

Renewable Energy

Sector Profile



RENEWABLE ENERGY
Government of Uttarakhand



उत्तराखण्ड शासन

Disclaimer: The content in the profile is being vetted by the department and is liable to change

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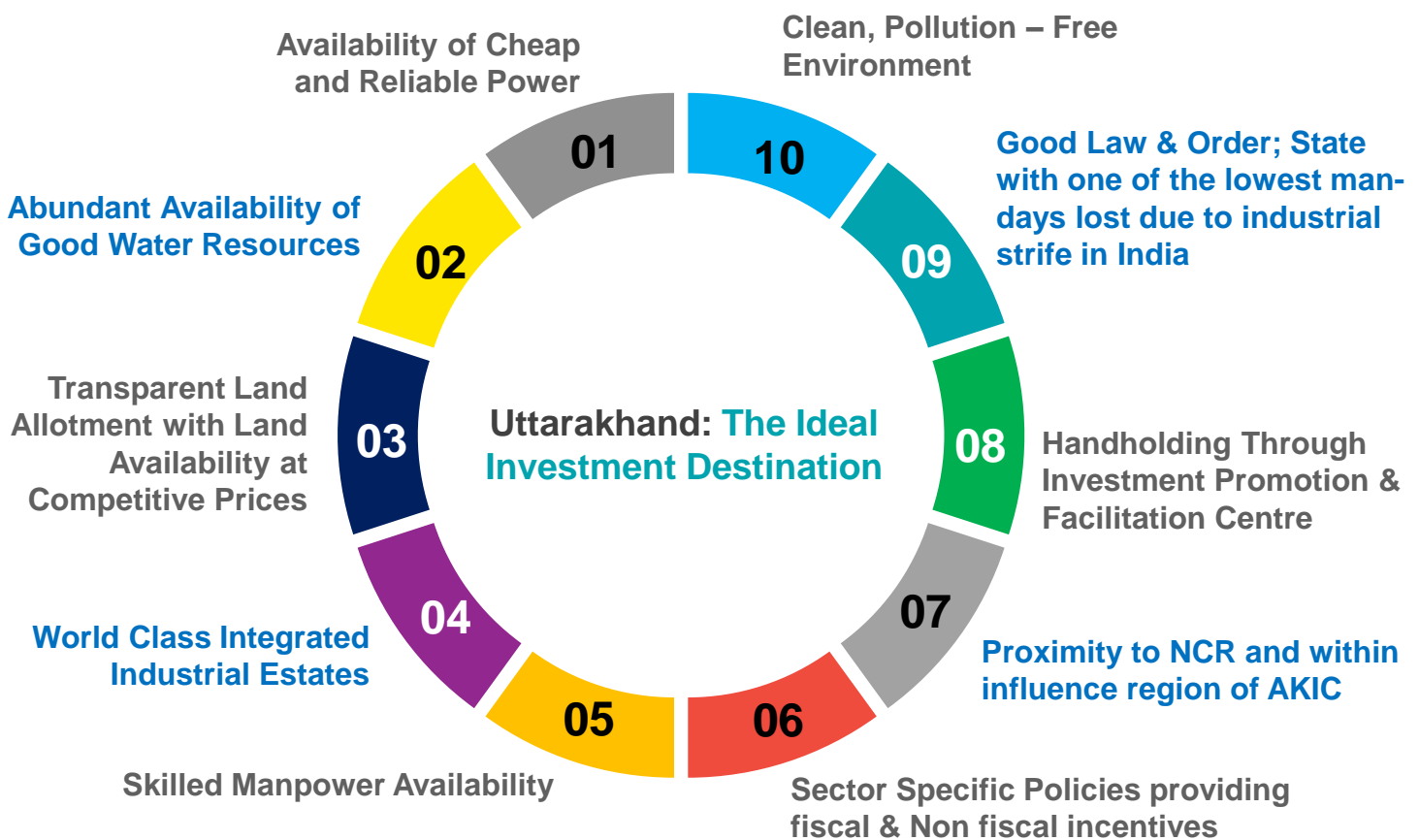
Sector Photographs

Uttarakhand Overview (1/4)



- ▶ The State of Uttarakhand was formed on 9th November 2000 as the 27th State of India, when it was carved out of northern Uttar Pradesh
- ▶ The State is close to the National Capital Region (NCR) and has excellent connectivity with its neighbouring states
- ▶ With levels of literacy rate (78.80%) higher than the national average and the presence of institutes of international repute, the State has abundant availability of quality human resources
- ▶ GSDP of the state stood at INR 2,17,609 Million with a growth rate of 11.23% (FY 2017-18)
- ▶ The state offers a wide range of benefits in terms of interest incentives, financial assistance, subsidies and concessions
- ▶ The secondary sector in the state contributes around 50% to the Gross State Domestic Product (GSDP: 2017-18), much higher than the national average

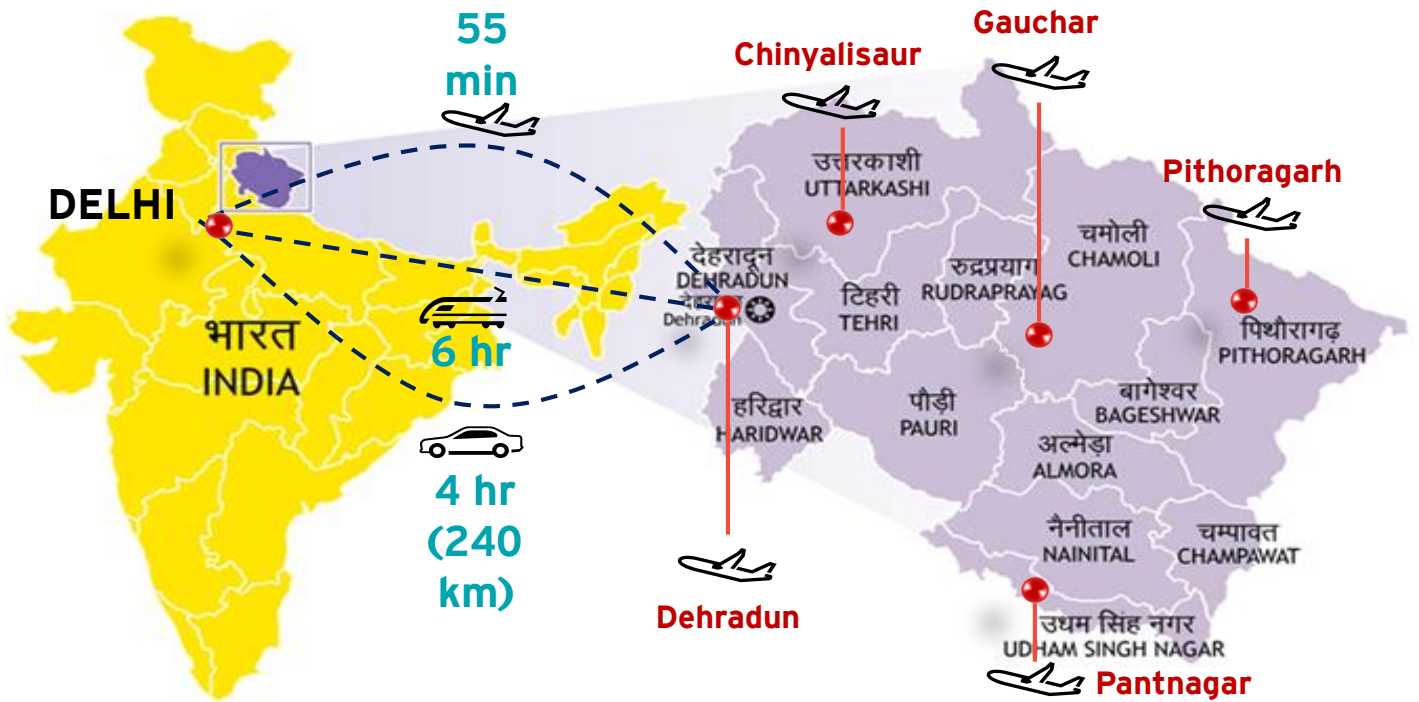
Acknowledged for *Ease of Doing Business & Peace of Doing Business...*



Uttarakhand Overview (2/4)



