges for deviation. The Commission has noted the suggestion and has provided in the final regulations a graded framework of DSM charge to discourage over-injection or under-injection.

Some stakeholders suggested that high spot market prices make the impact of deviation more profound on the plants selling power under LTOA/ MTOA than on the plants selling power under market. It was also suggested by some stakeholders that the Gas units should not be penalised for deviation in generation due to variation in gas availability. The Commission is of the view that the price at which a generator sells power is a commercial choice of that generator. The commercial arrangements of the generators cannot be given precedence over grid security. It is for the generators to make arrangements to mitigate the challenges arising out of their contractual issues. DSM Charges are meant to act as deterrent and cannot be

compared with or pegged at the contract rate under all circumstances.

Some stakeholders suggested not to levy Charges for Deviation on over injection by generators who are not given Technical Minimum schedule by their beneficiaries. Further, it was also suggested that if the generating station/unit is under RSDthe generator should not be penalized, and any import may be net off with subsequent export. Some stakeholders suggested that while calculating the deviation in such cases, SG (Scheduled generation) should be taken as Technical Minimum for those blocks while calculating deviations.

The Commission has taken note of the issue. However, giving schedule or not is the contractual arrangement between the generator and the beneficiary which is outside the purview of the present Regulations. The contractual issues between the generator and the beneficiary cannot be a ground for allowing interference with grid instability. Further, the issue of netting of import with export will create a lot of undesirable accounting issues. The grid connected entities have the option of purchasing power from the Market or selling excess generation in the Market including RTM and AS Markets. They should use these platforms for managing their energy requirements rather than relying on the grid for meeting their needs.

7.2. For a general seller being an RoR generating station (Regulations 8 (1))

7.2.1. The Commission had proposed Charges for deviation in a time block by a general seller being an RoR generating station in the draft Regulations as under:

"Deviation by way of over injection

Zero

Deviation by way of under injection

(i) @ normal rate of charges for deviation up to 12% Deviation-general seller (in %);

(ii) @ 110% of the normal rate of charges for deviation beyond 12% Deviation-general seller (in %).@

Comments received

Tata Power suggested to either provide 48MW bandwidth for computation of deviation for RoR projects with schedule upto 400 MW due to dependence of such

plants on water flow, which may be uncontrollable or to provide such RoR generators the opportunity to correct their under injection position in RTM.

Abellon suggested that such generators should be paid for over injection above 2% also as the generation depends upon available discharge at real time and is beyond the control of the generators.

DNS Energy also suggested that as the over injection and under injection from hydro projects are due to various extraneous factors beyond the control of the generators, any over injection should be compensated and the charges for deviation for under injection should be capped at Rs 3/ kWh.

Greenko Group suggested that over injection upto 12% should be compensated at PPA rate/ contract rate and above 12% over injection the compensation should be 90% of the PPA/ contract rate.

DNS Energy suggested that all hydro projects should be treated as RE as the generation of hydro projects also depends on various extraneous factors (weather condition, generation pattern of upstream projects etc.) which are beyond the control of generators. Further, hydro projects have been classified as RE projects vid MoP notification 08.03.2019.

Abellon also suggested to remove the cap of 2% for over injection as the transmission losses vary due to loading by other participating entities and ambient conditions. FICCI suggested that the deviation limit of hydro plants should be the same as that of RE projects due to unpredictability of the water inflow in hydro projects.

NHPC suggested that such projects should be incentivised if over injection occurs due to increase in inflow as “Must Run” status has been provided by the CERC to such projects.

Analysis and Decisions

Some of the stakeholders suggested for the removal of 2% band for over-injection while others suggested for providing 12% band for the RoR projects as their

generation depends on various external factors. Highlighting the classification of hydro projects as RE vide MoP notification 08.03.2019, some of the stakeholders suggested to provide treatment of hydro projects as RE projects and to provide "Must Run" status to such hydro projects. Some of the stakeholders also suggested to cap under injection by hydro projects to Rs 3/ unit and for providing compensation to such projects for over injection.

Under the clause (d) of Issue 2 of the SOR for Central Electricity Regulatory Commission (Deviation Settlement and Related Matters) (Fifth Amendment) Regulations 2019, the Commission has clarified that the recognition of large hydro as Renewable by the Ministry of Power was for a specific purpose, including for purchase obligation by the obligated entities. The Ministry of Power's notification itself clarifies that large hydro projects would not be automatically eligible for various special dispensation available to the renewable projects. Further, the issue of Must Run status is beyond the scope of the DSM Regulations.

The Commission analysed the comments of the stakeholders in relation to the RoR projects and held discussion with the experts on the subject. Based on the analysis, the Commission has provided certain special dispensation, for instance a tolerance band of +/- 20%, to RoR projects with due consideration to the constrains of such projects.

7.3. For a general seller being a generating station based on municipal solid waste (Regulations 8 (1))

7.3.1. The Commission had proposed Charges for deviation in a time block by a generating station based on municipal solid waste as under:

"Deviation by way of over injection

Zero

Deviation by way of under injection

(i) Zero up to 20% Deviation-general seller (in %);

(ii) @ normal rate of charges for deviation beyond 20% Deviation-general seller (in %). limit."

Comments received

EAL (IIT-K) suggested to ensure that the charges for deviation for MSW based

projects in case of under-injection should not be zero.

Tata Power suggested refund of payment to the pool for the quantum of under-injection so as to avoid gaming.

Abellon suggested to allow the bandwidth to +/- 30% as has been suggested by CEA due to heterogenous nature of fuel and variation in the calorific value of the fuel.

Mr Asit Singh suggested to provide payments for over injection upto 20% from schedule.

CEA suggested that the deviation limit for levying zero deviation charge may be kept as 30% instead of 20% for an MSW project. Further, the same exemption should be extended to all types of Waste to Energy (WTE) Plants.

Analysis and Decisions

EAL (IIT-K) suggested that the charges for deviation for MSW based project in case of under-injection should not be zero while Tata Power suggested refund of payment to the pool for the quantum of under injected energy so as to avoid gaming. On the other hand, CEA, Mr Asit Singh and Abellon suggested to allow the exemption band up to +/- 30%.

The Commission has examined the suggestions and is of the view that the generation from MSW generators is more uncertain than conventional generators due to heterogeneous nature of the fuel and other factors. Further, MSW projects contribute to environment protection by gainfully disposing the wastes. Hence such projects deserve special dispensation. However, grid stability is the responsibility of all the constituents of the grid. As such, the exemption band of +/- 20% as proposed in the draft Regulations has been retained in the final Regulations. But suitable provision has been made in the final Regulations to provide for pay in / pay out for under-injection / over-injection from MSW projects.

7.4. For WS seller (Regulations 8 (1))

7.4.1. The Commission had proposed Charges for deviation in a time block payable

by a WS seller as under:

"Deviation by way of over injection

Zero

Deviation by way of under injection

(i) Zero up to 10% Deviation-WS seller (in %);

(ii) @ 10% of the normal rate of charges for deviation beyond 10% Deviation-WS seller (in %):

Provided that such seller shall pay back to the Deviation and Ancillary Service Pool Account for the total shortfall in energy against its schedule in any time block due to under injection, (a) at the contract rate at which it has been paid based on schedule, or (b) in the absence of a contract rate at the rate of the Area Clearing Price of the Day Ahead Market for the respective time block."

Comments received

EAL (IIT-K) suggested to ensure uniformity in charges of deviation between general sellers and RE based sellers. FICCI suggested to provide deviation limit of +/-15% to wind projects as the predictability of wind power is less than solar.

Tata Power suggested to pay the generators from the pool for over injected quantity of energy if they are mandated to return payment for the quantum of under injection.

Adani Power suggested that no payment for over injection would attract WS sellers to always over-schedule their power irrespective of DSM charge levied on them if the highest discovered weighted average ancillary service charge of ACP is less than PPA/contract rate and vice versa. Hence, over injection should be paid for. APP suggested to retain the provisions of the DSM Regulations 2014 for over injection and under-injection.

APRAAV Energy suggested to keep the existing band of +/- 15% as the deviation error within this band is accurate for about 85% to 90% of instances. However, if this band is reduced to 10% then the accuracy of deviation error would fall to about 60% thereby increasing the resultant penalties from currently 10%-15% (approx.) of instances to about 40% of instances. APP suggested to consider revision of the

bandwidth to 12% which help solar/wind generators to quickly adopt to this change without paying excessive penalty.

APRAAV Energy also suggested to provide payments to the generators for over injection as non-payment for overinjection would be akin to forced clipping of RE generation which will be a violation of must run status granted under Regulation 5.2 of the Indian Electricity Grid Code, 2010 ('IEGC).

