

Model DSM Regulations at State Level.



March, 2017

MODEL DSM REGULATIONS AT STATE LEVEL
_____(STATE)ELECTRICITY REGULATORY COMMISSION

___March, 2017

NOTIFICATION

No. ___/___/2016/xERC.- In exercise of the powers conferred under Section 181 of the Electricity Act, 2003 (36 of 2003), and all other powers enabling it in this behalf, and after previous publication, the _____/[State]Electricity Regulatory Commission hereby makes the following regulations, namely:

1. Short title and commencement

1. These regulations may be called the _____/[State]Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2017.
2. These regulations shall come into force from the date of notification in the official Gazette[_____, 2017].

2. Definitions and Interpretation

1. In these regulations, unless the context otherwise requires -
 - a. **Act'** means the Electricity Act, 2003 (36 of 2003);
 - b. **'Actual drawal'** in a time-block means electricity drawn by a buyer, as the case may be, measured by the interface meters;
 - c. **'Actual injection'** in a time-block means electricity generated or supplied by the seller, as the case may be, measured by the Interface meters;
 - d. **'Available Capacity (AvC)'** for wind or solar generators which are regional entities or state entities, as the case may be, is the cumulative capacity rating of the wind turbines or solar inverters that are capable of generating power in a given time-block.
 - e. **'Buyer'** means a person, including distribution licensee or open access consumer, purchasing electricity through a transaction scheduled in accordance with the regulations applicable for short-term open access, medium-term open access and long-term access;
 - f. **'Connectivity Regulations'** means the _____/[State]Electricity Regulatory Commission (Grant of Connectivity, Long Term Access and Medium Term Access in inter-State Transmission) Regulations as amended from time to time and shall include any subsequent amendment thereof.

- g. '**Commission**' means the _____/[State]Electricity Regulatory Commission referred to in sub-section (1) of section 82of the Act;
- h. '**Deviation**' in a time-block for a Seller means its total actual injection minus its total scheduled generation and for a Buyer means its total actual drawal minus its total scheduled drawal, and shall form part of the State Energy Accounts to be prepared by SLDC.
- i. '**Deviation-RE** (also termed as **Absolute Error**') shall mean the absolute value of the error in the actual generation of wind or solar generators which are state entities with reference to the scheduled generation and the 'Available Capacity' (AvC), as calculated using the following formula for each 15 minute time block:

$$\text{Error (\%)} = 100 \times [\text{Actual Generation} - \text{Scheduled Generation}] / (\text{AvC})$$

- k. '**Existing RE Project**' shall mean Wind Generating Project or Solar Generating Project that has been commissioned prior to date of notification of these Regulations and the term Existing Wind/Solar Generator shall be construed accordingly;
- l. '**Gaming**' in relation to these regulations, shall mean an intentional mis-declaration of declared capacity by any seller in order to make an undue commercial gain through Charge for Deviations;
- l. '**Grid Code**' means the Grid Code specified by the Commission under clause (h) of sub-section (1) of Section 86 of the Act.
- m. '**Interface meters**' means interface meters as defined by the Central Electricity Authority under the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time.
- n. '**Interconnection Point**' means the HV side of the pooling station (line isolator of the outgoing feeder of the HV side of the pooling S/S), which shall be the same level at which forecast and schedule need to be prepared by wind and solar generating stations for onward submission to SLDC.
- o. '**Load Despatch Centre**' means National Load Despatch Centre, Regional Load Despatch Centre or State Load Despatch Centre, as the case may be, responsible for coordinating scheduling of the Buyers and the Sellers in accordance with the provisions of Grid Code;
- p. '**New RE Project**' shall mean Wind Generating Project or Solar Generating Project that has been commissioned subsequent to date of notification of these Regulations and the term New Wind/Solar Generator shall be construed

- accordingly;
- q. '**Open Access Regulations**' means the _____/[State]Electricity Regulatory Commission Open Access Regulations as amended from time to time and shall include any subsequent amendment thereof.
- q. '**Qualified Coordinating Agency (QCA)**': means the agency coordinating on behalf of Wind/Solar Generators connected to a pooling station. QCA may be one of the generators or any other mutually agreed agency for the following purposes:
- Coordinate for schedules with periodic revisions on behalf of all the Wind/Solar Generators connected to the pooling station(s).
 - Responsible for coordination with STU/SLDC for metering, data collection/ transmission, communication.
 - Undertake commercial settlement on behalf of the generators of such charges pertaining to generation deviations only including payments to the Regional/State Deviation Pool Accounts through the SLDC.
 - Undertake de-pooling of payments received on behalf of the generators from the State Deviation Pool Account and settling them with the individual generators.
- QCA shall be treated as a State Entity and shall be registered with SLDC.
- r. '**Scheduled Generation**' at any time or for a time block or any period means schedule of generation in MW or MWh *ex-bus* given by the concerned Load Despatch Centre;
- s. '**Scheduled Drawal**' at any time or for a time block or any period time block means schedule of despatch in MW or MWh *ex-bus* given by the concerned Load Despatch Centre;
- t. '**Seller**' means a person, including a generating station, supplying electricity through a transaction scheduled in accordance with the regulations applicable for short-term open access, medium-term open access and long-term access;
- u. '**State Entity**' means such person who is in the SLDC control area and whose metering and energy accounting is done at the state level
- u. '**Time-Block**' means a time block of 15 minutes, for which specified electrical parameters and quantities are recorded by special energy meter, with first time block starting at 00.00 hrs;
Provided that time block shall be revised to 5 minutes from the date to be notified by Central Commission and [State] Commission.

