

**JOINT ELECTRICITY REGULATORY COMMISSION
(FOR THE UT OF J&K AND THE UT OF LADAKH)
To be published in Extra-Ordinary Part III, Section 4
DRAFT NOTIFICATION**

Jammu, the _____ 2023

No. JERC-JKL/Reg/2023/..... In exercise of powers conferred under sections 86 (1) (e) and 181 of the Electricity Act, 2003 and all powers enabling it in this behalf, the Joint Electricity Regulatory Commission for the UT of Jammu & Kashmir and the UT of Ladakh hereby makes the following regulations for the development of power generation from renewable energy sources and for procurement of energy from renewable sources by distribution licensee.

1. Short title, commencement, and extent of application:

- 1.1 These regulations shall be called the Joint Electricity Regulatory Commission for the UT of Jammu & Kashmir and the UT of Ladakh (Smart Grid) Regulations, 2023.
- 1.2 These regulations shall come into force from the date of their publication in the official gazette.
- 1.3 These regulations shall apply to the whole of the UT of Jammu & Kashmir and the UT of Ladakh.

2. Definition

2.1 In these Regulations, unless the context otherwise requires:

- (a) **“Act”** means the Electricity Act, 2003 (36 of 2003) and subsequent amendments thereof.
- (b) **“Advanced Metering Infrastructure (AMI)”** including ‘Smart Meters’ means the infrastructure required to enable the distribution licensee to accurately collect, monitor, and analyze real-time consumption data from consumers, communicate price signals to consumers and where permitted loads are controlled;
- (c) **“Aggregator”** is an entity registered with the distribution licensee to provide aggregation of one or more of the services like demand response services under the demand response mechanism, Distributed Generation, Energy Storage, etc. within a control area;
- (d) **“Bureau”** means Bureau of Indian Standards (BIS) established under section 3 of the Bureau of Indian Standards Act, 2016;
- (e) **“Central Electricity Authority (CEA)”** means the Authority referred to in sub-section (1) of Section 70 of the Act;
- (f) **“Commission”** means the Joint Electricity Regulatory Commission for the UT of Jammu & Kashmir and the UT of Ladakh;
- (g) **“Cyber Security”** means protecting information, equipment, devices, computers, computer resources, networks, programmes, data, communication devices, and information stored therein from unauthorized or unintended access, use, disclosure, disruption, modification, or destruction;
- (h) **“Distributed Generation”** means power generation at the point of consumption;
- (i) **“Distribution Licensee”** means a licensee authorized to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply. This definition covers deemed distribution licensees and those exempted from obtaining distribution licenses;
- (j) **“Electric Energy Storage”** means a set of technologies capable of storing previously generated energy and releasing energy at a later time to feed electricity into the grid. Electric storage technologies may store energy as potential, kinetic, chemical, or thermal energy, and include various types of batteries, flywheels, electrochemical, capacitors, compressed air storage, thermal storage devices, and pumped hydroelectric power and able to generate electricity;
- (k) **“Interoperability”** means the measure of ease of integration between two systems or software components to achieve a functional goal;
- (l) **“Key Performance Indicator (KPI)”** is a type of performance measurement to evaluate its success, or to evaluate the outcome of a particular activity in which it is engaged;
- (m) **“Microgrid”** is an intelligent electricity distribution system that interconnects loads, distributed energy resources, and storage within clearly defined electrical boundaries to act as a single controllable entity with respect to the main grid. A microgrid uses information, communications, and control technologies to operate the system’s distributed supply and demand resources in a controlled and coordinated way either while

connected to the main grid or while islanded. A microgrid can connect and disconnect from the grid to enable it to operate in both grid-connected or island mode;

- (n) **“Prosumer”** means a consumer who consumes electricity from the grid and can also inject electricity into the grid for distribution licensee, using the same point of supply;
 - (o) **“Smart Grid”** is an electricity network that can cost-efficiently integrate the behaviour and actions of all users connected to it - generators, consumers, and those that do both in order to ensure economically efficient, sustainable power systems with low losses and high levels of quality and security of supply and safety.
 - (p) **“Smart Meter”** means a meter as specified in IS16444 and as amended from time to time;
 - (q) **“Wide Area Measurement Systems (WAMS)”** is advanced measurement technology, information tools, and operational infrastructure that facilitate the understanding and management of the increasingly complex behaviour exhibited by large power systems to enhance the system operator’s “situational awareness” for safe and reliable grid operation.
- 2.2 Words and expressions used and not defined in this Regulation but defined in the Act shall have the meanings assigned to them in the Act.