APRAAV also suggested the aggregation of WS forecasting and DSM mechanism at State/Regional level to iron out the vast RE resource variations between various RE projects.

Azure Power, FICCI suggested that the proposed DSM regulation would lead to penalty on overall revenue increasing from 0.5 - 0.6% to 4 - 4.5% considering Zero payment in case of over injection from schedule.

WIPPA, APP suggested that the impact of the proposed Regulation on the Top Line of the three wind sites it conducted study on will be from 5% to 7%.

BASK Research Foundation suggested to revisit the 10% exemption band and to bring it at par with global standards.

Hero Future Group suggested that at least +/-15% deviation limit be allowed for both Solar & Wind technologies till technological breakthrough is achieved for 100% forecasting for wind and solar sources of generation.

India Grid Trust, Mahindra susten, NTPC suggested to retain the 15% band for WS sellers. India Grid Trust, Mahindra susten further suggested that the generators should be paid for over injection at least upto a certain limit so that net tariff for Solar generators becomes revenueneutral.

NTPC suggested that over-injection and under- injection upto 15% band should be compensated at the contract rate and in the absence of contract rate at the ACP of DAM for that particular time block.

Enel Green Power suggested to compensate for over injection at Re 1.0/ kW h and the charges for deviation for under-injection beyond 10% should be 10% of the PPA rate/ Contract rate because the DAM rate for the months of August, September, and October hovered around Rs 5/ unit.

Greenko Group suggested that over-injection upto 12% should be compensated at PPA rate/ contract rate and above 12% over injection the compensation should be 90% of the PPA/ contract rate.

Kreat Energy indicated that studies conducted by their Team found that the error due to Weather forecast even from best weather forecasting organization has been in the range of 10%-12% for Solar and 13%-15% for wind. Even by deploying AI based algorithm for power module, the accuracy is still not achievable at the level of 95% for all the time blocks.

EAL (IIT-K) suggested that payment on the basis of scheduled energy for RE projects with relaxed deviation limits and limited penalty for deviation, provides ample incentive to generators to over schedule.

FICCI suggested to tighten the current band to get more discipline in the system, and for better grid stability and reliability but suggested to allow deviation band on both sides.

Hero Future Group, IWPA (Northern Region) suggested that WS generators should be allowed to buy/sell power from spot markets on real time basis to square up their position and avoid penalty on deviation.

IWPA (Norther Region) suggested that the deviation band should be increased to +/- 20% on both sides without any deviation charge. Further, for over injection generators should be compensated as per the existing regulations.

Manikaran Analytics suggested that no payment for over-injection would demotivate the WS sellers who have been accorded must run status and thus will motivate the generators to opt for over scheduling. Further, as under the Ancillary Service

Regulations 2015, the WS generators are exempted from participating as AS provider due to ramping constraints, the WS generators are left with no option for availing benefits for over injection. It was also submitted that implementation of the proposed Regulations would impact the revenue of the WS generators by upto 11.5% per annum.

Manikaran Analytics also suggested to retain the 15% band presently provided to WS sellers or at best be reduced by 1% or 2%.

PXIL suggested that with the introduction of Integrated DAM the Area Clearing Price of Renewable segment for that time block should be utilised for computing deviation charge for that time block for WS sellers.

Prayas suggested to remove incentive to over-schedule and under-inject for Wind and Solar generators by either tightening the under-injection error band (upto 8%) or providing a graded payment for over-injection like 50-75% of the fixed rate upto 10/15% over-injection and zero payment for >10/15% over-injection. Further, in the absence of a contract rate (for OA/CPP sellers), the payment into the pool by wind-solar generators for under-injection could be at the Green DAM ACP.

Mytra suggested that at one hand the Commission is proposing to reduce the deviation band from 15% to 10% for WS generators and on the other hand the real time revisions are limited to 16 per day. Thus, the Commission should waive off the restriction of number of revisions for WS generators so that they may adhere to the schedules.

IEX suggested that the process of attributing the deviation to different market segments and ascertaining the prices for different segments for calculation of the DSM Charges may be clarified as a RE Generator may be participating in different market segments (GDAM, DAM, GTAM and TAM) which may lead to discovery of different prices for different time blocks based on the nature of the product.

Some of the stakeholders (FICCI, WIPPA, Azure Power) suggested to link the charges for deviation of RE project to the their PPA tariff as it will place all the

projects at the same position when it comes to penalty.

Apraava Power indicated that with the linking of the deviation charge rate with the Market rate for RE power, the impact will be more profound on the RE generators selling power under PPA mode than on generators selling power in Market due to the difference in their per unit revenue.

Torrent Power suggested that under-injection quantum of WS generation may be paid to the pool at (a) 80% of normal rate of charges for deviation or (b) the weighted average PPA rate without additional penalty else pool should also pay at contract rate for additional energy injected in case of over-injection.

Vector Green Energy Pvt. Ltd. suggested that the WS seller should receive payment from the Deviation and Ancillary Service Pool Account for the total excess energy against its schedule in any time block due to over injection.

WIPPA suggested that graded system with varying charges for deviation against each grade should be adopted with incentive for over injection.

Analysis and Decisions

The Commission has analysed the submission of the stakeholders. Several stakeholders have suggested that the existing exemption band of +/-15 %should be retained for the WS sellers. The Commission is of the view that implementation of the framework of forecasting, scheduling and Deviation settlement for wind and solar generation sources and the aggregation of wind/solar projects at the pooling station level have helped reduce the forecasting error over the period. This justifies reduction of the exemption band to +/- 10%.

As regards the suggestion of applicability of the reduced exemption band to the new projects only and continuation of the existing band of +/- 15% for the existing projects for their project viability, the Commission would like to reiterate that DSM is not a trading platform nor is it a mechanism that guarantees fixed revenue for any project. DSM is a deterrent mechanism and as such basing project viability on revenue from DSM cannot be considered a sound business decision. It’s a common

knowledge that Regulations are subject to change periodically and it is expected that the project developers duly factor in these realities while conceptualising a project. Further, the forecasting techniques have been improving and aggregation of pooling stations is also becoming a norm. The benefits of these developments are equally available to the existing projects as well. As such, the Commission is not inclined to consider the suggestion of continuing with the exemption band of +/- 15% for the existing WS sellers while applying the reduced exemption band only for the new projects.

It would also be pertinent to mention in this context that a special dispensation has already been provided to the WS sellers in the formula for computation of deviation. As explained earlier, this method of deviation calculation already gives a lot of relief to the WS sellers. Another comfort extended to the WS sellers in the final Regulations is the provision for payment to such sellers in the event of over-injection. The Commission feels these provisions adequately balance the interests of the WS sellers as well asthe host States, who have to manage the variability caused by such sellers. At the same time, this addresses the requirement of secure and stable grid operation.

8. Charges for Deviations

8.1. Buyer (other than the buyer with schedule less than 400 MW and the RE-rich State) (Regulations 8 (2))

The Commission proposed the Charges for deviation in a time block payable by a buyer (other than the buyer with schedule less than 400 MW and the RE-rich State) as under:

"Deviation by way of under drawal

Zero

Deviation by way of over drawal

(i) @ normal rate of charges for deviation up to 12% Deviation-buyer (in %) or 150 MW Deviation-buyer (in MWh) in a time block, whichever is lower;

(ii) @110% of normal rate of charges for deviation beyond the above limit."

Comments received

Tata Power suggested to compensate the buyer for the quantum of underdrawal energy either at weighted average AS charges or cost of procurement of power.

BRPL suggested to cap for the under drawal to12% just like cap on over drawal.
DVC informed that it is catering to many open access consumers like Indian Railways and JBVNL, which are of national importance and emergency load, which cannot be curtailed even if the over drawl is beyond permissible limits. Under the proposed DSM Regulations, these open access consumers have the liberty to overdraw power at a nominal cost i.e. 110% of normal charge of deviation which is much below the average cost of DVC pooled power. Thus, the charges of deviation, for these open access consumers, beyond 12% deviation should be 110% of Average Cost of Supply of the OpenAccess provider or ACP whichever is higher.

For the Discoms participating in AS market as service providers, during SRAS down, the Discoms would be over drawing, which will attract over drawal penalty. HPPC suggested to provide clarity on the applicable charges of deviation for the Discoms under such situations.

MSEDCL suggested that non-compensation to discoms for under drawal will encourage them to stay in over drawal mode, endangering the grid security. Further, Ancillary services may not be sufficient to support the requirement of grid. Hence, the under drawing discoms upto given limit, should also receive payment may be with reduced rate and this will also help to stabilize the grid.

MSEDCL suggested that high demand fluctuations due to seasonal variation may necessitate under drawal of power. Hence, deviation within a certain limit needs to be allowed for under drawal also.