(2) Save as aforesaid and unless repugnant to the context or the subject-matter otherwise requires, words and expressions used in these regulations and not

defined, but defined in the Act, or the Grid Code or any other regulations of this Commission shall have the meaning assigned to them respectively in the Act or the Grid Code or any other regulation.

1. Objective

The objective of these regulations is to maintain grid discipline and grid security as envisaged under the Grid Code through the commercial mechanism for Deviation Settlement through drawal and injection of electricity by the users of the grid.

2. Scope

These regulations shall be applicable to Seller(s) and Buyer(s) involved in the transactions facilitated through short-term open access or medium-term open access or long-term access in intra-state transmission or distribution of electricity (including inter-state wheeling of power), as the case may be.

3. Pre-conditions for participation in Deviation Settlement Mechanism:

These Regulations aim to govern the functioning of the various State Entities in a way that discipline is maintained with regards to the injection and drawal of energy by such State Entities and the reliability and integrity of power system is maintained.

In order to meet these objectives, necessary preconditions and covenants for participation by State Entities shall be as under:

- (A) All State Entities shall have equal and non-discriminatory treatment as regards the 'Deviation Settlement mechanism as specified in these Regulations.
- (B) The State Entities shall inform the SLDCs of all contracts they have entered into for exchange of energy.
- (C) SLDC shall take all decisions with regard to the despatching of stations after evaluating all possible network parameters, constraints, congestions in the transmission network and in the eventuality of any such network aberration, the instructions by the SLDC with regard to despatch and drawal shall be binding on all State Entities.
- (D) State Entities shall operate their equipment and loads in a manner that is consistent with the provisions of the Indian Electricity Grid Code and the State Grid Code.
- (E) State Entities shall enter into BPTA (Bulk Power transmission agreement) and Connection Agreement with the concerned transmission licensee, which shall specify the physical and operational requirements for a reliable operation and gain physical access and connection to the intra-State transmission system (InSTS) or enter into Connection and Use Agreement with concerned Distribution Licensee for use of distribution

system, as the case may be.

- (F) SLDC shall publish all such information as required for all other State Entities to be aware of the energy exchanges taking place within the pool as well as exigency conditions, if any.
- (G) All State Entities shall make necessary arrangements for putting up suitable meters, capable of recording energy flows at 15-minute intervals, at the points of injection and drawal.

4. Principles for Operationalising Deviation Settlement Mechanism:

The framework for Deviation Settlement Mechanism shall cover the following key design parameters, viz. (a) Scheduling period (b) Operating range of frequency (c) Deviation (d) Settlement period (e) Measurement unit for State Deviation Pool (f) Deviation Pool Price Vector (g) Deviation Volume Limit (h) Premise for least cost despatch (i) Premise for allocation of losses.

- (A) **Scheduling Period:** The scheduling period shall comprise of 96 time blocks, each of 15-minute duration starting from 00:00 hours (IST) ending with 24:00 hours (IST). The first time block of scheduling period shall commence from 00:00 hours (IST) to 00:15 hours (IST), second time block of scheduling period shall commence from 00:15 hours (IST) to 00:30 hours (IST) and so on.

Provided that from the date to be notified by Commission, the scheduling period shall be revised to 288 time blocks, each of 5-minute duration starting from 00:00 hours (IST) ending with 24:00 hours (IST). Accordingly, the Interface Metering, Energy Accounting and Deviation Settlement should be capable to undertake transactions with 5-minute duration. All future resource planning, IT and communication system requirement and infrastructure development shall be undertaken to cater to this requirement.

- (B) Based on the availability schedule forecasted by generating stations (Sellers) and load requirement forecasted by Buyers, the SLDC shall draw up the least cost despatch schedule on Day Ahead basis for the State Entities in accordance with the merit order principles approved by State Commission from time to time;

Provided that wheeling transactions of captive users and open access consumers shall be despatched as contracted subject only to transmission constraints and system emergency conditions.

- (C) **Operating Range for Frequency:** The normal operating range for average grid frequency for time block shall be in line with range stipulated under IEGC and [State] Grid Code from time to time (viz. 49.90 Hz to 50.05 Hz). While normal operating range of average frequency as per IEGC has been stipulated as 49.90 Hz to 50.05 Hz, the deviation price vector has been specified under Schedule-I for frequency range of 49.80 Hz to 50.05 Hz.

No over-drawal or under-injection shall be allowed when grid frequency is below 49.80 Hz and no under-drawal or over-injection shall be allowed when grid frequency is above 50.05 Hz.

(D) **Deviation:** For the purposes of Deviation settlement amongst State Entities, the SLDC shall work out the 'Deviation Pool Accounts' comprising over-drawal/under-drawal and over-injection and under-injection for each State Entity corresponding to each Scheduling period in accordance with the principles outlined hereunder.

- i. **'Deviation'** in a time-block for a Seller means its total actual injection minus its total scheduled generation and for a Buyer means its total actual drawal minus its total scheduled drawal.
- ii. **'Deviation-RE** (also termed as **Absolute Error'**) shall mean the absolute value of the error in the actual generation of wind or solar generators which are State Entities with reference to the scheduled generation and the 'Available Capacity' (AvC), as calculated using the following formula for each 15 minute time block:

$$\text{Error (\%)} = 100 \times [\text{Actual Generation} - \text{Scheduled Generation}] / (\text{AvC})$$

(E) **Settlement Period:** Preparation and settlement of 'Deviation Pool Accounts' shall be undertaken on weekly basis coinciding with mechanism followed for regional energy accounts.

