

**GOVERNMENT OF JHARKHAND
DEPARTMENT OF ENERGY**

Draft of Jharkhand State Solar Rooftop Policy 2017

Preamble

In order to reduce the dependence on fossil fuel based generation, it is essential to explore all possible alternative sources of generation. Under these circumstances, the generation based on renewable energy resources as well as adopting energy efficiency measures to fulfill the electricity requirement shall play a significant role in meeting our future demands of electricity.

The State has vast potential of solar rooftop power plants for utilising Solar Energy. The State receives daily average solar radiation in the range 4.5 kWh/sqm –5.5 kWh/sqm, in most of its part, offering opportunity for deployment of suitable solar energy facilities. Accordingly, the Government of Jharkhand has formulated Solar Power Policy – 2015 for deployment of megawatt scale grid connected solar power plants.

The Government of Jharkhand is equally committed to promote the deployment of rooftop solar photovoltaic plants. Keeping into consideration the potential benefits of deployment of rooftop solar photovoltaic plants, which includes reducing dependence on fossil fuel based generation, optimal utilisation of spaces on rooftops and wasteland around the buildings, savings on investment in transmission and distribution infrastructure, savings on reducing the network losses, reduced cost for managing the scheduling of electricity etc., the Government of Jharkhand hereby introduces the Jharkhand Rooftop Solar Photovoltaic Power Plants Policy, 2017,

1. Title of the Policy

The policy shall be known as the Jharkhand State Solar Rooftop Policy 2017.

2. Scope of Policy

This policy would be applicable to grid connected solar rooftop power plant and ground mounted small power plants (upto 500kWp) within the premises of electricity consumers and as per this policy solar rooftop power plants also implies ground mounted small power plants.

3. Objectives

The State Government introduces the policy with the following objectives,

- 3.1. To contribute to solar capacity addition and energy security
- 3.2. To optimally utilize the available solar energy resource in the State
- 3.3. To encourage development and promotion of environment benign solar energy generation contributing to sustainable development
- 3.4. To reduce the cost of power and ensure community participation in promotion of green energy.
- 3.5. To maximize the utilization of the state's energy distribution infrastructure

- 3.6. To encourage sustainability of economically weaker classes through innovative business models
- 3.7. To promote a robust investment climate that enables multiple financial models, from self-owned (CAPEX) to third-party owned (RESCO) models. Also facilitate access to loans at preferential interest rates through various schemes that may be introduced from time to time, whether through public or private channels.
- 3.8. To enhance skills and create employment opportunities
- 3.9. To spread environmental awareness amongst the people of Jharkhand

4. Operative Period

The policy shall come into effect from date of notification and shall remain applicable till such time a new policy is issued.

Rooftop solar photovoltaic power plants installed & commissioned during the operative period shall become eligible for the incentives declared under this policy, for a period of five (05) years from the date of commissioning- unless otherwise the period is specifically mentioned for any incentive.

5. Eligible Entities:

Any person, which shall include any company or body corporate or association or body of individuals, whether incorporated or not, shall be eligible to set up rooftop solar photovoltaic power plant and approach Jharkhand Renewable Energy Development Agency for implementation of such power plants. Provided that such plants are set up for the purpose of captive use/self-consumption of electricity/ Sale of Electricity to the Distribution Licensee of the State/ Sale of Electricity to a person/ entity other than Distribution Licensee and such plants comply with the technical standards and specifications, if any, specified by the Central/State Government. or through its nominated nodal agency.

6. Target

The State shall strive to achieve the objective of the policy and aim at implementing the following targets in 5 year period:

| Description | Unit | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 | FY 2021-22 | Total |
|----------------------------|------|------------|------------|------------|------------|------------|-------|
| Rooftop Solar Power Plant* | MW | 50 | 75 | 100 | 125 | 150 | 500 |

*The minimum size of the Rooftop solar PV power plant at single location shall be 1 KW.