UPPCL suggested that under drawl by a utility when supporting the grid should be considered as Ancillary Service and the drawee entity should be paid in case of under drawl from the pool. UPPCL also suggested for relaxation for States having scheduling more than 5000 MW. This is because such states have to deal with various variables.

WBSEDCL suggested to shorten the time between RTM auction and delivery of power from one hour to half hour immediately.

Analysis and Decisions

Most of the stakeholders suggested for compensation for underdrawal on various grounds including, treatment of under drawal while supporting the grid, maintaining parity between under drawl and over drawal, demand fluctuation due to seasonal variation. They also argued that non-compensation for under drawal encourages buyers to stay in over drawal mode endangering the grid security. BRPL suggested to provide a cap of 12% in under drawal in line with over drawal.

MSEDCL suggested for compensation to drawing discomsupto given limit at a reduced rate while Tata Power suggested compensation for under drawal either at weighted average AS charges or cost of procurement of power. DVC suggested to raise the Charges for Deviation for the deviation caused by the entities of national importance (Indian Railways and JBVNL) which over draw from the DVC grid and urged linking the Charges for Deviation for such open access entities with higher of Average Cost of Supply of the Open Access provider or ACP.

WBSEDCL suggested to shorten the time between RTM auction and delivery of power from one hour to half hour. UPPCL also suggested for relaxation for states having schedule of more than 5000 MW.

The Commission has studied the submission of the stakeholders. Based on the suggestions of the stakeholders and discussion held with experts on the subject, the Commission has decided to provide a band of 10% for over drawal and under injection with specified pay in and pay out for such buying entities. However, the Commission has decided to increase the charges for over drawal beyond 10% in a graded manner, so as to infuse greater discipline amongst the drawee entities. It is expected that the DSM Charges so designed would encourage the drawee entities to invest more in scientific load forecasting techniques to ensure lesser deviation.

Further, the suggestion of the stakeholder to shorten the time between RTM auction and delivery of power from one hour to half hour is beyond the scope of these Regulations.

8.2. Buyer (being an RE Rich State) (Regulations 8 (2))

The Commission had proposed Charges for deviation in a time block payable by a buyer being an RE Rich State as under:

"Deviation by way of under drawal

Zero

Deviation by way of over drawal

(i) @ normal rate of charges for deviation up to 12% Deviation-buyer (in %) or 250 MW Deviation-buyer (in MWh) in a time block, whichever is lower;

(ii) @110% of normal rate of charges for deviation beyond the above limit."

Comments received

EAL (IIT-K) suggested that as most of the larger states may qualify as RE rich state, relevance of additional deviation limit for RE rich states would then no longer exist, and would need to be re-evaluated. Further, higher deviation limit would continue to dissuade investment in demand side management and economical energy storage

FIICI suggested to allow 15% deviation for under drawal by buyers as some discoms curtail RE when it comes to deciding between underdrawl and curtailing State gird connected RE projects.

Citing the situation of Gujarat which already has an installed capacity of 14,000 MW in the state, GUVNL suggested that states should be exempted from DSM charges to the extent of over drawal by the State on account of deviation by RE Sources. Alternatively, the applicable DSM charges should be made in line with the DSM charges applicable to RE generators for the deviation, to the extent of deviation made by RE generators from their schedule.

GUVNL also suggested that during the scenarios of heavy drawal by the State (when buy bid is 3 to 4 times the sell bids), the existing DSM Regulations may be made applicable for over drawal.

IWPA suggested to provide a deviation limit of 250 MW for both under and over drawal for "RE rich states" (with RE installed capacity between 1000 MW and 10,000MW) and a deviation limit of 500 MW for "RE Super rich states" (withan

installed capacity above 10,000 MW) in the absence of such limits the SLDCs will start curtailing the REpower, as experienced in the past.

Kreat energy suggested to enhance the deviation limit for buyer to 500 MW as the sudden cloud effect causes zigzag pattern in solar generation with variation of more than 400 MW, affecting the load pattern of RE rich states like Gujarat, Karnataka, Rajasthan, etc.

MSEDCL highlighted that due to high penetration of RE energy, the deviation limit provided for the state should be increased to 500 MW from the existing level of 250 MW.

SLDC Gujarat suggested that the limit for deviation for RE rich State having combined RE (Wind + Solar) capacity more than 10000 MW should be enhanced to ± 500 MW

Analysis and Decisions

Most of the stakeholders suggested to increase the deviation limit of buyer to 500 MW due to higher penetration of RE energy and the associated uncertainty in RE generation. FICCI suggested allowing 15% of deviation for under drawal by buyers as some discoms curtail RE more to avoid under drawal. GUVNL suggested linking over drawal by the State with deviation in RE generation. GUVNL also suggested to implement the proposed DSM Regulations only under the scenarios of heavy drawal by the state i.e. when buy bid is 3 to 4 times the sell bids.

The Commission has studied the submissions of the stakeholders and is of the view that with reduction in the exemption band of deviation for WS sellers from the prevailing 15% to 10% and as a result of other measures towards grid integration of RE taken by the Commission, the deviation from RE generation is going to decrease substantially in future. Further, with the deployment of improved forecasting techniques and tools the Discoms would be able to make better forecast of their schedule. The deployment of improved forecasting tools by the buyers is also important so as to provide necessary support to the System Operator in managing the grid.

In view of the suggestions of the stakeholders, the Commission has reviewed the tolerance band for RE rich States and introduced in the final Regulations the provision of compensation for under drawalin a graded manner. However, to discourage deviations, the Commission has also decided to provide differentiated but higher rate of Charges for Deviation for over drawal. The Commission believes that this approach will balance the interests of the RE rich States as well RE generators while at the same time ensuring grid security.

9. Deviation Charges for infirm power

9.1. The Commission proposed the charges for deviation for injection of infirm power in Regulation 8 (3) (a) of the draft Regulations as under:

"The charges for deviation for injection of infirm power shall be zero."

Comments received

Adani Power, BALCO, APP suggested to retain the provisions of the DSM Regulations 2014 w.r.t. the infirm power.

EAL (IIT-K) suggested that the duration of injection of infirm power be limited to two weeks in the case of RE and up to two months for thermal and hydro generating stations.

Greenko Group suggested to provide compensation for infirm injection at the PPA/ contract rate but to limit the duration for such benefit to the generator to 60 days prior to COD.

Greenko Group, NHDC, NHPC suggested that higher revenuerealization and the excess recovery thereof would be accounted for reduction in the capital cost of the project. Thus, the existing provision pertaining to this section should be retained.

Kreat Energy suggested that the charges for deviation for infirm Power drawl to run the unit should be capped.

NTPC indicated that no payment of infirm power before commissioning would lead to capitalization of the entire fuel cost used during commissioning activities, thereby

pushing up the total capital cost of a project and increase the AFC burdenon the beneficiary states. For an 800 MW plant impact on Normative FC could be around 6-8 Paise/Unit. Thus, the payment should be made for the infirm power injected into the grid from the Deviation and Ancillary Service Pool Account.

UPRVUNL suggested that charges for deviation for injection of infirm power should be equal to charges for deviation for drawl of start-up power before COD.

Analysis and Decisions

Some of the stakeholders (Adani Power, BALCO, APP) suggested to retain the provisions of the DSM Regulations 2014 w.r.t. the infirm power, while others suggested to reduce the duration of injection of infirm power. Some of the stakeholders suggested to compensate infirm injection at the PPA/ contract rate or should be made equal to charges for deviation for drawl of start-up power before COD. while others suggested capping the rate of compensation. NTPC suggested that in the absence of compensation for infirm power, the entire fuel cost would be capitalised during commissioning activities, thereby pushing up the total capacity cost of a project and increase the AFC burden on the beneficiary States.

The Commission would like to emphasise that going forward, every grid connected entity is mandated to adhere to schedule. In such a scenario, injection of infirm power without corresponding buyer will lead to imbalance in the system. The basic message is that the generators should make necessary arrangements for scheduled transaction of their infirm power. The Commission is of the view that sufficient avenues are available for the generators to sell their infirm power in the market. Hence, the generators should explore those options rather than using grid as a market for injection and obtaining compensation. The revenue generated from the scheduled transaction of infirm power can be used to mitigate the burden of the beneficiaries of the generating station. As regards the duration for which infirm power can be injected, the Commission would like to clarify that this aspect is beyond the scope of the DSM Regulations.