CONNECTIVITY - UTTARAKHAND



General Characteristics	Population ('000) 10086	Area (Sq. Km) 53,483	Water bodies Ganga, Yamuna, Bhagirathi and others
Economic Indicators	GSDP (Million INR) 2,17,609 (FY 2017-18)	GSDP Growth Rate 11.23% (FY 2017-18)	Per Capita Income (INR) 1,77,356 (FY 2017-18)
Technical Institutes	Higher Education Institutes* 159	Industrial Training Institutes (ITI) 179	Polytechnic Institutes 70



INTEGRATED INDUSTRIAL ESTATES (IIEs)

07



INLAND CONTAINER DEPOTS

2 ICDs (FY 2017)



AIRPORTS

2 (Domestic)

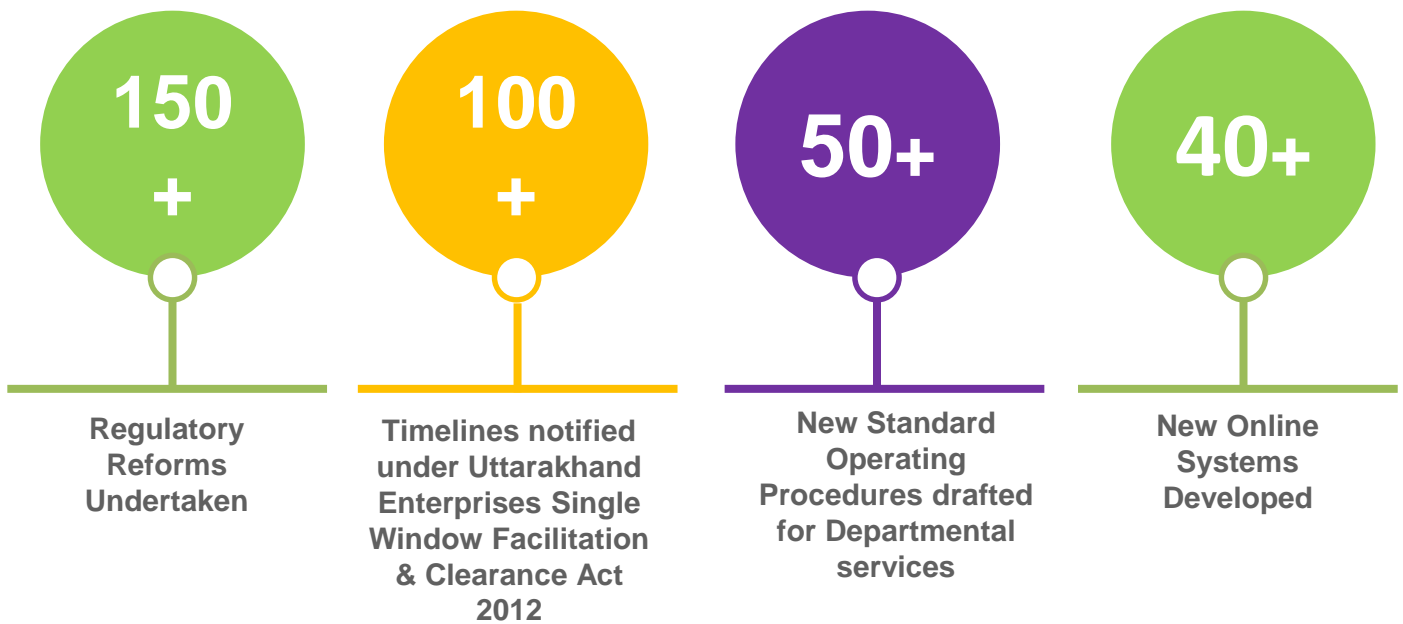


ELECTRICITY TARIFF

INR 4.99* /kWh (2017-18)

EASE OF DOING BUSINESS

Under the 'Ease of Doing Business' initiative, the State has implemented a web based Single Window Clearance System - www.investuttarakhand.com, allowing investors to avail the necessary State Government approvals to establish and start their business operations through a single platform without any physical touch point with the approving / licensing authority.



HASSLE FREE SETUP AND OPERATIONS IN THE STATE

Online Single Window System for all required approvals			Auto Renewal of Consent to Establish, Consent to Operate
Single Point Sectoral Clearances			Self / Third party certification in lieu of departmental inspections
Investment facilitation centre to handhold investors			Single Integrated Return for all labour laws
Objective Criteria for land allotment			Use of modern SCADA System to ensure reliable supply of electricity
Geographic Information System of all land banks			Commercial Court set up in Dehradun with entire state jurisdiction

INVESTOR FACILITATION

- ▶ The Government of Uttarakhand has laid huge emphasis on business facilitation by creating an enabling environment for industries to set up and start their operations in the State
- ▶ The State government houses a dedicated '**Investment Promotion & Facilitation Centre (IPFC)**' which acts as a centralized one-stop-shop for the investors / businesses and provides complete handholding support in a structured, focused and comprehensive manner. IFC will focus on investment promotion, facilitation, direct engagement and consultation with investors / Stakeholders and ensures investment realization and sustainable industrialization in the state
- ▶ '**Uttarakhand Right to Service Act, 2011**' & '**The Uttarakhand Enterprises Single Window Facilitation and Clearance Act, 2012**' were enacted to provide necessary time bound licenses, permissions and approvals for the setting up of commercial establishments in the state. The State has ensured robust legal resolution mechanisms to ensure time bound delivery of government services with more than 100 investor related services already notified under both the acts separately and is in the process of adding more such services of multiple sectors shortly

CREDITED BY INDUSTRY ASSOCIATIONS

Story of 'Make in Uttarakhand' which started in 2003 is a classic example of what manufacturing can deliver to a region's economy in terms of both economic growth and employment generation

-CII Report 'Making Uttarakhand Competitive, June 2016'

CII

NCAER Assessment based on "Perception of good business climate" ranks Uttarakhand as the Least Corrupt state in India

*NCAER N-SIPI Index Survey ;
Five states – Uttarakhand, Gujarat, Assam, Andhra Pradesh and Himachal Pradesh – had more than 90% respondents say they faced no problem in getting land*

NCAER

Uttarakhand has emerged as the top state in the country in terms of growth in the industry and service sectors in the last ten years.

Uttarakhand has also figured as the second best performing state in terms of project implementation, improving investment scenario in the state

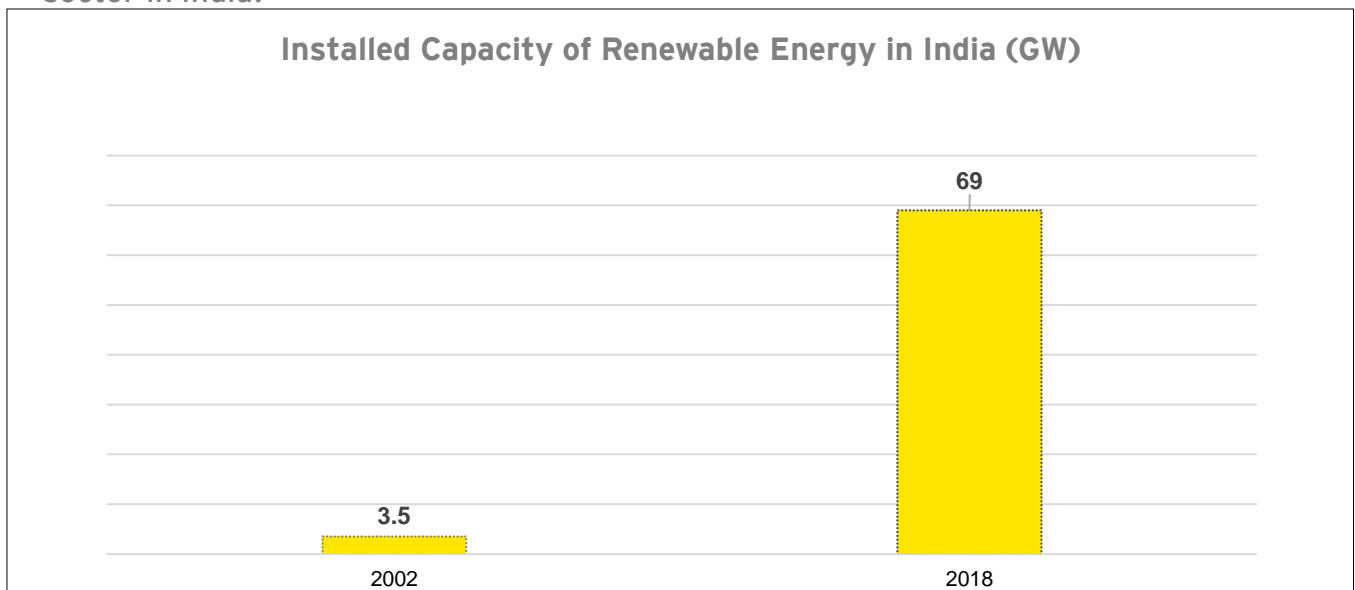
ASSOCHAM

Renewable Energy Industry - Brief Overview (1/2)