7. Implementation Plan for Grid Connected Rooftop Solar Photovoltaic Power Plants:

The modalities for implementing the solar rooftop policy including metering, billing, settlement, payment & technical aspects shall be issued by Discom (Distribution Company) in consultation with JREDA within 30 days from the date of issue of this policy.

The State shall encourage implementation of the minimum target specified for rooftop solar photovoltaic power plants, connected with electricity system, under below mentioned segments:-

7.1. Generation and Sale of Electricity to the Distribution Licensee of the State:

In order to reap the benefits and to enable obligated entities complying with the solar purchase obligation targets specified by the Jharkhand State Electricity Regulatory Commission, the State would encourage deploying solar rooftop power plant for generation and sale of electricity to the Distribution Licensee of the State.

The JREDA will approach to Jharkhand State Electricity Regulatory Commission to announce separate feed-in tariff applicable to solar rooftop power plants, after considering the State specific parameters.

7.2. Generation and Sale of Electricity to a Person/entity other than Distribution Licensee (RESCO Model):

The State shall promote implementation of solar rooftop power plant and sale of electricity generated to a Person/entity other than the Distribution Licensee. The Nodal Agency shall extend its support for implementation of solar rooftop power plants under this segment.

The Jharkhand State Electricity Regulatory Commission shall announce suitable provisions for the development of the solar rooftop power plants under this category.

7.3. Generation, Captive Consumption and injection of surplus Electricity under Net Energy Metering Mechanism:

The State shall promote development of rooftop solar photovoltaic power plants implemented by any Person/entity for meeting its own electricity requirements and injecting surplus electricity into the distribution system through net metering.

a. Group Net Metering

To encourage solar rooftop plants on buildings that cannot consume all of the energy generated locally, Discoms shall facilitate Group Net Metering, whereby surplus energy exported to the grid from a solar rooftop plant at the location of the solar rooftop plant can be adjusted in any other (one or more) electricity service connection(s) of the consumer within the districts of Jharkhand, provided these connections are in the same Discom territory. The purpose of this provision is to help maximize the utilization of rooftop space for solar energy generation for consumers with multiple buildings and service connections.

The State Government shall work with JSERC to develop group net metering framework, pending finalization of the framework, consumers of all categories who wish to avail Group Net Metering facility shall make a written request to JSERC, which shall review the requests in a timely manner and grant approval on a case-by-case basis. Within 30 days of notification of this policy, JSERC shall make available on its website a simple document form to handle such written requests.

The State Government shall work with JSERC to develop Group Net Metering framework for government buildings and other consumer categories. JSERC, the state power department and SNA will form a joint committee to achieve this policy objective.

b. Virtual Net Metering

To give access to the Solar Net Metering facility for consumers who do not have a suitable roof for installing a solar system (e.g. residential consumers who live in apartments, consumers with shaded rooftops) there will be the facility of Virtual Net Metering. In Virtual Net Metering consumers can be beneficial owners of a part of a collectively owned solar system. All energy produced by a collectively owned solar system will be fed into the grid through an energy meter and the exported energy as recorded by that meter will be pro-rata credited in the electricity bill of each participating consumer on the basis of beneficial ownership.

Collective ownership of solar plants may be established through housing societies, RWAs or any other legal entity that safeguards the interests of participating consumers, including rights which are at par with the rights enjoyed by consumers who have solar net metering with a solar system installed on their own roof.

The State Government shall work with JSERC to develop Virtual Net Metering framework for all consumers. JSERC, the state power department and SNA will form a joint committee to achieve this policy objective.

The State shall encourage implementation of grid interactive rooftop solar photovoltaic power plants as under:

7.3.1. Government/Public Institutions:

The State Government shall promote deployment of rooftop solar photovoltaic power plants for captive/self-consumption on the offices of the government organizations, government owned or aided hospitals, research institutions, educational institutions, govt. residences/colonies, hostels & training institutions, libraries, circuit houses, tourism guest houses, inspection houses etc.

