विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY

DST-Centre for Policy Research
NISER Bhubaneswar

POLICY DIALOGUE

ENERGY TRANSITION IN EASTERN INDIA

JANUARY 23-24, 2024
NISER BHUBANESWAR

https://dstcpr.niser.ac.in

Concept Note

Background

India is one of the fastest-growing economies in the world and is enjoying a demographic dividend. The Indian economy has the potential to become the third-largest economy in the world by 2027 and the largest economy in the world by 2047. Energy will be the key driver for achieving fast economic growth. Although India has achieved 100 percent electrification of all households, the per capita electricity consumption will rise significantly with the rise in per capita income. India's average per capita electricity consumption from utilities alone, ~800 kWh in 2020, is only about a fourth of the global average. The overall per-capita electricity consumption for 2021-22 was 1255 kWh. Across sectors, the electricity supply in India will grow to support domestic, agricultural, industrial, and other uses. Currently, 60 percent of India's electricity is produced from fossil fuels. This contributes massively to CO2 emissions and climate change. The energy sector contributes 75% of GHG emissions in India, of which electricity contributes more than half.

Table 1: Economy and Energy Scenario in Eastern Indian States

State	Population in Crore in 2022	Per Capita Income in Rs in 2021-22	Total Installed Capacity (MW) in 2021-22	Per capita Energy Consumption (KwH) in 2021-22	% Share of Thermal power in total installed capacity	% Share of Solar Energy in total Installed Capacity	% Share of Hydro & Small Hydro in total Installed Capacity
Odisha	4.8	1,28,181	12328.19	2264	77.38%	3.72%	18.42
West Bengal	10.3	1,24,798	10665.63	1255	87.28%	1.25%	9.26
Bihar	12.9	47,498	8789.6	329	95.47%	2.30%	0.80%
Jharkhand	3.7	84,059	5246.25	867	93.59%	2.25%	0.80%
Chhattisgharh	2.9	1,20,704	25109.17	2211	94.34%	3.78%	0.48%

Source: Economic Survey of Respective States

Just Transition and Challenges

As a signatory of the Paris Agreement and CoP 26, India aims to increase electricity generation with minimum carbon emissions. India's Long-term Low-Emissions Development Strategies aim to (i) meet 50% of India's cumulative electric power installed capacity from non-fossil sources by 2030 and (ii) Reduce the emission intensity of GDP by 45% below 2005 levels by 2030. The country needs to find the optimum energy mix, including the non-fossil and fossil fuel sources.

Challenges Before Eastern India

Global pressure is mounting to phase down thermal energy generation and coal production. The resource-rich eastern Indian states will be affected immensely by this process. Reducing coal production will have negative implications for the revenue positions of the states and the employment and livelihood of the workers engaged in the coal and thermal sector. What will be the just energy transition path for eastern Indian states, namely Odisha, West Bengal, Bihar, Jharkhand, and Chhattisgarh?

Discussion Themes

The policy dialogue will focus on the following issues:

- Optimal energy mix for Eastern India
- Future of thermal energy and coal industry in Eastern India
- Feasibility of solar, wind, hydrogen, and nuclear energy?
- Policy options available for just energy transition
- Industry and Energy
- Role of state and non-state actors in energy transition
- Energy Financing

Stakeholders

- Policy makers
- Industry leaders
- Economists
- Social Scientists
- Energy Scientists
- Practitioners in the field of energy

Expected Outcomes

- The Policy Dialogue will bring together all stakeholders on a single platform to discuss the advances in the research on clean energy sources and developments of clean technologies in India and worldwide. The policymakers will share the challenges they faced in increasing clean energy production in eastern India and the policy measures they took. Industry captains will share the cooperation required from research institutions and governments to scale up the production and use of clean energy. The key findings of the Policy Dialogue will be published as policy briefs for eastern Indian states. State-specific roadmaps will be drawn for just energy transition. The policy dialogue will also provide a platform for future partnerships.

How to Participate?

Participation in the Policy Dialogue is by invitation only.

Submit Your Research Paper

If you are a researcher in the field of energy transition and are interested in participating in the Policy Dialogue, please submit your research paper on the discussion points stated on the previous page of the brochure. Please email your paper to Dr. Amarendra Das (amarendra@niser.ac.in) on or before December 31, 2023. Limited participants will be provided travel support and accommodation at NISER for participating in the Policy Dialogue. If you need travel support, please mention this in your email while submitting your paper.

About DST CPR, NISER

With the generous funding of the Department of Science and Technology, Government of India, the DST Centre for Policy Research is established at the School of Humanities and Social Sciences (SHSS), National Institute of Science Education and Research (NISER) Bhubaneswar, Odisha, India from April 01, 2023.

The research focus of the CPR is Energy Transition and Tribal Education in Eastern India, covering Odisha, Bihar, Chhattisgarh, Jharkhand, and West Bengal. The coordinator (Principal Investigator) of the Centre is Dr. Amarendra Das, SHSS, NISER Bhubaneswar. The other Co-PIs are (1) Dr. Pranay Kumar Swain, NISER Bhubaneswar, (2) Dr. Subhankar Mishra, NISER Bhubaneswar, (3) Professor Saudamini Das, Institute of Economic Growth, Delhi, (4) Dr Bibhunandini Das, Berhampur University, (5) Dr. Chandrasekhar Bahinipati, IIT Tirupati and (6) Dr Gopal Krishna Sarangi, TERI University, New Delhi

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