INDIAN RENEWABLE ENERGY INDUSTRY

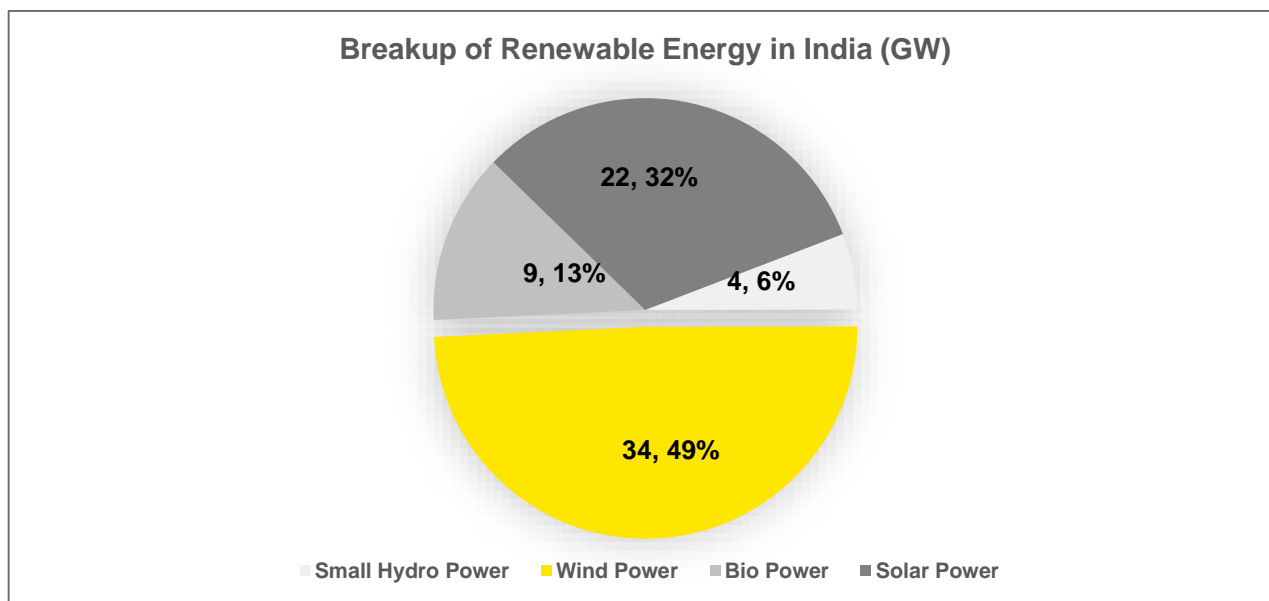
- ▶ India is one of the most dynamic and vibrant markets in the world for renewable energy. It offers huge renewable resource availability and potential.
- ▶ India is ranked fourth globally in the renewable energy country attractiveness index in the year 2017¹.
- ▶ India has the fifth largest power generation sector globally with a total installed capacity of 344 GW as on 31 March 2018. The Contribution of private sector in the overall installed capacity is increasing, and now stands at 155 GW (45.2%), followed by State and Central Governments with contribution of 84 GW (24.6%) and 103 GW (30.2%) respectively².
- ▶ Thermal power dominates the generation mix with an installed capacity of 222.9 GW (64.8%), followed by renewable power with 69 GW (20.1%), hydro with 45.2 GW (13.2%), and nuclear with 6.7 GW (2%).
- ▶ The share of renewable power has increased considerably from 3.5 GW in 2002 to 69 GW in 2018³. The Private sector investments, primarily driven by government incentives such as fiscal incentives, direct and indirect tax benefits, depreciation allowances and 100% FDI allowance have been the major drivers of the renewable sector in India.



Source: Indian Renewable Energy Development Agency, MNRE

- ▶ The wind power has the highest share in the installed capacity of Renewable Energy in India. Also, wind power generation is projected to increase strongly, with installed capacity rising from 34 GW to 142 GW in 2040.

Brief Overview (2/2)



Source: Central Electricity Authority, Ministry of Power

- ▶ India has an estimated renewable energy potential of about 900 GW from commercially exploitable sources, 750 GW being from solar power ⁴
- ▶ The Government has set a target to achieve the proposed renewable energy capacity addition of 175 GW by 2022 - 100 GW being from Solar Power alone. This happens to be the largest every capacity addition planned. The country's aspiration to achieve 40% power installed capacity from non-fossil based energy resources by 2030 has made its nascent solar power industry the destination for global investors, creating growth opportunities for a host of industries ⁵
- ▶ India has made several reform initiatives under the 'Getting Electricity' reform area of Ease of Doing Business, World Bank initiative, because of which India's ranking has improved from 99 in the 2015 report to 29 in the 2018 report ⁶
- ▶ Renewable energy has been re-classified as 'white category'. Previously, this sector was under 'green category' and the re-classification will enable ease of doing business as setting up of solar and wind power plants will be exempt from seeking environmental clearances from Ministry and consent from State Pollution Control Boards
- ▶ India has also launched Wind Atlas, 2015, a GIS (Geographical Information System) software tool to help policy planners and developers. It identifies regional and local wind energy potential in India and contains average annual values of Wind Speed (m/s), Wind Power Density and Capacity Utilization Factor (CUF) calculated for an average 2 MW turbine at 100 m. This data is made freely available by Government on public domain ⁷
- ▶ FDI regulations:⁸ Foreign Direct Investment (FDI) up to 100% is permitted under the automatic route for renewable energy generation and distribution projects subject to provisions of The Electricity Act, 2003.

4. <http://pib.nic.in/newsite/PrintRelease.aspx?relid=155612>

5. <http://www.makeinindia.com/documents/10281/114126/New+%26+Renewable+Energy+Sector+-+Achievement+Report.pdf>

6. https://powermin.nic.in/sites/default/files/uploads/Ease_of_doing_business_getting_electricity_as_on_10th_may_2018.pdf

7. <http://makeinindia.com/documents/10281/114126/New+%26+Renewable+Energy+Sector+-+Achievement+Report.pdf>

8. <http://www.makeinindia.com/sector/renewable-energy>

Key Credentials of the State (1/4)



UTTARAKHAND SNAPSHOT

- ▶ Uttarakhand is being developed as an 'energy state' to tap the hydropower electric potential of over 25,000 MW. About 76.85 per cent of the capacity owned by state utilities is based on hydropower. In addition, government of Uttarakhand plans to promote and develop:
 - ▶ Power generation through Hydro projects
 - ▶ Co-generation in industries such as Sugar, Paper, Fertilizer and Chemical etc.
 - ▶ Power generation from Biomass / Agricultural residue
 - ▶ Power generation from urban, municipal and industrial waste
 - ▶ Power generation from solar energy
 - ▶ Power generation from wind energy
 - ▶ Power generation from geothermal energy
 - ▶ Energy conservation in domestic, agriculture, industrial, commercial and transport sectors through induction of administrative/statutory/ legislative/ technical solutions and imposing stringent conditions for all categories of consumers.
 - ▶ Hydro Electricity forms more than three-quarters share of the total electricity generated in Uttarakhand

