

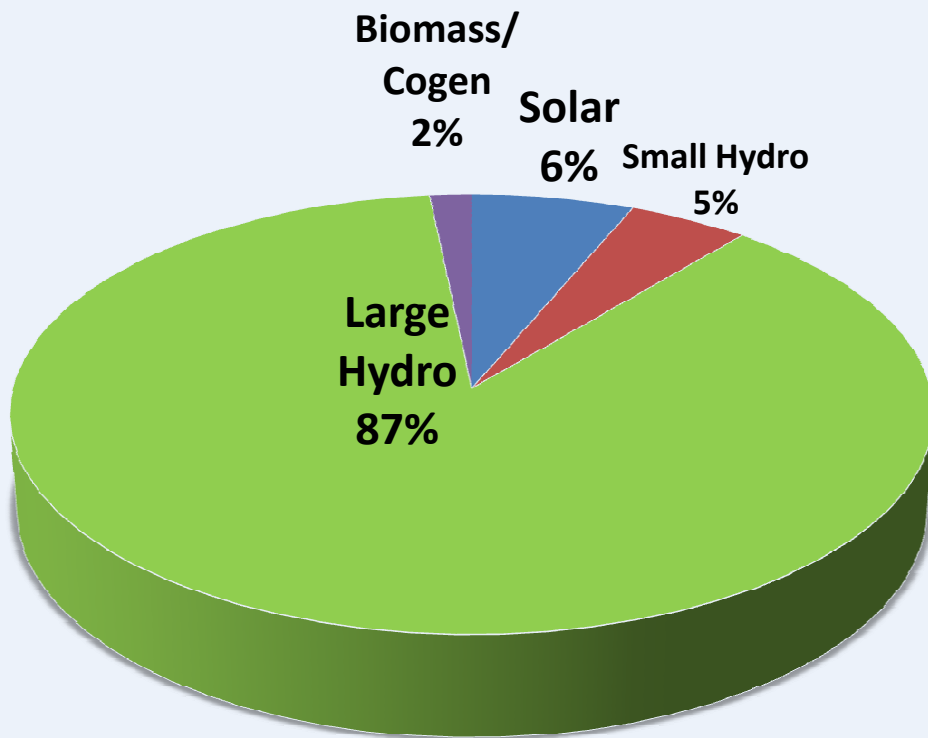
URED A

About UREDA

- Set up in July, 2001 under Society Registration Act 1860.
- Administrative control of the Department of Renewable Energy, GoU
- An Executive Body headed by the Principal Secretary/Secretary, Renewable Energy, GoU.
- State Nodal Agency for deployment of Renewable Energy, Energy Efficiency and Energy Conservation
- Head Office in Dehradun and Project Office in all 13 districts.
- Manpower strength in UREDA
 - ✓ Sanctioned posts: 119;
 - ✓ Working: 80;
 - ✓ Vacant: 39 (Direct Recruitment: 20 ; By promotion: 19)

Renewable Energy Share in Uttarakhand

Total installed capacity as on July 2021 : 4459 MW



Solar	295 MW
Small Hydro	210 MW
Biomass- Cogen	73 MW
Large Hydro	3881 MW

Large Hydro Breakup

State Share: 1254 MW (32.3%)

CPSUs and others 2627 MW (67.7%)

Renewable Energy Programmes

1. Solar Power Projects

- a. Solar Farming: Big projects (100 KW to 5 MW)
- b. Mukhyamantri Saurya Swarojgar Yojana-MSSY (upto25 KW)
- c. Rooftop Solar Program (upto 10 KW)
- d. Solar projects under RESCO Program (for Govt. institutions)
- e. Solar Street Light Scheme (Sanctioned by MNRE, GoI)

