

**“Promoting Ultra Low Head Micro Hydropower Technology to Increase
Access to Renewable Energy for Productive uses in Rural India”**

REPORT ON NATIONAL WORKSHOP-III

**“Awareness Building of ULH-MHP and Other Innovative Micro Hydro
Technologies in India”**

**Held at
DEHRADUN
on
24th -25th June, 2016**

**SUPPORTED BY
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION**



**ORGANIZED BY
GRAPHIC ERA UNIVERSITY
DEHRADUN, UTTARAKHAND**

INDEX

S.NO	TITLE	PAGE NO.
1.	Preamble	1
2.	Objective of the Workshop	1
3.	Focus of the Workshop	2
4.	Summary of the Workshop	2
5.	About the Workshop	2- 4
6.	Details of Resource Persons	5-6
7.	Photo Gallery	7-9
8.	Media Coverage	10-13
9.	Annexure I : Schedule of the Workshop	14-16
10.	Annexure II : List of Participant	17-24
11.	Annexure III : Objectives of three Workshops	25-26

National Workshop-III at Dehradun

Preamble:

United Nations Industrial Development Organization (UNIDO) has extended assistance to the Government of India for carrying out a project entitled “Promoting Ultralow Head Micro Hydro Power Technology to increase access to renewable energy for productive uses in rural areas.” As a sequel to this project UNIDO is organizing three workshops on awareness building on the opportunities for public private partnership (PPP) in ULH-MHP technologies on replicable model and by also providing a platform to potential manufacturers, developers and academic institutions worldwide to demonstrate their products and work related to innovative micro-hydro technology development in context to Indian conditions.

The contract for conducting the three workshops with the objectives outlined in the foregoing paragraph was awarded to Graphic Era University, Dehradun by UNIDO. The objectives of three workshops are as per Annexure-III.

Workshops No. I and II were aimed at creating awareness amongst selected district / block level officials, local representatives (Gram Pradhan etc) local technicians and local level government functionaries about availabilities of appropriate technologies for harnessing such resources were organized at Haldwani / Kaladhungi (Nainital District) and in Dehradun (for Haridwar & Dehradun Districts). These workshops were organized for participants from three pilot project districts (20 x 3, around 60 nos.)

Objectives of the Third Workshop:

In compliance with the objectives of the Project “Promoting Ultra Low Head Micro Hydro Power Technology to increase access to renewable energy for productive uses in rural India” the Graphic Era University organized the third and final workshop in the series at Dehra Dun, on 24th-25th June, 2016.

The third workshop focused on the ULH-MHP technology that is being piloted in the state of Uttarakhand by UNIDO with the active support of MNRE and UREDA and also to provide idea about such technologies available with other manufacturers or developers mainly amongst the

Government officials from selected state nodal agencies involved in the development of small hydro in their respective states where there is scope of micro hydro development.

Focus of the Workshop:

1. ULH-MHP Technologies available.
2. Possible rural use of energy generated.
3. Financing especially in PPP mode, for developing such projects by the Gram Panchayats and policies of the State Government and the Central Government (MNRE, Government of India) for catalyzing such activities through liberal grant of financial subsidies etc.

Summary of the Workshop:

Date held:	24-25 th June, 2016
Location/City:	Dehradun, Uttarakhand
Duration of workshop:	2 days
Venue for workshop:	HOTEL SAROVAR PORTICO, Dehradun
Venue for stay:	HOTEL SAROVAR PORTICO, Dehradun
No. of participants:	63

About the Workshop:

The proceedings of the workshop started with a warm welcome to all the guests and participants. The Chief Guest, Dr. N.P. Singh, Sr. Technical Advisor UNIDO along with the guests of honour, Mr. Tikam Singh Panwar, Mr. Kishan Nath, Sri B.K. Bhatt, Sri K. N. Vajpai and Sri A.K. Tyagi were felicitated by presentation of flower bouquet with their brief introductions. The workshop proceedings began with the traditional “lighting of the lamp.”

The introduction to the workshop was delivered by Sri K. N. Vajpai, National Project Co-ordinator, UNIDO. He extended a hearty welcome to the Chief Guest, Distinguished Guests, Resource persons and the Participants of the workshop on behalf of the organizers. He appraised the participants about the significant steps being undertaken by the Graphic Era University in

developing use of renewable energy sources for meeting the growing energy needs of the society and those of rural hilly communities in particular. Sri T.K Panwar, Additional Secretary (Renewable Energy), Government of Uttarakhand, in his address highlighted the active role played by UREDA in developing renewable energy sources especially in meeting the electrical energy needs of isolated communities through decentralized generation from micro/mini hydro and solar energy sources in Uttarakhand. He highlighted that low cost power generation through Ultra Low Head Micro Hydro Power Projects in rural remote areas will create livelihood opportunities in such areas and stop people from migrating from the villages.

Mr. Kishan Nath, Additional Secretary - Irrigation while addressing the gathering mentioned the huge potential available in Uttarakhand due to the large irrigation canal network and he further added that the irrigation and other canal network in the state must be fully utilized for the development of Ultra Low Head Hydro Power Projects.

Sri B.K. Bhatt, Adviser, Ministry of New and Renewable Energy, Govt. of India, in his inaugural address congratulated the UNIDO and UREDA for their signal initiative in organizing awareness workshops for developing ultralow head micro hydro power station amongst the community leaders, and opinion motivators. He extolled the virtues of harnessing renewable energy in the context of global warming and climate change and as engine of change for ushering in sustainable development of the society in particular and humanity as a whole.

