



Uttarakhand State Solar Policy, 2023

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Abbreviations

AAI	Airports Authority of India
CAPEX	Capital Expenditure
CGTMSE	Credit Guarantee Fund Trust for Micro and Small Enterprise
C&I	Commercial and Industrial
DISCOM	Distribution Company
DRE	Decentralised Renewable Energy
DSS	Distribution sub-station
EOI	Expression of Interest
EV	Electric Vehicle
kW	Kilo Watt
MoRD	Ministry of Rural Development
MW	Mega Watt
NABARD	National Bank for Agriculture and Rural Development
NBFC	Non-Banking Financial Company
NIRD	National Institute of Rural Development
NISE	National Institute of Solar Energy
NOC	No Objection Certificate
NSDC	National Skill Development Corporation
OPEX	Operational Expenditure
P2P	Peer-to-Peer
PCCF	Principal Chief Conservator of Forests
PDC	Post Dated Cheque
PFC	Power Financial Corporation Ltd.
PPA	Power Purchase Agreement
PSM	Payment Security Mechanism
PTCUL	Power Transmission Corporation of Uttarakhand Ltd.
R&D	Research and Development
REC	Renewable Energy Certificate
RESCO	Renewable Energy Service Company

RFP	Request for proposal
ROW	Right of Way
RPO	Renewable Purchase Obligation
SCGJ	Skill Council for Green Jobs
SGST	State Goods and Services Tax
SLDC	State Load Dispatch Center
SLEC	State Level Empowered Committee
SLSC	State Level Screening Committee
SOP	Standard Operating Procedure
SPPD	Solar Power Park Developer
SPO	Solar Purchase Obligation
T AFC	Technical Appraisal and Financial Committee
SRLM	State Rural Livelihood Mission
TRANSCO	Transmission Corporation
UERC	Uttarakhand Electricity Regulatory Commission
UPCL	Uttarakhand Power Corporation Limited
UREDA	Uttarakhand Renewable Energy Development Agency
USPLAC	Uttarakhand Solar Power Land Allotment Committee
VLC	Village Level Committee
VNM	Virtual Net Metering

Glossary

1. "Act" means Electricity Act 2003, including amendments thereto.
2. "Agrovoltaic projects" refer to solar power plants set up on cultivable or non-cultivable agricultural land.
3. "Behind the meter solar PV projects" refers to Solar PV projects designed for self-consumption with reverse power flow relay to ensure that electricity generated from rooftop PV projects is not fed into the network of the Distribution Licensee, then such installation needs to be treated as grid-connected behind the meter rooftop solar installation which does not exchange electricity with the grid."
4. "Central Agency" means the National Load Dispatch Centre (NLDC) as designated by the Central Electricity Regulatory Commission vide order dated 29.01.2010 for the REC Regulations.

5. "Data rooms" refers to the online portal to host information on available land parcels, building details, and rooftop solar potential (including rooftop and ground-mount solar) of government buildings.
6. "Discom" means a distribution licensee of Uttarakhand.
7. "Effective Date" means the date on which the PPA agreement will come into effect.
8. "Government" and "State" means the Government of Uttarakhand and the State of Uttarakhand, respectively.
9. "Green Tariff" is the regulated tariff at which willing consumers can procure clean electricity from UPCL.
10. "Licensee" includes a person deemed to be a licensee under Section 14 of the Act.
11. "MNRE" means the Ministry of New and Renewable Energy, the nodal Ministry of the Government of India for all matters relating to new and renewable energy.
12. "Nodal Agency" means the State Nodal Agency, UREDA.
13. "Peer-to-Peer (P2P)" trading refers to the 'buying & selling of rooftop solar PV energy between two or more grid-connected parties in a secured & reliable way with proper accounting & billing mechanism implemented with the help of Blockchain technology.'
14. "Policy" means Uttarakhand State Solar Policy 2023.
15. "Renewable Energy Certificate" or "REC" means the Renewable Energy Certificate issued by the Central Agency under the procedure prescribed by it and under the provision specified in the Central Electricity Regulatory Commission (Terms & Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulation, 2016.
16. "RE Park Developer" means a person or an entity who develops land and other common infrastructure for the installation of Renewable Energy based Projects. The RE Park Developer can also install generation plants on the land developed, as per the provisions of the applicable policy.
17. "REC Regulation" or "CERC REC Regulation" means Central Electricity Regulatory Commission (Terms & Conditions for recognition and issuances of Renewable Energy Certificate for Renewable Energy Generation) Regulation, 2016, notified by CERC vide notification dated 28.03.2016 and amended from time to time.
18. "Renewable Energy Sources" (RES) means
 1. solar radiation, wind, hydro, biomass, biofuels, biogas, landfill gas, sewage gas, geothermal energy, ocean energy, and combinations thereof;
 2. any other sources of energy as may be notified by the Central Government from time to time;
 3. any combination, as may be notified by the Central Government.
19. Rooftop solar power plants refer to solar PV systems installed either on the rooftop or the ground within the premises of the consumer.
20. "Solar Power Producer" means an entity which owns facilities to generate electric power for sale to Discom of Uttarakhand/Licensees/third-party/captive use.

