

STATE ELECTRICITY REGULATORY COMMISSION

No.: XX/XX/SERC/2012

Dated: DD.MM.2012

DRAFT MODEL GUIDELINES

WHEREAS Section 3 (1) of the Electricity Act,2003 provides that "The Central Government shall, from time to time, prepare the National Electricity Policy and tariff policy, in consultation with the State Governments and the Authority for development of the power system based on optimal utilisation of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy";

AND WHEREAS Section 4 of the Electricity Act, 2003 provides that "The Central Government shall, after consultation with the State Governments, prepare and notify a national policy, permitting stand alone systems (including those based on renewable sources of energy and other nonconventional sources of energy) for rural areas";

AND WHEREAS Section 5 of the Electricity Act 2003 provides that "The Central Government shall also formulate a national policy, in consultation with the State Governments and the State Commissions, for rural electrification and for bulk purchase of power and management of local distribution in rural areas through Panchayat Institutions, users' associations, cooperative societies, non-Governmental organisations or franchisees";

AND WHEREAS Section 6 of the Electricity Act, 2003 provides that "the concerned State Government and the Central Government shall jointly endeavour to provide access to electricity to all areas including villages and hamlets through rural electricity infrastructure and electrification of households";

AND WHEREAS seventh proviso of Section 14 of the Electricity Act, 2003 provides that "in a case where a distribution licensee proposes to undertake distribution of electricity for a specified area within his area of supply through another person, that person shall not be required to obtain any separate licence from the concerned State Commission and such distribution licensee shall be responsible for distribution of electricity in his area of supply";

AND WHEREAS eight proviso of Section 14 of the Electricity Act, 2003 provides that "where a person intends to generate and distribute electricity in a rural area to be notified by the State



Government, such person shall not require any licence for such generation and distribution of electricity ,but he shall comply with the measures which may be specified by the Authority under section 53";

AND WHEREAS Section 61 of the Electricity Act, 2003 provides that "The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-"Clause (h) "the promotion of co-generation and generation of electricity from renewable sources of energy";

AND WHEREAS Section 86 (1)(e) of the Electricity Act, 2003 provides that "The State Commission shall discharge the following functions, namely: -"Clause (e) "promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee";

In exercise of the power conferred under Sections 14, 61(h), 66, 86(1)(e) &(k), and 181 of the Electricity Act, 2003 (36 of 2003), and all other powers enabling in its behalf, and after previous publication, the _____(Name of State) Electricity Regulatory Commission hereby outlines the following Guidelines, namely:

1 Short title and commencement

- 1.1 These guidelines may be called the Guidelines by ____ (Name of State) Electricity Regulatory Commission for Development, Management and Operations of Off-Grid Distributed Renewable Energy Generation and Supply, hereinafter referred to as 'Rural System Operator Guidelines' or 'RSO Guidelines'.
- 1.2 These RSO Guidelines shall come into force from the date of their publication in the Official Gazette.
- 1.3 These RSO Guidelines shall apply through the State.

2 Definitions and Interpretations

- 2.1 In these RSO Guidelines, unless the context otherwise requires,
 - a) 'Act' means the Electricity Act, 2003 (36 of 2003);