7.3.2. Private Institutions:

The State Government shall promote deployment of rooftop solar photovoltaic power plants on the premises of residential buildings/colonies/townships, societies, hotels, private guest houses, private transit hostels, private students' hostels, marriage houses, commercial establishments, cinema & theatres, private hospitals, private ware-houses, industries etc. All the aforementioned institutions shall be encouraged to implement rooftop solar photovoltaic power plant, of suitable capacity, on the roof of their premises/area, generate the electricity for sale to the distribution licensee and/or for their self-consumption.

The installation of Solar Rooftop Power Plant for the category of buildings/ areas mentioned column 2 as per the capacity mentioned against it under column 3 of the schedule below shall be mandatory:

| Sr. No. | Category of Building/ area | Capacity of Solar Rooftop Power Plant to be installed |
|---------|---|---|
| 1 | 2 | 3 |
| 1 | All residential buildings built having built up area size of 3000 sq. ft. and above falling within the limits of Municipal Corporations, Municipal Council, Municipal Committees, Urban Development Authorities, Industrial and Infrastructure Development Authorities and corporations | Minimum 10% of connected load Or 1kWp, whichever is higher |
| 2 | All private Educational Institutes, Schools, Colleges, Hostels, Technical/ Vocational Education Institutes, Universities etc. having connected load of 30 kW and above | Minimum 10% of connected load Or 5kWp, whichever is higher |
| 3 | All Government Buildings and Offices, Government Colleges, District Institute of Education and Training (DIET), Government Educational Institutions, Universities having connected load of 30 kW and above | Minimum 10% of connected load Or 5kWp, whichever is higher |
| 4 | All private Hospitals and Nursing Homes, Industrial Establishment, Commercial Establishments, Malls, Hotels, Motels, Banquet Halls and Tourism Complexes having connected load of | |
| | (i) 50kW to 1000 kW (Premises without Diesel Genset) | (i) Minimum 10% of connected load Or 10kWp, whichever is higher |
| | (ii) Above 1000 kW (Premises without Diesel Genset) | (ii) Minimum 5% of connected load Or 50kWp, whichever is higher |
| | (iii) 50kW to 1000 kW (Premises with Diesel | (iii) Minimum 10% of connected load |

| | | |
|---|---|---|
| | Genset) (iv) Above 1000 kW (Premises with Diesel Genset) | Or Capacity equivalent to Diesel Genset, whichever is higher (iv) Minimum 5% of connected load Or Capacity equivalent to Diesel Genset, whichever is higher |
| 5 | All new Housing Complexes, developed by Group Housing Societies, Builders, Housing Boards, on a plot size of: (i) 0.5 Acre to 1 Acre (ii) More than 1 Acre to 2 Acre (iii) More than 2 Acre to 5 Acre (iv) More than 5 Acre | (i) Minimum 10 kWp (ii) Minimum 20 kWp (iii) Minimum 30 kWp (iv) Minimum 40 kWp |
| 6 | All water lifting/pumping stations of Water Resource Department and Drinking Water and Sanitation Department having connected load of 100kW and above | Minimum 5% of connected load Or 10kWp, whichever is higher |

8. Incentives:

The State government shall provide suitable incentives to promote large scale adoption of grid interactive rooftop solar power generation by the residential consumers.

The State Government shall encourage the local urban bodies for making suitable amendments in the existing building bye-laws to encourage rooftop solar photovoltaic power plants. Eligible Developers are allowed to avail the relevant subsidies & incentives from MNRE under JNNSM scheme. The sanction & release of the subsidy will be as per the guidelines issued by MNRE from time to time.

The net metering facility will be extended for all eligible developers who intend to setup solar Photovoltaic power plant in their premises. Eligible Developers who wish to avail the net metering facility will have to apply to DISCOMs, who will develop an on-line system for the same. The applicable tariff for solar rooftop projects shall be determined by JSERC.