3. Smart Grid Objective

- 3.1 The objectives of this Regulation are to enable the integration of various smart grid technologies and measures to bring about the economy, efficiency improvement in generation, transmission and distribution licensee operations, manage the transmission and distribution networks effectively, enhance network security, integrate renewable and clean energy into the grid and micro grids.
- 3.2 The objectives also include enhancing network visibility and access, promoting optimal asset utilization, and improving consumer service levels thereby allowing for participation in operations of transmission licensees, and distribution licensees through greater technology adoption across the value chain in the electricity sector and particularly in the transmission and distribution segments.

4. Smart Grid Process

- 4.1 The Smart Grid process shall constitute the activities including but not limited to the following:
- (a) Formulation of Smart Grid programmes;
 - (b) Implementation of Smart Grid programmes;
 - (c) Cost Effectiveness Assessment of Smart Grid programmes;
 - (d) Monitoring and Reporting of Smart Grid Plans and programmes;
 - (e) Essential requisites for Smart Grid programmes;
 - (f) Customer engagement and participation;
 - (g) Customer data protection;
 - (h) Training and capacity building;
 - (i) Methodology for setting Smart Grid plans and funding levels;
 - (j) Database development framework and information system requirements;

5. Constitution of Smart Grid Cell, its roles & responsibilities

- 5.1 Every transmission licensee, and distribution licensee shall constitute a Smart Grid Cell within three (3) months of notification of this Regulation.
- 5.2 The Smart Grid Cell so constituted shall have the authority and necessary resources to execute the functions assigned to it under this Regulation.
- 5.3 The Smart Grid Cell shall be responsible for.
- (a) Baseline study and development of data;
 - (b) Formulation of Smart Grid Plans, Programmes and Projects;
 - (c) Design and Development of Smart Grid Projects including cost-benefit analysis, plans for implementation, monitoring & reporting, and for measurement & verification;
 - (d) Seeking necessary approvals for Smart Grid Plans, Programmes, and Projects;
 - (e) Implementation of Smart Grid Programmes;
 - (f) Any other additional function that may be assigned by the Commission from time to time;

5.4 The transmission licensee and distribution licensee may combine activities related to energy efficiency, demand side management, and Smart Grid implementation within the same cell.

6. Baseline study and development of data

6.1 The transmission licensee and distribution licensee shall undertake a baseline study to identify the targets and final outcomes for Smart Grid project programmes. The transmission licensee, and distribution licensee shall also build the necessary database.

6.2 The transmission licensee and distribution licensee shall undertake a study to estimate the potential for employment of specific efficiency technologies and applications, establish key performance indicators, and determine existing baseline technical conditions.

6.3 On the basis of the results of the baseline study, the transmission licensee and distribution licensee shall develop a Smart Grid Programme for its area of supply.

7. Formulation of Smart Grid Plan, Programmes, Project

7.1. The transmission licensee and distribution licensee shall submit the necessary Smart Grid Plan for their respective Licence areas along with Multi-Year Tariff Petition or ARR Petition, for the approval of the Commission.

7.2. Application for approval of capital investment for Smart Grid Projects shall be submitted by the Licensees to the Commission as per provisions mentioned under MYT Regulations, in force.

7.3. The proposal for Smart Grid Projects shall include:

- a) Detailed Project Report;
- b) Customer Engagement and Participation Plan as applicable;
- c) Training and Capacity Building plan; and
- d) any other information that may be stipulated by the Commission from time to time.