- b) 'Conduct of Business Regulations' means the State Electricity Regulatory Commission (Conduct of Business) Regulations, as amended from time to time;
- c) 'Distribution Infrastructure' means the infrastructure consisting of electric lines, distribution transformers, and associated equipments, if any, used for distributing electricity generated from the Off-grid Renewable Energy System;
- d) 'Franchisee' means a person or an agency or a company authorised by the distribution licensee to distribute electricity on its behalf in a particular area within area of supply of the distribution company;
- e) 'Feed in Tariff means the tariff determined by the State Electricity Regulatory Commission pursuant to Section 61(h) of the Electricity Act for a particular renewable energy technology;
- Franchisee Agreement means the Agreement between the Rural System Operator and the Distribution Licensee for the purpose of distribution of electricity pursuant to provisions under these RSO Guidelines;
- g) 'MNRE' means the Ministry of New and Renewable Energy of the Government of India or its successor entity;
- h) 'Off-grid Renewable Energy System (ORES)' means the stand alone systems comprising power plant generating electricity from renewable energy sources where grid is not connected and distribution network including associated appliances used for distributing electricity produced in the said plant to end users in the Project Area;
- i) 'Operation and maintenance expenses' or 'O&M expenses' means the expenditure incurred on operation and maintenance of the project, or part thereof, and includes the expenditure on manpower, repairs, spares, consumables, insurance and overheads;
- j) Power Purchase Agreement is the Agreement between Rural System Operator and the Distribution Licensee for purchase of electricity by the Distribution Licensee from the Off-grid Renewable Energy System;
- k) 'Project Area' means un-electrified habitation in which the electricity is proposed to be supplied from Off-grid Renewable Energy System defined at Clause 2 (h) of these RSO Guidelines;

Provided the Project Area will have minimum 25 households;

 'Renewable Energy Sources' means renewable sources such as small hydro, wind, solar including its integration with combined cycle, biomass, bio fuel cogeneration, urban or municipal waste and other such sources as approved by the MNRE from time to time;



- m) 'Rural Local Body' (RLB) means the body as may be defined in sub section (1) of section 9 of these RSO Guidelines;
- n) 'Rural System Operator' (RSO) means the company or a person or a group of persons that develops and operates Off-grid Renewable Energy System;
- Standard of Performance Regulations are the relevant Regulations issued by the Appropriate Commission that define the Standards of Performance for the Distribution Licensees in the State;
- p) 'Tariff Period' means the period for which tariff is to be determined by the Commission on the basis of specified norms;
- q) 'Year' means a financial year.
- 2.2 Words and expressions used in these Regulation and not defined but defined in the Act or the regulations issued by the Central Commission or any other regulations issued by the Commission, shall have the same meaning assigned to them respectively in the Act or such regulations issued by the Central Commission or such other regulations issued by the Commission

3 Scope of RSO Guidelines and Extent of Application

3.1 These RSO Guidelines shall apply to all new and existing Off-grid Renewable Energy Systems commissioned or to be commissioned for distributed generation and supply of electricity from such renewable energy sources to the rural consumers in the Project Area.

Provided that provisions of this RSO Guidelines shall be applicable subsequent to the date of publication of these RSO Guidelines.

Provided further that Rural System Operator shall abide by the tariff determined by the Appropriate Commission for a generating station or a unit thereof under Section 61(h) read with Section 86 of the Act.

Provided further that Rural System Operator shall supply electricity to the consumers as per the tariff determined by the Appropriate Commission for supply of electricity;

Provided further that the existing system shall be eligible for Feed-in Tariff under these RSO Guidelines, subject to the fulfilment of eligibility criteria in Clause 16 of these RSO Guidelines.



4 Applicability of RSO Guidelines

- 4.1 In case the Rural System Operator wants to develop and operate Off-grid Renewable Energy Systems, and wants to operate under these RSO Guidelines, such choice will have to be made before the project becomes operational, post which, such projects will not be allowed to operate under these RSO Guidelines;
- 4.2 For projects existing on the date of notification of these RSO Guidelines, the Rural System Operator has to make a choice of operating under these RSO Guidelines within a period of two years of publication of these RSO Guidelines, post which, no existing projects will be allowed to operate under these RSO Guidelines;
- 4.3 Under these RSO Guidelines, the project shall cover un-electrified census village or cluster of villages, or padas / bastis / hamlets of electrified census villages or cluster of padas/bastis/hamlets;

5 Central Electricity Authority and its functions:

- 5.1 Authority means the Central Electricity Authority referred to in sub section (1) of section 70 of the Act;
- 5.2 Central Electricity Authority shall notify regulations governing generation aspects, grid connectivity aspects for small scale renewable energy plants and the metering regulations in respect of such systems;

Provided till such time, the Central Electricity Authority formulates the above mentioned regulations, the regulations notified by the Appropriate Commissions from time to time in respect of grid connectivity shall be considered.

