

**TAMIL NADU ELECTRICITY REGULATORY COMMISSION  
(FORECASTING, SCHEDULING AND DEVIATION SETTLEMENT FOR  
SOLAR AND WIND GENERATION) REGULATIONS, 2017**

**Draft Notification No.TNERC/F&S Solar & Wind/ dt. .12.2017**

(Comments/suggestions are invited on or before 27.01.2018)

**NOTIFICATION**

The following draft of the Regulations which it is proposed to make in exercise of the powers conferred by Sections 86(1) and 181(2)(zp) read with Sections 32 and 33 of the Electricity Act, 2003 (36 of 2003), and all other powers enabling it in this behalf, is hereby published for information of all persons likely to be affected thereby, as required by sub section (3) of section 181 of the said Act.

2. Notice is hereby given that draft Regulations will be taken into consideration after the expiry of thirty days from the date of publication of this notification in the TNERC website and that any objection or suggestion which may be received from any person before the expiry of the aforesaid period will be considered by the Commission.

3. Objection or suggestion, if any, should be addressed in duplicate to the Secretary, Tamil Nadu Electricity Regulatory Commission, 19-A, Rukmini Lakshmi pathy Salai, Egmore, Chennai-600 008.

**REGULATIONS**

**1 Short Title, Commencement and Extent**

1.1 These Regulations may be called the "Tamil Nadu Electricity Regulatory

Commission (Forecasting, Scheduling and Deviation Settlement and related matters for Solar and Wind Generation) Regulations, 2017”.

1.2 These Regulations shall come into force from the date of publication in the Tamil Nadu Government Gazette:

Provided that the Commercial Arrangements specified in these Regulations, and the related provisions regarding Deviation Charges and penalty, shall come into force six months thereafter.

## 2 Definitions

2.1 In these Regulations, unless the context otherwise requires:

(a) “**Absolute Error**” means the difference between the scheduled and the actual generation injected by Solar or Wind Energy Generators in relation to their Available Capacity(AvC) in each time block, and may be computed in percentage terms by applying the following formula:

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

(b) “**Act**” means the Electricity Act, 2003 (36 of 2003), as amended from time to time;

(c) “**Actual Drawal**” in a time block means the electricity drawn by a Procurer, as measured by the interface meters;

(d) “**Actual Injection/Generation**” in a time block means the electricity generated and injected into the Grid by a Generator, as measured by the interface meters;

- (e) **“Available Capacity” (or “AvC”)** of Wind or Solar Energy Generators means the cumulative capacity rating of the Wind turbines, Solar inverters that are capable of generating power in a given time block;
- (f) **“Commission”** means the Tamil Nadu Electricity Regulatory Commission;
- (g) **“De-Pooling”** means the disaggregation and apportionment of the deviations and the applicable charges among the Generators at a Pooling Sub-Station;
- (h) **“Deviation”** in a time block means the difference between the actual injection of energy and scheduled generation;
- (i) **“Forecasting”** means the projection of likely future electricity generation based on scientific analysis of meteorological data and other relevant parameters;
- (j) **“Gaming”** in relation to these regulations, shall mean an intentional mis-declaration of available capacity or schedule by any generator in order to make an undue commercial gain through Charges for Deviation.
- (k) **“Grid Code”** means the State Grid Code specified by the Commission under Section 86(1) (h) of the Act;
- (l) **“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;

(m) **“Interface Meter”** shall have the same meaning as in the Regulations of the Central Electricity Authority governing the installation and operation of Meters;

(n) **“Inter-connection point”** means the interface point of a generation facility with the transmission or distribution system; and shall mean, in relation to a Wind or Solar Energy facility, the line isolator on the incoming feeder on the Low Voltage (LV) side of the Pooling Sub-Station;

(o) **“Pooling Sub-Station”** means a Sub-Station consisting of a step-up transformer and associated switchgear to the Low Voltage (LV) side of which several Wind or Solar Energy Generators are connected:

Provided that, where a Generating Unit is connected through a common or an individual feeder terminating at a Sub-Station of a Distribution Licensee, or the State Transmission Utility, such Sub-Station shall be treated as the Pooling Sub-Station for such Wind or Solar Energy Generator for the purposes of these Regulations;

(p) **“Procurer”** means a person, including a Distribution Licensee, Trading Licensee or an Open Access consumer, procuring electricity through a transaction scheduled in accordance with the Regulations governing Open Access;