10. Deviation Charges for start-up power

10.1. The Commission had proposed the charges for deviation for drawal of start-up power before COD of a generating unit or for drawal of power to run the auxiliaries during shut-down of a generating station, in Regulations 8 (3) (b) of the draft Regulations as under:

"The charges for deviation for drawal of start-up power before COD of a generating unit or for drawal of power to run the auxiliaries during shut-down of a generating station shall be payable at the normal rate of charges for deviation."

Comments received

Mahindra Susten suggested that start-up power for auxiliaries especially for solar may be charged at 90% of the contractrate because RE power especially solar technologies usually do not generate during night time when the requirement for start-up power/auxiliaries is required. So effectively schedule will always be zero which is inherent nature of technology. Thus, as a measure of equity and technology constraint, such charges may be linked to contract rate.

UPRVUNL suggested that the charges for deviation for drawal of start-up power before COD of a generating unit or for drawal of power to run the auxiliaries during shut-down of a generating station should be payable at the rate of energy charges or @ 40% of the normal rate of charges for deviation.

Tata Power suggested that for WS seller, charges for start-up power and drawal of power to run the auxiliaries during shutdown of a generating station should be payable at the PPA Tariff. O2 Power suggested that any consumption when WS seller is in consumer mode should be payable by the seller at the contract rate of Charges for Deviations.

BALCO suggested that the charges for deviation for start-up power should be exempted or capped at the same level as per the existing mechanism.

JITPL pointed out that any penalty applicable on deviation related to start up power should be at a reasonable rate to avoid unnecessary burden on the generator under such special cases.

Kreat Energy suggested that the charges for deviation for start-up power drawl to run the unit should be capped.

MPPKVVCL suggested that generators may act as consumers when they require power for synchronisation purpose and for auxiliary consumptions during shut down. The supply and distribution of electricity to cater to the need of consumer is a regulated activity under the preview of State Commission. Accordingly, such power should not be charged under DSM but as per the Tariff Order issued by the respective Commissions. Thus, this section should be omitted from the proposed Regulations.

MPPGCL suggested that in the absence of provision for the generator to submit requisition for drawl of power (negative declaration) and for MP SLDC to schedule this drawl of power, the drawal of power by such unit should not be governed by the DSM Regulations. Accordingly, MPPGCL suggested that during normal operating conditions (since the frequency binding on seller and buyer are withdrawn in these draft Regulations), the treatment/ settlement/ adjustment for energy drawl by such generating station to meet its plant consumption undershutdown, be done by netting off the energy drawn by such generating station on monthly /annual basis with energy generated by that generating station and supplied to the contracteddistribution licensee.

NTPL suggested that the charges for deviation should be capped to previous month's ECR.

Analysis and Decisions

Some of the stakeholders suggested that Charges for Deviation for drawal of start-up power to be 50% of the contract rate while others suggested that start up power and auxiliaries for solar plants be charged at 90% of the contract rate especially for consumption by solar plants at night. It has also been suggested by some stakeholders to link the charges for deviation for start-up power and auxiliary by solar plants with their PPA rate. NTPL suggested capping the charges for deviation to previous month's ECR.

JITPL suggested that proper mechanism should be developed and communicated to RLDC/ SLDCs to ensure that approval/ permission for procurement of start-up power

is provided in a time bond way. MPPKVVCL suggested that the present provision should be deleted from the proposed Regulations as the consumption of power by generators being in consumer mode should be as per the Tariff Order issued by the respective state. MPPGCL suggested the treatment/ settlement/ adjustment for energy drawl by such generating station be done by netting off the energy drawn by such generating station on monthly/ annual basis with energy generated by that generating station and supplied by the contracted distribution licensee.

The Commission is of the view that the drawal of start-up power from the grid without schedule is not desirable. Drawal of (start-up or auxiliary) power from the grid without schedule would lead to system imbalances in the absence of corresponding level of generation in the system. The Commission is of the view that the generators have sufficient avenues of procuring power to meet their requirement of start-up power and auxiliary power including that during the night hours and they should explore these avenues to ensure scheduled transaction without affecting the grid. If they fail to do so, they would be subjected to deviation charge at the normal rate of charges for deviation.

11. Charges for inter-regional deviation and deviation in respect of cross-border transactions

11.1. The Commission had proposed the charges for inter-regional deviation and for deviation in respect of cross-border transactions, in Regulations 8 (4) as under:

"The charges for inter-regional deviation and for deviation in respect of cross-border transactions, caused by way of over-drawal or under-injection shall be payable at the normal rate of charges for deviation."

Comments received

WBSEDCL sought clarity regarding the treatment of deviation of cross border sources with respect to the schedule at Indian boundary declared by Bhutan NLDC.

Statkraft suggested that there should be seamless applicability of the deviation charges as more distinctions may lead to more distractions or complications as our power system is complex.

Analysis and Decisions

The Commission feels the provision is amply clear and adequate. Further detailing in regard to scheduling and accounting for deviation shall be stipulated by the NLDC/RLDC/RPC in the accounting procedure.

12. Accounting for Charges for Deviation and Ancillary Service Pool Account

12.1. Regulation 9(1)

Commission's Proposal

(1) By every Thursday, the Regional Load Despatch Centres shall provide the data for deviation calculated as per Regulation 6 of these regulations, for the previous week ending on Sunday mid-night to the Secretariat of the respective Regional Power Committees.

Comments received

SRPC suggested to modify the clause as indicated below:

"(1) By every Thursday, the Regional Load Despatch Centers shall provide the implemented schedules of concerned regional entities and the actual net injection / drawal of concerned regional entities, blockwise, based on the Interface Energy Meter (IEM) readings along with the processed data of meters for the previous week ending on Sunday mid-night to the Secretariat of the respective Regional Power Committees."

ERPC suggested that this may be modified as below:

"(1) By every Thursday, the Regional Load Despatch Centres / National Load Despatch Centres shall provide the data for deviation calculated as per Regulation 6 of these regulations, for the previous week ending on Sunday mid-night to the Secretariat of the respective Regional Power Committees."

ERPC suggested that NLDC being the Nodal Agency for the implementation of the Ancillary Service Regulations 2021 and for management of SRAS data, it may be included in the regulatory provision for SRAS data sharing with RPCs for timely computing DSM Accounts by RPC secretariat.

ERPC commented that an additional clause 9 (8) on the real time SCADA drawl data may be added.

Analysis and Decisions

The Commission is of the view that the provision is adequate. Further detailing can be worked by the NLDC/RLDC/RPC and suitably provided in the accounting procedure.

12.2. Regulation 9(2)

Commission's Proposal

(2) After receiving the data for deviation from the Regional Load Despatch Centre, the Secretariat of the Regional Power Committee shall prepare and issue the statement of charges for deviation prepared for the previous week, to all regional entities by ensuing Tuesday:

Provided that transaction-wise DSM accounting for intra-State entities shall not be carried out at the regional level.

Comments received

SRPC suggested that the clause may be modified as below:

"(2) After receiving the data for deviation from the Regional Load Despatch Centre, the Secretariat of the Regional Power Committee shall prepare and issue the statement of charges for deviation prepared for the previous week, to all regional entities by ensuing Tuesday."

Analysis and Decisions

The Commission is of the view that the provision is adequate. Further detailing can be worked by the NLDC/ RLDC/ RPC and suitably provided in the accounting procedure.

12.3. Regulation 9(3)

Commission's Proposal

(3) Separate books of accounts shall be maintained for the principal component and interest component of charges for deviation by the Secretariat of the Regional Power Committees.

Comments received

WRPC suggested that since the collection and disbursal of the charges of deviations is done by RLDCs, the responsibility of separate books of accounts for the principal component and interest component of charges for deviation be maintained by RLDCs. Further, WRPC suggested that these accounts shall be made available to all the regional entities on the web site of RLDCs and the information shall also be put up in the appropriate sub Committees/ Committee of RPCs.

Analysis and Decisions

The Commission is of the view that the provision is adequate. Further detailing including in terms of maintenance of books of accounts can be worked by the NLDC/ RLDC/ RPC and suitably provided in the accounting procedure.

12.4. Regulation 9(5)

Commission's Proposal

"(5) The Deviation and Ancillary Service Pool Account shall receive credit for:

(a) payments on account of charges for deviation referred to in Regulation 8 of these regulations:

……"

Comments received

SRPC suggested that the clause may be modified as below:

"(5) The Deviation and Ancillary Service Pool Account shall receive credit for:

(a) payments on account of charges for deviation referred to in Regulation 8 of these regulations along with the late payment surcharge, if any."

SRPC also suggested that interest amount due to late payment surcharge @0.04%/day should also be credited to the Pool account.

Analysis and Decisions

The Commission has noted the suggestion of SRPC regarding late payment surcharge and suitably modified the provision in the final Regulations.

