

**DRAFT PUNJAB STATE ELECTRICITY REGULATORY COMMISSION
(DEVIATION, SETTLEMENT MECHANISM AND RELATED
MATTERS) REGULATIONS, 2019**

November, 2019

NOTIFICATION

No. PSERC/Secy./Regu - In exercise of the powers conferred under sub-section (3) of Section 32, sub-section (4) of Section 33, Sections 66, Clauses (b) and (h) of sub-section (1) of Section 86, and Clauses (g) and (zp) of sub-section (2) of Section 181 of the Electricity Act, 2003 (36 of 2003), and all other powers enabling it in this behalf and after previous publication, the Punjab State Electricity Regulatory Commission hereby makes the following regulations, namely:

1. Short Title and Commencement

- 1 These Regulations may be called the Punjab State Electricity Regulatory Commission (Intra-State Deviation Settlement Mechanism and related matters) Regulations, 2019.
- 2 These Regulations except commercial arrangements, Deviation Charges, Additional Charges for Deviation and penal action shall come into force from the date of their notification in the official Gazette of the State.

Provided that the commercial arrangements specified under Clause (9) and (10) of these Regulations, and the related provisions regarding Deviation Charges, Additional Charge for Deviation and penal actions, if any, shall come into force from date to be notified separately through Order.

Provided further that till notification of commercial arrangements under these regulations, CERC DSM Regulations read with Commission's order dated 28.11.2014 in petition no. 27 of 2014 shall remain in force for methodology of deviation and all related commercial arrangements.

Provided also that deviation of wind and solar generators, shall be treated as per the provisions of "Punjab State Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2019

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 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, as measured by the interface meters;
- d. **‘Area Clearing Price (ACP)’** means the price of a time block electricity contract established on the Power Exchange after considering all valid purchase and sale bids in particular area(s) after market splitting, i.e. dividing the market across constrained transmission corridor(s);
- e. **‘Buyer’** means a person, including distribution licensee, deemed distribution licensees 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 Punjab State Electricity Regulatory Commission (Terms and Conditions for Intra-state Open Access) Regulations, 2011 as amended from time to time and shall include any subsequent amendment thereof;
- g. **‘Commission’** means the Punjab State Electricity Regulatory Commission referred to in sub-section (1) of section 82 of the Act;
- h. **‘Day Ahead Market (DAM)’** means a market where physical delivery of electricity occurs on the next day (T+1) of the date of transaction (T) and is governed by the Central Electricity Regulatory Commission (Power Market) Regulations, 2010 (as amended from time to time), the Rules and Bye-Laws of the Power Exchanges as approved by the Central Commission;
- i. **‘Daily Base DSM Charge’** means the sum of charges for deviations for all time blocks in a day payable or receivable as the case may be, excluding the additional charges specified under Regulation 10 of these Regulations;
- j. **‘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 the State Load Despatch Centre.
- k. **‘Deviation Settlement Mechanism’** shall mean and include the framework for energy accounting, deviation accounting, rules for pricing of deviation(s) payable and receivable by the State entities and other design parameters as specified under Regulation 6 of these Regulations.
- l. **‘Full Open Access Consumer’** shall mean Open Access Consumer connected to transmission system or distribution system but not having any contract demand with the distribution licensee within the state;
- m. **‘Gaming’** in relation to these Regulations, shall mean an intentional mis-declaration of declared capacity by any Seller or intentional mis-declaration of drawal schedule by any Buyer in order to make an undue commercial gain through Charge for Deviations;

- n. **‘Grid Code’** means the Grid Code specified by the Commission under clause (h) of sub-section (1) of Section 86 of the Act.
- o. **‘Indian Electricity Grid Code’ (or ‘IEGC’)** means the Grid Code specified by the Central Electricity Regulatory Commission under Section 79(1)(h) of the Act;
- p. **‘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.
- q. **‘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;
- r. **‘MoD Guidelines’** means the Guidelines for operation of Merit Order Despatch and amendments thereof, as may be approved by the Commission from time to time.
- s. **‘Open Access Regulations’** means the Punjab State Electricity Regulatory Commission (Terms and conditions for Intra State Open Access) Regulations, 2011 as amended from time to time;
- t. **‘Partial Open Access Consumer’** shall mean Open Access Consumer connected to the transmission system or distribution system and having part of his contract demand with the distribution licensee within the state;
- u. **‘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;
- v. **‘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;
- w. **‘Seller’** means a person, including a generating station or unit of generating station including Captive Power Plant, supplying electricity to the grid through a transaction scheduled in accordance with the regulations applicable for short-term open access, medium-term open access and long-term open access;
- x. **‘State Deviation Pool Account’** means the State Account for receipts and payments on account of deviations by Buyers and Sellers;
- y. **‘State Entity’** means such person who is in the SLDC control area and whose metering and energy accounting is done at the state level;
- z. **‘State Load Despatch Centre’ or ‘SLDC’** means the Load Despatch Centre of the State established under sub section (1) of section 31 of the Act, responsible for co-ordinating scheduling of the state entities in accordance with the provisions of State Grid Code

aa. 'Time-Block' means a time block of 15 minutes or any such shorter duration as may be notified by the Commission, for which specified electrical parameters and quantities are recorded by special energy meter, with first time block starting at 00.00 hours;

bb. 'Time Block DSM Charge' means the charge for deviation for the specific time block in a day payable or receivable as the case may be, excluding the additional charges as specified under Regulations 10 of these Regulations;

- 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 as the case may be.

