



## *The Future of the Third Pole and the Eastern Himalaya*

### **SUSTAINABLE ENERGY TRANSITION IN THE EASTERN HIMALAYA**

**Host Institution: IIT Guwahati**

#### **I. Rationale and Context**

The Eastern Himalaya, often referred to as the "Third Pole" due to its vast glacial reserves, is one of the most ecologically significant and vulnerable regions in the world. Climate-induced glacial melt, erratic water regimes, and extreme weather events have placed extraordinary stress on ecosystems and communities that depend on natural resources for their survival.

In this context, transitioning to sustainable, decentralized, and resilient energy systems is no longer an option but a necessity. A just and inclusive energy transition is central to addressing climate impacts, promoting climate justice, and ensuring energy access for remote, forest- fringe, and indigenous communities in this ecologically fragile terrain. The energy session at EHNf 2025 will serve as a platform to explore innovations, technologies and community- driven models that can drive this transition across the Eastern Himalayan region.

#### **II. Focus Areas of the Session**

This session will bring together thought leaders, researchers, entrepreneurs, policymakers, and communities to share knowledge and discuss scalable and inclusive energy solutions. Discussions will highlight regionally relevant, low-carbon technologies and approaches that are ecologically compatible and socially equitable.

#### **Key Discussion Points:**

##### **1. Renewable Energy Pathways for Mountain Landscapes**

- Expanding the use of solar, hydro, wind and bioenergy systems in ecologically sensitive zones.
- Addressing the challenge of terrain and remoteness through decentralized and off-grid solutions.
- Showcasing success stories from Northeast India, Bhutan, and Nepal, where small- scale renewables are transforming rural energy access.

##### **2. Innovation & Technology in Energy Access**

- Role of smart microgrids, battery energy storage systems (BESS), and energy-efficient infrastructure in remote terrains.
- Emerging technologies including green hydrogen, AI-powered energy management, and low-cost solar devices tailored for hilly and forested regions.

##### **3. Energy for Climate Resilience**





- How renewable energy supports disaster resilience in flood-prone and landslide-prone regions.
- Strengthening food-water-energy linkages in the Himalayas through integrated systems.
- Creating energy infrastructure that adapts to climate variability and helps reduce emissions from high-impact sources such as diesel or firewood.

## 4. Community Energy Models & Green Livelihoods

- Empowering local governance institutions like forest councils and village development boards to manage community-based energy systems.
- Energy cooperatives, women-led enterprises, and youth collectives as anchors of clean energy adoption.
- Integrating energy access with sustainable livelihoods in sectors like agroforestry, tourism, and craft production.

## 5. Policy & Institutional Ecosystems

- Strengthening enabling policy frameworks that facilitate decentralized renewable energy uptake.
- Public-private-community partnerships for investment, implementation, and long-term sustainability.
- The need for energy governance that is inclusive, transparent, and responsive to ecological constraints and social needs.

## III. Outcomes & Collaboration Opportunities

This session aims to catalyze cross-sectoral collaboration and innovation around:

1. Localised renewable energy models for mountain communities- Building a roadmap for scaling micro-energy models in forest and fringe villages.
2. Capacity building and innovation lab - Creating partnerships with universities and technical institutions to train youth in renewable energy technology and entrepreneurship.
3. Energy-Biodiversity integration plans - Developing frameworks where energy infrastructure planning accounts for ecological corridors and biodiversity impacts.
4. Policy roundtable - A multi-stakeholder policy dialogue to feed into regional sustainable energy strategies for the Eastern Himalayas.

## IV. Participation Audience

- Government, Policy Leaders and Corporates: Government officials, corporates from Energy, Climate Change, Forest, Environment, and Rural Development departments.
- Energy Innovators and Entrepreneurs: Startups, clean tech companies, energy cooperatives, and local technology providers.
- Research and Academia: IIT Guwahati, Tezpur University, and other leading technical institutes, contributing knowledge and innovation.
- Community Organizations and Indigenous Networks: Civil society groups, youth and women-led organizations engaged in energy access and environmental justice.
- International Development and Financial Institutions: Multilateral and bilateral agencies supporting renewable energy and resilience initiatives.

## V. Venue & Engagement at IIT Guwahati

IIT Guwahati will host this key energy session at EHNF 2025, leveraging its leadership in climate and energy research to co-create dialogue and actionable insights.





## VI. Proposed Format

- Opening Keynote: Vision for a just energy transition in the Eastern Himalayas.
- Expert Panel Discussion: Solutions, case studies, and collaboration opportunities from across the Eastern Himalayas.
- Audience Q&A and Open Forum: Interaction with students, researchers, and policy stakeholders.
- Technical Showcases: Demonstrations or short case presentations on innovative clean energy solutions relevant to the terrain.
- Naturenomics™ Pavillion: Showcasing the art and crafts of Eastern Himalayan communities.