12.5. Regulation 9(7)

Commission's Proposal

(7) In case of deficit in the Deviation and Ancillary Service Pool Account of a region, surplus amount available in the Deviation and Ancillary Service Pool Accounts of other regions shall be used for settlement of payment under clause (6) of this Regulation:

Provided that in case the surplus amount in the Deviation and Ancillary Service Pool Accounts of all other regions is not sufficient to meet such deficit, the balance amount shall be recovered through the RLDC Fees and Charges.

Comments received

GUVNL suggested that it would not be prudent to recover the deficit in Deviation and Ancillary Service Pool Account from DISCOMs as such deviation/ deficit may not be attributable to DISCOMs.

Tata Power suggested that instead of recovering the deficit amount through RLDC Fees and Charges, the same may be recovered from the entity which has caused the Ancillary Services to be dispatched as the recovery of such deficit from RLDC Fees and Charges would unfairly burden the non-defaulting entities too. Instead, the causer pay principal should be followed.

It was also suggested to add new Clause below Clause 9 (7)

"*The surplus amount, if any in the Deviation and Ancillary Service Pool Accounts as on last day of the month, shall be transferred to "Power Systems Development Fund" specified by the Commission in the first week of the next month and shall be utilized, for the purpose specified by the Commission."*

Tamil Nadu Transmission Corporation Ltd and Transmission Corporation of Telengana Limited suggested that Deviation and Ancillary Service Pool Account should be maintained only at regional level. Interlinking with other region and RLDC Fees and charges should not be done as this will discourage the disciplined and well planned region.

WBSEDCL and RPG Power Trading Company Ltd inquired about the treatment of surplus fund available in the Deviation and Ancillary Service Pool Account after settlement of payments. SLDC (Odissa) suggested that the surplus in the Pool Account should be disbursed between entities on weekly basis for specified reasons.

Adani Power highlighted that the draft regulation is silent on monthly billing mechanism/ payment flow and its adjustment toward DSM and suggested to lay down strict guidelines on payment defaulters.

Analysis and Decisions

The Commission has examined the comments of the stakeholders and would like to reiterate that the surplus if any accumulated in any regional DSM pool cannot be viewed as money available to the participants in the concerned region. DSM is a deterrent mechanism and the charges paid by the grid connected entities are for violation of grid discipline and such entities cannot have any claim over surplus if any created in the DSM pool. Further, the provision of usage of surplus in one region to make good the deficit in another region is as per the present practice. The provision of the net deficit to be charged to the RLDC fees and charges is premised on the fact that there could be situations when the ancillary services have to be paid for despite having no deviation, for instance, payment of commitment charges for holding the AS capacity etc. As these charges to be paid for maintaining grid security, it is appropriate to socialise these costs through RLDC fees and charges. Therefore, the Commission does not find any reason for change in this clause.

13. Schedule of Payment of charges for deviation

13.1. Regulation 10(1)

Commission's Proposal

(1) The payment of charges for deviation shall have a high priority and the concerned regional entity shall pay the due amounts within 7 (seven) days of the issue of statement of charges for deviation by the Regional Power Committee, failing which late payment surcharge @0.04% shall be payable for each day of delay.

Comments received

Some stakeholders commented that the time period allowed for the payment of

deviation charges should be 12 days as per the existing Regulations or 7 days (excluding public holidays) or 10 days or 14 days or 30 days with incentive of 1.5% for making payment within 5 days/ 1% for making payment after 5 days or 45 days with rebate 1.5% to 2% for making payment within one week.

Tata Power suggested that rate of late payment surcharge may be linked to SBI MCLR, while KPTCL suggested late payment surcharge should be fixed at @0.02%.

Analysis and Decisions

Regarding rate of late payment surcharge, the Commission is of the view that there is no need for any change in this regard and hence the provision as proposed in the draft Regulations has been retained.

13.2. Regulation 10(2)

Commission's Proposal

(2) Any regional entity which at any time during the previous financial year fails to make payment of charges for deviation within the time specified in these regulations, shall be required to open a Letter of Credit (LC) equal to 110% of their average payable weekly liability for deviations in the previous financial year in favour of the concerned Regional Load Despatch Centre within a fortnight from the start of the current financial year.

Comments received

POSOCO suggested that the extant DSM regulation allows a deviation volume limit of 12% for overdrawing buyers. Accordingly, the new regional entity buyers may be advised to open Letter of Credit (LC)/ Bank Guarantee (BG) equivalent to the energy charge corresponding to for 12% of their contacted capacity/ installed capacity. Further, the LCs must be made unconditional, revolving and irrevocable so that RLDCs can encash them whenever the default continues beyond a defined period in case of default in payment of weekly DSM charges by such entities.

Adani Power suggested that if any regional entity fails to make payment of Charges for Deviation including Additional Charges for Deviation by the time specified in these regulations during the current fiscal year, it should be required to open anLC

equal to 110% of weekly outstanding liability in favour of RLDC within a fortnight from the due date of payment.

SLDC (Gujarat) suggested that LC should be equal to 200% of their average payable weekly liability for deviations in the previous financial year because the LC amount may not be sufficient in case of continuous default to make payment of charges for deviation within the time specified in these regulations.

Analysis and Decisions

The Commission is of the view that the provision is adequate and takes care of the deterrence sought to be enforced in payment of DSM charges by the entities liable to pay such charges. Hence, no change is warranted in this clause.

13.3. Regulation 10(3)

Commission's Proposal

(3) In case of failure to pay into the Deviation and Ancillary Service Pool Account within 7 (seven) days from the date of issue of statement of charges for deviation, the Regional Load Despatch Centre shall be entitled to encash the LC of the concerned regional entity to the extent of the default and the concerned regional entity shall recoup the LC amount within 3 days.

Comments received

SLDC (Gujarat) suggested to continue the Regulation 10 (5) of (Deviation Settlement Mechanism and related matters) Regulations, 2014 w.r.t. proposed 10 (3) regulation.

Analysis and Decisions

The Commission is of the view that the provision is adequate and takes care of the deterrence sought to be enforced in payment of DSM charges by the entities liable to pay such charges. Hence, no change is warranted in this clause.

13.4. Other suggestions

There were some suggestions from the stakeholders which were not specific to any Regulationof the Draft Regulations. However, the Commission has studied these comments also and has provided its analysis and Decisions on the same.

1) Suggestion 1:

Tata Power suggested to:

a. allow Discoms to be DR providers and to compensate the Discoms for this service at AS charges.
b. reduce the timelines for real time market, so that entities may trade and correct their positions at real time.
c. SERCs may also be asked to notify Deviation Settlement Regulations which are consistent with the CERC DSM Regulations and CERC Ancillary Service Regulations.
d. the Hon'ble Commission may also notify Regulations related to creation of Spinning Reserves in the system.
e. right to withhold the payment in case of dispute.

Analysis and Decision

The Commission is of the view that these suggestions are beyond the scope of the DSM Regulations.

2) Suggestion 2:

Tata Power suggested that energy supplied by from RE generators eligible for RPO/ HPO under SRAS-Up and TRAS-Up, should get accounted for RPO & HPO of the concerned DISCOM which is overdrawing the power.

Analysis and Decision

The Commission is of the view that these suggestions are beyond the scope of the DSM Regulations.

3) Suggestion 3:

Mr Asit Singh suggested that till the Intra-state SRAS/TRAS is implemented in the States, differential/controlled/regulated payment for over injection/ under drawl can be considered with strict volume limits to avail the reserves from states/ sellers for which they have margins and to avoid the inherent deficit Load Generation Balance.

Analysis and Decision

The Commission would like to reiterate that DSM mechanism cannot be used to meet the reserves requirement. The Commission has already detailed out the road map for

reservesand States are expected to take steps with or without a formal regulation to maintain reserves.

4) Suggestion 4:

Enel Green Power has stated that the current restriction of allowing only 16 revisions per day as per IEGC to RE generators should be removed and suitable amendments may be introduced in IEGC.

Analysis and Decision

The Commission is of the view that this suggestion is beyond the scope of the DSM Regulations.

5) Suggestion 5:

Greenko Group suggested that towards the RPO compliance obligation of the buyers with respect to schedule, deviations by all wind and solar generators which are regional entities should first be netted off for the entire pool on a monthly basis and any remaining shortfall in renewable energy generation must be balanced through purchase of equivalent solar and non-solar Renewable Energy Certificates (RECs), as the case may be, by NLDC by utilising funds from the Pool Account.

IEX suggested that this mechanism is necessary to enable claiming of RPO on the basis of schedule energy.

Analysis and Decision

The Commission feels that RPO compliance is the obligation of the buying entities. Going forward, it is expected that the obligated entities and the concerned SERCs shall evolve mechanism to account for RPO compliance in cases where payment is made based on scheduled energy.