21. "Tariff" means the schedule of charges for generation, transmission, wheeling and supply of electricity together with terms and conditions for application thereof.
22. "Virtual Net Metering" means an arrangement whereby the entire energy generated/injected from a renewable energy system or battery energy storage system (BESS) charged through renewable energy is exported to the grid from a renewable energy meter. The exported energy is adjusted in more than one electricity service connection(s) of participating consumers located within the same distribution licensee's area of supply.
23. "Vulnerable communities" refer to the communities impacted by or at high risk from natural calamities. In addition, the communities displaced due to the development of hydro projects shall also be considered under this category and will be given preference for employment and capacity building.
24. "Waste Land" or "unused lands" means the land which is presently not in use for any productive activities, nor there is any planning (either approved or in the process of approval) of productive use for the upcoming 25 years.

1. Preamble

In the Himalayan belt of northern India, Uttarakhand ("State") is a state that is known for its natural beauty, religious significance, and some of India's richest forests and biodiversity. However, this natural heritage would be at risk due to the increasing impact of global warming and climate change. The state recognises the urgent need to act on climate change by reducing its dependence on fossil fuels and adopting cleaner forms of energy that also lead to energy security and inclusive growth of its economy.

The current solar policy, referring to the Uttarakhand Solar Energy Policy 2013, focuses on accelerating solar deployment through utility-scale projects. Under the current solar policy, the state has achieved approximately 575 MW by November 2022. Going forward, the state aims to harness the potential of renewables in meeting its jobs, growth and sustainability objectives. Therefore, by leveraging the solar potential, the state will emphasise adopting clean energy pathways and diversifying its energy mix to further its objectives of preserving natural ecosystems, boosting livelihood prospects, improving the quality of life for its population, and ensuring resilient infrastructure growth. Going forward, Uttarakhand will require innovative energy solutions to address the growing power demand and leverage economic opportunities. With uneven geographical terrain and weather conditions such as snowfall that cuts off villages for months, distributed renewable energy systems, supported by energy storage and resilient distribution grids, will be required to provide energy security while meeting sustainable development goals.

With this focus, the state commits to accelerating the growth of solar energy in the state through the implementation of distributed solar systems and innovative business models and pushing for greater adoption of solar applications in the residential, agriculture, commercial, and industrial sectors. The state aims to adopt a targeted, systematic, streamlined, and transparent approach to scaling up the share of solar in its energy mix and reaping the various socio-economic, health and environmental benefits it offers.

2. Vision

The state envisions championing the clean energy transition by bringing solar energy from the margins to the mainstream. The policy intends to accelerate solar energy deployment by harnessing the potential of distributed solar in different consumer segments, strengthening the institutional infrastructure, promoting innovative business models, scaling up rural livelihood applications, and supporting tourism. It further strives to leverage the potential of solar energy to improve the resilience of the power system, reliability and quality of electricity supply, boost rural incomes, strengthen education and health services, promote inclusive and sustainable economic growth and create livelihood opportunities for youth and women.

3. Regulatory Framework

The policy may be called Uttarakhand State Solar Power Policy 2023.

Several provisions under the Electricity Act, 2003 (Act) mandate the Uttarakhand State Electricity Regulatory Commission (UERC) and the Government to take necessary steps to promote renewable energy. Section 108 of the Act mandates the State Government to give directions to the State Electricity Commissions in the matter of policy involving public interest. Accordingly, the State Government, in the exercise of its powers, formulates this policy. This policy supersedes the Uttarakhand Solar Energy Policy 2013 and all amendments thereto.

4. Objectives :

This policy outlines the following objectives to meet the state's vision:

- Reach a cumulative capacity of 2500 MW in the state by December 2027 through a diversified project portfolio across consumer categories, locations and applications.
- Accelerate investment in solar through new deployment mechanisms, including improved processes, incentives and business models.
- Provide reliable access to electricity to rural consumers in remote areas by promoting solar plus storage solutions.
- Support the development of solar-based livelihood applications and employment opportunities and foster an entrepreneurial ecosystem in the state.
- Create opportunities for tourism to be part of the energy transition by offering incentives and innovative business models.
- Showcase the potential of agro-photovoltaics to boost agricultural income in the state.
- Provide training for skill development with a special focus on vulnerable communities to create employment opportunities through solar project deployment.