The following incentives shall be available to the solar power plants which are implemented and commissioned during the Operative Period of the policy:

8.1. Subsidy:

State Nodal Agency Jharkhand Renewable Energy Development Agency shall facilitate in availing Government of India subsidy, as applicable for implementation of such plants, to both Public and Private Institutions / organizations.

8.2. Exemption from payment of Conversion Charges:

The residential consumers shall be exempted from conversion of house tax to commercial tax on opting for implementation of rooftop solar photovoltaic power plant under sale of power to grid.

8.3. Height of the module structure:

The height of the module structure carrying rooftop solar panels, in addition to the building height, shall not be counted towards total height of the building under the building bye laws.

8.4. Third Party Sale:

Third Party sale within the State of Jharkhand will be allowed as per Electricity Act 2003 and the Orders and /or Regulations issued by JSERC from time to time.

8.5. Clean Development Mechanism benefits:

CDM benefits to the solar power project Developers / Investors shall be as per the provisions specified by JSERC.

8.6. Pollution Clearance:

Solar PV Power Projects will be exempted from obtaining any NOC/consent for establishment, consent to operate and public hearing under the pollution control laws from Jharkhand State Pollution Control Board.

8.7. Renewable Energy Certificate (REC):

All projects developed with the above incentives will be eligible for REC benefits subject to applicable regulations/orders of the appropriate commission. Deemed injection into the grid for in-house solar generation will also be eligible for REC benefits subject to applicable guidelines.

8.8. Deemed approvals:

All approvals / clearances shall be disposed by respective DISCOMs within 15 days from the date of application or otherwise considered as deemed approval.

8.9. Priority industry:

Solar industry shall be declared as a priority industry.

9. Role of Nodal Agency:

Jharkhand Renewable Energy Development Agency (JREDA) shall be the Nodal Agency for the State of Jharkhand.

The Nodal Agency and or the designated offices under the Nodal Agency shall be responsible for following activities:-

9.1. Announcement of Scheme:

The Nodal Agency shall bring out a comprehensive scheme to implement the targets specified under the policy. The scheme should elaborate the appropriate process for invitation of bids/applications, incentives and central financial assistance, if any, targets, implementation mechanisms etc.

9.2. Allotment of the Solar Rooftop Power Capacities:

The Nodal Agency shall, from time to time, undertake the process for allotment of solar rooftop power capacities to the project developers/ integrators. The Nodal Agency in consultation with the related stakeholders shall announce the process for allotment of solar rooftop power capacities.

9.3. Facilitation in Development of Solar Rooftop Power Plant:

The Nodal Agency shall, facilitate the project developers/ integrators in obtaining necessary clearances and approvals from different Government departments, if required.

9.4. Support in establishing Protocols/Procedures for easy adoption of Solar Rooftop Power Plant:

The Nodal Agency shall also support the distribution licensee in developing the protocols and procedures for metering, connectivity with the electricity system, and power purchase agreements etc. for easy adoption of rooftop solar photovoltaic power plants by the stakeholders.

9.5. Identification of Sites for Deployment of Rooftop Solar Photovoltaic Power Plants:

The Nodal Agency shall facilitate the project developers in identifying the technically feasible sites/roofs under jurisdiction of the State Government for deployment of rooftop solar photovoltaic power projects. The Nodal Agency may charge nominal fee for extending its services.

9.6. Support in availing the Subsidy:

The Nodal Agency shall facilitate the solar rooftop power plant developer(s) to avail the subsidy available from Central and/or State Government.

9.7. Amendment in Bye-Laws:

The Nodal Agency shall coordinate with the Housing and Urban Development Department, identify and recommend necessary amendments in the Bye-Laws to facilitate extensive adoption of rooftop solar photovoltaic power plants.

9.8. Capacity Building & Awareness:

The Nodal Agency shall organize Capacity Building & Training Sessions for participation by the segment stakeholders. The Nodal Agency shall also take necessary steps in creating awareness among the citizens of the State.