6) Suggestion 6:

HPPC suggested that definition of “Time block” should not be altered to implement time block of 5 minutes from the existing 15 minutes. This is because the SRAS provider mentioned in the draft Ancillary Regulation, becomes operational after 30 seconds and sustains up to 15 minutes. Hence, 5 minutes time block would require the generators to have a very high ramp rate (MW/Min) which is not feasible at present.

Analysis and Decision

This suggestion of the stakeholder is beyond the scope of these Regulations.

7) Suggestion 7:

Kreat Energy and MSEDCL suggested that deviation settlement mechanism linked with frequency is a must for grid stability. MSPGCL suggested that it is too early for payment to be delinked from frequency as AS market is not mature enough. MSEDCL suggested that regional entities shall be benefitted for maintaining grid frequency in real time operations which inturn would encourage regional entities to ensure grid frequency within the desired band at all times. On the other hand, Prayas termed the effort to move to a centralised mode of frequency regulation through Ancillary Services rather than continuing with the existing decentralised frequency linked DSM framework, as a necessary and logical move going ahead.

Nabha Power suggested that before the Regulations are notified, the Commission must mandate GPS based metering for accounting of energy for all LDCs to ensure accurate computing of Deviations and elimination of prevalent meter drift errors.

Analysis and Decision

In the Explanatory Memorandum to the draft Regulations, the Commission has clearly indicated the reasons for delinking of the DSM from frequency. The reasons provided are indicated below:

1) In the absence of large frequency excursions as at present, there hardly remains any scope for frequency linked price arbitrage. Therefore, the system frequency is no longer an indicator of generation being short or surplus, and there exists no longer any link between the system marginal price and frequency.
2) Introduction of ancillary services has made linkage of DSM rate to frequency redundant. In fact, co-existence of ancillary services and frequency linked DSM could be counter-productive. Ancillary services are deployed centrally by the system operator to restore and maintain system frequency closer to 50 Hz. On the other hand, the frequency linked DSM rate is a decentralised tool of controlling frequency. Existence of both centralised mode of frequency regulation through Ancillary Services and

decentralised mode of controlling frequency through frequency linked DSM could lead to avoidable conflict in system operation.

3) Another fallout of linkage of frequency to DSM rate is the perverse tendency of the Discoms to deviate from the schedule, especially during high frequency conditions. In view of the prevailing stability in grid operation and frequency and consequent DSM rate being predictable, the drawee entities can choose to deviate during high frequency hours as DSM rates are low or zero at those times.

In view of the above, the Commission does not find any cause of concern for delinking of DSM with frequency.

As regards the suggestion of energy accounting based GPS based meters, the Commission would like to emphasise that it would be an added advantage as it would decrease the efforts in data collection and compilation. However, energy accounting is not dependent on the implementation of GPS based metering system.

8) Suggestion 8:

Some stakeholders suggested that the DSM Charges for co-generation should be same, as applicable to a generating station based on municipal solid waste. It was also suggested that proposed DSM Charges are impractical for small sellers such as captive generators, co-generators, and other generators selling surplus power to the grid as per open access regulations. For example, a small generator, exporting surplus power up to 25 MW to the grid, for them 2% deviation from schedule is merely 500 KW (maximum). Such small deviation, which could be due to various operational / technical constraints, meter related issues etc. will not affect grid stability significantly. Thus, for such small generators deviation up to 1 MW or 20% from the schedule, whichever is higher, with zero Charges for Deviation should be allowed.

Analysis and Decision:

The Commission would like to reiterate that the grid connected entities are expected to follow their schedule. Seen from an individual buyer or seller point of view, the size of deviation might appear small, but from the system point of view the deviations could assume larger proportion if several such small buyers and sellers start resorting

to deviation. As such, the Commission is not inclined to consider this suggestion.

Suggestions from POSOCO:

9) Suggestion 9:

Implementation of Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) in Electricity in the States has been taken up by the Technical Committee of the Forum of Regulators. Delinking of DSM from frequency, being proposed in the draft Regulations, would lead to confusion and further delays in implementation for intra-state ABT.

Analysis and Decision

Regulation making is an evolving process, and the Commission hopes the Forum of Regulators and its Committees would take note of the developments at the Centre and formulate a complementary AS and DSM framework for the States.

10) **Suggestion 10:**

For the past few years, on an average, Ancillary Service 'Down' is given for 33-– 45 time-blocks in a day. Therefore, there would be complex issues with pricing of deviation linked with Ancillary Services despatch as in some time blocks in a day when Ancillary Service "Up" may not be required to be deployed or only "Down" may have been deployed. Further, it would be limited to a particular set of generators which would not represent the true marginal cost.

Analysis and Decision

The Commission would like to clarify that the new Ancillary Service framework has opened the door for all types of resources, including for energy storage and demand response. As such, the argument that the AS would be limited to a particular set of generators is not correct. All ancillary services deployed will have to accounted and paid for/to. Accordingly, the Commission does not envisage any problem in linking DSM price to AS price. In any case, the DSM Regulations 2022 have already provided for a transition period before the DSM price is linked to AS price and it is expected that NLDC as the nodal agency would take necessary steps to resolve implementation challenges if any.

11) **Suggestion 11:**

In the short-term markets such as day-ahead and real time, bids don't factor in the ramping constraints as it is assumed that it would be implicitly factored by the bidding entity. It has been observed that due to non-clearing of short-term trades in day-ahead and real time markets, there is excessive leaning on the grid by the entities. It results in sudden change in schedules leading to huge deviations of grid entities. Hence, factoring of ramping constraints in the short-term market bidding along with focus on ramping reserves needs to be there. These drawbacks have to be removed through provisions in the Grid Code with respect to scheduling. Delinking the frequency component in DSM without adequate provisions in the former would create insecure conditions.

Analysis and Decision

While the Commission appreciates the need for a framework to take care of the ramping constraints, it is difficult to comprehend how linkage of DSM charge to frequency would help address this problem, especially when the message that DSM is not a trading platform is loud and clear. Whether in the short-term market or in the scheduling framework under long-term or medium-term contracts, the generator has to give schedule based on its ramping capability and failure to adhere to schedule due to the ramping constraints which it could not anticipate, would make it liable for payment of DSM charges. Nonetheless, the Commission is already engaged in finalising the revised Grid Code and would address the issues regarding ramping capability while underscoring the need for honouring the same.

12) **Suggestion 12:**

For the period of January2020 - October2021, in around 9.7 % of time blocks, frequency remained above 50.05 Hz. There are even some days when more than 45 % of the time, frequency remained above 50.05 Hz. There could be aspects of gaming involved too if the deviation charge for over-injection/under drawal would be made zero. In the absence of any price signal linked with frequency and in the scenario of shortfall in procurement of 'Down' Ancillary services by Nodal Agency, it would be detrimental to grid security. Further, zero deviation charge payable for under-drawals would lead to a sharp increase in Renewable Energy curtailment from commercial considerations alone rather than technical reason. Hence, deviation in any direction by

all grid entities must be priced at all times in the interest of grid security. Any Under Drawal/ Over Injection above 50.10 Hz and for Over Drawal/ Under-Injection below 49.90 Hz, additional charges for deviation would need to be considered.

Analysis and Decision

The Commission would once again like to reiterate that frequency management is the responsibility of the system operator and going forward, the Commission would expect the NLDC/RLDC to estimate the requirement for, and procure the ancillary services in advance which it can deploy to maintain frequency close to 50 Hz. As regards the suggestion of compensation for over injection and under drawal, the Commission has already addressed this issue in the final Regulations.

13) **Suggestion 13:**

As per CERC Order in Petition 142/MP/2012, RLDCs may invoke Regulation 25A of Open Access Regulations and deny open access to such entities whenever they wilfully and persistently default in payment of regulatory charges including DSM charges. As per the said Order such default trigger date is defined as 90 days from the due date of payment. Consequently, the defaulting regional entities are taking advantage of the 90 days default trigger date provision for initiating the regulatory measures by RLDCs and wilfully delaying in payment of weekly DSM charges to 30-40 days. Thus, by making payments after 30-40 days, these entities are avoiding to get regulated by RLDCs and continuing with the same cycle for each weekly DSM account. Further, RLDC can invoke this clause (25A of Open Access Regulations) only to stop STOA transactions and not the LTA & MTOA transactions. It may be appreciated that the amount of weekly deviation charges is very less when compared with the payable generation and transmission charges. Accordingly, to address this issue of persistent delay/default in DSM charge payment, it is suggested that if any regional entity defaults the DSM payments for a long period (i.e. beyond 30 days), RLDCs shall curtail/ restrict their schedules (LTA/ MTOA/ STOA) in a graded fashion say 25% restriction for first week of default, followed by 50% the next week and so on

Analysis and Decision

The Commission appreciates the concern of POSOCO in this context but is of the view that the suggestion of curtailment of schedules is beyond the scope of the DSM Regulations.