7.4. Provided that the Detailed Project Report would include inter alia description of the project objective and rationale for the project, technical feasibility study, projected financial implications, target stakeholders, detailed cost-benefit analysis detailing all costs qualitative and quantitative in nature, assessment of the project, in line with the cost-effectiveness guidelines issued by the Commission, the proposed mechanism for recovery of costs, delivery strategy, implementation mechanism, implementation schedule, performance incentives if any, monitoring and evaluation plan, plan for increasing awareness among the stakeholders.

7.5. The Commission shall allow the creation of provisions for Research and development activities in the field of Smart Grid projects in the Aggregate Revenue Requirement of the licensee, if any, based on the specific plan submitted by the Licensee. The licensee shall be required to submit a detailed report on the activities carried out by the Licensees, after approval of the Commission.

7.6. A list of indicative components of Smart Grid Projects are as under:

- (a) Advanced Metering Infrastructure (AMI);
- (b) Demand Response;
- (c) Micro-Grids;
- (d) Distribution SCADA/Distribution Management;
- (e) Distributed Generation;
- (f) Peak Load Management;
- (g) Outage Management;
- (h) Asset Management;
- (i) Wide Area Measurement Systems;
- (j) Energy Storage Projects;
- (k) Grid Integration of Renewables;
- (l) Electric Vehicle including Grid to Vehicle (G2V) and Vehicle to Grid (V2G) Interactions;
- (m) Smart Grid Data collection and analysis;
- (n) Tariff Mechanism including interruptible and dynamic tariffs, time of use, critical peak pricing, real time pricing, etc.

8. Approval of Smart Grid Plan, Programme, Project Document

- 8.1. The Commission shall approve a Smart Grid Programme or Project if it is in line with the Objectives set out in clause 3 of this Regulation.
- 8.2. The Commission may take the assistance and advice of such experts as it deems necessary for examining the proposal submitted by the transmission licensee distribution licensee.
- 8.3. The Commission while giving approval to the proposals, may identify costs, if any, relating to the programme, and project and decide the methodology, procedure, and process for recovery of such costs.

Provided that the Commission may provide the incentive/disincentive mechanism for the transmission licensee, and distribution licensee linked to the execution, implementation, and performance during the life of the project. The Commission may also specify financial incentives/disincentives to participating consumers to encourage active and effective participation in the Smart Grid programs.

Provided that the Commission may modify the proposal as deemed fit in order to ensure its consistency with overall objectives.

9. Execution of Smart Grid Programmes, Project

- 9.1. The transmission licensee and distribution licensee shall undertake the execution of the project, and programme in line with the approval given by the Commission and other directions issued by the Commission from time to time.
- 9.2. The transmission licensee and distribution licensee shall normally adopt the system standards as per Regulations notified by the CEA. In such cases where no standards or regulations are notified by the CEA the appropriate standards, and regulations notified by the Commission shall be applicable. In respect of network, communication, products, interoperability, and cyber security, the standards as provided by BIS or such appropriate authority shall be adopted. Where these standards are not yet in place, relevant IEC/IEEE/ANSI Standards shall be followed in that order;
- 9.3. The Regulations relating to Standards of Performance (SoP) as notified by the Commission shall apply. Assessment of the performance of the Smart Grid projects shall be carried out for incentivizing/penalizing the performance of the transmission licensee, and distribution licensee. The Commission may specify and require the implementation of additional standards of performance to maximize and ensure compliance of the Smart Grid performance standards and the benefits proposed.
- 9.4. The transmission licensee, distribution licensee, and other agencies responsible for the implementation of the Smart Grid programmes, and projects shall ensure that the protection of consumer data and consumer privacy is accorded the highest levels of priority.