Chief Guest on the occasion Dr. N.P. Singh, Sr. Technical Advisor, UNIDO, in his address said that cheaper renewable energy production would increase in per capita energy consumption in the country and it would usher in a new era of economic development and prosperity for the people.

At the end of the inaugural session, Sri A. K. Tyagi, Chief Project Officer, UREDA, proposed a vote of thanks to the Chief Guest, Guests of honour, officials from renewable energy development agencies from different states who have come over long distances to participate in the workshop and the representatives of the manufacturers and NGOs. He wished that the deliberations of the workshop will create an environment conducive to developing micro hydro power projects involving ultralow head hydro resources which can bring in qualitative change in life styles and economic benefit to rural communities at large in the state and in the country.

Officials from the nodal agencies from the states of Uttar Pradesh, Himachal Pradesh, Kerala, Nagaland and Meghalaya attended the workshop. The officials from the pilot state, Uttarakhand (UREDA, Irrigation Department, Minor Irrigation Department, IRI, UCOST, etc.) attended the same.

The workshop was attended by some of the manufacturers of micro hydropower equipment in the country and abroad and presented their developed technologies for information of the participants. Senior officials from the Ministry of New and Renewable Energy, Govt. of India were also become part of this workshop.

The workshop was also attended by academicians from IIT Roorkee, and Graphic Era University, Dehradun.

The Inaugural session was followed by the following technical sessions:

Session – I: ULH-MHP Technologies

Session – II: Regulatory and Policy Issues in developing MHPs

Session – III: ULH - MHP Technology- Presentation by Manufacturers

Session – IV: Challenges and Surprises- Technology Impact on Environment

Session – V: Micro Hydro Policies in other states of India

Session – VI: Open house Discussions

On the Day II, after the lecture sessions, an open house discussion session was held, in which the participants got clarified of their doubts and specifics of the systems, and their relative use and benefits from the experts. Thereafter the customary “vote of thanks” was extended.

Following printed materials were distributed to the participants for their information and reference.

- 1) Uttarakhand State Government policy for development of micro & mini hydropower projects up to 2 MW.
- 2) Brief note on policy incentives of MNRE, India for the development of micro hydro power projects.
- 3) Brief note on ULH-MHP Technology
- 4) Technology Brochure
- 5) Brochure of ULH-MHP Technology
- 6) Program Schedule

Details of Resource Persons

S.No	Name	Contacts	TOPICS
1.	Shri S.K. Shahi Scientist C Ministry of New and Renewable Energy Block No. 14, CGO Complex, Lodhi Road New Delhi- 110003	Email: sk.shahi@nic.in Mobile: 7838584840	Policies and Incentives by Government of India for Promotion of ULH – MHP
2.	Shri K.N. Vajpai National Project Coordinator ULH-MHP Project Renewable and Rural Energy Unit, UNIDO Urja Park, Industrial Area, Patel Nagar Dehradun-248001, Uttarakhand, INDIA	Email: k.vajpai@unido.org; knvajpai@gmail.com Mobile: 7607481242	Experience of ULH-MHP Pilot project in Uttarakhand by UNIDO
3.	Prof. Devadutta Das Visiting Professor Graphic Era University 566/6, Bell Road, Clement Town Graphic Era University Dehradun-248002, Uttarakhand	Email: devaduttadas1945@gmail.com Mobile: 9412074065	(1) Available Innovative ULH-MHP Technologies (2) Development, Environment and Renewable Energy
4.	Prof. Arun Kumar Alternate Hydro Energy Centre Indian Institute of Technology Roorkee, Uttarakhand	Email: akumafah@iitr.ac.in; aheciitr.ak@gmail.com Mobile: 9837016919	Optimum Use of ULH-MHP Potential
5.	Shri L.D Sharma Deputy Chief Project Officer Uttarakhand Renewable Energy Development Agency Urja Park, Patel Nagar Dehradun-248001, Uttarakhand	Email: shp.uredahq@gmail.com Mobile: 9412092098	State Micro Hydro Policy and Support provided by State Government in Decentralized Power Generation

6.	Shri Yashwardhan Dimri Asstt. Director (Technical) Uttarakhand Electricity Regulatory Commission Dehradun, Uttarakhand	Email: ydimri@rediffmail.com Mobile: 8193800050	Regulatory Policies for Micro Hydro Projects
7.	Shri Manoj Kesharwani Executive Engineer Urja Cell, Dept. of Energy Government of Uttarakhand, Uttarakhand Secretariat, Dehradun-248001	Email: manoj1176@gmail.com Mobile: 9456590017	Environmental Challenges & Development of Hydropower Projects in Uttarakhand
8.	Dr. N. P. Singh Senior Technical Adviser UNIDO Regional Office, New Delhi	Email: npsingh855@yahoo.com Mobile: 9811882878	UNIDO Country Program
9.	Ms. Anubhuti Agarwal ULH-MHP Project United Nations Industrial Development Organization (UNIDO) Urja Park, Industrial Area, Patel Nagar Dehradun-248001 , Uttarakhand	Email: anubhuti02@gmail.com Mobile: 9897117246	ULH-MHP Technology Innovation Pilot by UNIDO in Uttarakhand
10.	Ms. Malavika Bhatt People's Science Institute Dehra Dun, Uttarakhand	Mobile:9458168610	Mega Benefits of Micro Hydropower
11.	Mr. Onkar Nath, GIZ, New Delhi	Email: om libra81@gmail.com Mobile: 8826007526	Indo German Energy Programme- Access to Energy in Rural Areas (IGEN-Access)