3. Objective

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

4. Applicability

These Regulations shall apply to the Seller(s) and Buyer(s) involved in the transactions facilitated through short- term open access or medium-term open access or long-term access using intra-state transmission system (InSTS) or distribution system of electricity (including inter-state **wheeling** of power),subject to the following conditions:

- (A) Deviation Settlement Mechanism under these Regulations shall be applicable for all Seller(s) having installed capacity above 5 MW(or such other threshold capacity), including renewable energy generators (excluding wind and solar generating stations and must run generators as defined in IEGC), open access generators, captive generators (**excluding in-situ captive generators**) connected to intra-state transmission system.

Provided that, the revision in the threshold capacity limit shall be separately notified by the Commission in stages over the period considering implementation aspects and based on report to be submitted by SLDC.

Provided further that, forecasting, scheduling and deviation settlement related matters regarding wind and solar generation shall be governed as per the provisions of Punjab State Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2019" and its amendments thereof.

Provided also that, in case of CPP connected to InSTS or distribution system wheeling power under Open Access Regulations and availing Standby power under PSERC(Harnessing of Captive Power Generation) Regulations, 2009 as amended from time to time, the overdrawal during the period of Standby power shall be as per

PSERC(Harnessing of Captive Power Generation) Regulations, 2009 as amended from time to time

- (B) Deviation Settlement Mechanism under these Regulations shall be applicable for all Buyer(s) including distribution licensee(s), deemed distribution licensee(s) located in the state and full open access consumers connected to intra-state transmission system(InSTS).

Provided that, Deviation Settlement of partial open access consumers connected to intra-state transmission system and all open access consumers connected to distribution network shall be in accordance with the provisions of Open Access Regulations.

Provided further that, in case of full open access consumers connected to InSTS and availing standby power under Open Access Regulations, the overdrawl during the period of standby power shall be dealt as per the Open Access regulations.

5. Duties of State Load Despatch Centre and State Entities

These Regulations aim to govern the functioning of 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 the power system is maintained.

To meet these objectives, necessary preconditions and covenants for participation by the State entities shall be as under:

- (1) The State entities shall inform the SLDCs of all contracts they have entered into for exchange of energy.
- (2) The 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 Punjab State Grid Code.
- (3) To gain physical access and connection to the intra-State transmission system (InSTS) or the distribution system, the State entities shall enter into a Connection Agreement/Open Access Agreement with the concerned transmission licensee or the distribution licensee. This agreement shall specify physical and operational requirements for reliable operation of InSTS or the distribution system as the case may be, in accordance with Punjab State Electricity Regulatory Commission (Terms and Conditions of Intra State Open Access) Regulations, 2011 its amendments thereof. The State Transmission Utility (STU) or the distribution licensee, as the case may be, shall make necessary arrangements for installation of suitable meters, capable of recording energy flows at 15-minute intervals or any other time interval as specified by the Commission, at the points of injection and drawal of the State entities. The time synchronisation of metering system shall be through Global Positioning System with counter check from the State Energy Accounting Centre which is the SLDC.

- (4) SLDC shall take all decisions regarding the despatch of generating stations after evaluating all the possible network parameters, constraints, congestions in the transmission network. In the event of any network aberration, the instructions issued by the SLDC relating to despatch and drawal shall be binding on all State entities.

SLDC shall publish on its website 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 with regard to the despatch of power.

6. Principles for Operationalising Deviation Settlement Mechanism

The framework for Deviation Settlement Mechanism shall cover the following key design parameters, viz., (a) Scheduling Period (b) Guiding Principles for Scheduling and Despatch (c) Operating Range of Frequency (d) Deviation (e) Settlement Period (f) Measurement Unit for State Deviation Pool Account (g) Deviation Pool Price Vector (h) Deviation Volume Limit (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 or such other period as the Commission may specify.

- (B) Guiding Principles for Scheduling and Despatch:** All the Sellers and Buyers under these Regulations shall be guided by the scheduling and despatch procedure to be formulated by the SLDC in accordance with the provisions of Punjab State Grid Code and amendment thereof. The scheduling and despatch code thereon shall be governed by following principles:

- i. Based on the availability, schedule forecasted by generating units (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 as may be approved by the Commission, from time to time.
- ii. Wheeling transactions of captive users and open access consumers shall be despatched as contracted subject only to transmission constraints and system emergency conditions.
- iii. **Transactions/submission of generation data of SGS operating under distribution licensee:**

Each generating stations shall provide their Availability and Declared capacity to SLDC.