2. Pine needle (Pirul) based power projects

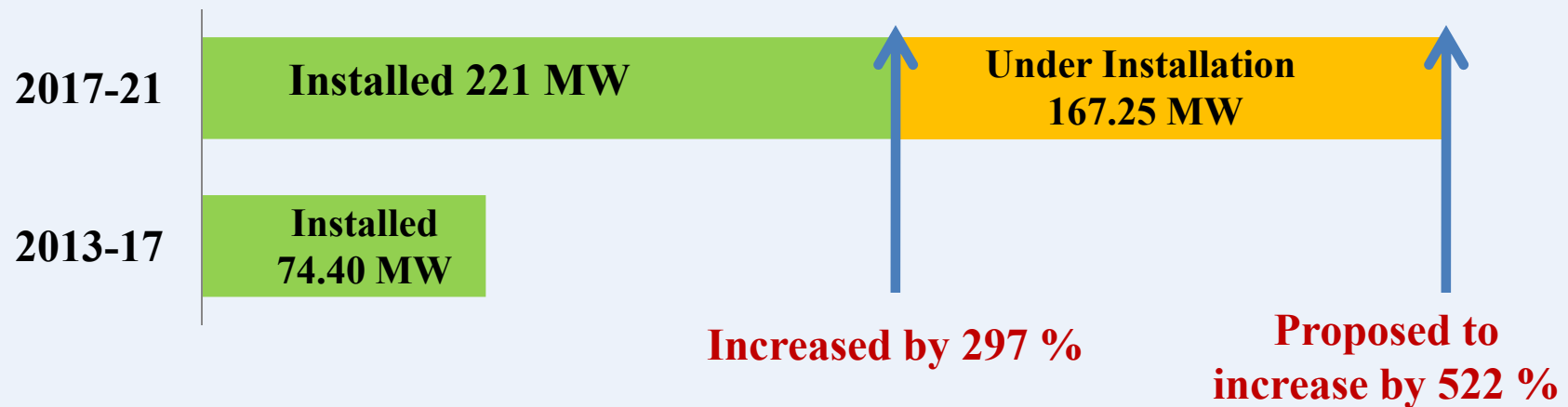
3. Energy Efficiency & Energy Conservation

4. Micro Hydel Projects

1(a) Solar Farming in Uttarakhand

1. GoU has notified Solar Power Policy in 2013 (amended in 2018)
2. Objective to provide self employment in hilly areas and generate clean power.
3. Min: 100 KW; Max cap: 5 MW
4. Reserved for permanent residents of Uttarakhand
5. Cumulative installed capacity: 295.40 MW
6. Under installation :167.25 MW

Solar power growth in last 4 years





Solar Project of 400 KW installed by Sh. Pratap Singh Rawat in Tehri



Solar Project of 900 KW installed at Village Odda, Block-Kot, Pauri

**Solar Project of 1 MW
installed at Landowne,
Pauri Garhwal**



**Solar Project of 400 KW
installed at Dunga,
Dehradun**

1(b) Mukhyamantri Saurya Swarojgar Yojana (MSSY)

1. Launched on 08th Oct, 2020 for providing self employment to the un-employed youths, small & marginal farmers and migrants.
2. The permanent resident of Uttarakhand can install project with capacity upto 25 KW on their own land or on leases basis.
3. The projects can be installed within the aerial distance of 300 m in hilly areas and 100 m in plain areas from 25 KVA and above size transformers of UPCL.
4. Online applications are being invited on MSME portal and incentives shall be applicable as per the MSME policy.
5. Progress till date:
 - Application received on portal:- 1155 nos.
 - LoA issued :- 441 nos.
 - PPA executed :- 279 nos.
 - Proposals sent to bank :- 168 nos.
 - Loan sanctioned from bank :- 02 nos.

1(c) Rooftop Solar Power Plant Scheme

1. Rooftop solar power plant scheme started by MNRE, GoI for residential sector.
2. Upto 3 KW:- 40% subsidy and 3-10 KW:- 20% subsidy
3. Based on net-metering & operated by UPCL.
4. MNRE GoI has allotted 28 MW target till FY 2023
5. Progress till date:
 - Application received on portal:- 2159 (12.408 MW)
 - NOC issued :- 1970 nos. (10.708 MW)
 - Projects installed :- 869 nos. (4.508 MW)

1 (d) Solar projects under RESCO Mode

1. Solar Energy Corporation of India (SECI) has selected [RESCO](#) firms for installation of solar power plants on the government buildings.
2. The tariff for sale of electricity to the consumers has been decided by SECI through open tender.
3. SECI has selected 5 firms for Uttarakhand and determined the tariff of Rs 1.90 per unit.