Photo Gallery:







Media Coverage:

11

अमर उजाला देहरादून

देहरादून | शनिवार | 25 जून 2016

झरनों से कम लागत में विद्युत उत्पादन : सिंह जल विद्युत के लघु और अति सूक्ष्म विकल्पों पर दो दिवसीय कार्यशाला शुरू



लघु और अति सूक्ष्म विकल्पों पर आयोजित कार्यशाला को संबोधित करते एडवाइजर साइंटिस्ट स्मॉल हाइड्रो प्रोजेक्ट डॉ. बीके भट्ट और उपस्थित लोग।

अमर उजाला ब्यूरो

देहरादून। यूनिडो नई दिल्ली के सलाहकार डॉ. एनपी सिंह ने कहा कि नहरों पर उपलब्ध छोटे-छोटे झरनों से भी कम लागत में विद्युत उत्पादन किया जा सकता है। इसके लिए विभिन्न देशों में उपलब्ध तकनीकियों को उपयोग में लाने की जरूरत है।

शुक्रवार को उत्तराखंड अक्षय ऊर्जा विकास अभिकरण (उरेडा), यूनाइटेड नेशंस इंडस्ट्रियल डेवलपमेंट ऑर्गनाइजेशन (यूनिडो)

यूनिडो के सलाहकार एनपी सिंह बोले, नई तकनीकियों का करना होगा उपयोग

और केंद्रीय नवीन एवं नवीकरणीय ऊर्जा मंत्रालय की ओर से जल विद्युत के लघु और अति सूक्ष्म विकल्पों पर दो दिवसीय कार्यशाला का हरिद्वार बाइपास स्थित एक होटल में उद्घाटन हुआ। वक्ताओं ने जल विद्युत उत्पादन के लघु और सूक्ष्म संसाधनों पर चर्चा की। अपर सचिव अक्षय ऊर्जा, टीकम सिंह पंवार ने प्रदेश के विभिन्न सरकारी

उद्यानों में उपलब्ध जल स्रोतों से भी विद्युत उत्पादन के संबंध में पहल पर जोर दिया। उन्होंने कहा कि इन परियोजनाओं से ऊर्जा उत्पन्न करने से जनता की आजीविका बढ़ाने में सहयोग मिलेगा और ग्रामीण क्षेत्रों से पलायन रुकेगा।

लघु जल विद्युत परियोजना के वैज्ञानिक सलाहकार डॉ. वीके भट्ट ने कहा कि सूक्ष्म एवं अति लघु जल विद्युत परियोजनाओं से पर्यावरण को कोई नुकसान नहीं होता। लिहाजा इन परियोजनाओं को अधिक से अधिक स्थानों पर

स्थापित करने से स्थानीय ग्रामीणों को रोजगार मिलेगा और विद्युत विक्रय करने से आय के स्रोत भी विकसित हो सकेंगे। कार्यशाला में विभिन्न राज्यों से आए प्रतिनिधि भाग ले रहे हैं। मौके पर अपर सचिव सिंचाई, किशन नाथ, उरेडा के मुख्य परियोजना अधिकारी एके त्यागी, एलडी शर्मा, आईआईटी रुड़की के प्रो. अरुण कुमार, अनुभूति अग्रवाल, ग्राफिक एरा विश्वविद्यालय के राजपाल राणा, संजय कुमार, केसी थपलियाल, एके कक्कड़, दीक्षा मदान आदि शामिल रहे।

देहरादून, शनिवार
25 जून 2016

विश्व का सर्वाधिक पैसा जलने वाला उद्योग

दैनिक जागरण

सूक्ष्म जल विद्युत परियोजना रोक सकती हैं पलायन

जागरण संवाददाता, देहरादून: सूक्ष्म एवं अति लघु जल विद्युत परियोजना पहाड़ से पलायन रोकने में अहम भूमिका निभा सकती है। साथ ही इससे प्रदेश का बिजली संकट भी कम हो सकता है। छोटी परियोजनाओं से पर्यावरण को कोई नुकसान नहीं होगा और स्थानीय लोगों को रोजगार भी मिलेगा। यह बातें 'सूक्ष्म एवं अति लघु जल विद्युत प्रौद्योगिकी' विषय पर हुई कार्यशाला में विशेषज्ञों ने कही।

हरिद्वार बाइपास रोड स्थित एक होटल में हुई कार्यशाला का शुभारंभ मुख्य अतिथि यूनीडो भारत सरकार के सलाहकार डॉ. एनपी सिंह ने किया। उन्होंने नहरों से विद्युत उत्पादन करने की विभिन्न देशों में मौजूद तकनीकों के बारे में जानकारी दी। अपर सचिव वैकल्पिक