- iv. **Scheduling Generating Stations under Bhakra Beas Management Board (BBMB):**

BBMB would coordinate and finalise the schedules of generating plants under BBMB in accordance with requirements of its beneficiary States and these shall be communicated to NRLDC who in turn would inform SLDC in accordance with IEGC.

- v. During real time operation, in case the grid parameters including frequency, voltage parameters and transmission line loading and substation loading conditions deviate beyond permissible operating range, SLDC shall take suitable measures in the interest of reliable and safe grid operations and to ensure compliance of RLDC instructions in conformity with the provisions of the DSM Regulations of Central Commission and the amendments thereof.

Accordingly, SLDC shall issue necessary despatch or curtailment instructions in accordance with least cost despatch schedule order, so as to maintain the load generation balance and comply with conditions stipulated under IEGC and State Grid Code

SLDC shall maintain and publish separate account of such actions initiated by SLDC in the interest of grid operation or in compliance of RLDC instructions in conformity with DSM Regulations of the Central Commission. SLDC shall publish a monthly report of exchange of power capacity, if any, amongst the State Entities consequent to such SLDC interventions.

The time block wise settlement of such exchange of power on account of such actions initiated by SLDC shall be settled at the applicable Deviation rate including Additional Deviation Charges, if any, for the state at the state periphery for the respective time block.

(D) Operating Range for Frequency: The normal operating range for average grid frequency for time block shall be in line with the range stipulated under the IEGC and Punjab State Grid Code, as amended from time to time (presently it is 49.90Hz to 50.05 Hz). While the normal operating range of average frequency as per SGC has been specified as 49.90Hz to 50.05 Hz but the deviation price vector has been specified under regulation 9 and 10 of these regulations for frequency range of 49.85 Hz to 50.05 Hz. No over-drawal or under injection shall be allowed when grid frequency is below 49.85 HZ and no under-drawal or over-injection shall be allowed when grid frequency is above 50.05 Hz. **Deviation:** For the purposes of deviation settlement amongst the State entities, the SLDC shall work out deviation for ‘State Deviation Pool Account’ comprising over-drawal/under-drawal and over-injection/under-injection for each State Entity corresponding to each scheduling period. Charges for Deviation shall be in accordance with regulation 9 and 10 of these regulations.

(E) Settlement Period: Preparation and settlement of ‘State Deviation Pool Account’ shall be undertaken on weekly basis coinciding with the mechanism followed for regional Deviation Settlement Accounts.

(F) Measurement Unit for State Deviation Pool Account: The measurement unit for State Deviation Pool Account Volume preparation shall be kilowatt hours (kWh). Measurement unit for State Deviation Pool Account Value (payable and receivable) preparation shall be in Indian Rupees (INR). The decimal component of the energy unit (kWh) and amount (INR) shall be rounded off to the nearest integer value. In addition, the interface meters and the state energy account shall capture the reactive energy exchange over interface points, however, the reactive energy pricing framework and compensation for reactive energy exchange shall be dealt with separately.

(G) Deviation Pool Price Vector: The pricing of deviation of Buyers/Sellers shall be in accordance with the Deviation Price Vector as specified in the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014 and its amendments thereof.

Provided that, a change in sign of the deviation shall be made once every 12 time blocks or by remaining in the range of $\pm 20\%$ of the installed capacity of the seller or ± 20 MW with reference to its schedule whichever is lower, or as prescribed by the Commission, failing which additional charges @10% of time block deviation charge shall be payable or receivable as the case may be.

Provided further that deviation of wind and solar generators, shall be treated as per the provisions of “Punjab State Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement for Solar and Wind Generation) Regulations, 2019

(H) Deviation Volume Limit: To ensure grid discipline and grid security, conditions for Deviation Volume Limit and consequences of exceeding such Deviation Volume Limit by way of levy of Additional Deviation Charges as specified under Regulation 10 shall be applicable.

(I) Premise for Allocation of Losses: For scheduling purposes, intra-state transmission system losses as approved by the Commission shall be allocated amongst the State entities in proportion to the scheduled drawal by each State Entity.

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

7. Declaration of Capacity and Scheduling

(1) The provisions of the Punjab State Grid Code and Punjab State Electricity Regulatory Commission (Intra-state Open Access) Regulations, 2011 and as amended from time to time, shall be applicable for declaration of capacity and scheduling.

- (2) The generating Unit, as far as possible, shall generate electricity as per the day-ahead generation schedule finalized by the SLDC in accordance with the Punjab State Grid Code.

Provided that the revision in generation schedule on the day of operation shall be permitted, in accordance with Punjab State Grid Code and as amended from time to time.

8. Treatment for Gaming

- (1) The Commission, either suo-motu or on a Petition made by the SLDC, or any affected party, may initiate proceedings against any Seller or any Buyer on charges of gaming and if required, may order an enquiry to be made by such officer of the Commission or such other party as the Commission may deem fit. The enquiry officer so appointed shall submit his findings within such time as may be fixed by the Commission and such investigating officer or authority shall exercise all powers as envisaged under Section 128 of the Act.
- (2) If in the proceeding initiated by the Commission or in the enquiry made in this regard under Clause (1) above, it is established that any Seller or any Buyer has indulged in gaming, the Commission may without prejudice to any other action under the Act or Regulation made thereunder, disallow any Charges for Deviation to such Seller or Buyer during the period of such gaming.