(F) **Measurement Unit for Deviation Pool Account:** The measurement unit for Deviation Pool Volume (Over-drawal/under-drawal and Over-injection/under-injection) preparation shall be kiloWatt hours (kWh). Measurement unit for Deviation Pool Value (Payable and Receivable) preparation shall be Indian Rupees (INR). The decimal component of the energy unit (kWh) and amount (INR) shall be rounded off to nearest integer value.

(G) **Deviation Pool Price Vector:** The charges for Deviation shall be in accordance with the Deviation Price Vector to be notified by the Commission from time to time. Separate treatment for pricing of Deviation of Buyers/Sellers and Wind/Solar Generators, as stipulated under Regulation 6 shall be applicable. Further, additional condition for a change in sign of the deviation shall be met once every 6 time blocks by Buyer/Seller except for Wind or Solar Generator(s), failing which additional charges @10% of the deviation charges applicable shall be levied for the duration of continuance of violation.

(H) **Deviation Volume Limit:** In order to ensure grid discipline and grid security, conditions for Deviation Volume Limit and consequences for exceeding such Deviation Volume Limit by way of levy of Additional

Deviation Charges as specified under Regulation 7 shall be applicable.

- (l) **Premise for allocation of losses:** For the purpose of Deviation Pool accounting, intra-State transmission system losses as approved by the Commission shall be allocated amongst the State Entities in proportion to the actual drawal by each State Entity.

Provided that State Load Despatch Centre shall maintain account of actual intra-state transmission system loss for each time block and publish reconciliation statement of 52 weekly average loss vis-à-vis approved loss by the Commission on its website.

5. Declaration, scheduling and elimination of gaming

- (A) The provisions of the State Grid Code and the ____/[State]Electricity Regulatory Commission Open Access Regulations, as amended from time to time, shall be applicable for declaration of capacity, scheduling and elimination of gaming.
- (B) The generating station, as far as possible, shall generate electricity as per the day-ahead generation schedule finalized by the State Load Despatch Centre in accordance with the State Grid Code.

Provided that the revision in generation schedule on the day of operation shall be permitted, in accordance with the procedure specified under the Grid Code and ____/[State]Electricity Regulatory Commission Open Access Regulations, as the case may be.

- (C) The wind and solar generator or the QCA, as the case may be, shall have the option of accepting the concerned SLDC's forecast for preparing its schedule or provide the concerned SLDC with a schedule based on its own forecast, and such schedule shall be used as reference for deviation settlement.
- (D) The QCA shall coordinate the aggregation of schedules of all generators connected to a pooling station and communicate it to the SLDC. The QCA shall undertake all commercial settlement on behalf of the wind or solar generator(s) connected to the respective pooling station(s).
- (E) The Commission, either suo-motu or on a petition made by SLDC, or any affected party, may initiate proceedings against any generating company or seller on charges of gaming and if required, may order an inquiry in such manner as decided by the Commission. When the charge of gaming is established in the above inquiry, the Commission may, without prejudice to any other action under the Act or regulations thereunder, disallow any Charges for Deviation received by such generating company or the seller during the period of such gaming.

6. Charges for Deviations:

(A) Deviation Charges for Sellers and Buyers other than the Wind and Solar Generators:

- (1) The charges for the Deviations for all the time-blocks shall be payable for over-drawal by the Buyer and under-injection by the Seller and receivable for under-drawal by the Buyer and over-injection by the Seller, other than the wind and solar generators which are State Entities, and shall be worked out on the average frequency of a time-block at the rates in the table specified at **Schedule-I** and subject to conditions stipulated under clause (2) to (6) of this regulation:

Provided that a change in sign of the deviation shall be made once every 6 time blocks, failing which additional charges @10% of the deviation charges applicable shall be levied for the duration of continuance of violation.

- (2) The charges for the Deviation for the generating stations regulated by Commission using coal or lignite or gas supplied under Administered Price Mechanism (APM) as fuel, when actual injection is higher or lower than the scheduled generation, shall not exceed the Cap Rate to be determined by Central Commission from time to time ¹[303.04]Paise/kWh.
- (3) No cap rate shall be applicable with effect from [the date of revision of price of APM gas by the Government of India] on the charges for the Deviation for the generating stations regulated by [the Central Commission] using gas supplied under Administered Price Mechanism (APM) as the fuel.
- (4) The charges for the Deviation for the under-drawal by the Buyer in a time block in excess of 12% of the schedule or ²[X]MW, whichever is less, shall be zero; wherein limit of [X]MW shall be determined as per

¹ Present Tariff Rate of imported coal as determined by Central Commission

² Volume Cap for Buyer may vary with profile mix and no. of pool entities (Buyers) in the state

methodology specified under Clause (1) of Regulation 7 of these Regulations;

- (5) The charges for the deviation for the over-injection by the Seller in a time block in excess of 12% of the schedule or ³[10] MW, whichever is less, shall be zero, except in case of injection of infirm power, which shall be governed by clause (7) of this regulation:
- (6) The Charges for Deviation may be reviewed by the State Commission from time to time and as and when Deviation Price Vector is revised by Central Commission and shall be re-notified accordingly.
- (7) The infirm power injected into the grid by a generating unit of a generating station during the testing, prior to COD of the unit shall be paid at Charges for Deviation for infirm power injected into the grid, consequent to testing, for a period not exceeding 6 months or the extended time allowed by the Commission in the ____ [State] Electricity Regulatory Commission Open Access Regulations, as amended from time to time, subject to ceiling of Cap rates corresponding to the ⁴[main fuel] used for such injection as specified below:

Domestic coal/ Lignite/Hydro	- [1.78] / kWh sent out
APM gas as fuel	- [2.82]/ kWh sent out <i>up to the date of revision of price of APM gas by Government of India and thereafter, at the rate to be notified by the Commission separately</i>
Imported Coal	- [3.03] / kWh sent out
RLNG	- [8.24] / kWh sent out

(B) Deviation Charges for Wind and Solar Generators:

³ Volume Cap for Seller may vary with no. of pool entities (Sellers) in the state

⁴ Present rates of main fuel as determined by Central Commission

- (1) The charges for deviation for wind and solar generators which are state entities undertaking inter-state or intra-state transactions, shall be governed as per the provisions outlined under sub-clauses (1) to (9) of this regulation.

Wind/Solar Generators	Under-injection	Over-injection
Inter-State transaction(s)	Refer Table-I of Schedule-II	Refer Table-II of Schedule-II
Intra-State transaction(s) of New Wind/Solar Generators	Refer Table-III of Schedule-II	
Intra-State transaction(s) of Existing Wind/Solar Generators	Refer Table-IV of Schedule-II	

- (2) The wind or solar generators which are state entities undertaking inter-state transactions shall be paid as per schedule generation.
- i. In the event of actual generation being lesser than the scheduled generation, the deviation charges for shortfall in generation shall be payable by such wind or solar generator which are state entities into State Deviation Pool Account as given in **Table -I of Schedule-II**
 - ii. In the event of the actual generation being more than the scheduled generation, the Deviation Charges for excess generation shall be payable to the wind or solar generators which are state entities undertaking inter-state transactions from State Deviation Pool Account as given in **Table - II of Schedule-II:**
- (3) The wind or solar generators which are state entities undertaking intra-state transactions shall be paid as per actual generation.
- iii. In the event of actual generation of a generating station or a pooling station, as the case may be, being less or more than the scheduled generation, the deviation charges for shortfall or excess generation shall be payable by the wind and solar generator or the QCA, as the case may be, to the State Deviation Pool Account, as given in **Table - III or Table-IV of Schedule-II,** as the case may be.
- (4) In case of wind or solar generators as state entities undertaking intra-state transactions and inter-state transactions shall be allowed provided that such generators are connected to separate feeders at LV side of the Pooling Substation and metering, scheduling, energy

accounting and deviation settlement account for such wind or solar generators are maintained separately.

- (5) Where the Fixed Rate referred under **Table-I and Table-II of Schedule-II** is the PPA rate as determined by the Commission under section 62 of the Act or adopted by the Commission under section 63 of the Act. In case of multiple PPAs, the weighted average of the PPA rates shall be taken as the Fixed Rate. The wind and solar generators shall furnish the PPA rates on affidavit for the purpose of Deviation charge account preparation to concerned SLDC supported by copy of the PPA.
- (6) Fixed Rate for Open Access participants selling power which is not accounted for RPO compliance of the buyer, and the captive wind or solar plants shall be the Average Power Purchase Cost (APPC) rate at the National level, as may be determined by the Central Commission from time to time through a separate order.
- (7) With regard to inter-state wheeling transactions of Wind and Solar Generating stations as State Entities, for balancing of deemed renewable purchase obligation (RPO) compliance of buyers with respect to schedule, deviations by all wind and solar generators which are state entities shall 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 SLDC by utilising funds from the Pool Account. For positive balance of renewable energy generation, equivalent notional RECs shall be credited to the DSM Pool and carried forward for settlement in future.
- (8) State Load Despatch Centre [or the Secretariat of State Power Committee, as the case may be] shall maintain separate records and account of time-block wise schedules, actual generation and deviations for all generators, including wind and solar generators.
- (9) Once the accounting procedures as above are put in place, all Wind and Solar generators shall be treated together as a virtual pool within the State Deviation Pool Account. Deviations for and within this virtual pool could be settled first at the rates and methodology stipulated above for wind and solar generators.

7. Limits on Deviation volume and consequences of crossing limits

- (A) The over-drawal or under drawal of electricity by any Buyer during a time block shall not exceed 12% of its scheduled drawal or **[X] MW**, whichever is lower, when grid frequency is between range of '49.80 Hz and above to below 50.05 Hz.'
- (B) The Volume Limit of **[X] MW** for distribution licensee(s) and Buyers shall be determined as under:

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- i. Minimum of (12% of schedule, (Peak Demand of Distribution Licensee or Buyer / \sum NCPD) x State Volume Limit)
Where NCPD (Non-Coincident Peak Demand) represents the sum of Peak Demand of Distribution Licensee(s) and Buyer(s) subject to condition stipulated under following sub-clause (iii).
- ii. State Volume Limit shall be linked to Volume Limit (L) applicable to the State as per CERC DSM Regulations and its amendments thereof
- iii. Where Peak Demand of the Distribution Licensee shall be recorded Peak Demand in the previous Financial Year or Projected Peak Demand of Buyer in ensuing Financial Year, whichever is higher;

Provided that no over drawal of electricity by any buyer shall be permissible when grid frequency is "below 49.80 Hz" and no under drawal of electricity by any buyer shall be permissible when grid frequency is "50.05 Hz and above".