9.9. Strategy for the development of Solar rooftop power Segment:

The Nodal Agency shall arrange to formulate a strategy for the overall development of solar rooftop power segment in the State with special emphasis on creating market for service providers, small and medium enterprises etc. The report shall be submitted for the consideration of the State Government on yearly basis. The Nodal Agency shall also ensure accessibility of quality equipment as per standards specified by appropriate agencies including Ministry of New and Renewable Energy.

9.10. Coordination with MNRE for Technical Specification:

The State shall follow the technical specifications and standards as specified by the Ministry of New and Renewable Energy, from time to time. The Nodal Agency shall provide its inputs to the Ministry of New and Renewable Energy for specifying standard new or amending existing technical specifications for different component of rooftop solar power plant.

9.11. Rate Contracts for Solar Rooftop Power Plants:

JREDA will utilize its domain expertise of procurement of equipment's and implementation solar rooftop project, from time to time for fixing up Rate Contracts through open bidding process and circulate the list of empaneled vendors along with the Rate Contract as well as the commercial and technical aspects. This will save the government departments from repetitive process of purchase/ procurement and the Government offices will be free to select any vendor of their choice from empaneled list. This will expedite the solarisation process in Government buildings.

9.12. REC Accreditation:

JREDA shall provide requisite support for accreditation of the power plant and recommend its registration with the Central Agency for issuance of Renewable Energy Certificates (REC).

10. Role of the Jharkhand State Electricity Regulatory Commission:

The Jharkhand State Electricity Regulatory Commission shall on priority basis, notify appropriate regulatory framework for the promotion and deployment of grid connected rooftop solar photovoltaic power plants in the State. The regulatory framework shall include the enabling provisions for the implementation of the policy.

The JSERC shall have exclusive jurisdiction on those provisions of this policy which are within its regulatory mandate for management of the Electricity Act, 2003, especially regarding notification of Electricity Tariffs for sale for power, power purchase agreements, wheeling, banking, distribution, transmission loss charges etc. Similarly, the JSERC has jurisdiction under the provisions of the Electricity Act, 2003 as regards promotion of non- conventional energy sources, facilities for

transmission of energy and sharing of purchase of power amongst Transmission Licensee/ Distribution Licensee etc. Compliances of Guidelines, Directives, Regulations, Rules etc. issued by the JSERC issued from time to time regarding these shall be binding on all concerned parties.

In the event of any dispute in the interpretation of this policy or any terms and conditions of agreement/clauses between the Developer and any state govt. department or Transmission Licensee/ Distribution Licensee, the same shall be referred to the State Government or the JSERC, whose decision shall be final.

11. Role of State Distribution Licensee:

11.1. The State Electricity Distribution Licensees (Discoms) shall extend their support in installing solar rooftop power plants, their connectivity with their grid network, and metering. They shall comply with the regulatory framework specified by the JSERC and provisions contained in this Policy.

11.2. In case of third-party PPA signed directly with the consumer (RESCO model), the consumer will be responsible for providing appropriate technical details of the solar installations on the consumer's rooftop to Discoms.

11.3. For each billing period, DISCOM shall show separately:

- a) The quantum of units of electricity exported by the Consumer;
- b) The quantum of units of electricity imported by the Consumer;
- c) The quantum of units of electricity generated by the Consumer's solar rooftop power plant (this will be the basis for the Discoms RPO computation);
- d) The Net units of electricity billed for payment to the Consumer and the Net units of electricity carried over to the next billing period.

The Discom shall also make available online all the billing data above for each consumer, along with a sample bill explaining the various billing components above.

11.4. Discom will promote online applications for Net Metering. Discom will also display online the status of all Net Metering applications received, whether online or offline. Discom will maintain a database of Net Metering application requests, approval status, installation and commissioning data, which will be submitted to the SNA on a quarterly basis. Discom shall, at the request of the SNA from time to time, also provide to the SNA the load status of distribution transformers on its network.