ऊर्जा टीकम सिंह पंवार ने कहा कि राज्य सरकार ग्राम पंचायतों में सूक्ष्म परियोजना लगा रही है। पंचायतों के पार्टनर ऊर्जा निगम, जल विद्युत निगम और उरेडा बन रहे हैं। कार्यशाला में विभिन्न राज्यों से आए ऊर्जा विशेषज्ञों ने जल विद्युत उत्पादन की विभिन्न तकनीकों की जानकारी दी। कार्यशाला में अपर सचिव सिंचाई किशननाथ, नवीन एवं नवीकरणीय ऊर्जा मंत्रालय भारत सरकार के सलाहकार बीके भट्ट, उत्तराखण्ड अक्षय ऊर्जा विकास अभिकरण (उरेडा) के मुख्य परियोजना अधिकारी एके त्यागी आदि मौजूद रहे। कार्यशाला का आयोजन उरेडा, यूनीडो, नवीन एवं नवीकरणीय ऊर्जा मंत्रालय भारत सरकार और ग्राफिक एरा विवि की ओर से किया गया।

देहरादून, शनिवार

कला, आज और कल

25 जून 2016

सच कहूँ

वैकल्पिक विद्युत उत्पादन पर दिया गया जोर

ग्राफिक एरा विवि ने आयोजित की दो दिवसीय राष्ट्रीय कार्यशाला

देहरादून (सच कहूँ न्यूज)। उत्तराखण्ड अक्षय ऊर्जा विकास अभिकरण (उरेडा), यूनीडो एवं नवीन एवं नवीकरणीय (ऊर्जा मंत्रालय, भारत सरकार) के तत्वावधान में ग्राफिक एरा विवि देहरादून द्वारा सूक्ष्म एवं अति लघु माइक्रोहाईड्रल जल विद्युत प्रौद्योगिकी पर दो दिवसीय राष्ट्रीय कार्यशाला का आयोजन किया गया। कार्यशाला के उद्घाटन सत्र में बतौर मुख्य अतिथि मौजूद सलाहकार यूनीडो डॉ. एनपी सिंह द्वारा नहरों पर उपलब्ध फल से विद्युत उत्पादन करने के लिये विभिन्न देशों में उपलब्ध तकनीकियों का उपयोग किये जाने पर बल दिया गया। उत्तराखण्ड अक्षय ऊर्जा विकास अभिकरण (उरेडा) के अपर सचिव टीकम सिंह पंवार द्वारा प्रदेश के विभिन्न सरकारी उद्यमों में उपलब्ध जल स्रोतों से भी विद्युत उत्पादन के सम्बन्ध में पहल किये जाने पर जोर दिया गया। उन्होंने सुझाव दिया कि इन परियोजनाओं से उर्जा उत्पन्न करने से राज्य के जनता की आजीविका बढ़ाने में सहयोग मिलेगा।

अन्य विशेष अतिथियों में सिंचाई विभाग, उत्तराखण्ड के अपर सचिव किशन नाथ, वैज्ञानिक नवीन एवं नवीकरणीय ऊर्जा मंत्रालय (भारत सरकार) के



सलाहकार बीके भट्ट आदि उपस्थित थे। अन्य वक्ताओं द्वारा अवगत कराया गया कि सूक्ष्म एवं अति लघु जल विद्युत परियोजनाओं से पर्यावरण को कोई नुकसान न होने के कारण इन परियोजनाओं को अधिक से अधिक स्थानों पर स्थापित कराने से ग्रामीणों को रोजगार के साथ-साथ विद्युत विक्रय करने से आय के स्रोत भी विकसित होंगे। कार्यशाला में एके त्यागी, प्रो. अरूण कुमार, प्रो. देवदत्त दास, केएन वाजपेयी, अनुभूति अग्रवाल, वार्ड डिमरी, एलडी शर्मा ने भी अपने अनुभवों पर विस्तार से चर्चा की। कार्यशाला का आयोजन संजय कुमार, केसी थपलियाल, एके कक्कड, तीक्षा मदान एवं राजपाल राणा ग्राफिक एरा विश्वविद्यालय, देहरादून द्वारा किया गया।

June 24, 2016

Press Release

National Workshop on Ultra Low Head – Micro Hydro Power Technologies

Low cost power generation through Ultra Low Head Micro Hydro Power Projects will create livelihood opportunities and stop people from migrating: Tikam Singh Panwar, Additional Secretary – Renewable Energy

Large irrigation canal network in Uttarakhand must be fully utilized for the development of Ultra Low Head Hydro Power Projects: Kishan Nath, Additional Secretary – Irrigation

Cheaper renewable energy production would increase in per capita energy consumption in the country ushering in a new era of economic development of the people: NP Singh, Sr. Technical Advisor, UNIDO

Dehradun: Low cost power generation through Ultra Low Head Micro Hydro Power Projects will create livelihood opportunities in the state and stop people from migrating from the villages said Mr. Tikam Singh Panwar, Additional Secretary - Renewable Energy, Government of Uttarakhand. Mr. Panwar was addressing the inaugural session of National Workshop on Ultra Low Head – Micro Hydro Power Technologies. The two day national workshop is being organized by Graphic Era University in Collaboration with UNIDO, MNRE and UREDA at Dehradun from June 24 to 25, 2016 at Hotel Sarovar Portico.

Chief Guest of the occasion Mr. N.P. Singh, Sr. Technical Advisor, UNIDO said that cheaper renewable energy production would increase in per capita energy consumption in the country and it would usher in a new era of economic development and prosperity for the people.

Across the world research and development in the energy sector is being directed towards providing energy security through development of innovative technology which are cleaner, efficient and greener. The National Workshop on Ultra Low Head Micro Hydro Power Projects aims to bring into focus the required intellectual discussion between various stakeholders on the technical and policy aspects for equitable promotion of the Ultra-Low Head Hydro Power Technology and ways of bringing it into the mainstream agenda for providing net energy

security. This awareness building workshop will highlight the innovative Ultra Low Head Micro Hydro Power technology, scope of the innovation and ways of replication of the technology across the nation.