S.N.	Name of Institute/building	Proposed capacity	Expected commissioning date
1	Uttarakhand Open University, Haldwani	120 KW	Sept 2021
2	ICAR Fisheries Research Center Bhimtal	100 KW	Aug 2021
3	Aryabhat Research Institute, Nainital	240 KW	Sep, 2021
4	ICAR-IISW Dehradun	160 KW	Aug 2021
5	HNB Garhwal University, Shrinagar	850 KW	Sept 2021
6	CRPF, Katgodam	500 KW	Oct 2021
Total		1970 KW	

1(e) Solar Street Light

1. MNRE, GoI has sanctioned:- 19665 Solar Street Light (SSL)
2. Central Govt. subsidy: 90% and State Govt. subsidy : 10%
3. Implementing firm selected by: Energy Efficiency Services Limited (EESL).
4. Selected implementing firm: Indian Telephone Industry (ITI), Naini, Prayagraj
5. Till date 10,120 SSL are supplied and 8158 are installed.
6. MNRE has fixed the last date for completion of project: 15th August 2021
7. Request for extension of project completion time has been send to MNRE, GoI

2. Pine needles (Pirul) Policy

- **Title:** Policy for Energy Generation from Pine Litter and Other Biomass-2018
- **Total net availability of pine needles & other biomass:** 14 Lakh MT/yr
- **Total power potential from pine needles :** Over 150 MW.
- **Procurer of Power :** UPCL to meet its RPO Compliance
- **Eligible entities:** SHG, Van Panchayats and enterprenuers of Uttarakhand
- **Project capacity:** 10-250 KW
- **Tariff:** Rs 7.54 per kWh (Gross tariff: 4.27 + variable charges: 3.27 per kWh)
- **Applicability:** To all pine litter and other biomass based power generation and briquetting/bio-oil projects set-up in Uttarakhand.
- **Nodal Agency:** Department of Forest and UREDA
- **Facilitator:** Government of Uttarakhand

Pine to Power Statistics and Project Economics

Statistics

- 4.5 MT per year pine are generated in 1 hectare of forest land.
- 9 MT per year of pine required for 1 KW project.
- Seasons for pine collection: 3 months (April, May & June).
- Specific Pine consumption: 1.5 Kg per kWh

Project Economics (25 KW Project)

- Total project cost : Rs 25 Lakh
- Annual Energy generation : 1.42 Lakh kWh
- Total annual Revenue gen. : Rs 12.33 Lakh
- Total operational expenses : Rs 7.65 Lakh
- Net profit : Rs 4.68 Lakh
- Simple Pay back period : 4 Years

Pine Projects Progress

1. The Forest dept. is providing Rs 2 / Kg on collection of pineneedles from the Chir forest.
2. Total project allotted:
 - 58 nos. (1785 KW) for power generation
 - 4 projects for Briquette production
3. Project commissioned: 6 projects (150 KW) and 1 Briquette project

S.N	Developer name	Project Capacity	Project location
1	Shri Mahadev Singh Gangari	25 KW	Chakon, Dunda, Uttarkashi
2	Shri Dewan Singh Deopa	25 KW	Deopnali, Didihat, Pithoragarh
3	Smt Khasti Suyal	25 KW	Satoli, Ramgarh, Nainital
4	Shri Himmat Singh Rawat	25 KW	Nalai, Thralisain, Pauri
5	Shri Bhupendra Singh Negi	25 KW	Nigrar, Ramgarh, Nainital
6	Smt Tara Devi (Playan Roko Samuh)	25 KW	Valta, Hawalbagh, Almora
7	AllStar Infra Park India P. Ltd	2000 MT/ yr	Nail, Syaldey, Almora



*Pirul collection by
Women*



25 KW Plant installed in Didihat, Pithoragarh



200 MT/annum Briquette plant installed in Almora

3. Energy Conservation Program

1. Development Model Energy Efficient Villages

- Objective: Showcase & demonstrate the use & need of energy efficiency.
- Progress till date:
 - ✓ 1 village each in 12 districts converted to “Model Energy Efficient Villages”
 - ✓ 4 village each in 13 districts identified, energy audit completed.

2. Development of energy efficient ULBs, hospitals and pumpsets

- Energy audit of 19 ULBs, 35 hospitals/primary health centers, 11 pump sets of irrigation department are completed.
- Rate contract for equipments is under progress

3. Implementation of Energy Efficient Activities In Govt. Schools

- Total 226 Govt. schools are identified for energy efficiency activities (awareness and installation)
- Completed awareness activities & energy audit.
- Energy club formed
- Energy efficient equipments in 100 schools are installed

3. Demonstration of IoT and sensor based Agriculture practice

- Following equipments are installed at KVK, Dehradun for demonstration of IoT and sensor based Agriculture practices.
 - ✓ Energy Efficient Submersible Agriculture Pump set
 - ✓ Drip piping network in 3 acres of land
 - ✓ Application of IoT and Sensor based Technologies to control pump operation