5. Operative Period

The policy would come into operation from the notification date and remain valid unless superseded by any other policy.

6. Target

The policy promotes a diversified project portfolio spanning various consumer categories and applications. The two broad project categories are utility-scale solar and distributed solar. The distributed solar is further disaggregated based on consumer categories as indicated below:

Project Categories	Utility Scale Solar	Distributed Solar				Total
		Residential	Commercial and Industrial	Institutional	Agriculture	
Cumulative Target by 2027 (MW)	1100	250	750	350	50	2500

The Government of Uttarakhand recognises that purchase of power from utility-scale solar PV projects in other resource-rich regions of the country would be preferred by state utilities because of cost-competitiveness as compared to installations within the state. At the same time, the state also acknowledges that decentralised solar applications across districts could offer flexibility and resilience to its power system and deliver the desired socio-economic benefits by bringing the transition closer to the communities. Hence, this policy emphasises a balanced growth of the solar sector by encouraging the purchase of cheaper solar power from other regions and promoting the adoption and offtake of decentralised solar within the state.

7. Key provisions to achieve policy targets

7.1 Applicability

Solar power plants commissioned or power purchase agreement (PPA) signed in the operative period of the policy shall be eligible for incentives declared under this policy for 25 years from the date of scheduled commissioning unless otherwise mentioned.

The state solar policy shall subsume the existing state-run solar-based schemes. The target specified under individual schemes shall become part of the larger target under the policy. UREDA shall be the nodal agency for these schemes.

7.2 Green Tariff

- Discom shall create provisions for all interested and obligated consumers to procure clean electricity from renewable energy sources at predetermined tariff rates, also called 'Green Tariff'.
- UERC shall introduce the 'Green Tariff' under UERC (Tariff and other terms for supply of electricity from renewable energy sources and non-fossil fuel-based Co-generating stations) regulations 2018 or its subsequent amendments from time to time, allowing all electricity consumers to opt for green energy. To encourage consumers to switch towards green energy and become early movers, economically attractive green tariff rates shall be announced by UERC.
- In cases of obligated consumers/entities under Renewable Purchase Obligation (RPO) Regulations, the renewable energy certificate (REC) benefits shall be transferred to the consumer.

- Green energy procured by non-obligated entities shall be considered towards RPO fulfilment of Uttarakhand Discom.

7.3 Feed-in-tariff

UERC shall introduce feed-in-tariff for distributed solar power plants set up by residential, agricultural, government, and institutional consumers to compensate for any excess generation injected into the grid. UERC may introduce time-of-the-use solar energy feed-in tariffs to encourage solar plus storage operators to inject energy during peak demand hours.

7.4 Metering

7.4.1 Virtual and Group Net Metering

UERC shall introduce regulations on Virtual net-metering (VNM) and Group net-metering (GNM) to promote and facilitate solar adoption among eligible consumers. Eligible consumers shall include consumers with constraints of access to adequate rooftop area/inaccessible rooftops, entities with multiple electricity connections, etc.

7.4.2 Net metering

In the absence of state net metering regulations, State Electricity Regulatory Commission shall refer to the Electricity (Rights of Consumers) Rules, 2020, as modified from time to time for allowing net metering, net billing or net feed-in for other loads. These provisions shall apply to all consumers that are allowed net metering under the policy.

7.4.3 Peer-to-peer trading

The government and the UERC shall promote peer-to-peer trading using blockchain technologies, allowing prosumers to sell power to other grid consumers. UERC shall promote peer-to-peer trading through amendments to UERC (Tariff and other terms for supply of electricity from renewable energy sources and non-fossil fuel-based Co-generating stations) regulations 2018 or its subsequent amendments from time to time. Prosumers shall be able to sell excess energy to interested consumers at a mutually agreed price/dynamically realised price (over the trading platform).

7.5 Banking

- Banking shall be available only to captive solar power plants not availing net-metering.
- Banking of 100% of injected energy shall be permitted during all 12 months of the year.
- The banking year shall be from April to March. Energy settlement shall be done every month.
- From time to time, UERC shall determine the peak and off-peak hours.
- The compensation for the banked energy will be based on
 - **Banking during peak hours:**
 - The banking provisions as specified in UERC (Tariff and other terms for supply of electricity from renewable energy sources and non-fossil fuel based Co-generating stations) regulations, 2018 or its subsequent amendments shall be applicable for banking during peak hours as specified in the tariff orders from time to time.