The workshop is being attended by eminent scientists, technocrats, administrators and community group members working in the field of renewable energy. The participants of the workshop would also be provided a first-hand experience by the community representative who are managing the three projects being operated on pilot basis in Uttarakhand at Bahadrabad in Haridwar, Ambadi in Vikasnagar, Dehradun and Kaladhungi in Nainital District. The large canal network in Uttarakhand is ideal for setting up these power projects upto a capacity of 10 kW requiring only a water head of just 3 meters in height. Shri Kishan Nath, Additional Secretary - Irrigation while addressing the gathering mentioned the huge potential of the technology in Uttarakhand due to the large irrigation canal network and he further added that the irrigation and other canal network in the state must be fully utilized for the development of Ultra Low Head Hydro Power Projects.

India is the fourth largest energy consumer in the world and the demand for energy would keep on increasing in the coming decades. Ultra-Low Head Micro Hydro Power Projects can help India overcome a part of its energy requirements and is cheap, renewable and non-polluting. Adopting a community based approach for implementing Ultra Low Head Micro Hydro Power Projects across the country would provide an easily available source of energy to rural economy there-by helping the local communities to set up small and micro industrial units in their local areas. The Ultra-Low Head Micro Hydro Power Projects can provide the required impetus for reviving agro-forestry based processing units in remote areas where cost of energy transportation is expensive and unviable.

Annexure I

Schedule of the Workshop

VENUE: HOTEL SAROVAR PORTICO, Near ISBT, Haridwar Bypass Road, Dehradun

DATE: 24-25th June, 2016

DAY 1(Friday)

TIME	ACTIVITY	
09.30 – 10.00	Registration	
Inaugural session and opening of Welcome		
10.00 –10.20	Welcome address Introduction of Chief Guest/Guests of Honour Bouquet Presentation Lighting of the lamp	Ms. Tiksha Madan Master of Ceremony
10.20–10.25	Introduction to the Workshop	Mr. K. N. Vajpai, National Project Coordinator, UNIDO
10.25 – 10.30	Address by the Guest of Honour	Mr. Tikam Singh Panwar, Additional Secretary- Renewable Energy. Govt. of Uttarakhand.
10.30–10.35	Address by the Guest of Honour	Mr. Kishan Nath, Additional Secretary- Irrigation Govt. of Uttarakhand.
10.35 – 10.40	Address by the Guest of Honour	Dr. B.K. Bhatt, Advisor, Scientist G and Division Head Small Hydro Projects M.N.R.E
10.45–10.50	Address by the Chief Guest	Dr. N.P. Singh, Sr. Technical Advisor UNIDO, New Delhi
10.50 –10.55	Memento Presentation	
10.55 – 11.00	Vote of Thanks	Mr. A.K. Tyagi, Chief Project Officer Uttarakhand Renewable Energy Development Agency
11.00 –11.30	Tea break	

Technical Session –I: ULH-MHP Technologies		
11.30 – 12.10	Available Innovative ULH-MHP Technologies	Prof. D. D. Das
12.10 – 12.40	ULH-MHP Technology Innovation Pilot by UNIDO in Uttarakhand	Ms. Anubhuti Agarwal ULH-MHP Expert UNIDO
12.40 -13.10	Optimum use of ULH-MHP Potential	Prof. Arun Kumar Alternate Hydro Energy Centre Indian Institute of Technology Roorkee, Uttarakhand
13.10 – 13.30	UNIDO Country Program	Mr. N.P. Singh Sr. Technical Advisor UNIDO, New Delhi
13.30 –14.30	Lunch	
Technical Session –II: Regulatory & Policy Issues in MHP's		
14.30 - 15.00	Policies and Incentives by Government of India for Promotion of ULH – MHP	Mr. S.K. Shahi, Scientist C Ministry of New and Renewable Energy, New Delhi
15.00 – 15.30	State Micro Hydro Policy and Support provided by State Government in Decentralized Power Generation	Mr. L.D Sharma, Deputy Chief Project Officer Uttarakhand Renewable Energy Development Agency
15.30 – 16.00	Regulatory Policies for Micro Hydro Projects	Sri Yashwardhan Dimri Asstt. Director (Technical) Uttarakhand Electricity Regulatory Commission, Dehradun
16.00 – 16.15	Tea Break	
Technical Session –III: ULH-MHP Technology – Presentation by Manufacturers		
16.15 –16.30	Kirloskar Integrated Technologies Ltd.,	Ms. Richa Shinde Head Strategy and Operations
16.30 – 16.45	Imagenous Engineering Pvt. Ltd.,	Mr. Subhendu Vishwas Director
16.45 - 17.00	First Day closing and Briefing of IIInd Day	

DAY II (Saturday)