4. Energy Conservation Building Code (ECBC):

- In 2007, UK ECBC was included in building bylaws of Uttarakhand
- ECBC incorporated in “Bhawan Nirmaan Evam Vikas Viniyam- 2011” (amended in 2015). UREDA is nodal agency for ECBC compliance.
- Revised UK ECBC-2017 sent to Housing Department for adaptation.
- Around 12 projects were given preliminary ECBC Compliance certificates and the building are under construction

5. LED Village Light Program

- Employment opportunity and empowerment among the the women in rural areas.
- The women of SHG are being trained for assembling and repairing of LED based equipments like bulbs, tube lights, jhalar etc.
- 17 training program organized whereby 587 women of 40 SHGs are trained.
- Growth center established. SHG generating income is Rs 20,000 – 30,000 per month.
- 59 SHGs are shortlisted & forwarded to GoUK for providing RIF of Rs 50,000/- each.

6. Total Annual Energy Saving in FY 2020-21

- Energy Saving: 427.51 MUs
- Equivalent avoided generation capacity: 89.38 MW
- Co2 emission reduction: 3.42 lakh Tons



LED Village Light training program at Village Patkot, Nainital



LED Village Light training program at Village Dharkot, Tehri

4. Policy for Micro & Mini Hydro Power Project (Up to 2 MW)-2015

- Micro & Mini hydro projects upto 2 MW are reserved for local PRI's.
- Panchayat can install [MHP](#):
 - ✓ Option no. 1: On their own
 - ✓ Option no. 2: With Special Purpose Vehicle (SPV)
- Eligible SPV of Uttarakhand:
Entrepreneur, Community based organizations (CBOs), Society (Society Registration Act 1860), Co-operative societies, Company (majority of the Director are the domicile of Uttarakhand), Industry, Central power utilities, state governments or any other government owned entities.
- UREDA as Nodal Agency shall provide technical support to Panchayats and prepare DSI & DPR of projects.
- SPV Selection Criterion:
The SPV who will share the maximum revenue of the project with concerned Panchayat will be selected through transparent e-bidding.

Achievements till date

1. Installed and under operational MHPs

- Grid connected : 13.34 MW (34 nos.)
- Off Grid : 0.795 MW (10 nos)

2. Under Construction MHPs

- Grid connected : 1.00 MW (04 nos)
- Off Grid : 0.325 MW (07 nos)

3. Under Development MHPs

- UREDA has identified total 78 sites for development of MHPs
- MNRE has sanctioned 75 sites (cumulative capacity 35.55 MW) for preparation of DSI & DPR.
- DSI & DPR of all sites prepared and project execution as per policy is under progress.

Upcoming Projects

- 1. Micro and Mini Hydro Projects:** 09 Gram Panchayats (GPs) have provided their consent for development of MHPs through SPV partner.
- 2. Solar Power Plants on Govt buildings:** Installation of Solar Power Plants on all Vikas Bhawans, Tehsil Bhawans and Block Office buildings under net metering.
- 3. RPO obligation:** Installation of solar power plant to fulfil the RPO obligation (11% for FY 2022-23) of UPCL
- 4. Construction of Net-Zero ECBC building:** BEE proposed the construction of net-zero ECBC building for demonstration in Uttarakhand: Worth Rs 5 crore.

Issues

1. More time in obtaining land use permission for installation of allotted solar power projects and pine needles based power generation projects.
2. Difficulties in sanction of collateral free loan from Banks.
3. Extension of time from MNRE for installation of 19665 nos. of Solar Street Lights project

State Plan Progress for FY 2021-22

S.N.	Program	Sanctioned (in Rs lakh)	Released (in Rs lakh)	Expenditure (in Rs lakh)
1	Solar Thermal	172.00	00.00	00.00
2	Solar Photovoltaic	256.79	35.64	35.64
3	Micro Hydro & Gharat	298.25	55.876	00.00
4	Administration Expenditure	788.00	394.00	394.00
5	Energy Conservation	00.00	00.00	00.00
	Total	1515.04	485.516	429.64

S.N	Program	Target	Progress
1	Installation of Solar water heater at resident schools, hospitals, Govt. guest house	128400 LPD	Proposal submitted to GoU
2	Installation of Solar water heater at Hon'ble court	612 KW	88 KW installed and other are under progress
3	Installation of grid interacted solar power at Govt. institutions	518.30 KW	Proposal submitted to GoU
4	Renovation of on-going Micro Hydro	1550 KW	Under process



सधन्यवाद