(C) The under-injection or over-injection of electricity by Seller shall not exceed following when grid frequency is "49.80 Hz or above and below 50.05 Hz":

- i. 12% of the scheduled injection or [10] MW, whichever is lower for a Seller

Provided that in case schedule of a Seller, in a time block, is less than or equal to [40] MW, under-injection / over-injection in a time-block shall not exceed [5] MW, when grid frequency is "49.80 Hz or above and below 50.05 Hz".

(D) The limits on deviation volume and consequences for crossing these limits (including the additional charges for deviation) as stipulated under Regulation 7 shall not apply to wind and solar generators which are State Entities.

(E) No under injection of electricity by a seller shall be permissible when grid frequency is "below 49.80 Hz" and no over injection of electricity by a seller shall be permissible when grid frequency is "50.05 Hz and above.

(F) Any infirm injection of power by a generating station prior to COD of a unit during testing and commissioning activities shall be exempted from the volume limit specified above for a period not exceeding 6 months or the extended time allowed by the Commission in accordance with Connectivity Regulations.

(G) Any drawal of power by a generating station prior to COD of a unit for the start up activities shall be exempted from the volume limit specified above when grid frequency is "49.80 Hz and above".

- (H) In addition to Charges for Deviation as stipulated under Regulation 5 of these regulations, Additional Charge for Deviation shall be applicable for over-drawal as well as under-injection of electricity for each time block in excess of the volume limit specified in Clause (B) and (C) of this regulation when average grid frequency of the time block is "49.80 Hz and above" at the rates specified in the **Table V of Schedule-II** in accordance with the methodology specified in clause (N) of this regulation:
- (I) Additional Charge for Deviation for under-injection of electricity, during a time-block in excess of the volume limit specified in clause (A) and (B) of this regulation when grid frequency is "49.80 Hz and above", by the generating stations regulated by the Commission using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel shall be at the rates specified in **Table VI of Schedule-II** in accordance with the methodology specified in clause (P) of this regulation;
- (J) Any drawal of power by a generating station prior to COD of a unit for the start-up activities shall be exempted from the levy of additional Charges of Deviation.
- (K) In addition to Charges for Deviation as stipulated under Regulation 5 of these regulations, Additional Charge for Deviation shall be applicable for over-injection/under drawal of electricity for each time block by a Seller or Buyer, as the case may be; when grid frequency is "50.05 Hz and above" at the rates equivalent to charges of deviation corresponding to the grid frequency of "below 50.01 Hz but not below 50.0 Hz".
- (L) State Load Despatch Centre shall develop and publish on its website Procedures and Methodologies for the computation of Charges for Deviation and Additional Charges for deviation for each State Entity for crossing the volume limits specified for the under-drawal /over-injection and for over-drawal and under-injection in clause (D) of this Regulation.
- (M) In addition to Charges for Deviation as stipulated under Regulation 5 of these Regulations, Additional Charge for Deviation shall be applicable for over-drawal or under-injection of electricity when grid frequency is "below 49.80 Hz" in accordance with the methodology specified in clause (O) of this Regulation and the same shall be equivalent to 100% of the Charge for Deviation as stipulated under Deviation Price Vector at Schedule-I [800Paise/kWh] corresponding to the grid frequency of "below 49.80 Hz".

Provided that Additional Charge for Deviation for under-injection of electricity by a Seller, during the time-block when grid frequency is "below 49.80 Hz", by the generating stations regulated by State Commission using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel in accordance with the methodology specified in clause

(O) of this Regulation shall be equivalent to 100% of the Cap Rate for Deviations of [303.04]⁵ Paise/kWh.

- (N) The Additional Charge for Deviation for over-drawal and under-injection of electricity for each time block in excess of the volume limit specified in clause (B) and (C) of this Regulations when grid frequency is "49.80 Hz and above" shall be as specified by the [State Commission] as a percentage of the charges for the Deviation corresponding to average grid frequency of the time block with due consideration to the behavior of the Buyers and Sellers towards grid discipline:

Provided that the [State Commission] may specify different rates for additional Charges for Deviation for over drawals and under injections depending upon different % deviation from the schedule in excess of the volume limit specified in clause (B) and (C) of this Regulation.

- (O) The additional Charge for Deviation for over-drawals and under-injection of electricity for each time block when grid frequency is "below 49.80 Hz" shall be as specified by the [State Commission] as a percentage of the charges for the Deviation corresponding to average grid frequency of the time block with due consideration to the behavior of the Buyers and Sellers towards grid discipline:

Provided that the [State Commission] may specify different rates for Additional Charges for Deviation for over drawals and under injections and for different ranges of frequencies "below 49.80 Hz".