TIME	ACTIVITY	
10.30 – 10.45	Welcome along with Tea	Ms. Tiksha Madan Master of Ceremony
Technical Session –IV: Challenges and Surprises -Technology Impact on Environment		
10.45 – 11.15	Environmental Challenges &Development of Hydropower Projects in Uttarakhand	Sri Manoj Kesharwani Executive Engineer Urja Cell, Dept. of Energy Government of Uttarakhand,
11.15- 11.45	Development, Environment and Renewable Energy	Prof. D. D. Das
11.45- 12.15	Mega Benefits of Micro Hydropower	Ms. Malavika Bhatt People's Science Institute Dehra Dun
12.15- 12.30	Indo German Energy Programme- Access to Energy in Rural Areas (IGEN-Access)	Mr. Onkar Nath GIZ, New Delhi
Technical Session –V: Various State Micro Hydro Policy and Incentives		
12.30 – 13.15	Open Discussion	
13.15 - 13.30	Closing Note/Vote of Thanks	Mr. K. N. Vajpai, National Project Coordinator, UNIDO
13.30 - 14.30	Lunch	

Annexure II

List of Participant

S. No	Name , Designation, Organization, Mobile No.
1	Ms. Richa Shinde, Head Strategy and Operations Kirloskar Integrated Technologies Ltd., 13/a, Karve Road, Kothrud PUNE 411 038, Maharashtra Mobile: 9594529251
2	Shri Dinesh Kumar A.N., Energy Technologist – E1 Energy Management Centre Srikrishna Nagar Sreekaryam P.O, Thiruvananthapuram 695017 Kerala, India Email: dinesh@kerelaenergy.gov.in Mobile: 9446075212
3	Shri Ajay Dogra Technician, ULH-MHP Ambadi, Vikasnagar, Dehradun Email: ajaydogra778@gmail.com Mobile:9410575128
4	Shri Subhendu Vishwas, Director Imagenous Engineering Pvt. Ltd., 3 C , Camac Street, Camac Tower Kolkata -700016, West Bengal Email: subhendu@verde.co.in Mobile: 9748756709
5	Dr. S. K. Mishra HOD, WRD&M IIT Roorkee-247667, Uttarakhand Email: skm61fwt@gmail.com Mobile: 9411100753
6	Dr. Satyendra Mittal Associate Professor Dept. of Civil Engineering IIT Roorkee, Uttarakhand Email: satyendramittal@gmail.com; smittf@iitr.ac.in Mobile: 9760014237
7	Shri G.P.S. Bhati Hydropower Consultant Roorkee, Uttarakhand Email: rkedeepak@gmail.com Mobile: 9897004804
8	Shri Ashok Kakar, Consultant E-30 Nehru Colony, Dehradun-248001 Uttarakhand Email: akkakarstep@gmail.com Mobile: 9412075259
9	Er. K.L. Thakur Dy. Chief Executive Officer

	<p>HIMURJA (Himachal Pradesh Energy Development Agency) Block No. 8-A, URJA BHAWAN, SDA Complex Kasumpti, Shimla- 171009 Himachal Pradesh Email: klthakur.22@gmail.com Mobile: 9816117256</p>
10	<p>Er. Sanjeev Gautam Sr. Executive Engineer HIMURJA (Himachal Pradesh Energy Development Agency) Block No. 8-A, URJA BHAWAN, SDA Complex Kasumpti, Shimla- 171009 Himachal Pradesh Email: himurja-hp@nic.in Mobile: 9418475472</p>
11	<p>Shri K.N. Vajpai National Project Coordinator ULH-MHP Project Renewable and Rural Energy Unit, UNIDO Urja Park, Industrial Area, Patel Nagar, Dehradun-248001, Uttarakhand, INDIA Email: k.vajpai@unido.org or knvajpai@gmail.com Mobile: 7607481242</p>
12	<p>Shri U.N. Madan, Director Meghalaya Non-Conventional & Rural Energy Development Agency Near BSF Camp, P.O. Mawpat Shillong-793012 Email: mnreda.dir@gmail.com Mobile: 9436160175</p>
13	<p>Shri S.K. Shahi, Scientist -C SHP Division Ministry of New & Renewable Energy Block No. 14, CGO Complex, Lodhi Road New Delhi- 110003 Email: sk.shahi@nic.in Mobile: 7838584840</p>
14	<p>Dr. N.P. Singh Senior Technical Adviser UNIDO Regional Office, New Delhi Email: npsingh855@yahoo.com Mobile: 9811882878</p>
15	<p>Shri A. K. Tyagi Chief Project Officer Uttarakhand Renewable Energy Development Agency Urja Park, Patel Nagar Dehradun-248001, Uttarakhand Email: cpo.uredahq@gmail.com Mobile: 9837071245</p>
16	<p>Shri Subhash Chander Sharma Chairperson Yamuna Ghati SS</p>

	Ambadi, Vikasnagar, Dehradun Email: ajaydogra778@gmail.com Mobile: 9411512238
17	Shri Kishor Kumar Secretary Yamuna Ghati SS Ambadi, Vikasnagar, Dehradun Email: Mobile: 9012617022, 7830422177
18	Shri L.D. Sharma Chief Project Officer Uttarakhand Renewable Energy Development Agency Urja Park, Patel Nagar Dehradun-248001, Uttarakhand Email: shp.uredahq@gmail.com Mobile: 9412092098
19	Mrs. Anubhuti Agarwal ULH-MHP Expert, UNIDO Urja Park, Patel Nagar Dehradun-248001, Uttarakhand Email: anubhuti02@gmail.com Mobile: 9897117246
20	Sri B. K. Bhatt, Scientist-G Advisor and Division Head Small Hydro Projects Ministry of New and Renewable Energy Block No. 14, CGO Complex, Lodhi Road New Delhi- 110003 Email: bkbhatt@nic.in or bhattbk88@gmail.com Mobile: 9868886752
21	Shri Promod Kumar Sr. Project Officer Uttarakhand Renewable Energy Development Agency Near Petrol Pump, Gopeshwar Chamoli, Uttarakhand Email: ureda_chamoli@rediffmail.com Mobile: 9412045119
22	Shri Ram Kumar Senior Project Officer Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA) VibhutiKhand, Gomti Nagar, Lucknow- 226010 Uttar Pradesh Email: Mobile: 9415609018
23	Shri Rajendra Bisht Channel Mountain J P Tower, Kargi Chowk, Dehradun- Uttarakhand 248001 Email: Mobile: 8979034330