(q) **“Qualified Co-ordinating Agency” (or “QCA”)** means the agency appointed by the Wind or Solar Energy Generators connected to a Pooling Sub-Station, or by an individual Generator connected directly

to a Sub-Station, to perform the functions and discharge the obligations specified in these Regulations;

- (r) **“Scheduled Generation”** for a time block or other time period, means the Schedule of generation in MW or MWh ex-bus provided by the State Load Despatch Centre;
- (s) **“Scheduled Drawal”** for a time block or other time period means the Schedule of despatch in MWh ex-bus provided by the State Load Despatch Centre;
- (t) **“State Deviation Pool Account (Wind and Solar)”** means the State Account for receipts and payments on account of deviations by Procurers, including Wind and Solar Energy Generators;
- (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;
- (v) **“State Load Despatch Centre” (or “SLDC”)** means the Load Despatch Centre of Tamil Nadu established under Section 31(1) of the Act and responsible for coordinating the scheduling of the State Entities in accordance with the provisions of the State Grid Code;
- (w) **“Time block”** means a period of 15 minutes or any such shorter duration as may be notified by Central Commission and State Commission for which specified electrical parameters and quantities are recorded by a Special Energy Meter, with the first time block

starting at 00.00 hrs., or such other period as the Commission may stipulate.

Words or expressions used and not defined in these Regulations shall have the meaning assigned to them in the Act, or the Rules or other Regulations framed thereunder.

## **PART A**

### **GENERAL**

#### **3 Objective**

3.1. These Regulations are intended to facilitate Grid integration of Wind and Solar energy generated in Tamil Nadu while maintaining Grid stability and security as envisaged under the State Grid Code and the Act, through forecasting, scheduling and a mechanism for the settlement of deviations by such Generators.

3.2. In order to maintain system security, stability and reliability, the SLDC shall take into consideration the forecasts of Wind and Solar generation for Week-Ahead, Day-Ahead and intra-Day operations and scheduling, and longer term forecasts for its planning.

3.3. The SLDC shall make use of the flexibility provided by conventional Generating Units and the capacity of inter-Grid tie-lines to accommodate Wind and Solar energy generation to the largest extent possible subject to Grid security.

## **4 Applicability**

- 4.1 These Regulations shall apply to all Wind and Solar Energy Generators (excluding Rooftop PV Solar power projects) in Tamil Nadu connected to the Intra-State Transmission System or Distribution System, including those connected through Pooling Sub-Stations, and using the power generated for self-consumption or sale within or outside the State:
- 4.2 The Commission shall review these Regulations after two years, or earlier if it considers necessary.

## **PART B**

### **TECHNICAL ARRANGEMENTS: FORECASTING AND SCHEDULING**

#### **CODE**

## **5 Forecasting and Scheduling Code**

- 5.1. This Forecasting and Scheduling Code specifies the methodology for Day-Ahead scheduling of Wind and Solar Energy Generators connected to the intra-State Transmission Network (Transmission and Distribution system), its revisions on a one and a half hourly basis, and the treatment of their deviations from such Schedules.
- 5.2. The Wind and Solar Energy Generators at each Pooling Sub-Station shall appoint a QCA:
- Provided that an individual Generator not connected to a Pooling Sub-Station may opt to be its own or appoint a separate entity as its QCA.
- 5.3. The QCA shall be treated as a State Entity.

5.4. Every QCA shall be registered with the SLDC in accordance with the Detailed Procedure prescribed in pursuance of Regulation 5.21.

5.5. Notwithstanding the appointment of a QCA, the onus of complying with the relevant provisions of these Regulations shall remain that of the concerned Generators, and the commercial and other arrangements between them and their QCA shall be governed by their inter-se agreements or terms of engagement.

5.6. The QCA shall be appointed by the Generators for the purposes specified in these Regulations, including but not limited to the following:

a) Meter reading and data collection and its communication, and co-ordination with the Distribution Licensees, the SLDC and other agencies;

b) De-pooling of amounts payable on behalf of the constituent Generator of the Pooling Sub-Station from the State Deviation Pool account and settling them with each Generator;

c) Settlement of the Deviation Charges specified in these Regulations with the SLDC on behalf of the Generators.

5.7. The QCA shall be the single point of contact between the SLDC and its Generators for the purposes of these Regulations.

5.8. The QCA shall furnish the technical specifications of the Generators whom it represents to the SLDC in the prescribed format, at the time of its



registration or within such period thereafter as may be stipulated by the SLDC in its Detailed Procedure, and when there is a change in these specifications.