- (P) The Additional Charge for Deviation for under-injection of electricity during the time-block in excess of the volume limit specified in Clause (C) of this regulation when grid frequency is '49.80 Hz and above", by the generating stations regulated by SERC using coal/ lignite or gas supplied under

⁵ *(to be linked to variable cost for imported coal price as determined by Central Commission)*
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Administered Price Mechanism (APM) as the fuel shall be as specified by the Commission as a percentage of the Cap Rate or the Charges for Deviation corresponding to the grid frequency of the time block, or both with due consideration to the behavior of the generating stations regulated by SERC towards grid discipline:

- (Q) In the event of sustained deviation from schedule in one direction (positive or negative) by any state entity, such State Entity (Buyer or Seller) shall have to make sign of their deviation from schedule changed, at least once, after every 6 time blocks. To illustrate, if a state entity has positive deviation from schedule from 07.30 hrs to 9.00 hrs, sign of its deviation from schedule shall be changed in the 7th time block i.e. 9.00 to 9.45 hrs from positive to negative or negative to positive; as the case may be.
- (R) Payment of Charges for Deviation under Regulation 5 and the Additional Charges for Deviation under Clauses (H) and (I) of this Regulation, shall be levied without prejudice to any action that may be considered appropriate by the Commission under Section 142 of the Act for contravention of the limits of over-drawal/ under drawal or under-injection /over-injection as specified in these regulations, for each time block or violation of provision of clause (Q) of these Regulations.
- (S) The charges for over-drawal/ under-injection and under-drawal/ over-injection of electricity shall be computed by the respective SLDCs [or State Power Committee, as case may be] in accordance with the methodology used for preparation of 'State Energy Accounts'.
- (T) The State Load Despatch Centre shall, on monthly basis, prepare and publish on its website the records of the Deviation Accounts, specifying the quantum of over-drawal/ under-injection and corresponding amount of Charges for Deviation payable/receivable for each buyer and seller for all the time-blocks when grid frequency was "49.80Hz and above" and "below 49.80" Hz separately.

8. Compliance with instructions of Load Despatch Centre

Notwithstanding anything specified in these Regulations, the sellers and the buyers shall strictly follow the instructions of the State Load Despatch Centre on injection and drawal in the interest of grid security and grid discipline.

9. Accounting of Charges for Deviation

- (A) A statement of Charges for Deviations including Additional Charges for Deviation levied under these Regulations shall be prepared by SLDC [or by the Secretariat of the State Power Committee, as the case may be] on weekly basis based on the data provided by SLDC by the Thursday of the week and shall be issued to all constituents by next Tuesday, for seven day period ending on the penultimate Sunday mid-night.

- (B) All payments on account of Charges for Deviation including Additional Charges for Deviation levied under these Regulations and interest, if any, received for late payment shall be credited to the funds called the “State Deviation Pool Account”, which shall be maintained and operated by the concerned State Load Despatch Centre in accordance with provisions of these regulations.

Provided that –

- i. the [State Commission] may by order direct any other entity to operate and maintain the respective “State Deviation Pool Account”:
 - ii. separate books of accounts shall be maintained for the principal component and interest component of Charges for Deviation and Additional Charges for Deviation by SLDC [or by the Secretariat of the respective State Power Committee, as the case may be].
- (C) All payments received in the “State Deviation Pool Account” shall be appropriated in the following sequence:
- i. First towards any cost or expense or other charges incurred on recovery of Charges for deviation.
 - ii. Next towards over dues or penal interest, if applicable.
 - iii. Next towards normal interest.
 - iv. Next dues towards Regional Deviation Pool Account
 - v. Lastly, towards charges for deviation and additional charges for deviation.

10. Schedule of Payment of Charges for Deviation

- (A) The payment of charges for Deviation shall have a high priority and the concerned constituent shall pay the indicated amounts within 10 (ten) days of the issue of statement of Charges for Deviation including Additional Charges for Deviation by SLDC [or by the Secretariat of the State Power Committee, as the case may be] into the “[**State**] **Deviation Pool Account**”.
- (B) If payments against the Charges for Deviation including Additional Charges for Deviation are delayed by more than two days, i.e., beyond twelve (12) days from the date of issue of the statement by the SLDC [or the Secretariat of the State Power Committee, as the case may be], the defaulting constituent shall have to pay simple interest @ 0.04% for each day of delay.
- (C) All payments to the entities entitled to receive any amount on account of charges for Deviation shall be made within 2 working days of receipt of the payments in the “[State] Deviation Pool Account”.

Provided that –

- i. in case of delay in the Payment of charges for Deviations into the [State] Deviation Pool Account and interest there on if any, beyond 12 days from the date of issue of the Statement of Charges for Deviations, the State Entities who have to receive payment for Deviation or interest thereon shall be paid from the balance available in the [State] Deviation Pool Account. In case the balance available is not sufficient to meet the payment to the State Entities, the payment from the [State] Deviation Pool Accounts shall be made on pro rata basis from the balance available in the Deviation Pool Account.
 - ii. the liability to pay interest for the delay in payments to the “[State] Deviation Pool Account” shall remain till interest is not paid; irrespective of the fact that constituents who have to receive payments, have been paid from the “[State] Deviation Pool Account” in part or full.
- (D) All State Entities which had at any time during the previous financial year failed to make payment of Charges for Deviation including Additional Charges for Deviation within the time specified in these Regulations shall be required to open a Letter of Credit (LC) equal to 110% of its average payable weekly liability for Deviations in the previous financial year, in favour of the SLDC within a fortnight from the date these Regulations come into force.

Provided that –

- i. if any State entity fails to make payment of Charges for Deviation including Additional Charges for Deviation by the time specified in these Regulations during the current financial year, it shall be required to open a Letter of Credit equal to 110% of weekly outstanding liability in favour of State Load Despatch Centre within a fortnight from the due date of payment.
- ii. LC amount shall be increased to 110% of the payable weekly liability for Deviation in any week during the year, if it exceeds the previous LC amount by more than 50%.

Illustration: If the average payable weekly liability for Deviation of a State entity during [2016-17] is `2.0 crore, the State entity shall open LC for 2.2 crore in [2017-18]. If the weekly payable liability during any week in [2017-18] is `3.5 crore which is more than 50% of the previous financial year’s average payable weekly liability of Rs 3.0 Crore, the concerned state entity shall increase the LC amount to `3.85 Crore (1.1*3.50) by adding 1.65 Crore.