9. Charges for Deviations

Deviation Charges for Sellers and Buyers:

- (1) The Charges for Deviation 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, which are State entities, and shall be worked out on the average frequency of a time-block by considering the Price Vector for Deviation Charges as specified in the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014, as amended from time to time, (as reproduced at Annexure I) and subject to the conditions under clause (2) to (8) of this regulation.
- (2) The Cap rate for the charges for deviation for generating stations irrespective of the fuel type and whether the tariff of such generating station is determined by the Commission or not, shall not exceed 303.04 Paise/kWh
- (3) The Charges for Deviation of under-drawal by the Buyer in a time block in excess of 12% of the schedule or [X]MW, whichever is less, shall be zero; wherein limit of [X] MW shall be determined as per the methodology specified under Clause (B) of the regulation 10 of these Regulations;

Provided that if schedule of a buyer, in a time block, is less than or equal to 40 MW, the charges for under-drawal in excess of 5 MW shall be zero.

- (4) The Charges for deviation of over-injection by the Seller in a time block in excess of 12% of the schedule or 10MW, whichever is less, shall be zero, except in case of injection of infirm power, which shall be governed by Clause (8) of this Regulation;

Provided that if schedule of a Seller, in a time block, is less than or equal to 40 MW, the charges for over-injection in excess of 5 MW shall be zero.

- (5) The Charges for Deviation shall be zero at grid frequency of 50.05 Hz and above.
- (6) The Charges for Deviation corresponding to grid frequency interval of 'below 50.01 Hz and not below 50.0 Hz' shall be daily average Area Clearing Price discovered in the Day-Ahead Market (DAM) segment of Power Exchange. The daily simple average ACP of the Power Exchange having a market share of 80% or more in energy terms on a daily basis shall be used for linking to the DSM price. If no single Power Exchange is having a market share of 80% or more, the weighted average of the daily simple average ACP shall be considered.
- (7) The linkage of Deviation Charges to frequency may be reviewed by the State Commission as and when revised by Central Commission keeping in view the changing power market conditions and shall be re-notified accordingly.
- (8) The infirm power injected into the grid by a generating unit of a generating station during 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 six months or the extended time as may be allowed by the Commission subject to ceiling of Cap Rate of 303.04 Paise/kWh or as may be determined by the Commission from time to time.

10. 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 the range of '49.85 Hz or above and below 50.05 Hz.' The Volume limit of [X] MW for Buyers shall be determined as per clause (B) of this Regulation.

Provided that no over-drawal of electricity by any Buyer shall be permissible when grid frequency is "below 49.85 Hz" and no under-drawal of electricity by any Buyer shall be permissible when grid frequency is "50.05 Hz and above".

(B) The Volume Limit of [X] MW for distribution licensee(s) and Buyers shall be determined as under:

- 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).

Where, Peak Demand of the Distribution Licensee(s) and Buyer(s) shall be recorded Peak Demand in the previous Financial Year or Projected Peak Demand of Distribution Licensee(s) or Buyer(s) in ensuing Financial Year, whichever is higher;

- ii. Volume Limit for the Distribution Licensee or Buyer determined as per above formula shall be rounded off to nearest integer value.
- iii. State Volume Limit shall be linked to Volume Limit (1L) applicable to the State as per the CERC(Deviation Settlement Mechanism and related matters) Regulations,2014 and its amendments thereof;

(C) The under-injection or over-injection of electricity by Seller shall not exceed 12% of the scheduled injection or [10] MW, whichever is lower when grid frequency is “49.85 Hz and above and below 50.05 Hz”;

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 “49.85 Hz and above and below 50.05 Hz”.

Provided further that no under-injection of electricity by a Seller shall be permissible when the grid frequency is “below 49.85 Hz” and no over-injection of electricity by a Seller shall be permissible when the grid frequency is “50.05 Hz and above

(D) In addition to the Charges for Deviation as stipulated under Regulation 9 of these Regulations, Additional Charges 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 “49.85 Hz and above” at the rates specified in Annexure-II in accordance with the methodology specified in Clause (H) & (I) of this regulation:

