PR12 / Solar Energy Praxis in the Global South: Experiences of Policy Implementation and Development Outcomes

Topic : Practice

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GENERAL OBJECTIVES, RESEARCH QUESTIONS AND SCIENTIFIC RELEVANCE

This panel, Solar Energy Praxis in the Global South: Experiences of Policy Implementation and Development Outcomes, seeks to critically examine how solar energy policies are designed, implemented, and experienced in diverse socio-technical contexts of the Global South. With each Conference of the Parties (COP) from COP-16 in 2010, India highlighted its focus on reducing emissions and promoting renewable energy (Bardhan et al., 2019). On similar lines, India pursues ambitious energy transitions—including the commitment to generate half of its electricity from renewables by 2030 (Ministry of Science & Technology, 2023) and its recent achievement of 235 GW renewable capacity (Press Information Bureau, 2025)—solar energy has become central to discussions on sustainability, energy access, and development. The panel aims to unpack these transformations by analysing how solar policies translate from global commitments to ground-level practice and how they interact with existing infrastructures, institutions, and community livelihood systems.

The general objectives of the panel revolve around understanding the multi-layered processes of solar policy implementation, identifying the drivers and barriers to adoption, and evaluating the developmental implications of solar transitions. A key objective is to investigate the empirical realities shaping solar adoption—whether in rooftop systems, agricultural solar pumps, mini-grids, or large solar parks—and to highlight the experiences of households, farmers, marginalised communities, frontline bureaucrats, and implementing agencies. The panel also seeks to assess how institutional coherence, governance capacity, technical design, and policy communication influence policy outcomes. By bringing together diverse perspectives, the panel aims to contribute insights that can inform more adaptive, equitable, and resilient solar energy policies.

Guiding the panel are the following research questions:

1. What are the lived experiences of implementing solar energy–based public policies in the Global South?

2. What challenges—technical, administrative, financial, social, or infrastructural—shape the adoption of solar technologies across different settings?

3. What innovations, best practices, or local adaptations help address barriers in implementation?

4. How do academicians, practitioners, policymakers, and local institutions work together or in tension during the implementation of solar policies?

5. How do these processes influence broader developmental outcomes such as energy access, affordability, equity, and livelihood enhancement?

The scientific relevance of this panel lies in its focus on empirically grounded inquiry and interdisciplinary engagement with energy transitions. While substantial research exists on renewable energy policies, the granular realities of implementation—bureaucratic negotiations, infrastructural frictions, socio-cultural interpretations, and user experiences need more discussion. By acknowledging these realities, the panel aims to contribute to the growing scholarship on socio-technical transitions, energy justice, and public policy design in the Global South. The panel also addresses broader questions of governance and institutional coherence, as solarization demands coordination across multiple agencies, levels of government, and local actors. Furthermore, by inviting comparative and theoretical reflections, the panel contributes to the development of frameworks that understand solar transitions not merely as technological shifts but as dynamic social, political, and economic processes. In doing so, it advances discussions on how renewable energy policies can be made more inclusive, context-sensitive, and development-oriented.

References:

Bardhan, R., Debnath, R., & Jana, A. (2019). Evolution of sustainable energy policies in India since 1947: A review. WIREs Energy and Environment, 8(5), e340. https://doi.org/10.1002/wene.340

Ministry of Science & Technology. (2023, September). India is committed to achieve the Net Zero emissions

target by 2070. Press Information Bureau.

Press Information Bureau. (2025, June 22). Powering Growth with Sustainable Energy. Government of India. https://www.pib.gov.in/PressNoteDetails.aspx?id=154717&NoteId=154717&ModuleId=3

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Solar energy has emerged as a key arena of policy innovation and development action across the Global South, with India demonstrating one of the most rapid and extensive transitions. From its COP-26 commitment to generate 50% of its electricity from renewables by 2030 to its current achievement of 235 GW of renewable capacity, India represents a powerful example of an expansive solar landscape shaped by diverse policies such as PM-KUSUM, PM Surya Ghar, Solar Parks, targeted solar electrification for PVTG communities and manufacturing of solar PV cells. Yet, despite such progress, the ground realities of implementation reveal a complex terrain of socio-technical negotiations, infrastructural constraints, administrative challenges, and uneven outcomes. This panel seeks to understand these complexities and invites scholars to share research that illuminates how solar transitions unfold in practice.

We welcome empirically rich and theoretically informed papers that explore the processes, challenges, and development implications of solar energy policies across the Global South. Contributions may examine residential rooftop systems, agricultural solar pumps, off-grid or decentralised solar interventions, utility-scale solar parks, or hybrid energy infrastructures. Submissions may draw from public policy studies, political economy, anthropology, rural sociology, development studies, environmental governance, energy studies, science and technology studies, or related fields.

Potential areas of focus include:

· Experiences of implementing solar energy schemes across varied geographies and communities

· Administrative, financial, technical, legal, or socio-cultural obstacles to solar adoption

· Innovations and adaptive strategies developed by users, technicians, civil society actors, or implementing agencies

· Practices and politics of subsidy distribution, financing mechanisms, and policy communication

· Governance coherence across state, local, public, private, and community actors

· Impacts of solar transitions on energy access, affordability, equity, gender, and livelihoods

· Comparative analyses across nations or regions within the Global South

· Theoretical contributions that deepen understandings of socio-technical transitions or public policy implementation

While the panel encourages empirical contributions grounded in fieldwork, case studies, or mixed-method approaches, theoretical submissions offering conceptual depth and critical insights are equally welcome.