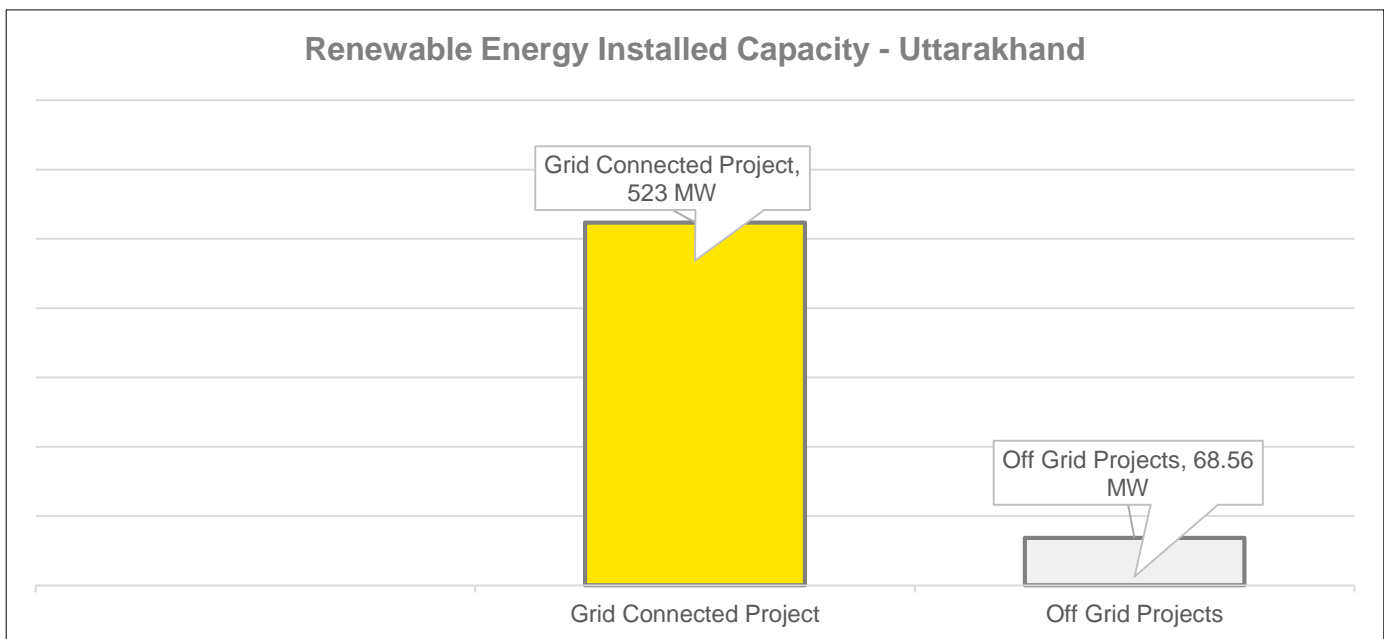
- ▶ Uttarakhand is also one of the leader States in terms of Identified Capacity (MW) of Hydro Potential Status

Key Credentials of the State (2/4)



उत्तराखण्ड शासन

Achievements of Uttarakhand Renewable Energy Development Agency (UREDA)*		
S. No	Activities	Achievements
1	Uttarakhand Solar Power Policy-2013	Installed:216.40 MW
2	Rooftop and Small Solar Power Plant Scheme	Installed: 18.156 MW Under development:28.537 MW
3	Canal bank/top scheme	Installed: 20 MW (19 MW on canal bank & 01 MW on canal top) Implementing Agency: UJVN Limited
4 (i)	Uttarakhand Policy for Micro & Mini Hydro Power Project(Up to 2 MW)-2015	Installed: 12.05 MW
4 (ii)	Uttarakhand Policy for Small Hydro Power Project (2-25 MW)-2015	Installed 184.35 MW
5 (i)	Policy for Energy Generation from Pine Litter and Other Biomass–2018	Potential of about 150 MW Bidding for allotment of project will be soon initiated
5 (ii)	Baggase and non-baggase based Co-generation Power Plant	Installed: 72.60 MW



Key Credentials of the State (3/4)



उत्तराखण्ड शासन

Renewable Energy Installed Capacity in the State*		
S. No	Particulars	Capacity (in MW)
A	Grid Connected Projects	523.55
1	Bio Energy Programme	72.6
A	Baggase and non-baggase based Co-generation Power Plant	72.6
2	Solar Energy Programme	254.55
A	Solar PV power plant	216.40
B	Solar rooftop & small plant	18.15
C	Solar Canal bank/top Power Projects	20
3	Hydro Energy Programme	196.40
A	Micro, Mini and Small Hydro Power Plants	196.40
B	Off Grid Projects	68.56
1	Bio Energy Programme	59
A	Rice Husk and biomass based Captive Power Plant	59
2	Solar Energy Programme	3.66
A	Solar decentralized PV power plant	3.66
3	Hydro Energy Programme	5.90
A	Micro and Mini Hydro power plants	5.90

Uttarakhand Renewable Energy Development Agency (UREDA) has adopted various Renewable Energy programme for the development of the State

RENEWABLE ENERGY PROGRAMMES

Micro Hydro Projects

- ▶ 38 Micro Hydro Projects (MHPs) of total capacity 2.85 MW been installed in the remote villages
- ▶ 19 MHPs of total capacity 2.315 MW are under implementation

Improved Watermill Programme

- ▶ Engaged UREDA for up-gradation of traditional watermills for mechanical, electrical and electromechanical use with a subsidy of INR 6000 per Watermill from MNRE apart from INR 1.10 Lakhs for up- gradation for electrical/electromechanical output and INR 35,000 for mechanical output
- ▶ 15449 traditional watermills (Gharats) will be upgraded to produce power up to 5 KW within a diameter of 500 metres

Solar Programme

- ▶ Programme focuses on promotion of equipment's working through Solar Energy and includes Solar Lantern, Solar Street Light, Solar Home Light, and Solar Charkha and Solar Power plant
 - ▶ UREDA since its inception has focussed on promulgation of Renewable Energy in the State of Uttarakhand to ensure basic needs like electricity are made available to people living in remote and inaccessible areas of state
 - ▶ UREDA installed 19676 (capacity 1436.72 kw) solar streetlights till 2018
 - ▶ Programme covers Solar Water Heater and installed capacity till 2018 is 35.10 lac litre per day
 - ▶ 7280 dish type Solar Cooker distributed in various primary schools under the mid day meal scheme and to individuals for cooking
 - ▶ Solar Steam Cooking with cumulative installed capacity 2812 square meter of collector area
 - ▶ UREDA has taken up Initiatives to distribute solar lantern and solar streetlights in various villages

Ease of Doing Business in the State

- ▶ The State government houses a dedicated 'Investor Facilitation Centre' (IFC) which acts as a centralized one-stop-shop for the investors / businesses and provides complete handholding support in a structured, focused and comprehensive manner. IFC will focus on investment promotion, facilitation, direct engagement and consultation with investors / stakeholders and ensures investment realization and sustainable industrialization in the state

Policies, Schemes & Incentives (1/15)



Central Government Schemes and Policies

Central Financial Assistance and Fiscal Incentives¹⁰

- ▶ Under Biomass Power & Cogeneration Programme of MNRE, Uttarakhand is categorized in Special States where various capital subsidy are applicable apart from
 - ▶ Concessional import duty
 - ▶ Excise duty
 - ▶ Tax holidays for 10 years
 - ▶ Bank loans of up to INR 15 crore for biomass based power generators will considered part of PSL available for Biomass power projects.

Guidelines for Green Large-Area Developments by MNRE

- ▶ These guidelines cover various fiscal and promotional policies for the development of grid interactive solar and wind energy
- ▶ The package of incentives includes
 - ▶ Fiscal concessions - 80% accelerated depreciation,
 - ▶ Concessional custom duty for specific critical components,
 - ▶ Excise duty exemption,
 - ▶ Income tax exemption on profits for power generation etc.
- ▶ Generation based incentives (GBI) of USD 0.007/unit subject to max of USD 153,846.2/MW for wind power projects (not availing the benefits of AD).
- ▶ Viability Gap Funding (VGF) support up to USD 153,846.2/MW based on reverse e-auction for 5000 MW Viability Gap Funding (VGF) scheme to be implemented in 4 years by Solar Energy Corporation of India (SECI).

The Provision of Central Financial Assistance for Small/Micro Hydro-Power Projects

- ▶ The MNRE is providing central financial assistance to set up small hydro projects both in the public and private sectors. Support is also given to state governments for the identification of new potential sites, including surveys, the preparation of detailed project reports and the renovation and modernization of old projects.

The Policy for Repowering of the Wind Power Projects:

- ▶ To promote optimum utilization of wind energy resources, repowering policy is in place
- ▶ For repowering projects Indian Renewable Energy Development Agency (IREDA) will provide an additional interest rate rebate of 0.25% over and above the interest rate rebates available to the new wind projects being financed by IREDA
- ▶ All fiscal and financial benefits available to the new wind projects will also be available to the repowering project as per applicable conditions
- ▶ The repowering projects would be implemented through the respective State Nodal Agency/Organisation involved in promotion of wind energy in the State

Policies, Schemes & Incentives (2/15)



Central Government Schemes and Policies

The National Policy on Biofuels:

- ▶ To encourage the accelerated development and promotion of the cultivation, production and use of biofuels to increasingly substitute petrol and diesel for transport and be used in stationary and other applications

The Policy for Grid connected Solar Roof-top Projects:

- ▶ Joint Electricity Regulatory Commission (JERC)/State Electricity Regulatory Commissions (SERC) of 29 States/UTs namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Meghalaya, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh, Uttarakhand, West Bengal, Andaman & Nicobar and Lakshadweep Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Delhi and Pondicherry have notified regulations/tariff order for grid connected solar rooftop projects.