¹For Punjab State Volume Limit (L) is 150 MW

- (E) In addition to the Charges for Deviation as stipulated under Regulation 9 of these Regulations, Additional Charges 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 “50.10 Hz and above” at the rates equivalent to the charges of deviation corresponding to the grid frequency of “below 50.01 Hz but not below 50.0 Hz” or cap rate for deviation of [303.04] Paise/kWh, whichever is lower
- (F) In addition to the Charges for Deviation as stipulated under Regulation 9 of these Regulations, Additional Charges for Deviation shall be applicable for over-drawal of electricity by a buyer for each time block when grid frequency is “below 49.85 Hz” as a percentage of charges for the deviation corresponding to the average grid frequency of the time block and the same shall be equivalent to 100% of the charges for deviation of 800 Paise/kWh corresponding to the grid frequency of ‘below 49.85 Hz’.
- (G) In addition to the charges for deviation as stipulated under regulation 9 of these regulations, the Additional Charges for Deviation for under-injection of electricity by a Seller, during the time-block when grid frequency is “below 49.85 Hz”, by any generating station irrespective of fuel type and whether the tariff of such generating station has been determined by the Commission or not shall be equivalent to 100% of the Cap Rate for deviations of [303.04] Paise/kWh.
- (H) The Additional Charges for Deviation for over-drawal by a Buyer for each time block in excess of the volume limit specified in Clause (B) of this regulation when grid frequency is "49.85 Hz and above" shall be as specified by the Commission as a percentage of the charges for the deviation corresponding to average grid frequency of the time block with due consideration to the behaviour of the Buyers towards grid discipline:
- (I) The Additional Charges for Deviation of under-injection of electricity during the time-block in excess of the volume limit specified in Clause (C) of this Regulation, when the grid frequency is “49.85 Hz and above”, by the generating stations irrespective of the fuel type and whether the tariff of such generating plant is determined by the Commission or not 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 behaviour of the generating stations towards grid discipline:

(J) The additional charges for violation by sellers/buyers when the frequency is below 49.85 Hz or above 50.10 Hz as mentioned at (E), (F) & (G) above are without prejudice to the right of SLDC to initiate action against the seller/buyer for all such violations as per the provision of Section 146 of the Act.

(K) Sustained Deviation Charges:

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 correct its position in the manner as specified under clause (a) and (b) of this Regulation.

(a) For the period upto 31.03.2020: If the sustained deviation from schedule continues in one direction (positive or negative) for 12 time blocks, the State Entity (Buyer or Seller) shall correct its position by making the sign of its deviation from schedule changed or by remaining in the range of $\pm 20\%$ of the installed capacity of the seller or ± 20 MW with reference to its schedule, whichever is lower, at least once, latest by 13th time block, such range being a subset of the volume limit as specified under Regulation 10 of these Regulations.

Provided that each violation of the sign change requirement under this clause shall attract an additional charges of 10% of the time block DSM Charges payable or receivable as the case may be.

To illustrate,

A state entity having a sustained deviation from time blocks t_1 to t_{12} , shall correct its position either by changing the sign of its deviation (from positive to negative or negative to positive as the case may be) or come back in the range of $\pm 20\%$ of the installed capacity of the seller or ± 20 MW with reference to its schedule, whichever is lower, latest by the end of time block t_{13} . In case, such sign change does not take place or it fails to come back in the aforesaid range by the end of time block t_{13} , but such correction of position takes place from time block t_{14} up to time block t_{24} , then additional charge shall be levied equivalent to one violation. Further, in case, sign change does not take place or it fails to come back in the range as aforesaid latest by the end of t_{25} , but correction in position takes place from time block t_{26} up to time block t_{36} , then the additional charge shall be levied for two violations and so on.

(b) For the period from 01.04.2020 onwards: If the sustained deviation from schedule continues in one direction (positive or negative) for 6 time blocks, the State Entity (buyer or seller), shall correct its position, by making the sign of its deviation from schedule changed or by remaining in the range of $\pm 20\%$ of the installed capacity of the seller or ± 20 MW with reference to its schedule, whichever is lower, at least once, latest by 7th time block, such range being a subset of the volume limit as specified under Regulation 10 of these Regulations.

Provided that violation of the requirement under clause (b) of this Regulation shall attract an additional charge as specified in the table below:

<i>No. of violations in a Day</i>	<i>Additional Charge Payable</i>
<i>From first to fifth violation</i>	<i>For each violation, an additional charge @ 3% of daily base DSM charge payable or receivable</i>
<i>From sixth to tenth violation</i>	<i>For each violation, an additional charge @ 5% of daily base DSM charge payable or receivable</i>
<i>From eleventh violation onwards</i>	<i>For each violation, an additional charge @ 10% of daily base DSM charge payable or receivable</i>

To illustrate, A state entity having a sustained deviation from time blocks t_1 to t_7 , shall correct its position either by changing the sign of its deviation (from positive to negative or negative to positive as the case may be) or come back in the range of $\pm 20\%$ of the installed capacity of the seller or ± 20 MW with reference to its schedule, whichever is lower, latest by the end of time block t_7 . In case, such sign change does not take place or it fails to come back in the aforesaid range by the end of time block t_7 , but such correction of position takes place from time block t_8 up to time block t_{12} , then additional charge shall be levied equivalent to one violation. Further, in case, sign change does not take place or it fails to come back in the range as aforesaid latest by the end of t_{13} , but correction in position takes place from time block t_{14} up to time block t_{18} , then the additional charge shall be levied for two violations and so on.

Provided further that counting of number of sign change violations under above mentioned clauses (a) and (b) of this Regulation shall start afresh at 00.00 Hrs. for each day.

Provided also that the Commission may adopt a different methodology or change the allowed time blocks for sign change as required from time to time.