- Energy banked in peak hours can be utilised by the consumer during off-peak hours. The unutilised banked energy shall be deemed to be purchased by the Discom and compensated at the tariff rate as determined by the UERC from time to time.
- No banking charges will apply to the unutilised banked energy.
- **Deemed purchase during non-peak hours**
 - Excess generation during non-peak hours by distributed solar power plants shall be a deemed purchase by Discom and compensated at the tariff determined by UERC. Discom shall aggregate the excess generation to create a green energy pool. This green energy pool shall be made available by the Discom to the consumers at the green tariff rate.

7.6 Open Access

The Discom shall update the status of open access applications for the intra-state network within 21 days, as per the application request for short-term, medium-term or long-term tenure. In the absence of any response or intimation from the Discoms to the applicant within 21 days, the application shall be deemed to be approved, unless Discoms shall seek additional time (maximum upto 15 days) citing the valid reasons for the extension.

- Captive/group-captive solar plants will be exempt from paying transmission and wheeling charges.

To further the principles of the Act, the Government of Uttarakhand, in consultation with UERC, will :

- Notify green open access regulations in alignment with 'Green Energy Open Access' rules to provide clarity on banking permission, charges, processes, open access charges computation methodology, etc.
- UERC will notify the computation methodology to calculate any losses incurred by discoms due to open access waivers. Discom will submit their computation to UERC and will be compensated by state government subject to UERC approval.

7.7 Grid Connectivity and Evacuation

To achieve the targets set under the policy, State Transco shall periodically assess transmission needs and conduct medium to long-term transmission planning in consultation with the discom and UREDA. Transco/ Discom(s) of Uttarakhand shall strengthen the upstream system on a priority basis. Supervision charges levied by the Uttarakhand Transco/ Discom(s) may be exempted for all solar power plants except utility-scale solar power plants. Transco/ Discom(s) may process and close the proposals for technical feasibility within thirty (30) days of receipt of the application from the solar power project developer. In addition, for rooftop solar projects, discoms shall identify and notify pockets where DT spare capacity is available and benefits will be higher for integrating rooftop solar system to the grid. Accordingly, network augmentation plans shall be formulated by the discom.

7.8 Solar Policy Cell and Single Window Portal

Uttarakhand Renewable Energy Development Agency (UREDA) shall create a dedicated Solar Policy Cell. All the statutory clearances and approvals shall be provided to the solar power project developers through the single window portal developed by the Department of Industries within a period of 60 days. Within 30 days of the policy notification, UREDA shall formulate detailed standard operating procedures (SOPs) providing details of the processes, relevant departments, and internal sharing mechanisms for transaction charges with clear timelines for approvals. A transaction charge of INR 25,000/MW shall be applicable for processing applications for single window clearance with a maximum of INR two lakhs per project for utility-scale and captive/group captive projects. This facility shall be extended to the rooftop solar power plants without any charges.

7.9 Data rooms

UREDA's Solar Policy cell shall create data rooms, to host information on available land parcels, building details, and rooftop solar potential (including rooftop and ground-mount solar) of government buildings.

7.10 Height of the Module Structure

The applicable building byelaws shall not count the height of module structures up to 3 meters towards the total height of the building. No approval shall be required from the concerned Municipal Corporation or Department of Urban Development & Housing for putting up solar power plants, including any additional system for monitoring the performance of solar power plants in existing or new buildings, except any required AAI approval.

7.11 Payment Security Mechanism (PSM)

For the sale of RE by developers to government departments and Discoms, UREDA, in consultation with the government departments, shall specify payment security mechanisms to be created by the buyers. The PSM may be in the form of ESCROW accounts or letter of credit. The first right of way remains with the developer for collection of undisputed dues, which the department may have failed to pay in time. The detailed provisions on PSM and, buyer guarantees, shall be specified in the bidding document.

7.12 Prepare model PPAs and request for proposals (RFPs)

UREDA shall prepare model PPAs and RFPs, in consultation with Discoms, to capture transactions in new business models of community solar and collaborative solar procurement, and setting up agrovoltaic projects, etc. In addition, UREDA shall issue a model lease agreement to facilitate the deployment of utility-scale solar projects on private land.

7.13 Timely Completion

If the utility-scale project is commissioned within the scheduled period, then the project will be exempted from electricity duty for ten years. In case of delay beyond 30 days for reasons other than those in the developer's control (like delay in signing PPA or up-gradation of power evacuation infrastructure) electricity duty shall be exempted on a case-to-case basis.