CFA for Biomass Power Project and Bagasse Cogeneration Projects by Private/Joint/Coop./Public Sector Sugar Mills.

Project Type	Capital Subsidy ¹¹
Biomass Power Projects	INR 25 Lakh X(C MW) (Maximum support of INR 1.5 Crores per project)
Bagasse Co-generation by Private sugar Mills	INR 18 Lakh X (C MW) (Maximum support of INR 1.5 Crores per project)
Bagasse Co-generation projects by cooperative/public sector sugar mills 40 bar & above 60 bar & above 80 bar & above	INR 40 Lakh * INR 50 Lakh* INR 60 Lakh* Per MW of surplus power** (maximum support INR 6.0 crore per project)

State Government Schemes and Policies - Uttarakhand Solar Power Policy-2013 (Amendment 2018)

- ▶ Government of Uttarakhand (GoUK) vide its notification no. 1044 / I / 2013- 5/14/ 2009 dated 27/06/13 has issued Uttarakhand Solar Power Policy-2013 with target to install 500 MW SPP
- ▶ Uttarakhand Renewable Energy Development Agency (UREDA) has been designated as Nodal Agency for implementation of Solar Policy
- ▶ The Solar power projects to be setup under this policy are categorized in 4 (four) types namely:
 - ▶ The first type is reserved for UPCL for meeting their Renewable Purchase Obligation and the projects will be selected through the tariff based competitive bidding process
 - ▶ The second type is for projects to be set up on private land for captive/3rd party sale/under REC mode
 - ▶ The third type is similar to the second type with a difference that under the third type Government land will be used and will be given to developer who will provide maximum free power per MW to GoUK
 - ▶ Solar projects under Jawaharlal Nehru National Solar Mission, Government of India will setup under type four of solar policy
- ▶ Selection and Allotment Procedures under the policy
 - ▶ Type I projects
 - ▶ Total capacity will be as per the RPO target specified by UERC from time to time or as decided by GoUK
 - ▶ GoUK/UREDA shall invite proposals through advertisements in newspaper
 - ▶ There shall be a set of qualification criteria fixed by GoUK/UREDA for the prospective developers
 - ▶ Shortlisting by Technical Appraisal Committee (TAC) and shortlisted developers will be published on website of GoUK/UREDA
 - ▶ UREDA/GoUK will invite competitive bidding amongst the shortlisted prospective developers
 - ▶ Allotment of the project will be done by the Project Approval Committee (PAC) based on the lowest tariff quoted (Below the tariff decided by UERC)

Policies, Schemes & Incentives (4/15)



State Government Schemes and Policies - Uttarakhand Solar Power Policy-2013 (Amendment 2018)

- ▶ Type II projects
 - ▶ GoUK/UREDA shall invite proposals through advertisements in News paper as per specified format
 - ▶ Scrutinized by Technical Appraisal Committee (TAC) based on financial & technical qualification criteria
 - ▶ List of shortlisted prospective developers would be published on the website of GoUK/UREDA
 - ▶ Approval from the Project Approval committee (PAC)
 - ▶ Letter of award would be issued by UREDA after deposit of Bank Guarantee @ INR 5 Lakhs per MW of part thereof to UREDA. Validity of BG would be 24 months for solar PV project and 36 months for solar thermal project

- ▶ Type III projects
 - ▶ GoUK/UREDA shall invite proposals through advertisements in News paper for each selected site (identification of Govt. land and necessary approval would be taken by UREDA)
 - ▶ The prospective developer shall submit their proposals in two separate envelopes containing all the required documents/information in first envelope and its offer for providing maximum free energy (in MUs) per MW in second envelope
 - ▶ Scrutinized by Technical Appraisal Committee (TAC) based on financial & technical qualification criteria
 - ▶ Project Approval Committee would provide the approval to the developer who provide maximum free energy per MW.
 - ▶ After approval from PAC, UREDA would issue letter of award after deposit of Bank Guarantee @ INR 10 Lakhs per MW of part thereof to UREDA. Validity of BG would be 24 months for solar PV project and 36 months for solar thermal project

- ▶ Type IV projects
 - ▶ GoUK/UREDA shall invites proposals from the prospective developers as per the guidelines issued by Ministry of New and Renewable Energy, Govt of India under JNNSM and as amended time to time

Policies, Schemes & Incentives (5/15)



State Government Schemes and Policies - Uttarakhand Solar Power Policy-2013 (Amendment 2018)

Coverage under the Policy:

- ▶ Open Access: Open Access is allowed under Category-II & III and have to pay the applicable Open Access charges and losses as approved by UERC from time to time
- ▶ Wheeling Charges: Applicable as decided by UERC.
- ▶ Cross Subsidy Surcharge: Not applicable for Open Access obtained for third party sale within the state under category II & III.
- ▶ Banking Facility: Provided, however under REC mode (Category II & III), CPP's have to forgoes this facility.
- ▶ Electricity Duty: No electricity duty

The following para has been amended (September 2018) in the solar policy 2013

- ▶ The solar power projects up to 5 MW will be allotted to the permanent residents of Uttarakhand for installation of solar power projects in the hilly regions of Uttarakhand
- ▶ The incentives/ benefits available under MSME policy 2015 will be applicable for solar power plant to be installed under solar policy 2013

Policies, Schemes & Incentives (6/15)



State Government Schemes and Policies - Policy for Development of Micro & Mini Hydro Power (Upto 2 MW) - 2015

- ▶ The projects under this policy have been categorized into two types:
 - ▶ Micro Hydro Power Projects up to capacity 100 KW
 - ▶ Mini Hydro Power Projects from 100 KW to 2 MW
- ▶ Nodal Agency: Uttarakhand Renewable Energy Development Agency (UREDA)
- ▶ Panchayat Raj Institutions (Gram Panchayat, Block Panchayat & Zila Panchayat) would have the options to execute the projects on their own or through formation of Special Purpose Vehicle (SPV) with any of the following:
 - ▶ Any community based organizations like Van Panchayat, Mahila Mangaldal, Yuvak mangaldal, ex-soldier society or SHGs of the State of Uttarakhand
 - ▶ Any societies of Uttarakhand registered under the Society Registration Act 1860, subjected to the condition that all the members of the society are domicile of Uttarakhand
 - ▶ Any Co-operative societies registered in Uttarakhand under the Co-operative act, subjected to the condition that all the members of the society are domicile of Uttarakhand
 - ▶ Any registered firms/companies registered under the Company Act 1956 having its registered office in Uttarakhand and in which the domicile of Uttarakhand always has maximum equity shares
 - ▶ Any industry registered in District Industries Offices of Uttarakhand
 - ▶ Any central/state power utilities, state governments/organizations or any other government owned entities
- ▶ Incentives/benefits available under this policy are :
 - ▶ Developer will be eligible for central financial assistance as per the standing guidelines of Ministry of New and Renewable Energy (MNRE), GoI
 - ▶ Developer could avail the Social Venture Capital Fund available with Rural Development Department through UPASaC (Uttarakhand Parvatiya Aajeevika Sanvardhan Company) and other programmes after fulfilling the eligibility
 - ▶ No royalty shall be charged on these projects
 - ▶ No entry tax will be levied by the state Government on Power generation/transmission equipment and building material used for MHPs
 - ▶ The projects awarded under this policy shall be exempted from the "Water user charges"
 - ▶ The Government land including the land belongs to the eligible PRI's, other than the forest land, if required, for Power Projects shall be allotted on lease for 40 years @ premium of INR 1 per square metre. However, in case of non availability of Government land, the land required shall be acquired by the concerned developer. If forest land is required for power project, the applicable rules shall apply
 - ▶ Exemption from court fee for registration of documents relating to lease of land will be granted to the developer
 - ▶ Micro & Mini hydro projects in Uttarakhand shall be treated as an Industry, all benefits declared by the State Government for the industry from time to time will also be applicable to these power project

Policies, Schemes & Incentives (7/15)



State Government Schemes and Policies - Policy for Development of Small Hydro Power (Above 2 MW)

Classification of Projects:

- ▶ Based on the generating capacity, small hydro projects are grouped under following two categories:
 - ▶ Small hydro Power projects above 2.00 MW and up to 5.00 MW
 - ▶ Small hydro projects above 5.00 MW

Small hydro Power projects (SHP) above 2.00 MW and up to 5.00 MW

- ▶ Eligible Developers for SHP's
 - ▶ Any Panchayat Raj Institution e.g. Gram Panchayat or Block Panchayat or Zila Panchayat of Uttarakhand State
 - ▶ Any Community Based Organization, Society of Uttarakhand registered under the Society Registration Act 1860, subjected to the condition that all the members of the Society are Domicile of Uttarakhand
 - ▶ Any registered firm/company registered under the Company Act 1956 having its registered office in Uttarakhand in which majority of the shares are owned by the Domiciles of Uttarakhand
 - ▶ Any partnership firm owned by the domiciles of Uttarakhand
 - ▶ Any industry registered in District Industries Offices of Uttarakhand for its own captive power use only
 - ▶ Any joint venture/ consortium constituted amongst the above category of developers
- ▶ Incentive to Panchayat Raj Institutions
 - ▶ Developer will be eligible for central financial assistance as per the standing guidelines of Ministry of New and Renewable Energy (MNRE), GoI
 - ▶ Micro & Mini hydro projects in Uttarakhand shall be treated as an Industry, all benefits declared by the State Government for the industry from time to time will also be applicable to these power projects
 - ▶ No Royalty will be charge from the developer
- ▶ Nodal Agency
 - ▶ Uttarakhand Jal Vidyut Nigam Limited (UJVNL) is the nodal agency for the implementation of this policy and will provide technical support to PRI's for the execution of projects

Policies, Schemes & Incentives (8/15)



State Government Schemes and Policies - Policy for Development of Small Hydro Power (Above 2 MW)

Small hydro Power projects (SHP) above 5.00 MW

- ▶ Eligible Developers for SHP's
 - ▶ The small hydro power projects above 5 MW are open to all the developers without any reservation/ preference
- ▶ Nodal Agency
 - ▶ Uttarakhand Jal Vidyut Nigam Limited (UJVNL) is the nodal agency for the implementation of this policy and will provide technical support to PRI's for the execution of projects
- ▶ The procedure for selection of developer
 - ▶ The State Government or State Sponsored Agencies will identify small hydro power projects in various river valleys of the Uttarakhand State (above 2.0 MW), will prepare the Detailed Project Report (DPR) of the Small Hydro Power Project and will submit the DPR to Government of Uttarakhand for approval
 - ▶ The small hydro power projects whose Detailed Project Report have been approved, will be put for bidding to the prospective bidders for detailed Engineering, construction and operation & Maintenance under BOT mode through open competitive bidding by the State Government. The bids will be invited under Single Stage Two Envelope format
- ▶ Pre-Qualification Criteria
 - ▶ The Prequalification parameters / eligibility Criteria for Developers / Bidders will be based on the Criteria mentioned in the "Model Request for Qualification for PPP Projects" document issued by Department of Expenditure, Ministry of Finance, Govt. of India in 2009 and all further amendments thereof
- ▶ Bid Parameter
 - ▶ The bidding parameter will be premium per MW payable upfront on the envisaged installed capacity in the Detailed Project Report of the project
 - ▶ The highest upfront premium quoted by the prospective developer will be the sole criteria for selection of the developer i.e. the project will be allocated the developer quoting the highest upfront premium above the threshold premium
 - ▶ The minimum threshold upfront premiums are:
 - ▶ Above 2 MW & up to 5MW - Rs.100,000/- per MW
 - ▶ Above 5 MW & up to 25MW - Rs.500,000/- per MW
- ▶ Royalty
 - ▶ Royalty is exempted for first 15 years of operation. From 16th year of operation, a royalty @ 15% of net energy generated will be charge from the developer

State Government Schemes and Policies - Policy for Development of Small Hydro Power (Above 2 MW)

Small hydro Power projects (SHP) above 5.00 MW

- ▶ Incentive to Developers
 - ▶ Developer will be eligible for central financial assistance as per the standing guidelines of Ministry of New and Renewable Energy (MNRE), GoI
 - ▶ The Government land, if available at project site, will be made available on lease to private investor for setting up the small hydro power project, for period of 40 years at fixed rate INR 1.00 per sqm annually, which may be further renewed up to 35 years or lesser period equal to the remaining useful life of the project on mutually agreed terms and conditions among the parties
 - ▶ If the required land is belonging to local bodies/ Gram Panchayat is available, the State Government would encourage the local bodies/ Gram Panchayat to provide the land for small hydro power projects on lease to private investor for setting up the small hydro power project, for a period of 40 years on lease at fixed rate INR 5.00 per sqm annually, which can be further renewed up to 35 years or lesser period equal to the remaining useful life of the project on mutually agreed terms and conditions among the parties
 - ▶ Permission of the State Government for purchase of agriculture land (more than 250 Sqm) as per the provision of Section 154, sub-section (4) (2) of the "The Uttarakhand (The Uttar Pradesh Zamindari Abolition & Land Reform Act 1950), (Adaption and Modification Order, 2001) (Amendment) Act 2003" will not be required for acquiring the land for the implementation of small hydro power project with the restriction that the land purchased under this exemption will not be used for any other purpose except for the implementation of the small hydro power project
 - ▶ In case of the developer acquiring private land for Setting up of small hydro Power Projects in the Agriculture Zone, he will be eligible to get the land diverted for industrial purpose from the competent revenue authority without any conversion fee/rent
 - ▶ Micro & Mini hydro projects in Uttarakhand shall be treated as an Industry, all benefits declared by the State Government for the industry from time to time will also be applicable to these power project
 - ▶ The developer will be exempted from water royalty charges to an extent of units generated before scheduled date of commissioning
 - ▶ The private developer will not be required to obtain Government permission for the right of way for construction of transmission line and associated works linking with small hydro power plant with state grid substation. The Private Developer will not have to make any payment for right of way purpose for laying overhead/underground lines in the land owned by State Government, or local bodies. However, he will be required to intimate the owner the State Government or Local bodies, as the case may be, in advance for construction of overhead lines or laying of underground cables provided the land is filled with earth and properly levelled

Policies, Schemes & Incentives (10/15)



State Government Schemes and Policies - Policy for Development of Small Hydro Power (Above 2 MW)

Small hydro Power projects (SHP) above 5.00 MW

- ▶ Incentive to Developers
 - ▶ No clearance will be required from the Irrigation Department/Minor Irrigation Department for Implementation of small hydro power projects allocated under this Policy, however the Developer will ensure that the designed water supply to the existing canals/Hydrant schemes in the project area is maintained during the construction and operation period of the hydro power project
 - ▶ No clearance will be required from Public Works Department for Implementation of small hydro power projects allocated under this Policy; however the Developer will ensure that the State Highway / National Highway roads in the project area and in the vicinity of the project are properly maintained by the developers at his own cost
 - ▶ Clearance from fisheries the department will not be required provided the developer is complying with the provisions of the Uttarakhand Fisheries Act 2013. The selected developer will have to submit a declaration/ affidavit in this regard to the Energy Department / Fisheries Department prior to the construction of the project
 - ▶ Clearance from the Pey Jal Nigam/Jal Sansthan will not be required, either, if any of the existing water supply project is not being affected by the proposed hydro project, or if any water supply scheme is coming in the hydro power project area, the Developer undertakes to maintain/ rehabilitate the water supply scheme at his own cost and submit such an undertaking to the Energy Department and Pey Jal Nigam/Jal Sansthan prior to the construction of the project
 - ▶ The industrial consumers opting to buy power from an SHP will be allowed a corresponding reduction in contract demand on a permanent basis subject to dispensation of UERC

Policies, Schemes & Incentives (11/15)



State Government Schemes and Policies - Policy for Energy Generation from Pine Litter and Other Biomass-2018

- ▶ Overview of the state:
 - ▶ Uttarakhand is highly rich in availability of pine litter as bio-mass
 - ▶ Out of the total forest area in the State, 16.36% (about 4 lacs Hectare) is covered by Chir Pine forests
 - ▶ As per the estimates over 15 Lakh MT Pine litter is generated annually in Reserve and Van Panchayat forests (excluding wild life area)
 - ▶ Therefore, even if about 40% of the estimated quantity is taken as collectible quantity after making sufficient provisions for traditional uses; about 6 Lakh MT is available for industrial use
 - ▶ Apart from Pine Litter, about 8 Lakh MT of other Biomass (Agricultural Crop Residues, Lantana, etc.) is also available for industrial purposes
 - ▶ Uttarakhand has the potential of producing over 150 MW of energy annually
 - ▶ This untapped potential of generating energy from bio-mass based projects of capacities up to 250 kW and the briquetting/bio-oil units of capacities up to 2000 MT per annum can help to meet not only the local energy needs but also could be an effective means for livelihood/revenue generation