- (E) In case of failure to pay into the “[State] Deviation Pool Account” within the specified time of 12 days from the date of issue of statement of charges for

Deviations, the SLDC shall be entitled to encash the LC of the concerned constituent to the extent of the default and the concerned constituent shall recoup the LC amount within 3 days.

11. Governance Structure and constitution of [State] Power Committee

(A) Within three months from date of notification of these Regulations, the State Load Despatch Centre shall formulate Operating Procedures and Business Rules for constitution of [State] Power Committee, which shall be approved by the [State] Commission.

(B) The [State] Power Committee shall :

- i. Co-ordinate and facilitate the intra-state energy exchange for ensuring optimal utilisation of resources.
- ii. Review energy accounting and billing for inter-utility exchange of power
- iii. Ensure settlement of deviations amongst State Entities in accordance with these Regulations.
- iv. Monitor compliance of these Regulations by State Entities.

12. Power to Relax.

The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected by grant of relaxation, may relax any of the provisions of these Regulations on its own motion or on an application made before it by an interested person.

13. Power to issue directions:-

If any difficulty arises in giving effect to these Regulations, the Commission may on its own motion or on an application filed by any affected party, issue such directions as may be considered necessary in furtherance of the objective and purpose of these Regulations.

Schedule-I : Price Vector for Deviation Charges

Average Frequency of the time Block (Hz)		Charges for Deviation
Below	Not Below	Paise/kWh
	50.05	0.00
50.05	50.04	50.00
50.04	50.03	100.00
50.03	50.02	150.00
50.02	50.01	200.00
50.01	50.00	250.00
50.00	49.99	277.50
49.99	49.98	305.00
49.98	49.97	332.50
49.97	49.96	360.00
49.96	49.95	387.50
49.95	49.94	415.00
49.94	49.93	442.50
49.93	49.92	470.00
49.92	49.91	497.50
49.91	49.90	525.00
49.90	49.89	552.50
49.89	49.88	580.00
49.88	49.87	607.50
49.87	49.86	635.00
49.86	49.85	662.50

Average Frequency of the time Block (Hz)		Charges for Deviation
Below	Not Below	Paise/kWh
49.85	49.84	690.00
49.84	49.83	717.50
49.83	49.82	745.00
49.82	49.81	772.50
49.81		800.00

(Charges for deviation for each 0.01 Hz step is equivalent to 50 Paise/kWh in the frequency range of 50.05-50.0 Hz and in step of 27.50 Paise/kWh in the frequency range of 50.0-49.8 Hz)

Schedule-II : Deviation Charges for Wind/Solar Generating Stations**Table – I: Deviation Charges in case of under injection by Wind/Solar Generating Stations as State Entities undertaking Inter-state transactions**

S. No.	Absolute Error in the 15-minute time block	Deviation Charges <u>payable to</u> State Deviation Pool Account
1	<= 15%	At the Fixed Rate for the shortfall energy for absolute error upto 15%
2	>15% but <=25%	(At the Fixed Rate for the shortfall energy for absolute error upto 15%) + (110% of the Fixed Rate for balance energy beyond 15% and upto 25%)
3	>25% but <=35%	(At the Fixed Rate for the shortfall energy for absolute error upto 15%) + (110% of the Fixed Rate for balance energy beyond 15% and upto 25%) + (120% of the Fixed Rate for balance energy beyond 25% and upto 35%)
4	>35%	(At the Fixed Rate for the shortfall energy for absolute error upto 15%) + (110% of the Fixed Rate for balance energy beyond 15% and upto 25%) + (120% of the Fixed Rate for balance energy beyond 25% and upto 35%) + (130% of the Fixed Rate for balance energy beyond 35%)

Table – II: Deviation Charges in case of over injection by Wind/Solar Generating Stations as State Entities undertaking Inter-state transactions

S. No.	Absolute Error in the 15-minute time block	Deviation Charges <u>payable from</u> State Deviation Pool Account
1	<= 15%	At the Fixed Rate for the excess energy upto 15%
2	>15% but <=25%	(At the Fixed Rate for the excess energy upto 15%) + (90% of the Fixed Rate for excess energy beyond 15% and upto 25%)
3	>25% but <=35%	(At the Fixed Rate for the excess energy upto 15%) + (90% of the Fixed Rate for excess energy beyond 15% and upto 25%) + (80% of the Fixed Rate for excess energy beyond 25% and upto 35%)

S. No.	Absolute Error in the 15-minute time block	Deviation Charges <u>payable from</u> State Deviation Pool Account
4	>35%	(At the Fixed Rate for the excess energy upto 15%) + (90% of the Fixed Rate for excess energy beyond 15% and upto 25%) + (80% of the Fixed Rate for excess energy beyond 25% and upto 35%) + (70% of the Fixed Rate for excess energy beyond 35%)

Table – III: Deviation Charges in case of under-injection or over injection, by Wind/Solar Generating Stations commissioned after date of Notification of these Regulations for sale of power within State