24	Shri Renilo Nuh Deputy Director Directorate of New & Renewable Energy Kohima-797001, Nagaland Email: Mobile: 9862515192
25	Er. Kekhriezhali Sorhie Project Officer Directorate of New & Renewable Energy Kohima-797001, Nagaland Email: Mobile: 9774002437
26	Shri Bhupendar Singh, Manager National Bank for Agriculture and Rural Development (NABARD) Hotel Sunrise Building 113/2, Rajpur Road, Dehradun Email: Mobile: 9027067604
27	Shri T.S. Panwar Add. Secretary, Renewable Energy Govt. of Uttarakhand Email: Mobile: 9412051467
28	Sri Ajay Kumar Executive Engineer Irrigation Research Institute Bahadrad, Haridwar Uttarakhand Email: roh2@iriroorkee.res.in Mobile: 9411384113
29	Shri Sunesh Sharma Himmotthan Society, (Sri Ratan Tata Trust) 193, VasantVihar, Phase 2 Dehradun, Uttarakhand Email: Mobile: 9456578242
30	Shri Vinod Kothari Himmotthan Society, (Sri Ratan Tata Trust) 193, VasantVihar, Phase 2 Dehradun, Uttarakhand Email: Mobile: 9456578242
31	Shri R. Chalisgaonkar Chief Engineer & HOD Uttarakhand Irrigation Department Yamuna Colony, Dehradun-248001 Email : hod.plan@gmail.com Mobile: 9411112472
32	Shri Ajay Verma Chief Engineer (Garhwal) Uttarakhand Irrigation Department Dehradun- Uttarakhand 248001

	Email: ajayirri@gmail.com; ce.garhwal@gmail.com Mobile: 9412409516
33	Shri Mahendra Singh Ambadi, Vikasnagar, Dehradun Email: ajaydogra778@gmail.com Mobile:8445063795
34	Shri Vimal Langer India Representative JAG Seabell Co. Ltd., India Office, 738, Sector – 15 Faridabad, Haryana -121 007 Email : langer @seabell-i.com Mobile: 9810957191
35	Shri C.P. Madan Hydro Power Consultant Dehradun, Uttarakhand 248001 Email: cpmadaan@gmail.com Mobile: 9412058355
36	Shri Sachin Singhal Assistant Engineer Irrigation Division Kalshi Abadi, Vikashnagar Dehradun Email: Mobile: 8273407732
37	Shri Kishan Nath Add. Secretary, Irrigation Govt. of Uttarakhand Email: kishan.nath56@gmail.com Mobile: 9927699098
38	Dr. Arun Kumar Professor Alternate Hydro Energy Centre (AHEC) IIT Roorkee, Uttarakhand Email: aheciitr.ak@gmail.com Mobile: 9837016919
39	Shri Yashwardhan Dimri Asstt. Director (Technical) Uttarakhand Electricity Regulatory Commission Dehradun, Uttarakhand Email: ydimri@rediffmail.com Mobile: 8193800050
40	Er. Sunil Kumar 223,Lane T,Mohit Nagar, G.M.S Road, Dehradun-248001 Uttarakhand Email: ersunil1956@gmail.com Mobile: 9411106714
41	Shri Sanjeev Kr. Srivastava Executive Engineer

	Irrigation Research Institute Roorkee, Haridwar Email: eadmin@iriroorkee.res.in Mobile: 9451847503
42	Shri Sambit Swaroop Das Media Consultant Aakhya Media Services Pvt. Ltd. A 1/7 Safdarjung Enclave New Delhi 110029 Email: sambit.swaroop@gmail.com Mobile: 9958944181
43	Shri Y. S. Bisht Project Officer Uttarakhand Renewable Energy Development Agency(UREDA) 25, B. Mahant Road, LaxmanChowk Saharanpur Road, Dehradun-248001 Uttarakhand Email: bishtyudhbir@gmail.com Mobile: 9412912732
44	Shri Shivshankar Kushwaha Reporter, SachKahoo Chandan Complex, Respina Bridge, Haridwar Bypass Road Dehradun-248001 Uttarakhand Email: sachkahoondun@gmail.com Mobile: 9997940060
45	Shri Bharat Patwal Director Institute for Development Support Dehradun- Uttarakhand 248001 Email: bharatpatwal@gmail.com Mobile: 7500279072
46	Shri Dinesh Chandra Tripathi Watermill Owner Vill- Ranjeetpur, Kotabagh Nainital, Uttarakhand Email: Mobile: 9927735653
47	Shri Aan Singh, Chairperson Self Help Group Roorkee Water Mill, Kaladhungi, Nainital Uttarakhand Email: panannu78@gmail.com Mobile: 7060164805
48	Shri Raj Kumar Pandey, Member Self Help Group Roorkee Water Mill, Kaladhungi, Nainital Uttarakhand