10. Mechanism for Cost Recovery

- 10.1. The transmission licensee, and distribution licensee shall identify the net incremental costs, if any, associated with the planning, design, and implementation of programmes.
- 10.2. The transmission licensee, and distribution licensee may propose methodology for recovery of net incremental costs through tariff or any other mechanism.
- 10.3. In order to qualify for cost recovery, each program must be:
 - (a) Approved prior to implementation; and
 - (b) Implemented in accordance with the approved program plan;
- 10.4. The Commission shall allow the recovery of such expenditure in the Aggregate Revenue Requirement (ARR) subject to prudence check

11. Smart Grid Programme, Project Completion Report

- 11.1. The Transmission licensee and distribution licensee will prepare and submit a detailed programme, and project completion report and submit the same to the Commission within one (1) month of completion of such programme
- 11.2. The Report shall cover the programme, project expenses, physical achievements, constraints and difficulties faced, and deviations, if any,

11.3. The transmission licensee and distribution licensee shall place the completion report in the public domain through its website.

12. Monitoring, Evaluation, Measurement, and Verification of execution and performance of the Smart Grid Programme, Project

12.1. The Smart Grid programme, project shall be monitored and evaluated based on appropriate methodology including Key Performance Indicators (KPI) as decided by the Commission using suitable measurement and verification protocols identified for each of the individual programmes, and projects.

12.2. The transmission licensee and distribution licensee shall also submit an evaluation report to the Commission, which inter alia will include outcomes, benefits, lessons learned, and the way forward.

13. Awareness and Capacity Building

13.1. In the development phase of Smart Grid programs, there would be significant needs for customer/prosumer education and outreach. The transmission licensee and distribution licensee shall earmark 1% of the project cost for each Smart Grid project towards consumer awareness and capacity building.

13.2. As part of the detailed project reports, the transmission licensee, and distribution licensee shall define a clear internal and external communication strategy that identifies the critical communication needs and links the same to the key project components. The Commission may reject project proposals or may require revisions to the communication strategy if required.

14. Safety and Standards related to Smart Grid

14.1. **System standards:** The transmission licensee and distribution licensee shall normally adopt the system standards as per Regulations notified by the CEA Where CEA or BIS standards are not yet in place, relevant IEC/IEEE/ANSI Standards should be followed in that order. In such cases where no standards or regulations are notified by the CEA the appropriate standards, and regulations notified by the appropriate Commission shall be applicable.

14.2. **Network and communication standards:** In respect of network, communication, and products, the standards provided by BIS or such appropriate authority shall be adopted. Where these standards are not yet in place, relevant IEC/IEEE/ANSI Standards should be followed in that order.

14.3. **Product standards:** Where available BIS standards shall be complied with for all equipment and technology related to Smart Grid. Where BIS standards are not yet in place, relevant IEC/IEEE/ANSI Standards should be followed in that order.

14.4. **Performance standards:** To the extent applicable, the Standards of Performance Regulation shall apply for assessing the performance of smart grid projects. The Commission may specify and require the implementation of additional Standards of Performance to maximize the benefits and ensure compliance of the Smart Grid investments proposed. All Standards of Performance to be met in the Smart Grid project implementation area shall be measurable through the measurement, visualization, and analytics facilities that are required to be an integral part of the Smart Grid project design. The Commission, through Order, may require specific reporting arrangements to be implemented and periodic reports to be furnished to the Commission on actual performance against the required standards.

14.5. **Consumer data protection standards:** The transmission licensee, distribution licensee and other implementers of the Smart Grid projects/programs shall ensure that protection of consumer privacy is accorded the highest levels of priority in the design of the Smart Grid projects and the corresponding investment plans. Consumer data shall be protected through appropriate levels of encryption and access controls and shall ordinarily not be shared with external agencies without the explicit authorization of the Commission or unless required by statutory authorities or by courts of law.

14.6. **Testing and certification:** The Commission may require the licensee to provide the certificate of compliance to specific standards from the designated nodal authority at the national level for the Smart Grid equipment installed.

15. Power to Amend

15.1. The Commission may, at any time add, vary, alter, modify, or amend any provisions of this Regulation.

16. Power to give Directions

16.1. The Commission may, from time to time, issue orders and practice directions in regard to the implementation of the Regulations and procedures to be followed.

17. 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, may relax any of the provisions of this Regulation on its own motion or on an application made before it by an interested person

18. Power to Remove Difficulties

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

By Order of the Commission.

**V.K. Dhar, (JKAS)
Secretary, JERC
J&K and Ladakh**