6 Consent of Rural Local Body for Off-grid Renewable Energy System:

- 6.1 Rural Local Body means the Panchayati Raj Institutions in line with Eleventh Schedule (Article 243G) of Constitution of India pursuant to the Seventy Third Amendment to the Constitution of India;
- 6.2 A person desiring to set up Off-grid Renewable Energy System shall seek consent from the Rural Local Body for setting up ORES.
- 6.3 While seeking consent, following information shall be provided to the RLB:
 - a. Description of the proposed Off-grid Renewable Energy System
 - b. Definition of Project Area



- c. Plan for harnessing of local renewable resources
- d. Local employment generation opportunity
- e. Support for productive load development/enhancement
- f. Long term sustainable and cost effective solution for energy need of Rural Local Body
- 6.4 In case of receipt of more than one request for consent, the concerned Rural Local Body shall select scheme offering maximum benefits in terms of above parameters; in consultation with Distribution Licensee.
- 6.5 The consent given by the Rural Local Body shall include following minimum information:
 - a) Un-electrified status of village/habitation/pada;
 - b) Number of households in such habitation;
 - c) Name and description of the Rural System Operator;
 - d) Brief Description of the System;
 - e) Minimum Standard of Supply;
- 6.6 The existing projects shall follow the process specified in these RSO Guidelines while seeking consent from the Rural Local Body.

7 Rural System Operator and its functions:

- 7.1 Rural System Operator shall be the operator who generates and distributes electricity to consumers after setting up the generation plant, distribution infrastructure, metering arrangement etc. and signs the Franchisee Agreement and Power Purchase Agreement with the Distribution Licensee;
- 7.2 Rural System Operator shall identify rural area, in consultation with concerned Rural Local Body and develop a Project Scheme for Off-grid Renewable Energy Supply;
- 7.3 Rural System Operator shall select and adopt technology based on the locally available renewable resources;
- 7.4 Rural System Operator shall select the project of appropriate size and technology in the un-electrified padas / bastis/ hamlets of electrified or un-electrified census villages which are considered under the rural areas;
- 7.5 Rural System Operator shall confirm the State Government's notification of rural area from Rural Local Body;
- 7.6 Rural System Operator shall confirm the number of households and establishments, unelectrified status of village / hamlet / padas from Rural Local Body;



- 7.7 Rural System Operator shall prepare Detailed Project Report for the proposed Off-grid Renewable Energy System;
- 7.8 DPR shall clearly state technology, tariff, franchisee fees, etc
- 7.9 Rural System Operator shall obtain the consent from Rural Local Body as per clause (2), (3) and (4) of Regulation 7;
- 7.10 RSO shall submit the DPR alongwith the consent of RLB to the Distribution Licensee with a request to enter into PPA and Franchisee Agreement.

Provided that detailed prefeasibility study report, detailed project report, net worth of the Rural System Operator, documents for availability of land, proof of availability of fuel, etc. shall be provided to Distribution Licensee by the Rural System Operator;

- 7.11 Rural System Operator shall enter into Franchisee Agreement and Power Purchase Agreement at Feed in Tariff with the concerned Distribution Licensee;
- 7.12 Rural System Operator shall achieve financial closure within time period not exceeding period of four months from the date of Power Purchase Agreement or such other timeframe as may be mutually discussed and agreed to with concerned Rural Local Body and shall submit the supporting documents for accomplishing financial closure to the Distribution Licensee;
- 7.13 Rural System Operator shall develop, construct and commission the Project within period as specified in the Power Purchase Agreement with concerned Distribution Licensee or such other period as may be mutually discussed and agreed to with concerned Distribution Licensee;
- 7.14 Rural System Operator may develop, construct and commission the distribution infrastructure within period as specified in Franchisee Agreement with concerned Distribution Licensee or such other period as may be mutually discussed and agreed to with the concerned Distribution Licensee in line with the guidelines issued by the Authority;

Provided that Standard of Performance Regulations shall address specific requirements of off-grid rural network development;