14) **Suggestion 14:**

Deterministic imbalances, such as schedule leaps at hourly boundaries in Indian case, could be efficiently targeted by passive balancing. In India, there is need for hybrid approach of distributed passive balancing (through frequency linked DSM) as back-up to integrated active balancing by LDCs.

Analysis and Decision

The Commission would like to reiterate that the line of demarcation between passive balancing to help the grid and the deliberate imbalance causation driven by commercial considerations to earn through frequency-linked-DSM, is very thin, as has been highlighted in the preceding paras (reference Reports on the Grid Disturbance on 30th July 2012 and Grid Disturbance on 31st July 2012).

Through the new DSM framework, the Commission expects the same set of generators and discoms who were purportedly providing 'passive balancing' to provide active balancing through participation in SRAS and TRAS, under scheduled transactions and not through unscheduled interchange. Nonetheless, the Commission has already made suitable provisions in the final Regulations about compensation for over injection and under drawal, which could also be seen as an avenue for passive balancing by the entities in a limited way.

15) **Suggestion 15:**

The respective distribution licensees need to publish yearly adequacy statement of generation (basket of resources) & transmission on a rolling basis. These statements need to consider reasonable margins for generation and transmission to take care of the contingencies. The determination of resource adequacy guidelines for each region is important including LoLP (Loss of Load Probability), VoLL (Value of Lost Load) and Optimal Reserve Margin. These provisions need to be strengthened through the

National Electricity Policy and the Indian Electricity Grid Code and implementation enforced through the SERCs.

Analysis and Decision

The suggestions of POSOCO are beyond the scope of the present Regulations. However, the Commission appreciates the suggestions and would take up the suggestions during the revamping of the Grid Code.

16) **Suggestion 16:**

In accordance with the stipulations in Clause 5.3 of the IEGC regarding demand estimation, each SLDC has to prepare the block wise daily forecast of demand on day-ahead basis by 1500 hrs of current day for next day taking into account various factors such as historical data, weather forecast data, outage plan of units / transmission elements, etc. Each state control area may also give block-wise reserves quantum. This provision is required to be given in the regulations for enforcement and compliance. Robust forecasting would be key for activation and deployment of reserves to tackle the deviations, by the system operators.

Analysis and decision

The suggestions of POSOCO are beyond the scope of the present Regulations. Demand forecasting is important for the load serving entities. It not only helps these entities in optimal contracting of resources but also helps them manage their schedule. These aspects would be suitably addressed while revamping the Grid Code.

17) **Suggestion 17:**

DSM, per-se, does not balance the system; it is simply an ex-post mechanism for defraying the costs of balancing and at the same time incentivizing good contracting and portfolio management behaviour on the part of grid entities. Therefore, deviation (as physical 'real time' manifestation in grid having impact on grid security and reliability) and settlement (commercial impact of deviation whether helping the grid or otherwise with incentive/disincentive) are two different yet complementary aspects. DSM has been recognized an integral part of Grid Code and hence, any change in fundamentals of DSM would necessitate amendment in the Grid Code a-priori.

Analysis and Decision

The Commission appreciates the statement that 'DSM does not balance the system'. In fact, it is this message that the Commission has been trying to convey through the new DSM framework. This statement also belies the assertion of DSM being a passive balancing mechanism. As regards the linkage of DSM with Grid Code, the Commission would like to clarify that DSM deals with 'deviation' from 'schedule' and schedule is governed by the provisions of the Grid Code.

18) **Suggestion 18:**

Frequency is an inseparable component of deviation. The frequency control component, represents the value of the response and underlying reserves activation used to deliver the balancing energy necessary to offset unscheduled energy by individual entities. In addition to frequency control component, the deviation also consists of the energy component, representing the value of the energy included in the Inadvertent Interchange. Further, the third component i.e. the transmission component, representing the reliability value of the transmission congestion and which is in the form of energy price. Hence, world over, any deviation settlement mechanism would have to factor the three components of energy, reliability and frequency control for deviation handling (security) and formulating suitable commercial aspects.

It can be inferred that that there is a long journey ahead in terms of stabilization of frequency profile in line with international standards. It is a fact that there is improvement in power system operation (in terms of stable operation and frequency remaining within a close band) over the years with various regulatory interventions by Hon'ble Commission. Still, there are large frequency excursions experienced on daily basis with constraints in the demand and supply with frequency touching 49.50 Hz as recently as 07th October, 2021.

Analysis and Decision

The Commission finds it difficult to comprehend how frequency is an 'inseparable component' of deviation. Frequency is a reflection of load-generation balance and change in frequency is a consequence of deviation. As explained above, there could

be situations when the deviation occurs without affecting frequency. However, the Commission appreciates the assertion that a lot needs to be done to stabilise frequency profile and the new framework of AS and DSM and the upcoming revised Grid Code are all aimed at achieving stable frequency in the larger interest of grid security.

19) **Suggestion 19:**

At an All India level, the RLDCs despatch typically 45% of the country's generation and so NLDC/RLDCs would need to spend amount in the range of ₹ 2000-5000 crores annually. The DSM regulatory pool account must have sufficient funds to facilitate ancillary services despatch and the differential DSM rates would be needed to capture this aspect.

Analysis and Decision

The Commission believes, the DSM Regulations 2022 do address this aspect adequately. There are provisions for use of surplus in one region to meet the deficit in another region, followed by the provision of overall deficit to be made good by the RLDC fees and charges.

20) **Suggestion 20:**

At present, SCED optimization is taking place after unit commitment has taken place based on requisitions by constituents. Formulation for Security Constrained Unit Commitment has been operational in offline mode since June 2020, and its results over an eight months period were shared in the SCED detailed feedback report submitted to Hon'ble Commission. The Expert Group constituted by the Central Commission to review Indian Electricity Grid Code also proposed that the Security Constrained Unit Commitment (SCUC) exercise may be carried out to facilitate reliability of supply to the regional entities/beneficiaries taking into account optimal cost, adequate reserves, ramping requirements factoring security constraints. In order to ensure availability of adequate secondary and tertiary reserves with sufficient ramping capability, there is a need to identify the generating unit for purpose of unit commitment at the national level on at least 3-day rolling basis. In addition to the above, subjects like more frequent declaration of variable charges, declaration of incremental heat rate curves, need for lower turn down level, mandate for reserves, national pool account, and optimization considering full transmission network have

been flagged in the Pilot on SCED detailed feedback report.

Analysis and Decision

The suggestions of POSOCO are beyond the scope of the DSM Regulations and would be taken up during the formulation of revised Grid Code and other relevant Regulations.

21) **Suggestion 21:**

Maintaining ACE within limits is an immediate requirement for grid security. Automatic control mechanisms like AGC at the interstate level can only work effectively if the States maintain ACE within reasonable limits. The culture of maintaining reserves also has to be adopted by every control area. There is a need for a paradigm change from monitoring of simple deviations to monitoring of "Area Control Error (ACE)".

Analysis and Decision

The suggestions of POSOCO are beyond the scope of the DSM Regulations and would be taken up during the formulation of the revised Grid Code and other relevant Regulations.

22) **Suggestion 22:**

There is a need for putting in place the complete framework of Resource Adequacy, portfolio management and balancing through generation reserves as available in all developed systems worldwide before we de-link frequency from DSM.

Analysis and Decision

The suggestions of POSOCO are beyond the scope of the DSM Regulations and would be taken up during the formulation of the revised Grid Code and other relevant Regulations.

23) **Suggestion 23:**

In order to facilitate the administration of the market trades, another essential requirement is the need for assessment of transfer capability State-wise in advance. Though some of the States have started declaring TTC/ATC, many States are yet to

start reporting these parameters. This would have to then translate to creation of more bid areas in the PX (with each state control area as a bid area). Only this would make the Area Control Prices more robust and factor network congestion.

Analysis and Decision

The suggestions of POSOCO are beyond the scope of the DSM Regulations.

24) **Suggestion 24:**

There are instances in the recent past wherein the States have procured upto 18 % of their demand through DAM and upto 10.9 % from RTM. Further, certain States had drawal schedule consisting of more than 40 % through DAM and upto 14.5 % from RTM. There is an urgent need to review the thresholds regarding relative proportion of energy procured in long-term and short-term markets including real time market. The dependence of the states on day ahead market and real time market as mode of last minute procurement poses a threat to grid security. Such high volumes would also lead to price volatility in the market. There is a pervasive grid security threat arising from inflexibility of contracts at the state level with over reliance on short term markets. There is a need for metrics such as resource adequacy for measuring portfolio management diligence of all market players.