	Email: panannu78@gmail.com Mobile: 9411634979
49	Shri Naveen Pandey, Technician ULH-MHP, Roorkee Water Mill, Kaladhungi, Nainital Uttarakhand Email: panannu78@gmail.com Mobile: 9720563197
50	Smt. Leela Joshi, Secretary Uttara Gharat, Kaladhungi Nainital, Uttarakhand Email: leela.devi.joshi@gmail.com Mobile: 8171664370
51	Shri Mahesh Chandra, Member Uttara Gharat, Kaladhungi Nainital, Uttarakhand Email: leela.devi.joshi@gmail.com Mobile: 8191069561
52	Mohammad Javed 55/3, BhadariBagh Dehradun-248001, Uttarakhand Email: mohdjaved.sheikh@gmail.com Mobile: 9897459026
53	Shri Ahmed Raza Abbasi Uttarakhand State Representative Prakruti Renewable Power Private Limited 108/5, Thimmaiah Industrial Estate, Doddakallasandra, Kanakapura Main Road, Bangalore, Karnataka-560078 Email: connect@prakrutirenewable.in Mobile: 9627786187
54	Shri Sandeep Rawat Garhwal Ki Matti Dehradun-248001 Uttarakhand Email: Mobile: 9456172893
55	Shri Manish Chandra Bhatt Sr. Reporter Amar Ujala Publications Ltd. Shed No.2, Patel Nagar, Industrial Estate, Dehradun Uttarakhand Email: manishb@ddn.amarujala.com or manishbhatt06@yahoo.com Mobile: 8392945705, 9897895610
56	Shri Onkar Nath GIZ, New Delhi Email: omibra81@gmail.com Mobile: 8826007526
57	Shri B. K. Pandey Executive Engineer

	Irrigation Research Institute Roorkee, Haridwar Email: rob2@iriroorkee.res.in Mobile: 9412072095
58	Ms. Malvika Bhatt People's Science Institute 653, Indira Nagar Dehra Doon - 248 006 Uttarakhand Email: psiddoon@gmail.com Mobile: 9458168610
59	Ms. Hermine Ten Hove People's Science Institute 653, Indira Nagar Dehradun - 248 006 Uttarakhand Email: Mobile: 9458168610
60	Shri Manoj Kesharwani Executive Engineer Urja Cell, Dept. of Energy Government of Uttarakhand, Uttarakhand Secretariat, Dehradun-248001 Email: manoj1176@gmail.com Mobile: 9456590017
61	Shri Kuldeep Chauhan Ambadi, Vikasnagar, Dehradun Email: Mobile: 9720558972
62	Dr. Ajay Sharma Director Greenla Bioenergy and Plantations Pvt. Ltd. New Delhi Email: ajays79@hotmail.com Mobile: 9560902555
63	Dr. R.K. Suri Chairman Global Development Foundation New Delhi Email: radeshsuri@gmail.com Mobile: 9810315110

Annexure III

Objective of the three Workshops:

Workshop-I & II:

These workshops will focus on the ULH-MHP technology pilot in Uttarakhand by UNIDO with MNRE and UREDA, and also provide broad idea about such technologies available with other manufacturers. The workshop shall be organized in Haldwani/Kaladhungi (Nainital district) and in Dehradun (for Haridwar and Dehradun districts), while site visits can be made to Kaladhungi and Ambadi sites respectively.

These workshops can be done for the participants from three pilot project districts (20 x 3, around 60 no.) where ULH-MHP technologies have been demonstrated; Dehradun, Haridwar and Nainital. These will be two different workshops those deal with ULH-MHP pilot demonstration by UNIDO in three districts and also provide idea to the participants about the availability of such technologies worldwide. The participants of the workshop will include selected district and block level officials, local representatives (Pradhan, etc.), local technicians and local level government functionaries working with the communities.

Workshop-III:

This workshop will focus on the ULH-MHP technology that is being piloted in the state of Uttarakhand by UNIDO with MNRE and UREDA and also provide idea about such technologies available with other manufacturers or developers. The workshop shall be organized in the state capital of Uttarakhand at Dehradun and a site visit shall be made to ULH-MHP pilot project at Ambadi (Dehradun).

The participants (around 45) of the workshop will be government officials those are in to decision making from selected government agencies, from various Indian states where there is scope of micro hydro development (for example: Uttar Pradesh, Bihar, Himachal Pradesh, J & K, Arunachal Pradesh, West Bengal, Karnataka, Kerala, Punjab, Haryana, Madhya Pradesh, etc.) and are dealing in renewable energy and specifically micro hydro. The officials from pilot state Uttarakhand (UREDA, Irrigation Department, Minor Irrigation, IRI, UCOST, etc.) and Ministry of New and Renewable Energy, Govt. of India will also become part of this workshop.

In this workshop the manufacturers and developers from different parts of the world and India will be invited for their presentation and showcasing of technologies. The participants can also include

senior political leaders/officials from the state of Uttarakhand–District Panchayat Presidents, Chairman/CEOs from Municipal corporations, etc.

Additionally, the participants of the workshop will be the mid-level government officials and senior engineers from all the districts of the pilot state Uttarakhand from agencies and departments like UREDA, Irrigation Department, Minor Irrigation, IRI, UCOST, local NGOs, hydro manufacturers, etc. From local governments /political leaders (Block Pramukh, etc.) the senior officials in planning, engineers from RES, Rural Development, municipal corporates, etc can be involved.