S. No.	Absolute Error in the 15-minute time block	Deviation Charges <u>payable to</u> State Deviation Pool Account
1	$\leq 10\%$	None
2	>10% but $\leq 20\%$	(At the Rs 0.50 per unit for shortfall or excess energy for Absolute Error beyond 10% and upto 20%)
3	>20% but $\leq 30\%$	(At the Rs 0.50 per unit for shortfall or excess energy for Absolute Error beyond 10% and upto 20%) + (At the Rs 1.00 per unit for balance energy beyond 20% and upto 30%)
4	>30%	(At the Rs 0.50 per unit for shortfall or excess energy for Absolute Error beyond 10% and upto 20%) + (At the Rs 1.00 per unit for shortfall or excess energy beyond 20% and upto 30%) + (At the Rs 1.50 per unit for balance energy beyond 30%)

Table – IV: Deviation Charges in case of under-injection or over injection by Wind/Solar Generating Stations commissioned prior to date of Notification of these Regulations, for sale of power within State

S. No.	Absolute Error in the 15-minute time block	Deviation Charges <u>payable to</u> State Deviation Pool Account
1	$\leq 15\%$	None

S. No.	Absolute Error in the 15-minute time block	Deviation Charges payable to State Deviation Pool Account
2	>15% but <=25%	(At the Rs 0.50 per unit for shortfall or excess energy for Absolute Error beyond 15% and upto 25%)
3	>25% but <=35%	(At the Rs 0.50 per unit for shortfall or excess energy for Absolute Error beyond 15% and upto 25%) + (At the Rs 1.00 per unit for balance energy beyond 25% and upto 35%)
4	>35%	(At the Rs 0.50 per unit for shortfall or excess energy for Absolute Error beyond 15% and upto 25%) + (At the Rs 1.00 per unit for shortfall or excess energy beyond 25% and upto 35%) + (At the Rs 1.50 per unit for balance energy beyond 35%)

TABLE – V : Additional Deviation Charge (for Seller/Buyer)

(A) When 12% of the Schedule is less than or equal to [10] MW		
1	For over-drawal of electricity by any Buyer in excess of 12% and upto 15% of the schedule in a time block	Equivalent to 20% of Charge for Deviation corresponding to average grid Frequency of the time-block
2	For over-drawal of electricity by any Buyer in excess of 15% and upto 20% of the schedule in a time block	Equivalent to 40% of Charge for Deviation corresponding to average grid Frequency of the time-block
3	For over-drawal of electricity by any Buyer in excess of 20% of the schedule in a time block	Equivalent to 100% of Charge for Deviation corresponding to average grid Frequency of the time-block
4	For under-injection of electricity by any Seller in excess of 12% and upto 15% of the schedule in a time block	Equivalent to 20% of Charge for Deviation corresponding to average grid Frequency of the time-block
5	For under-injection of electricity by any Seller in excess of 15% and upto 20% of the schedule in a time block	Equivalent to 40% of Charge for Deviation corresponding to average grid Frequency of the time-block
6	For under-injection of electricity by any Seller in excess of 20% of the schedule in a time block	Equivalent to 100% of Charge for Deviation corresponding to average grid Frequency of the time-block
(B) When 12% of the Schedule is more than [10] MW		
1	For over-drawal of electricity by any Buyer is above X MW and upto X+[10] MW in a time block	Equivalent to 20% of Charge for Deviation corresponding to average grid Frequency of the time-block

(A) When 12% of the Schedule is less than or equal to [10] MW		
2	For over-drawal of electricity by any Buyer is above X+[10] MW and upto X + [20] MW in a time block	Equivalent to 40% of Charge for Deviation corresponding to average grid Frequency of the time-block
3	For over-drawal of electricity by any Buyer is above X + 20 MW in a time block	Equivalent to 100% of Charge for Deviation corresponding to average grid Frequency of the time-block
4	For under-injection of electricity by any Seller is above [10] MW and upto[20] MW in a time block	Equivalent to 20% of Charge for Deviation corresponding to average grid Frequency of the time-block
5	For under-injection of electricity by any Seller is above [20] MW and upto [25] MW in a time block	Equivalent to 40% of Charge for Deviation corresponding to average grid Frequency of the time-block
6	For under-injection of electricity by any Seller is above [25] MW in a time block	Equivalent to 100% of Charge for Deviation corresponding to average grid Frequency of the time-block

TABLE – VI : Additional Deviation Charge for Under-injection by Generating Stations regulated by the Commission using coal or lignite or gas supplied under Administered Price Mechanism (APM)

(A) When 12% of the Schedule is less than or equal to [10] MW		
1	For under-injection of electricity by any Seller in excess of 12% and upto 15% of the schedule in a time block	Equivalent to 20% of Cap Rate for Deviations of [303.04] Paise/kWh or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.
2	For under-injection of electricity by any Seller in excess of 15% and upto 20% of the schedule in a time block	Equivalent to 40% of Cap Rate for Deviations of [303.04] Paise/kWh or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.
3	For under-injection of electricity by any Seller in excess of 20% of the schedule in a time block	Equivalent to 100% of Cap Rate for Deviations of [303.04] Paise/kWh or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.
(A) When 12% of the Schedule is more than [10] MW		

1	For under-injection of electricity by any Seller is above X MW and upto X+[10] MW in a time block	Equivalent to 20% of Cap Rate for Deviations of [303.04] Paise/kWh or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.
2	For under-injection of electricity by any Seller is above X+[10] MW and upto X + [20] MW in a time block	Equivalent to 40% of Cap Rate for Deviations of [303.04] Paise/kWh or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.
3	For under-injection of electricity by any Seller is above X + [20] MW in a time block	Equivalent to 100% of Cap Rate for Deviations of [303.04] Paise/kWh or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.