Provided also that payment of additional charges for failure to sign change requirement as specified above shall not be applicable to:

- (i) renewable energy generators which are state entities
- (ii) run of river projects without pondage
- (iii) any infirm injection of power by a generating station prior to CoD of a unit during testing and commissioning activities,.
- (iv) any drawal of power by a generating station for the start-up activities of a unit.
- (v) any inter-regional deviations.
- (vi) forced outage of a generating station in case of collective transactions on Power Exchanges.

11. Treatment of Infirm Power and Start Up Power Prior to COD

- (1) Any infirm injection of power by a generating station prior to the COD of a unit during testing and commissioning activities shall be exempted from the volume limit as specified in regulation 10 above for a period not exceeding six months or the extended time as may be allowed by the Commission.
- (2) Any drawal of power by a generating station prior to the COD of a unit for the start-up activities shall be exempted from the volume limit as specified in regulation 10 above when the grid frequency is “49.85 Hz and above”.
- (3) Any drawal of power by a generating station prior to the COD of a unit for the start-up activities shall be exempted from the levy of Additional Charges for Deviation.

12. Framework for Operationalisation and Monitoring of Deviation Settlement Mechanism

- (1) The SLDC shall develop and publish on its website procedure 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 under-drawal/over-injection and for over-drawal and under-injection respectively.
- (2) Payment of Charges for Deviation under Regulation 9 and the Additional Charges for Deviation under Regulation 10, 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 provisions of these regulations..

- (3) The charges for over-drawal/under-injection and under-drawal/over-injection of electricity shall be computed by the SLDC in accordance with the methodology used for preparation of "State Energy Accounts."
- (4) The SLDC shall, on weekly basis, prepare and publish on its website the records of the Deviation Accounts, specifying the quantum of over-drawal/under-injection and the corresponding amount of Charges for Deviation payable/receivable for each Buyer and Seller for all the time-blocks when the grid frequency is "49.85Hz and above" and "below 49.85" Hz separately.

13. State Energy Account

- (1) The SLDC shall prepare statement of State Energy Account for each time block for the Buyers and Sellers on monthly basis. Data required for the billing of partial open access consumers connected to InSTS and all open access consumers connected to distribution system shall be passed on to the billing centre of the distribution licensee by the SLDC. The billing centre of the distribution licensee shall be responsible for energy accounting, raising and settlement of bills with partial open access consumers connected to InSTS and all open access consumers connected to distribution system . Payments of capacity and energy charges by the Buyers to the Sellers shall be as per the provisions in the respective Power Purchase Agreements or Agreement(s) with respect to transactions through power exchange and through Short Term Open Access, as the case may be.
- (2) Energy Account Statement for Deviation Settlement of Partial Open Access Consumers connected to the InSTS and all open access consumers connected to the distribution network shall be in accordance with the provisions of PSERC (Terms and Conditions for Intra State Open Access) Regulations, 2011 and its amendments thereof .
- (3) The SLDC shall be responsible for preparation of weekly Deviation Charges statement to all state entities and billing and collection of Deviation Charges from the state entities in accordance with Regulation 12 of these Regulations.

Provided that Provisional State Energy Account and Statement for Deviation Account Settlement should be available for scrutiny and verification by concerned State Entity for specified time period. The same would be finalised within stipulated time period upon addressing comments/discrepancies (if any) in time bound manner.

Provided further that the State Energy Account and Deviation Account Statements shall be available for third party verification and audit on periodic basis and such third party verification and audit shall be carried out at least once a year.

- (4) A detailed energy accounting procedure shall be prepared by the SLDC within 3 months of notification of these Regulations and shall be submitted to the Commission for approval.

Provided that, SLDC shall undertake stakeholder consultation by uploading the draft procedure on SLDC's website before submission of procedure to the Commission for approval.

14. Compliance with the Instructions of State Load Despatch Centre

Notwithstanding anything specified in these Regulations, the Sellers and the Buyers shall strictly follow the instructions of the SLDC on injection and drawal in the interest of grid security and grid discipline.

15. 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 the SLDC on weekly basis 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 SLDC in accordance with the provisions of these Regulations.

Provided that –

- i. The Commission may by Order direct any other entity to operate and maintain "State Deviation Pool Account under these Regulations".
 - 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 the SLDC.
 - iii. The State entities shall comply with all statutory requirements for payment of the applicable statutory levies, taxes and duties;
 - iv. The State entities shall facilitate SLDC in meeting with the reporting requirements of Statutory Authorities, as necessary.
- (C) All payments received in the "State Deviation Pool Account" shall be considered in the following sequence:
- i. Any cost or expense or other charges incurred on recovery of Charges for Deviation.
 - ii. Over dues or penal Interest, if applicable.
 - iii. Normal interest.
 - iv. Regional Deviation Pool Account.
 - v. Charges for Deviation and Additional Charges for Deviation.

- (D) The surplus funds in the State Deviation Pool Account at the end of the financial year shall be utilised for the purpose of improvements in power system operations, for undertaking such measures and studies for improvement in reliability, security and safety of grid operations, undertaking capacity building and training programs related to system operations and market operations and for such other purposes as may be specified by Commission or for other schemes as may be devised in consultation with National Load Despatch Centre, or Regional Load Despatch Centre, with prior approval of the Commission.