5.9. The QCA shall provide real-time data relating to the power system output and parameters and weather-related data, as may be required, real-time to the SLDC.

5.10. Meters shall be installed for energy accounting in accordance with the relevant provisions of the Central Electricity Authority (CEA) Regulations governing metering, along with telemetry /communication and Data Acquisition Systems for the transfer of information to the SLDC by the QCA.

5.11. The QCA shall furnish to the SLDC the aggregated forecasts relating to its Wind and Solar Energy Generators connected to the intra-State Transmission network, with details of their Availability.

5.12. The SLDC shall also undertake forecasting of the Wind and Solar energy generation expected to be injected into the intra-State Transmission network at each location, by engaging forecasting agencies if required, so as to enable it to better plan for the balancing resources required for secure Grid operation.

5.13. The QCA shall aggregate the Schedules of all Generators connected to a Pooling Sub-Station and communicate them to the SLDC.

5.14. No Wind or Solar energy generation shall be considered for despatch by the SLDC if it is not scheduled by the QCA on behalf of the Generators in accordance with the provisions of these Regulations.

5.15. The QCA may adopt the forecast of the SLDC for preparing its Schedule or provide SLDC with a Schedule based on its own forecast, which shall be the reference Schedule for the purposes of deviation determination and settlement:

Provided that, if the QCA opts to adopt the forecast of the SLDC, the consequences of any error in such forecast which results in deviations from scheduling shall be borne by the concerned Generators through their QCA.

5.16. The SLDC shall recover such charges as may be approved by the Commission for providing its forecasting services to the QCA and the amount so recovered shall be treated as 'other income' in the Aggregate Revenue Requirement of the SLDC for the determination of its Fees and Charges.

5.17. The QCA shall provide to the SLDC a Day-Ahead and a Week-Ahead Schedule for each Pooling Sub-Station or each stand-alone Generating Station, as the case may be, to enable it to assess the Availability of energy and the margin available in the State Grid.

5.18. The Day-Ahead Schedule shall comprise the Wind or Solar energy generation to be scheduled in each 15-minute time block starting from

00:00 hours of the following day, and for all 96 time blocks of that day; and the Week-Ahead Schedule shall contain the same information for the next seven days.

5.19.a) The QCA may revise the Schedule of Generators connected to the Intra-State Transmission Network (excluding collective transactions) by giving advance notice to the SLDC.

b) Such revisions shall be effective from the 4<sup>th</sup> time block following the time block in which notice was given.

c) There may be one revision for each time slot of one and half hours starting from 00.00 hours of a particular day, subject to a maximum of 16 revisions during the day.

5.20. Wind energy generators shall provide time block wise banked energy withdrawal schedule and allocations to captive users on weekly basis. The schedule for the first week at the start of the billing cycle shall be provided seven days before the commencement of the billing cycle.

5.21 The plan for data telemetry, formats of forecast submission and other modalities and requirements shall be stipulated in the Detailed Procedure to be submitted by the SLDC within two months, which the Commission shall endeavour to approve within a month thereafter.

**5.22 The Detailed Procedure shall address the following aspects**

- a) The procedure and requirements, including the payment of fees and penalties, for the registration and de-registration of QCAs by the SLDC.
- b) The information and data, and the formats, required by the SLDC from the QCAs and to be provided by the SLDC to them.
- c) The mode and protocol of communication for exchange of information and data between the QCAs and the SLDC.
- d) The guidelines for energy and deviation accounting of Wind and Solar energy transactions under the State energy accounting framework, with illustrative examples, in accordance with the principles specified in these Regulations.
- e) The mechanism for monitoring compliance of the Forecasting and Scheduling Code by the QCAs.
- f) The default conditions in the State Pool Settlement by QCAs and their treatment.

5.23 The commercial impact of deviations from Schedules based on the forecasts shall be borne by the Generators through their QCAs.

## 5.24 Treatment to the Gaming

(a) Any intentional mis-declaration of Available Capacity to the SLDC for its own undue commercial gain or that of a Generator shall be considered as gaming and shall constitute a breach of these Regulations.

(b) Upon identification of gaming by SLDC, the QCA shall be liable to pay a penalty of three times the Deviation Charges that would have been applicable had the Available Capacity been correctly declared.

(c) The amount of penalty shall be payable by the QCA to the State Deviation Settlement Mechanism (DSM) Pool, through the SLDC.

(d) The SLDC may, after giving due notice and as stipulated in the Detailed Procedure, cancel the registration of the QCA upon repeated events of mis-declaration.