- 7.15 Rural System Operator shall have exclusive right to supply electricity to consumers in the Rural Local Body through Franchisee Agreement;
- 7.16 Rural System Operator shall raise bills for electricity supplied to consumers in the Project Area at the end of every month based on meter readings at the Tariff Rates not exceeding the Tariff Rates applicable for other consumers of Distribution Licensees belonging to similar consumer category;



- 7.17 Rural System Operator shall submit monthly reports to the Distribution Licensee in the third week of the next month which shall cover mutually agreed components;
- 7.18 Rural System Operator shall raise invoice for electricity generated through Off-grid Renewable Energy System within seven days of the end of the month for generation during the month and shall be entitled to receive payment from Distribution Licensee within seven working days after submission of the invoice;

8 Distribution Licensee and its functions:

- 8.1 Distribution Licensee shall establish mechanism for timely processing of applications as well as management of contracts with Rural System Operators;
- 8.2 Within one month of receipt of application from the Rural System Operator, the Distribution Licensee shall process application and confirm acceptance/ rejection of the application.

Provided that the Distribution Licensee can reject application only on the grounds of violation of norms of design of the system, or plan to extend electricity grid within two years.

- 8.3 Within one month of acceptance of application from Rural System Operator, Distribution Licensee shall enter into Franchisee Agreement and Power Purchase Agreement with Rural System Operator based on Model Franchisee Agreement and Model PPA, as annexed here and approved by the State Commission;
- 8.4 Distribution Licensee shall make payments to the Rural System Operator within seven days of receipt of invoice from the Rural System Operator;

Provided that electricity generation (including deemed generation, if any) shall be governed as per the terms and conditions outlined under the Power Purchase Agreement in line with the principles approved by the Commission;

8.5 Distribution Licensee shall provide necessary support to the Rural System Operator to submit application to Government of India for availing Central Financial Assistance for identified project schemes; as may be applicable;

Provided that application for Central Financial Assistance is optional;

8.6 Distribution Licensee shall provide necessary support to the Rural System Operator to submit application to State Government seeking Financial Assistance/revenue subsidy/capital subsidy, as may be provided by State Government from time to time for promotion of rural electrification in the State;



Provided that application for financial subsidy or revenue subsidy is optional;

- 8.7 Distribution Licensee shall take into consideration the off-grid schemes under operation or under advance stage of execution/planning in rural areas under this RSO Guidelines, while planning for its network expansion in rural areas;
- 8.8 Distribution Licensee shall furnish information about the applications/ operational systems to the Commission in format as may be prescribed from time to time;

9 Consumers in the Project Area and their functions:

- 9.1 Consumers in the Project Area shall regularly pay the electricity charges within 15 working days of receipt of bills to the Rural System Operator;
- 9.2 In case of delay in payment beyond due date of payment, the delayed payment charges at the rate of 1.25% per month or part thereof shall be applicable.

10 Framework for development of Feed-in-Tariff for ORES:

10.1 The Commission shall determine Feed-in tariff for the purchase of electricity from off-grid renewable energy sources by a distribution licensee from time to time, either through Generic Tariff Order on suo-motu basis or based on application filed by interested Rural System Operator.

Provided that Rural System Operator, under its tariff application shall clearly provide separate details of its capital cost, operating cost and performance details for off-grid generation scheme and capital cost, operating cost and performance details of its distribution/supply associated with network development activities separately.

- 10.2 The Commission shall determine Feed-in tariff corresponding to off-grid generation part of the Project Scheme separately for each kind of off-grid renewable source. While determining the tariff, the Commission may, to the extent possible, consider to permit an allowance based on technology, fuel, market risk, environmental benefits and social contribution etc., of each type of off-grid renewable source.
- 10.3 Further, while determining the Feed-in tariff, the Commission shall adopt the best practices and normative parameters for financing cost, O&M and other expenses.
- 10.4 The Commission shall as far as possible be guided by the principles and methodologies specified by the National Electricity Policy, Tariff policy, Rural Electrification Policy, while deciding on the terms and conditions of Tariff for off-grid renewable sources of energy.