11.5. Discom should update the status of solar capacity installation with respect to distribution transformers on their website to make the process transparent.

11.6. For solar rooftop power plants with capacity above 100 kWp, inspection by an Electrical Inspector, appointed by the Jharkhand Government shall be required to ensure quality, safety, and compliance before commissioning. Up to a solar rooftop power plant capacity of 100 kWp, the consumer shall be responsible for the inspection and verification before commissioning. Respective Discoms will conduct the inspection and verification of measures

related to safety parameters before installation of Net Meters. Consumers will be facilitating the Discoms for such verification

12. Metering and Billing Arrangement:

The metering and billing arrangement should comply with JSERC Net Metering Regulations and Guidelines, Central Electricity Authority (Installation and Operation of Meters) Regulations and its amendments, as applicable.

Metering equipment, as may be stipulated by Jharkhand Bijli Vitran Nigam Ltd. (JBVNL) or by respective Discoms, shall be installed at the interconnection point. Developers will install metering equipment's at their own cost as per specifications and provisions of JSERC Regulations on metering. All officials of the respective Distribution Company authorized for the purpose shall be allowed access by the Developer to inspect the same as required.

13. Capacity of Transformer

The capacity of solar rooftop power plant installation to be allowed in the area fed from the distribution transformer or any other transformer from which power is fed to the eligible consumer shall not exceed 100% of the rated capacity of such transformer(s).

14. Evacuation Voltage:

The voltage of evacuation of electricity generated from solar power plants will be as under,

| Capacity of System | Evacuation Voltage |
|--------------------|---------------------|
| Below 5 kW | Single Phase, 230 V |
| >5 kW- 50 kW | Three Phase, 415 V |
| >50 kW- 1.0 MW | 6.6 kV/ 11 kV |

15. Procedure for Interconnectivity with the Electricity System:

The procedure for interconnectivity of solar power plant with the electricity system of the licensee shall be in accordance with the provisions laid by licensee and approved by the Jharkhand State Electricity Regulatory Commission. The licensee within one (1) month, from the date of publication of this policy under official gazette, shall establish the procedure for interconnectivity of solar power plants its electricity system.

16. Monitoring of Parameters

Developers of all solar rooftop plants shall need to install necessary equipment to monitor electricity generated and injected into the electricity system or self-consumed from the solar plant. The generation data should be made available in public domain. The monitoring report shall be submitted to the SNA on regular time period for the useful life of the plant. The SNA in association with Discoms shall develop necessary online infrastructure to record and disseminate such parameters.

17. Financial Arrangement & Support:

The following financial arrangements shall be available for the promotion of solar power plant:-

17.1. Through Private investment:

State Government shall attract private investments for installation of solar plants. The Nodal Agency shall facilitate and provide clearances and approvals from concerned departments.

17.2. Budgetary Support:

The Nodal Agency shall undertake detailed assessment of the support required for encouraging implementation of targets identified under this policy for implementation of solar plants and submit the fund requirements for consideration of the Government for budgetary support.

17.3. Creation of Green Fund:

The State Government shall devise creation of a Green Fund through suitable strategy and methods. The fund so created shall be utilized for organizing capacity building and training programme, creating awareness, offsetting the upfront capital cost, interest subvention through Banks and any other aspect deemed necessary for the easy adoption of solar rooftop power plants in the State.

18. Empowered Committee:

To oversee, monitor and resolve various issues arising out of this Policy, an Empowered Committee will be constituted under the chairmanship of the Chief Secretary of the Government of Jharkhand

The Committee will have the following constitution:

| | |
|------------------------------------|------------------|
| Chief Secretary, GoJ | Chairman |
| Secretary (Power), GoJ | Member |
| Secretary (Urban Development), GoJ | Member |
| Secretary (Finance), GoJ | Member |
| Secretary (JSERC) | Member |
| Commissioner, RMC | Member |
| MD, JBVNL | Member |
| Director, JREDA | Member Secretary |