- ▶ Policy for Energy Generation from Pine Litter and Other Biomass
 - ▶ The Policy for Energy Generation from Pine Litter and Other Biomass will not only reduce the forest fire accidents occurred annually resulting financial as well as ecology loss of the State but also generate the employment in rural replaces to avoid migration of people
 - ▶ Forest department and UREDA have been made Nodal Agencies for the implementation of this policy in the State
 - ▶ The minimum capacity allocation to each developer will be 10 kW and the maximum capacity allocation will be 250 kW
 - ▶ This policy envisages achieving the target of 100 MW by the year 2030 and setting up of 50 Biomass briquetting/bio-oil plants of maximum 2000 MT per annum capacity by 2030
 - ▶ The potential pine needles areas shall be advertised to seek applications from Societies of Uttarakhand, Entity registered under UP Cooperative Act or under Uttarakhand Self reliant Cooperative, Proprietary/Partnership / Pvt. Ltd.
 - ▶ Firms registered in the State of Uttarakhand, Industry registered in District Industries Offices of Uttarakhand including Resin Units; individually or through forming Joint Venture/Consortium firm with any Community Based Organization (like Van Panchayat, Gram Panchayat, Self Help Group etc.) of the identified area

State Government Schemes and Policies - Policy for Energy Generation from Pine Litter and Other Biomass-2018

- ▶ Policy for Energy Generation from Pine Litter and Other Biomass
 - ▶ The developer quoted the minimum tariff for sale of electricity shall be selected and the generated energy from the project shall be purchased by State DISCOM (UPCL)
 - ▶ The pine needle and other biomass based energy generation units setup under this policy shall be treated as an industry and would be entitled to the benefits prescribed under the prevailing Industrial Promotion Policy of Government of India and Uttarakhand micro, small, medium enterprise policy-2015
 - ▶ If the energy generation unit is set up in private land, the developer will be exempted from payment of stamp duty for registration of documents
 - ▶ This policy will create employment to about 60,000 peoples, reduce forest fire accident, generate decentralized renewable energy, and fulfill the renewable purchase obligation of UPCL etc.

Policies, Schemes & Incentives (13/15)



State Government Schemes and Policies - RPO AND REC Related Regulations

- ▶ Renewable Purchase Obligation
 - ▶ Uttarakhand Electricity Regulatory Commission (UERC), under its regulations "Uttarakhand Electricity Regulatory Commission (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2013" has specified Solar and Non-Solar Renewable Purchase Obligation
 - ▶ In this regulation, distribution licensees, captive users (except co-generation based power plant) and open access customers are referred as "Obligated Entity", in the State of Uttarakhand
 - ▶ As per UERC (Compliance of Renewable Purchase Obligation) Regulations, 2010, Hon'ble UERC may direct obligated entity, in case of non fulfilment of its commitment towards RPO, to deposit into separate fund equivalent to applicable Preferential Tariffs in the State and forbearance price on the shortfall in units of RPO and also be liable for penalty as may be decided by the UERC under section 142 of the Act notwithstanding its liability for any other action under prevailing laws.
 - ▶ As per clause 7 of the UERC (Compliance of Renewable Purchase Obligation) Regulations, 2010 notification no. F-9(21)/RG/UERC/2010/1422 dated 03/11/2010, Uttarakhand Renewable Energy Development Agency is required to intimate shortfall in RPO to Hon'ble UERC within one month of close of that year
- ▶ Renewable Energy Certificates
 - ▶ Uttarakhand Electricity Regulatory Commission vide clause 6 of the UERC (Compliance of Renewable Purchase Obligation) Regulation 2010, has designated (UREDA) as the State Agency for accreditation and recommending the renewable energy projects for registration with Central Agency and to undertake certain others functions as mentioned in the regulation. Hon'ble Commission through sub clause 7.1 of clause 7 of above said regulation has also provided the responsibility to UREDA for intimating shortfall in units of RPO to Commission
 - ▶ UREDA has developed a detailed procedure that contains all the terms and conditions necessary for accreditation of renewable energy generation project and also defined the roles and responsibilities of each agency involved during the accreditation procedures and got it approved from Hon'ble Commission. The approved procedure under the UERC (Compliance of Renewable Purchase Obligation) Regulation 2010 for Accreditation of RE Generation Project by State Agency also contains the format/form for submission of Yearly Estimated RE requirement, Quarterly RPO compliance and Yearly RPO compliance
 - ▶ UREDA has received a several applications for accrediting the RE projects under REC mechanism and recommending them to Central Agency for registration. Five projects of total cumulative capacity 41 MW have been accredited under REC mechanism in the State of Uttarakhand and the same have been registered by Central Agency

Policies, Schemes & Incentives (14/15)

State Government Schemes and Policies - Mega Industrial and Investment Policy 2015

Coverage:

- ▶ New & Existing Projects undergoing expansion (falling within identified Industrial Estates: Large projects (50 Cr to 75 Cr), Mega Projects (75 Cr to 200 Cr), Ultra Mega Projects (Above 200 Cr)

Interest Subsidy

7% for 5 years
Investment - Interest
50-75 Cr - 25L Max
75-200 Cr - 35L Max
>200 Cr - 50L Max

SGST Concession*

Large: 30%
Mega / Ultra Mega: 50%

Stamp Duty

50% Exemption

ETP Subsidy

30% (up to 50 lacs)

Extra Employment Subsidy

@ 500 P.M. per Male
@700 P.M. per Female

Land Registration Fees

Land registration fee @1/- per 1000/-

Power Assistance

Rebate of 1/- per unit on the power bill and 100% rebate on electric duty for 7 years

Land Rates Rebate

Rebate of 15%, 25% and 30% on SIIDCUL prevailing land rate for Large, Mega and Ultra Mega Projects respectively

*With the advent of GST, the current provision of reimbursement of VAT now stands discontinued. However, SGST share (30% for large and 50% for mega and ultra-mega units) after adjustment of ITC on sale (B2C) will be reimbursed

Policies, Schemes & Incentives (15/15)

State Government Schemes and Policies - MSME POLICY 2015

Interest Subsidy

- ▶ **Category A:** 10% (Max 8 lacs/yr/unit)
- ▶ **Category B, B+:** 8% (Max 6 lacs/yr/unit)
- ▶ **Category C:** 6% (Max 4 lacs/yr/unit)

Capital Subsidy

- ▶ **Category A:** 40% (Max 40 lacs)
- ▶ **Category B, B+:** 35% (Max 35 lacs)
- ▶ **Category C:** 30% (Max 30 lacs)
- ▶ **Category D:** 15% (Max 15 lacs)

Transport Subsidy

% of Annual Turnover (Per year/ unit) or Inbound/ Outbound Logistics Cost whichever is less

- Category A:** 7% (Max 7 lacs/yr/unit)
- Category B, B+:** 5% (Max 5 lacs/yr/unit)

Stamp Duty

- ▶ **Category A, B, B+, C:** 100%
- ▶ **Category D:** 50%

SGST Concession*

- ▶ **Category A:** 100% for the first 5 yrs and 90% thereafter
- ▶ **Category B, B+:** 100% for the first 5 yrs and 75% thereafter

Power Bill Rebate

- ▶ **Category A:** Sanctioned Load up to 100 KVA: 100% for 5 yrs and 75% thereafter; If Load > 100 KVA: 60%
- ▶ **Category B, B+:** Sanctioned Load up to 100 KVA: 100% for 5 yrs and 60% thereafter; If Load > 100 KVA: 60%

*With the advent of GST, the current provision of reimbursement of VAT now stands discontinued. However, the net SGST after adjustment of ITC on sale (B2C) will be reimbursed.