- 10.5 Without prejudice to the generality of the powers of the Commission in regulating the Feed-in-Tariff for small scale renewable energy generators, the State Electricity Regulatory Commissions may keep in view, among others, the following factors, while determining the feed-in-tariff;
 - i. Feed in tariff shall be based on cost plus assured returns for the generation scheme;
 - ii. The need to link tariff adjustments to increases in the productivity of capital employed and improvement in efficiency so as to safeguard the interests of the consumer;
 - iii. The need to rationalise feed-in-tariff on the basis of the actual cost of generation, upon taking into consideration the capital subsidy, revenue subsidy, finance assistance from Central Government or State Government, if any;
 - iv. The unbundling of costs between off-grid generation component of Project Scheme and Distribution/Supply component of the Project Scheme, so as to enable the rational allocation of costs;
 - v. The need to provide transparently the appropriate incentives, in a nondiscriminatory manner, for a continuous enhancement in the efficiency of generation, distribution and supply and up-gradation in the levels of service;
 - vi. Specifying Control Period, Tariff Period, Tariff Structure (levellised, backended or front ended) and Tariff Design (Single part or Two part) to ensure long term regulatory clarity and regulatory certainty for principles of determination of Feed-in Tariff for Off-grid project scheme;
 - vii. Any other matter relevant in the opinion of the Appropriate Commission;
- 10.6 Rural System Operator, who are required to get their feed-in-tariff approved by the State Electricity Regulatory Commission, may develop tariff petitions based on the terms and conditions as may be notified by the State Electricity Regulatory Commission and submit the same for approval, in accordance with the procedure prescribed by the State Electricity Regulatory Commission;
- 10.7 The State Electricity Regulatory Commission may determine feed-in-tariff on such conditions as may be considered appropriate and shall issue tariff orders for each type of off-grid small scale renewable energy technologies approved by Ministry of New and Renewable Energy;
- 10.8 Provided that case specific tariff orders shall be issued by the State Electricity Regulatory Commissions for the new and up-coming off-grid small scale renewable energy



technologies for supply in off-grid areas, only in specific conditions based on merit and for all other projects Feed in Tariffs will be applicable;

10.9 While determining the Feed-in Tariff, the Commission shall also specify principles for power purchase agreement or approve Model PPA, as the case may be, to be executed between Rural System Operator and concerned Distribution Licensee;

11 Framework for Fees for Franchisee Operation by RSO:

- 11.1 Distribution Licensee and Rural System Operator shall enter into Franchisee Agreement to ensure distribution/supply of electricity by Rural System Operator to consumer in the Project Area in line with the terms and conditions outlined under Model Franchisee Agreement approved by State Commission;
- 11.2 While Distribution Licensee and Rural System operator shall be free to adopt or negotiate terms and conditions of Model Franchisee Agreement including commercial conditions for compensation thereof, the parties shall take into consideration following factors, while determining the Fees for Franchisee Operation;
 - i. Fees for Franchisee operation should cover cost of franchisee operation plus adequate returns to Rural System Operator over the period of Franchisee Agreement;
 - ii. Fees for Franchisee operation should be based on due consideration to distribution network rollout requirement, investment for expansion/augmentation of network, upkeep and operation of distribution network facilities, adherence to standard of performance, consumer profile, consumption/demand/load pattern and growth thereof and such other factors associated with franchisee operation.
 - iii. Fees for Franchisee operation should be derived upon taking into consideration revenue recovery from consumers and capital subsidy, revenue subsidy, financial assistance from Central Government or State Government, if any, available towards franchisee operation by Rural System Operator.
 - iv. The need to provide transparently the appropriate incentives, in a nondiscriminatory manner, for a continuous enhancement in the efficiency of distribution and supply and up-gradation in the levels of service;
 - v. Specifying Control Period for Franchisee Operation, Fee Structure (levellised, back-ended or front ended) and Fee Design (fixed monthly fee or Variable Monthly fee linked to quantum of distribution/supply) to ensure long term regulatory clarity and regulatory certainty for principles of determination of Fees for Franchisee Operation of Off-grid project scheme;