## 6 Principles of appointment of QCA

6.1. The Generators at a Pooling Sub-Station may appoint one amongst themselves or any other entity as a QCA.

6.2. The QCA shall be appointed with the approval of at least 51% of the Generators at a Pooling Sub-Station, in terms of their combined installed capacity.

Provided that QCA may undertake forecasting and scheduling at feeder level;

6.3. The Generators shall satisfy themselves that the QCA is technically and financially competent to undertake on their behalf the functions and discharge the obligations specified in these Regulations.

6.4. The terms of engagement of the QCA shall include provisions on the following aspects:

- a) The respective roles and responsibilities of the QCA and Generators;
- b) The metering, billing and energy accounting arrangements;
- c) The modalities for recovery of Deviation Charges from the Generators and their settlement, including the principles for de-pooling;
- d) The payment security mechanism and related provisions;
- e) The events of default and their mitigation.

## **PART C**

### **COMMERCIAL ARRANGEMENTS**

#### **7 Deviation Settlement for Intra-State Transactions**

7.1 The sale of power within Tamil Nadu by Solar and Wind Energy Generators connected to the Intra-State Transmission Network shall be settled by the Procurers on the basis of their actual generation, whereas the Deviation Settlement shall be undertaken as specified in these Regulations.

A Generator who deviates from its given Schedule shall be liable to pay a Deviation Charge under the provisions of these Regulations.

7.2 In respect of sale or self-consumption of power within Tamil Nadu, if the actual injected generation of a stand-alone Generator or the aggregate of such generation at a Pooling Sub-Station, as the case may be, differs from the scheduled generation, the Deviation Charge for the excess or shortfall shall be payable by the QCA to the State Deviation Pool Account, through the SLDC, as specified in Table 1 below:

**Table 1: Deviation Charge for under- or over-injection, for sale or self-consumption of power within Tamil Nadu**

<b>S.No.</b>	<b>Absolute Error in %age terms in 15-minute time block</b>	<b>Deviation Charge payable to State DSM Pool</b>
1	< = 10%	None
2	>10% but <=20%	At Rs. 0.50 per unit
3	>20% but <=30%	At Rs. 0.50 per unit for the shortfall or excess beyond 10% and upto 20% + Rs. 1.00 per unit for the balance energy beyond 20% and upto 30%
4	>30%	At Rs. 0.50 per unit for the shortfall or excess beyond 10% and upto 20% + Rs. 1.00 per unit for the shortfall or excess beyond 20% and up to 30% + Rs. 1.50 per unit for the balance energy beyond 30%

- 7.3. The SLDC and the QCA shall maintain records and accounts of the time block-wise Schedules, the actual generation injected and the deviations, for the Pooling Sub-Station and the individual Generators separately.
- 7.4. The QCA shall undertake de-pooling of the energy deviations and the Deviation Charges against each Generator at the Pooling Sub-Station as specified in Regulation 16.
- 7.5. The QCA shall undertake the settlement of the Deviation Charges with the SLDC on behalf of the concerned Generators.

## **8 Deviation Settlement for Inter-State Transactions**

- 8.1 The sale or self-consumption of power outside Tamil Nadu by Solar and Wind Energy Generators connected to the Intra-State Transmission system or Distribution system shall be settled by the Procurers on the basis of their scheduled generation.
- 8.2 Inter-State transactions at a Pooling Sub-Station shall be permitted only if the concerned Generator is connected through a separate feeder.
- 8.3 The Generator shall submit, through the QCA, a separate Schedule for its energy generation, in accordance with these Regulations, to the SLDC and the concerned Regional Load Despatch Centre (RLDC).
- 8.4 The SLDC shall prepare the deviation settlement account for such Generator on the basis of measurement of the deviation in the energy



injected and its impact at the State periphery. Excess injection over the schedule shall not be accounted for.

8.5 The Generator shall pay the Deviation Charges applicable within Tamil Nadu in case of deviations in the State DSM Pool, the consequences of such deviation at the Inter-State level being governed by the CERC Regulations governing the Deviation Settlement Mechanism and related matters.

8.6 The Deviation Charges for under-injection by Generators connected to the Intra-State Transmission Network and selling or consuming power outside Tamil Nadu shall be as specified in the **Annexure** to these Regulations, the accounting for which shall be done by the SLDC.

## **9 Deviation Settlement for Inter- and Intra-State Transactions: other provisions**

9.1 Deviations in respect of Inter-State and Intra-State transactions shall be accounted for separately at each Pooling Sub-Station.