Provided that, the shortfall in funds in the State Deviation Pool Account; if any, at the end of the weekly settlement period shall be recovered by levy of additional charge from the State Entities in proportion to Net Deviation Charges Payable by concerned State Entity for the applicable weekly settlement period through supplementary bills.

Provided further that SLDC shall prepare scheme(s) and shall submit an annual plan for utilisation of surplus funds and implement the scheme(s) only upon approval of the Commission.

16. Schedule of Payment of Charges for Deviation

- (A) The payment of Charges for Deviation shall have a high priority and the concerned State Entity shall pay the indicated amount within 10 days of the issue of statement of Charges for Deviation including Additional Charges for Deviation by the SLDC into the “**State Deviation Pool Account**”.
- (B) If payment against Charges for Deviation including Additional Charges for Deviation are delayed by more than two days, i.e., beyond 12 days from the date of issue of the statement by the SLDC, the defaulting State Entity shall pay simple Interest @ 0.04% for each day of delay.
- (C) All Payment to the entities entitled to receive any amount on account of Charges for Deviation shall be made within two working days of the receipt of 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 receiving 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 State 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 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 the State entities shall be required to open a Letter of Credit (LC)/RBI letter of mandate 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.

Illustration

If the average payable weekly liability for Deviation of a State entity during [FY2016-17] is Rs. `2.0 Crore, the State entity shall open LC or submit RBI letter of mandate for Rs. 2.2 Crore in [FY2017-18]. If the weekly payable liability during any week in [FY 2017-18] is Rs. `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/RBI letter of mandate amount to Rs. `3.85 Crore (1.1*3.50) by adding Rs. 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 the statement of Charges for Deviations, the SLDC shall be entitled to encash the LC/RBI letter of mandate of the concerned constituent to the extent of the default and the concerned constituent shall recoup the LC/RBI letter of mandate amount within three days.

17. Governance Structure

(A) SLDC may formulate Operating Procedures and Business Rules for constitution of State Power Committee, which shall be approved by the Commission.

Provided further that SLDC shall prepare and publish provisional (weekly/monthly) State Energy Account and (weekly/monthly) State Deviation Pool Account Statement, which shall be published on its website for scrutiny and review by the State entities. The State entities shall provide comments and suggestions for rectification (if any) within the stipulated period as per the procedures to be formulated by SLDC. Upon such scrutiny and rectification (if necessary),(weekly/monthly) State Energy Account and (weekly/monthly) State Deviation Pool Account Statement as prepared by the SLDC shall be final and binding on all State entities.

(B) The Punjab State Power Committee shall:

- i. Co-ordinate and facilitate intra-state energy exchange for ensuring optimal utilisation of resources.
- ii. Monitor compliance of these Regulations by the State Entities and submit annual compliance report in the prescribed format within thirty days from close of financial year.
- iii. Guide the SLDC for modification of procedure(s) to address the implementation

difficulties, if any.

- iv. Provide necessary support and advice to the Commission for suitable modifications/issuance of operating procedures, practice directions, and amendment to the provisions of this Regulation, as may be necessary upon due regulatory process.

(C) Provided that until such Punjab State Power Committee is constituted with approval of Commission, the State Grid Code Review Committee (SGCRC) constituted under Section 2 of PSERC (Punjab State Grid Code) Regulations, 2013, as amended from time to time, shall be responsible for providing necessary support and advice to the Commission for suitable modifications/issuance of operating procedures, practice directions, and amendment to the provisions of this Regulations, as may be necessary upon due regulatory process.

Provided further that until Punjab State Power Committee is constituted with approval of Commission, the Commercial & Metering Committee (CMC) constituted under Section 2.7 of PSERC (Punjab State Grid Code) Regulations, 2013, as amended from time to time, shall be responsible for monitoring compliance of these Regulations by the State Entities and guiding the SLDC for modification of procedure(s) to address the implementation difficulties, if any.

18. Power to Amend

The Commission may at any time, vary, alter, modify or amend any provision of these Regulations.

19. Power to Remove Difficulties

If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may, by general or specific order, make such provisions not inconsistent with the provisions of the Act, as may appear to be necessary for removing the difficulty.

20. 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.

21. 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.

