

R&D Conclave on Renewable Energy

Date: 11-12 April 2023, 10 AM – 5:30 PM

Venue: MNRE Auditorium, Atal Akshay Urja Bhavan, CGO Complex, Lodhi Road, New Delhi-110003

Background

Research and Development in the Renewable Energy (RE) sector have been primarily pursued by various leading academic institutions in India. It is presumed that the primary responsibility of the same should be borne by academic and research institutions, however, successful R&D models throughout the world have demonstrated a consistent trend of close-knit collaboration between the industry–academia– finance, and government.

Objective of the Workshop

Against this backdrop, the MNRE, in collaboration with the Shakti Foundation and RTI International organized the **two-day ‘R&D Conclave on Renewable Energy’**, on **April 11-12, 2023, at the MNRE**, to bring together a diverse set of stakeholders representing academia, research institutions, industry, funding agencies, start-ups, as well as policymakers to discuss catalyzing the RE ecosystem in the country, highlight the latest R&D developments, scale up adoption of industry-ready technologies, and collaborative R&D efforts between different stakeholders.

Participation

The Workshop witnessed the in-person participation of nearly 150 attendees from public and private research bodies, labs, universities, academia, public sector units (PSUs), industry, donors, not-for-profits, philanthropic organizations, start-ups, and venture capital funds. The two-day event covered 7 sessions (takeaways listed below).

Key Takeaways

- i. **Advanced R&D on Solar PV in India:** High efficiencies achieved on Perovskites by Indian R&D institutes. Progress was also made on PV waste recycling with >90% recovery rates. Institutes exploring industry partners for lab-to-fab conversion of Perovskites and scale-up PV recycling technologies. Indian PV manufacturers presented examples of investing in R&D and collaborating with Indian and international R&D institutes.
- ii. **Developing Green Cold Chains:** Industry has led the development of green cold storage technologies (solar thermal, biomass, adsorption tech) in the

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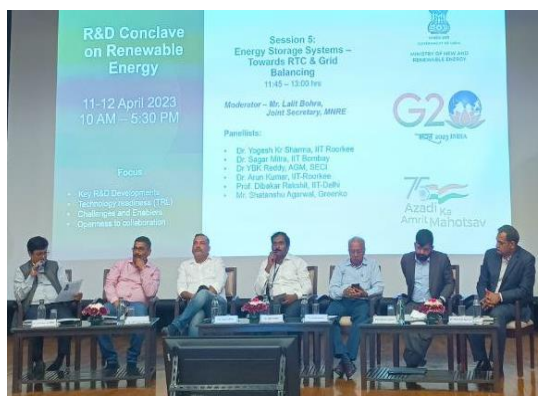
country. The development of standards on cold storage technologies was identified as the crucial next step.

- iii. **Role of Solar Energy in Clean Cooking and Process Heat Applications:** Several models of solar-based Cooking Solutions are available, but adoption is limited. Dish technology is used for industrial process heat/desalination. Clean cooking requires a diverse mix of technologies other than solar. Possible mechanisms, collaborative R&D, consumer awareness, and innovative finance like carbon funding are required to scale these up.
- iv. **Upcoming RE Technologies Powering Clean Energy Transition:** Novel desalination projects are already operational in India and need scale-up. A policy on geothermal is needed. Biomass-based green hydrogen technologies also need a level playing field. All upcoming RE technologies such as geothermal/marine/OTEC/green hydrogen require support for pilots/demonstration.
- v. **Energy Storage Systems Towards RTC & Grid Balancing:** A mix of solutions and technologies are needed for RTC and grid balancing this includes batteries and pumped storage. Significant progress on Sodium ion batteries made by Indian R&D institutes like IIT and industry collaboration is needed to scale these up.
- vi. **Advanced R&D in Bio methanation and Bio CNG:** Indian Industry has come forward and invested in bio methanation R&D like gas upgradation, biohythane production, advanced biorefineries, treatment of lignocellulosic biomass. R&D should include circular economy concepts and be economically viable. The sector needs development of a skilled workforce for running compressed biogas (CBG) plants.
- vii. **Enabling Ecosystem for Upscaling Clean Tech:** Incubators and social impact investors have been supporting cleantech solutions (particularly decentralized solutions) and start-ups. Capacity building of researchers on how start-ups function is needed. Plus, cleantech incubators expressed support from the MNRE to identify and partner with cleantech labs.

Gallery



Inaugural Session



Session on Energy Storage Systems



Session on Advanced R&D in Bio-methanation and Bio CNG



Session on Advanced R&D on Solar PV in India

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 **Ministry of New and Renewable Energy (MNRE)**
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Secretary @mnreindia, Shri Bhupinder S Bhalla launched the 'MNRE R&D Portal' during the 'R&D Conclave on Renewable Energy'.

This portal will help to know more about the policies, programmes and projects.
To know more click on the link: mnre-research.com

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NEW DELHI, APR 11 (UND):- Secretary for MNRE, Bhupinder Singh Bhalla launches the MNRE R&D portal at inaugural session of R&D conclave on renewable energy at Atal Akshay Urja Bhawan, in New Delhi on Tuesday. UNI PHOTO-94U

Social media coverage of the R&D Portal launch

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