9.2 The SLDC shall provide separate energy and Deviation Accounts for Inter-State and Intra-State transactions to the QCA, who shall settle the Deviation Charges with the concerned Generators.

## **PART D**

### **IMPLEMENTATION ARRANGEMENTS**

#### **10 Implementation Procedure**

##### **10.1 Metering**

10.1.1 Every Pooling Station shall have a Special Energy Meter (SEM) capable of recording the energy in time blocks as specified in the CEA Regulations governing metering.

10.1.2 The QCA shall furnish weekly meter readings to the SLDC by 00.00 hours on the Thursday of the previous week, in addition to the data provided to the Supervisory Control and Data Acquisition (SCADA) Centre, for the purpose of energy accounting under these Regulations.

##### **10.2 Energy Accounting**

The energy accounting shall be undertaken on the basis of the data recorded by the SEM referred to in Regulation 10.1.

#### **11 Communication between QCA and SLDC**

11.1 The Detailed Procedure prescribed by the SLDC shall set out the protocol for communication and exchange of information between the QCA and the SLDC, including but not limited to the following aspects:

- a) Communication of the Day-Ahead, Week-Ahead Schedule and intra-Day schedule and any revisions to the SLDC.
- b) Communication of the real-time generation at the Pooling Sub-Station or by the stand-alone Generator

- c) Communication of Grid constraints and curtailments by the SLDC to the QCA.
- 11.2 The SLDC shall equip itself with the necessary Information Technology (IT)-enabled communication platform and software for communication between it and the QCA.
- 11.3 The QCA shall provide the IT-enabled communication software log-in details to enable the SLDC to access live data of all Schedules and deviations and facilitate the timely billing and payment of Deviation Charges.
- 11.4 The IT-enabled communication platform and software should enable the SLDC and QCA to exchange information, including but not limited to the following:
- i. Generator outages and their reasons;
  - ii. Deviation Charges payable by the QCA;
  - iii. Site characteristics and details of the Wind Turbines, Solar Inverters, etc.;
  - iv. Schedules and generation handled by the QCA.

## **12 Deviation Accounting**

- 12.1 The methodology for deviation settlement for the State shall be as follows:
- a) The Deviation Charges payable or receivable for the State as a whole at the State periphery shall first be computed by the SLDC.

- b) The SLDC shall compute the impact of the deviation of the Solar and Wind Energy Generation and its contribution to the Deviation Charge at the State periphery.
- c) The SLDC shall compute the Absolute Error, i.e. the difference between the scheduled and the actual energy injected, in respect of each Pooling Sub-Station and each Generator feeding energy directly to another Sub-Station, and shall accordingly determine the amounts payable on account of the Deviation Charge in accordance with Regulations 7 and 8.
- d) Any shortfall in the aggregate amount of Deviation Charge payable by Solar and Wind Energy Generators at the State periphery and the amount receivable from them by the State Deviation Pool Account shall be accounted for separately.

## **12.2 Settlement of Deviation Charges**

The SLDC shall compute the deviations from the Schedule, determine the Deviation Charges payable and bill the QCA accordingly.

## **13 Payment Mechanism for Deviation Settlement**

13.1 The QCA shall pay the amount of Deviation Charges to the SLDC, and collect it from the concerned Generators in proportion to their actual generation:

Provided that the onus of ensuring the payment of the Deviation Charges to the SLDC by the QCA shall remain that of the concerned Generators.

13.2 The Deviation Charges shall be paid within ten days from the issue of the accounts and billing by the SLDC, failing which a late payment surcharge amounting to 1.25% per month shall be levied for the period of delay.

#### **14. De-Pooling of Deviation Charges**

The QCA shall de-pool the energy deviations and the Deviation Charges against each Generator in proportion to its actual generation or in proportion to Available Capacity, as may be mutually agreed between QCA and the Generators.

#### **15 Intimation of Curtailment**

15.1 Any curtailment imposed on the energy injection for reliable and secure Grid operation in emergent situations shall be communicated by the SLDC to the QCA through an IT-enabled communication, and no Deviation Charges shall be payable for any consequent deviations if the SLDC fails to do so.

15.2 In case of any curtailment planned and communicated by the SLDC due to line maintenance or other reasons in certain time blocks of a day, the QCA shall be responsible for curtailing the generation at site and amending the Schedule accordingly, failing which the SLDC shall revise the Schedule as required.