Secretary
Punjab State Electricity Regulatory Commission

Date: ____ November, 2019

Place: Chandigarh

1. Deviation Charges for Sellers, Buyers, and Other Conditions

- 1) As specified in the Regulation 9 (A) of these Regulations, the Charges for Deviation 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, which are State entities, and shall be worked out on the average frequency of a time-block by considering the Price Vector for Deviation Charges as specified in the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014 and its amendments as stipulated in the following table:

Average frequency of time block(Hz)		Charges for Deviation
Below	Not below	(Paise / kWh)
	50.05	0.0
50.05	50.04	<i>Slope determined by joining the price at Not Below 50.05 Hz and identified price at 50.00 Hz, and as detailed in the note below this Regulation</i>
50.04	50.03	
50.03	50.02	
50.02	50.01	
50.01	50.00	<i>Daily (simple) average Area Clearing Price discovered in the Day Ahead Market segment of power exchange</i>
50.00	49.99	<i>Slope determined by joining the price identified at 50.00 Hz and price at below 49.85 Hz, and as detailed in the note below this Regulation</i>
49.99	49.98	
49.98	49.97	
49.97	49.96	
49.96	49.95	
49.95	49.94	
49.94	49.93	
49.93	49.92	
49.92	49.91	
49.91	49.90	
49.90	49.89	
49.89	49.88	
49.88	49.87	
49.87	49.86	
49.86	49.85	
49.85		800.00

Note:-

- i. The Deviation Settlement Mechanism (DSM) rate vector will have a dynamic slope determined by joining the identified price points at 50 Hz. (daily simple average ACP), frequency of 49.85 Hz (Rs. 8 per unit) and 50.05 Hz (zero) on a daily basis.

- ii. The maximum ceiling limit applicable for average Daily ACP discovered in the DAM segment of Power Exchange at 50.00 Hz shall be 800 Paise/kWh.
- iii. Charges for deviation for each 0.01 Hz step shall be equivalent to the Slope determined by joining the price at 'Not below 50.05 Hz' and 'identified price at 50.00 Hz' in the frequency range of 50.05-50.00 Hz, and to the Slope determined by joining the 'price identified at 50.00 Hz' and price at 'below 49.85 Hz' in frequency range 'below 50 Hz' to 'below 49.85 Hz'.
- iv. The daily simple average ACP of the Power Exchange having a market share of 80% or more in energy terms on a daily basis shall be taken into consideration for linking to the DSM price vector. If no single Power Exchange is having a market share of 80% or more, the weighted average day-ahead price shall be used for linking to the DSM price.
- v. Daily simple average Area Clearing Prices (ACP) in the day-ahead market (exclusive of any transmission charges and transmission losses) shall be used as the basis for market linked DSM price at 50 Hz.

Provided that based on a review of the above mechanism within one year or in such time period as may be decided by the Commission, if the Commission is satisfied that the market conditions permit, the basis for market linked DSM price shall be substituted, by the time-block-wise ACP in the day ahead market or as and when the real time market is introduced, by the hourly ACP or the ACP of such periodicity as may be considered appropriate by the Commission.

- vi. The Cap rate for the charges for deviation for generating stations irrespective of the fuel type and whether the tariff of such generating station is determined by the Commission or not, shall not exceeds 303.04 Paise/kWh
- vii. In case of non-availability of daily simple average ACP due to no-trade on a given day, daily simple average ACP of the last available day shall be considered for determining the DSM charge.
- viii. Deviation price shall be rounded off to nearest two decimal places
- ix. An illustration to DSM price vector specified in table above, is provided as Annexure-III
- x. The National Load Despatch Centre (NLDC) shall act as the Nodal Agency to declare the daily DSM rates and shall display all relevant information on its website

Annexure-II

TABLE – I: 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 Cap Rate[303.04] Paise/kWh as determined by the Commission or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.
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 Cap Rate[303.04] Paise/kWh as determined by the Commission or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.
6	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[303.04] Paise/kWh as determined by the Commission or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.
(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
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
(C) When 12% of the Schedule is more than [10] MW		
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 Cap Rate[303.04] Paise/kWh as determined by the Commission or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.

5	For under-injection of electricity by any Seller is above [20] MW and up to [30] MW in a time block	Equivalent to 40% of Cap Rate[303.04] Paise/kWh as determined by the Commission or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.
6	For under-injection of electricity by any Seller is above [30] MW in a time block	Equivalent to 100% of Cap Rate[303.04] Paise/kWh as determined by the Commission or charge for Deviation corresponding to average grid Frequency of the time-block, whichever is less.

Annexure-III

Illustration to the DSM Price Vector specified in the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014 and its amendments under Clause 3.1

Average Frequency of the time block (Hz)		Charges for Deviation (Paise/kWh)
Below	Not Below	
	50.05	0.00
50.05	50.04	1xP/5
50.04	50.03	2xP/5
50.03	50.02	3xP/5
50.02	50.01	4xP/5
50.01	50.00	P
50.00	49.99	50.00+15xP/16
49.99	49.98	100.00+14xP/16
49.98	49.97	150.00+13xP/16
49.97	49.96	200.00+12xP/16
49.96	49.95	250.00+11xP/16
49.95	49.94	300.00+10xP/16
49.94	49.93	350.00+9xP/16
49.93	49.92	400.00+8xP/16
49.92	49.91	450.00+7xP/16
49.91	49.90	500.00+6xP/16
49.90	49.89	550.00+5xP/16
49.89	49.88	600.00+4xP/16
49.88	49.87	650.00+3xP/16
49.87	49.86	700.00+2xP/16
49.86	49.85	750.00+1xP/16
49.85		800.00

Where P is the Daily average Area Clearing Price in paise per kWh discovered in the Day Ahead Market segment of power exchange.