- vi. Need for specifying transfer value reflective of book value upon termination of Franchisee Agreement;
- vii. Any other matter relevant in the opinion of the Commission;

12 Grid Connectivity and Integrated Operation of ORES:

12.1 When the distribution network of Distribution Licensee reaches the Project Area, the Franchisee Agreement between Rural System Operator and Distribution Licensee may be terminated;

Provided that Distribution Licensee shall take over the assets of distribution infrastructure and compensate as a fixed fee structure to the Rural System Operator at book value;

12.2 The Power Purchase Agreement shall continue, and the Rural System Operator shall receive the feed-in-tariff from Distribution Licensee for the electricity being fed to the grid from generation scheme;

13 Contractual Framework:

- 13.1 As per Regulation 8 and Regulation 12, there shall be Franchisee Agreement and Power Purchase Agreement between the Rural System Operator and the Distribution Licensee;
- 13.2 Power Purchase Agreement shall be for life of the project, as determined by State Electricity Regulatory Commission in Feed in Tariff order issued for particular technologies;
- 13.3 Franchisee Agreement shall be co-terminus with Power Purchase Agreement with provision for prior termination as and when distribution network of concerned Distribution Licensee reaches the area of operation of Rural System Operator.
- 13.4 The Rural System Operator shall sell electricity to consumers within the Project Area at the Tariff Rates equal to the Tariff applicable for other consumers of Distribution Licensees belonging to similar consumer category;

14 Revocations of Contract & Arbitration:

14.1 If the Distribution Licensee after making an enquiry based on the monthly reports submitted by Rural System Operator, is satisfied that public interests so require, the termination of franchisee and power purchase agreement shall be done based on the following:-



- i. where the Rural System Operator, in the opinion of the Distribution Licensee, makes willful and prolonged default in doing anything required of him by or under these RSO Guidelines;
- ii. where the Rural System Operator breaks any terms and conditions for distribution of electricity at the tariff of the local distribution licensee to the rural consumers;
- 14.2 In case of termination of the contract, the Distribution Licensee and Rural System Operator shall follow the process specified in the respective Agreements.

15 Monitoring and Verification:

- 15.1 Monitoring and Verification shall be based on joint meter reading by Distribution Licensee and Rural System Operator on monthly basis;
- 15.2 The protocol for monitoring and verification shall be agreed in advance and shall form part of the Power Purchase Agreement for Generation part of the Project Scheme and shall form part of Franchisee Agreement for the distribution/supply part of the Project Scheme.

16 Eligibility Criteria:

- 16.1 Following conditions shall apply for the design and development of Off-grid Renewable Energy System (ORES) to be covered under these RSO Guidelines;
 - a) Village/ hamlet wherein no provision of supply of electricity exists. For existing projects, the Rural System Operator and its system shall be the sole source of electricity supply;
 - b) Rural System Operator The Rural System Operator shall have the net worth of Rs 5 lakh;
 - c) Selection of Technology and Sizing of the Plant The Rural System Operator shall follow the guidelines, if any, issued by the Appropriate Commission for selection of the technology and sizing of the plant. In case, the Appropriate Commission has not issued such guidelines, selection of technology and sizing of the plant shall be done in consultation with the RLB.



17 Metering:

- 17.1 The metering shall be provided both at the generation end and the consumer end;
- 17.2 The installation and operation of the Meters shall be in conformity with the relevant regulations notified by Central Electricity Authority from time to time.
- 17.3 At the generation end, main meter and standby metering arrangement to be provided as per terms of the Power Purchase Agreement.

18 Power to give directions:

18.1 The Commission may from time to time issue such directions and orders as considered appropriate for the implementation of these RSO Guidelines and for the development, management and operation of Off-Grid Renewable Energy System.

19 Power to Relax:

19.1 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 may relax any of the provisions of these RSO Guidelines on its own motion or on an application made before it by an interested person.

(Secretary)