#### **16 Energy Accounting**

16.1 All accounts relating to deviations shall be prepared by the QCA on a

weekly basis based on inputs from the SLDC, and be accessible to the SLDC through an IT-enabled system and software.

16.2 The SLDC shall furnish the processed data on a weekly basis by Thursday mid-night for the seven-day period ending on the previous Sunday mid-night to the concerned QCA in the prescribed format, for the preparation of weekly Energy Accounts of energy from the Pooling Sub-Station or the stand-alone Generator, as the case may be.

16.3 Any discrepancy communicated by the QCA within 15 days shall be corrected forthwith by the SLDC after verification.

## **PART E**

### **MISCELLANEOUS**

#### **17 Power to amend**

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

#### **18 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.

#### **19 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.

Secretary  
Tamil Nadu Electricity Regulatory Commission

## ANNEXURE

### **Framework for Deviation Charges for under- or over-injection by Solar and Wind Generators connected to the Intra-State Transmission network and selling or consuming power outside Tamil Nadu**

1. The Deviation Charges in respect of Solar and Wind Energy Generators connected to the Intra-State Transmission Network and selling or consuming power outside Tamil Nadu shall be as follows:

- a) If the actual generation is lower than scheduled, the Deviation Charges for the shortfall shall be payable by the QCA to the State Deviation Pool Account as given in Table A below:

**Table A: Deviation Charges in case of under-injection**

Sl. No.	%age Absolute Error in 15-minute time block	Deviation Charges payable to State Deviation Pool Account
1	$\leq 10\%$	At the fixed rate for the shortfall in energy for Absolute Error upto 10%
2	$>10\%$ but $\leq 20\%$	At the fixed rate for the shortfall in energy for Absolute Error upto 10% + 110% of the fixed rate for the balance energy beyond 10% and upto 20%
3	$>20\%$ but $\leq 30\%$	At the fixed rate for the shortfall in energy for Absolute Error upto 10% + 110% of the fixed rate for the balance energy beyond 10%, and upto 20% + 120% of the fixed rate for the balance energy beyond 20% and upto 30%



4	> 30%	At the fixed rate for the shortfall in energy for Absolute Error upto 10% + 110% of the fixed rate for the balance energy beyond 10% and upto 20% + 120% of the fixed rate for balance energy beyond 20% and upto 30% + 130% of the fixed rate for the balance energy beyond 30%
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The 'fixed rate' referred to in Table A shall be the Average Power Purchase Cost (APPC) rate at national level, as determined by the Central Commission from time to time.

- b) No Deviation charges shall be paid for excess generation above the scheduled generation to Solar or Wind energy generators.
- c) For the balancing of the deemed RPO compliance of Procurers with respect to Schedule, the aggregate deviations by Solar and Wind Energy Generators selling power outside the State shall first be netted off for the entire Pool on a monthly basis, and any remaining shortfall in generation shall be balanced through purchase of equivalent Solar or non-Solar Renewable Energy Certificates (RECs), as the case may be, by the SLDC by utilising funds from the State Deviation Pool account. In case of a positive balance of Solar or Wind Energy generation, equivalent notional RECs shall be credited to the State DSM Pool and carried forward for settlement in future.

## **TAMIL NADU ELECTRICITY REGULATORY COMMISSION**

Tamil Nadu Electricity Regulatory Commission (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017

### **EXPLANATORY STATEMENT**

1. Forecasting and scheduling of solar and wind generating stations is essential to maintain grid stability and security, load generation balance considering their infirm nature. The state has large renewable energy generation in both sources, wind and solar. Seamless large scale integration of renewable energy sources, specifically wind and solar is possible through forecasting and scheduling of the wind and solar generation sources.

2. The Central Electricity Regulatory Commission (CERC) notified the 'Framework on Forecasting, Scheduling & Imbalance Handling for Variable Renewable Energy Sources (Wind and Solar) in August 2015 at the inter state level. To enable states to manage, Renewable energy generating stations connected to the state grid, CERC evolved model Forecasting, Scheduling and Deviation Settlement for wind and solar generation sources regulations for the states that was endorsed by the Forum of Regulators. The above regulation underwent many changes. In line with the developments and changes that evolved over the period and after due deliberations, Commission floats this (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2017 seeking comments from stakeholders. The objective of the regulation is to

facilitate grid integration of wind and solar energy generated in the state by maintaining grid stability and security through forecasting, scheduling and a mechanism for settlement of deviations by the generators.

Secretary

Tamil Nadu Electricity Regulatory Commission