Analysis and Decision

While the suggestions of POSOCO are appreciated, they are beyond the scope of the DSM Regulations.

25) **Suggestion 25:**

Entities are resorting to imbalance as it is a risk-free option and payments are not required to be made before the delivery unlike other types of short-term contracts. The other challenge is pertaining to handling real time scenario which may be different from the anticipated scenario, while price discovery is in Power exchange. This may be either due to either load crash or any other unforeseen circumstances. The evaluation of DSM price vector based on the market prices would correctly evaluate the opportunity cost based on the expectations of buyers and sellers. This adequate compensation would help to extract the demand response and contribute positively

towards system reliability. Thus, linkage of DSM rates to market prices would be more appropriate. The base charges for deviation must be linked with 'ex-ante' market discovered prices. The Commission may also like to review the Rs 20 per kWh ceiling currently in vogue at the PX.

Analysis and Decision

The Commission has already explained in detail the rationale behind linkage of DSM charge to AS price, the basic idea being to enable recovery of the cost of AS which is deployed to correct the deviation. However, a transition period has been kept during which the DSM charge would be linked to market prices. The suggestion for review of the ceiling currently in vogue at PX is beyond the scope of the DSM Regulations.

26) **Suggestion 26:**

The present DSM mechanism defines volume limits violation,which attracts penalties in terms of additional charges varying from 20% to 100% of the applicable DSM rate for that time block. The utilities have been representing that there are instances such as generating unit tripping etc. and, in such cases, the volume limits get violated. However, during such an event, the violations can occur in the initial few blocks and the utility must quickly respond by taking actions to achieve balance once again. Another contention is that the deviation limits are violated because of variability of renewable generation. It needs to be appreciated that variation of renewables does not happen in the few-minute time frames and variability of renewables can be handled with better load and RE forecasting techniques as is being done elsewhere in the world. Every state control area needs to monitor its ACE and have appropriate tools to minimize the deviations. The regional level ACE for the October 2020 – September 2021 makes it clear that even if the top 10 states with high demand implement AGC at intra-state level, majority of the issues with the ACE may be addressed. In the interest of secure grid operation, all the volume limits along with associated additional charges for violating the deviation limits should be retained in the proposed market linked DSM price mechanism.

Analysis and Decision

The Commission has already put various volume limits in the DSM Regulations 2022 and believes that the compensation and deterrent charges specified would be

sufficient for ensuring secure grid operation and would deter the grid connected entities from deviating from their schedule.

27) **Suggestion 27:**

There is a need of national pool account to avoid transfer of fund to deficit region from surplus region while making payment to the recipients of Deviation Pool Account. The disbursement can be done in an integrated manner from the national pool without any procedural delay.

Analysis and Decision

In the DSM Regulations 2022, there are provisions for use of surplus in one region to meet the deficit in another region, followed by the provision of overall deficit to be made good by the RLDC fees and charges. The Commission believes, this will address the concern of POSOCO.

Sd/-	Sd/-	Sd/-	Sd/-
(P.K. Singh)	(Arun Goyal)	(I. S. Jha)	(P. K. Pujari)
Member	Member	Member	Chairperson

Annexure – I

List of the stakeholders who submitted written suggestions/ observations on the draft Regulations.

S No	Name of the Stakeholder
1	Association of Power Producers (APP)
2	Federation of Indian Chamber of Commerce and Industries (FICCI)
3	Indian Sugar Mills Association (ISMA)
4	India Wind Power Association (IWPA)
5	Wind Independent Power Producer Association
6	Uttar Pradesh Electricity Regulatory Commission (UPERC)
7	Calcutta Electric Supply Corporation (CESC)
8	Haryana Power Purchase centre (HPPC) for Haryana discoms
9	BRPL
10	M.P. PashchimKshetra Vidyut Vitran Company Ltd (MPPKVVCL)
11	Maharastra State Energy Distribution Company Ltd (MSEDCL)
12	India Energy Exchange (IEX)
13	Power Exchange India Limited
14	Adani Power (Mudra) Ltd
15	Adhunik Power and Natural Resources Ltd (APNRL)
16	Jhabua Power Limited (Jhabua Power)
17	Madhya Pradesh Power Generating Co. Ltd. (MPPGCL)
18	Maharastra State Power Generation Company Ltd (MSPGCL)
19	Nabha Power
20	Shree Cement
21	Sitapuram Power Limited - Zuari Cement
22	Satluj Jail Vidyut Nigam Ltd
23	Narmada Hydroelectric Development Corporation Ltd (NHDC)
24	National Hydro Power Corporation (NHPC)
25	AD Hydro Power Ltd
26	Apraava Energy
27	Azure Power
28	Continuum Green Energy (India) Pvt. Ltd.
29	DANS Energy Pvt Ltd
30	Enel Green Power India Private Limited
31	Greenko Group
32	Hero Future Energy
33	Kreate Energy
34	Mahindra Susten Pvt Ltd
35	MB Power
36	Mytrah Energy (India) Private Limited
37	O2 Power
38	Phillips Carbon Black Limited (PCBL)
39	RE Connect Energy
40	RE New Power Pvt Ltd
41	Torrent Power Ltd (TPL)
42	Damodar Valley Corporation (DVC)
43	Prayas Energy Group

44	Sembcorp Energy India Limited
45	Statkraft India Pvt Ltd
46	Vector Green Energy Pvt Ltd (VGEPL)
47	Indian Wind Power Association -Northern Region
48	Jindal India Thermal Power Limited
49	Manikaran Analytics Ltd
50	National Thermal Power Corporation (NTPC)
51	Neyveli Lignite Corporation India Ltd (NLCIL)
52	NLC Tamil Nadu Power Limited (NTPL)
53	Tata Power, Additional Comments
54	Central Electricity Authority (CEA)
55	Gujarat Urja Vikas Nigam Ltd (GUVNL)
56	Power Company of Karnataka Ltd (PCKL)
57	Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd (UPRVUNL)
58	West Bengal Power Development Corporation Ltd (WBPDCL)
59	Asit Singh
60	Mr Bhanu Bhusan
61	Mr Nadeem Ahmed Khan
62	Mr Shanti Prasad, (Es Chairman, RERC)
63	Mr ShivamPuri
64	BASK Research Foundation
65	Deloitte
66	Energy Analytics Lab (EAL)- IIT Kanpur
67	Centre for Energy, Environment and Water (CEEW)
68	Southern Region Power Committee (SRPC)
69	Western Regional Power Committee
70	Eastern Region Power Committee (ERPC)
71	State Load Dispatch Centre (SLDC) - Odisha
72	State Load Dispatch Centre (SLDC) - Gujarat
73	Abelllon Clean energy , Additional Comments
74	POSOCO
75	RPG Power Trading Company Ltd (RPTCL)
76	Tamil Nadu Transmission Corporation Ltd
77	Karnataka Power Transmission Corporation Ltd
78	Power Grid Corporation of India Ltd (PGCIL)
79	Transmission Corporation of Telangana Ltd
80	India Grid Trust
81	Bharat Aluminium Company Ltd (Balco)
82	Dhariwal Infrastructure Ltd (DIL)
83	HP ALDC
84	Penna Cement Industries Limited
85	Uttar Pradesh Power Corporation Ltd
86	West Bengal State Electricity Distribution Company Ltd (WBSEDCL)
87	DNV GL Energy India Private Limited

Annexure – II

List of Participants who made submission during the public hearing

S No	Name of Stakeholder
Presentation	
1	POSOCO
2	Mr Bhanu Bhusan
3	Indian Wind Power Association
4	Jhabua Power ltd
5	Azure Power
6	Manikaran Analytics
7	NLC India Ltd
8	REConnect Energy
9	Power Exchange of India Ltd
10	Tata Power
11	TistaUrja
12	NLC Tamil Nadu Power Ltd
13	National Thermal Power Corporation
14	Acmay Solar Holdings
15	Sembcorp Green Infra Ltd
Oral Submissions	
16	Mr Prasanna
17	Prayas Energy group
18	Transmission Corporation of Telangana
19	Torrent Power
20	ABC Solar India Pvt Ltd
21	DANS Energy
22	Jindal India Thermal
23	M.P. Power Management Ltd
24	Goa Tamnar Transmission Project Ltd
25	CLP Wind farm
26	M.P. Power Generation Company Ltd
27	Damodar Valley Corporation Ltd
28	MrSoni
29	Mr Kiran V
30	Transmission Corporation Ltd – Karnataka
31	Adani Green