Resource Profile of Uttarakhand



ADVANTAGE: UTTARAKHAND

Uttarakhand is richly endowed with natural renewable resources for generating energy. It has multiple micro-climatic zones. The hilly areas are close to ‘cold and sunny’ and ‘cold and cloudy’ climatic zones, while some locations like Dehradun lie under semi-moderate climate region. In addition, the plains of state like Haridwar, Roorkee, Kashipur and Rudrapur lies in the composite climatic zone. Also, the state has large network of rivers and canals providing immense scope for Hydro power

Small Hydro Electric Power

- ▶ Uttarakhand has tremendous potential for Micro, Mini and Small Hydro power generation
- ▶ It has a large network of perennial rivers and canals which provide immense scope for Hydro power
- ▶ The state has a total estimated capacity of 1700MW in Small Hydro Power out of total capacity of 20,363MW in Hydro Power

Biomass

- ▶ The state has large number of Food processing and agriculture based industry which produces a huge amount of agro residue and thus holds potential for generating decentralized energy through Biomass waste
- ▶ Apart from this, there is also cogeneration power potential available in Sugar, paper, fertilizer, chemical, textile and other industries
- ▶ The state has total estimated potential of about 262 MW of electricity generation through this mode

Solar Energy

- ▶ The entire state receives a good amount of solar insolation, about 4.5 to 5.5 KWh/sqm
- ▶ It is an adequate radiation which can be tapped for electricity generation in the state
- ▶ The average solar radiation is 1300 Kwh/Sq.m in the state and this is equivalent to solar power potential of about 4077 MW

Urban/Municipal /Industrial Liquid/Solid Waste

- ▶ About 2500 MT per day of municipal solid waste is generated throughout the state, which is equivalent to power generation capacity of about 100 MW

Geothermal Power

- ▶ As per the preliminary survey done by NTPC, two sites namely Tapovan (Chamoli), Dharma (Pithoragarh) are identified having geothermal potential of approx. 20 MW

List of Leading Players



उत्तराखण्ड शासन

Solar PV power plant under GBI Scheme: 5 MW - Grid Connected

Sr. No.	Name of Project	Capacity In MW
1	Jay Ace Technologies Ltd., Haridwar	2 MW
2	RV Akash Ganga Infrastrucure Ltd, Haridwar	2 MW
3	Metro Frozen Fruits & Vegetables (P) Ltd., Haridwar	1 MW
	Total	5 MW

Solar PV power plant under Type-I of Solar Policy: 211.40 MW - Grid Connected

Sr. No.	Name of Project	Capacity In MW
1	Redwoods Projects Pvt.Ltd	2 MW
2	Advika Energies Energy (P) Ltd.	2 MW
3	Purshotam Industries Ltd.	1 MW
4	Purshotam Industries Ltd.	1 MW
5	Madhav Infra Projects Limited.	12 MW
6	UJVN Ltd.	1.466 MW
7	UJVN Ltd.	4.398 MW
8	PurshotamIspat	1 MW
9	Vivaan Solar Pvt.Ltd.	3.5 MW
10	PurshotamIspat	1 MW
11	R.C. Energy	1 MW
12	Eastman International	0.636 MW
13	A.R. Solar Power, Dehradun	1 MW
14	A.R. Solar Power, Dehradun	1 MW
15	ACME Solar Holdings Pvt. Ltd	12.5 MW
16	ACME Solar Holdings Pvt. Ltd	12.5 MW
17	ACME Solar Holdings Pvt. Ltd	12.5 MW
18	ACME Solar Holdings Pvt. Ltd	12.5 MW
19	Emami Power Ltd.	20 MW
20	Hydro Power Engineers	1 MW
21	Impex India, Kolkata	2.4 MW
22	JLTM Energy India Pvt. Ltd.	5 MW
23	Makin Developers Pvt. Ltd	1 MW
24	OmkarPowerTech India Pvt. Ltd.	10 MW
25	OmkarPowerTech India Pvt. Ltd.	10 MW
26	OmkarPowerTech India Pvt. Ltd.	10 MW
27	Profigate Infra Gasoline, Roorkee	5 MW
28	Profigate Infra Gasoline, Roorkee	5 MW
29	PunjLiyod Infrastructure Ltd	10 MW
30	PunjLiyod Infrastructure Ltd	10 MW
31	PunjLiyod Infrastructure Ltd	10 MW
32	Rays Power Infra Pvt. Ltd.	10 MW
33	Rays Power Infra Pvt. Ltd.	10 MW
34	RP InfrapowerPvt. Ltd., Dehradun	5 MW
35	Vishal Techno Commerce Ltd., Mumbai	5 MW
	Grand Total	211.40 MW

List of Leading Players

Micro Hydro Power Plants: 12.05 MW - Grid Connected

Sr. No.	Name of Project	Name of Scheme	Capacity (In MW)
1	Tehri	Jakhana	0.100
2	Nainital	Ramgad	0.100
3	Uttarkashi	Harshil	0.200
4	Pithoragarh	Chharandev	0.400
5	Pithoragarh	Taleshwar	0.600
6	Pithoragarh	Barar	0.750
7	Pithoragarh	Garaun	0.300
8	Rudraprayag	Kedarnath-2	0.200
9	Nanital	Kotabagh	0.200
10	Bageshwar	Toli	0.100
11	Pauri	Karnuwasharam	0.100
12	Chamoli	Gulari	0.200
13	Uttarkashi	Janki Chutti	0.200
14	Chamoli	Bursol	0.200
15	Chamoli	Tharli	0.400
16	Chamoli	Pandukeshwar	0.750
17	Chamoli	Badhrinath-2	1.250
18	Champwat	Sapteshwar	0.300
19	Chamoli	Jummagad	1.200
20	Pithoragarh	Railagarh	3.000
21	Pithoragarh	Chhirkila	1.500
Total			12.050

List of Leading Players

The list of proposed Micro & Mini Hydro Power Project available for bidding of SPV partner with the concerned Gram Panchayat

Sr. No.	District	Project Name	Proposed Capacity in KW
1	Uttarkashi	Ranokigad	150
2	Uttarkashi	Varunigad	450
3	Uttarkashi	Paligad	2000
4	Tehri	Ringaligad	1050
5	Dehradun	Khatwagad	150
6	Dehradun	Daragad	500
7	Chamoli	Bomanbera	200
8	Chamoli	Talwariwan	600
9	Chamoli	Milikhet-2	200
10	Chamoli	Ghuni	200
11	Chamoli	Meeng gadera	200
12	Chamoli	Nandakini	2000
13	Chamoli	Rupganga	1000
14	Chamoli	Molagad	1060
15	Chamoli	Pranmati	1800
16	Chamoli	Sufaligad	2000
17	Chamoli	Garur Ganga	400
18	Pithoragarh	Dhapuwagad	1000
19	Bageshwar	Bagar -2	150
20	Pithoragarh	Jimmigad	1350
21	Bageshwar	Badiyakot - 2	150
22	Bageshwar	Jaitoli	1000
23	Pithoragarh	Khatiyani-gad	500
24	Nainital	Rokhar	50
25	Nainital	Chhadar	50
26	Nainital	Chanfi	200
27	Pithoragarh	Charmagad	750
28	Pithoragarh	jakulagad	1000
29	Uttarkashi	Mundrasugad	50
30	Uttarkashi	Dharasugad	70
31	Uttarkashi	Nagogad	30
32	Uttarkashi	Nigad gad	40
33	Uttarkashi	Nehri gad	120
34	Rudhrapyag	Ghatura	1500
35	Tehri	Bainoligad	100
36	Tehri	Chhatiyara	900
Total			22970

Key Contacts



Investment Facilitation Centre Directorate of Industries

Address	Investment Facilitation Centre C/o Directorate of Industries Industrial Area, Patel Nagar Dehradun, Uttarakhand - 248001
Phone	+91-135-2728227
Email ID	ifc.uttarakhand@gmail.com

SIIDCUL

Address	State Infrastructure and Industrial Development Corporation of Uttarakhand Ltd.(SIIDCUL) IT Park, Sahastradhara Road, Dehradun, Uttarakhand - 248001
Phone	+91-135-2708100
Phone	contactus@siidcul.com

Uttarakhand Renewable Energy Development Agency

Address	Uttarakhand Renewable Energy Development Agency, Energy Park Campus, Industrial Area, Patel Nagar Dehradun, Uttarakhand – 248001
Phone	+91-135-2521553, 2521387
Phone	cpo.uredahq@gmail.com

Single Window Clearance System - www.investuttarakhand.com
Toll Free: 18002701213

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Sector Photographs



Figure 1: Pilangad Small Hydro Power Plant



Figure 2: Pathri Small Hydro Power Plant



Figure 3: 500 KW Solar power plant at Ramnagar, Nainital



Figure 4: Solar Concentrating system installed at Resham Vibhag, Premnagar, Dehradun