



Just Transition

Future of Coal & Pathways to Low Carbon Footprints National Seminar

31st January 2024





Backdrop of the Event

Amid global climate change challenges, India is at the forefront of the transition to a sustainable future. With vast coal reserves and reliance on coal, India faces unique opportunities and challenges in reducing emissions and ensuring socio-economic well-being in coal-dependent communities. The heavy reliance of the national economy on the coal sector prompts one to reflect on associated risks to livelihoods, infrastructure, the environment, state revenues, and overall quality of life in coal dependent regions. There is a crucial need to advocate for a transition in the energy sector which is just (with an emphasis on equity and inclusivity) considering the diverse impacts on workers, vulnerable communities, the environment, and associated industries, is essential. Given this context, TERI has drafted a Just Transition Framework with the aim to guide future policies and action basis in-depth research on coal and coal dependent ecosystem. Through this framework, TERI aims to offer sustainable pathways for building resilience.

In collaboration with the Indian Institute of Technology (Indian School of Mines), Dhanbad, TERI organized a one-day national seminar on Just Transition in Kolkata on 31 January, 2024. The goal of the seminar was to facilitate multi-stakeholder engagements on repurposing of coal mining infrastructure, coal-consuming MSMEs, energy transition issues, and strategies for diversifying the fossil fuel-based economy, encouraging cross-learning, mutual deliberation, and the development of a roadmap for an equitable future.



Narrative of the Event

The TERI-IIT (ISM) Dhanbad seminar on "Just Transition: Future of Coal & Pathways to Low Carbon Footprint" gathered distinguished experts from various sectors to discuss India's transition towards a cleaner energy future, focusing on the shift from coal to more sustainable energy sources. The seminar provided a platform for thought leaders in energy, academia, and policymaking to explore the challenges and opportunities associated with moving India towards a non-coal economy. Through a series of thematic sessions and a plenary discussion, the event delved into innovative approaches for repurposing coal mines, supporting coal-dependent MSMEs through green initiatives, and ensuring a sustainable and equitable business model throughout this transition.

The seminar emphasized the critical need for a Just Transition that protects the well-being of communities and workers affected by the shift away from coal. It advocated for comprehensive policies that include retraining programmes, social safety nets, and job creation in emerging, sustainable industries. The discussions highlighted the Prime Minister's Panchamrit principle as a beacon for collaboration in achieving energy independence, economic resilience, and environmental sustainability, representing a significant step forward in India's commitment to a greener future.

The seminar had a structured agenda that included an introductory session, three thematic tracks, and a plenary session.

1. Inaugural Session



Inaugural Session Speakers (L-R): Mr. A.K. Saxena, Mr. Ajay Kr. Rastogi, Prof. J. K. Pattanayak, Mr. Ajay Shankar, and Dr. Jayanta Mitra

The Inaugural Session laid the groundwork for the seminar, which aimed to transition India's economy away from coal and towards cleaner energy. There was a strong emphasis on retraining workers for newer, greener jobs, repurposing old coal mines, and assisting small businesses affected by the shift away from coal. The opening remarks emphasized the seminar's goal of collaboration, which is based on the Prime Minister's principle, to achieve a more sustainable and equitable future.

Mr. A.K. Saxena, Senior Fellow and Senior Director, Electricity and Renewables Division TERI, in his welcome address, emphasized the importance of addressing climate change through proactive measures and recognized India's prominent position as a global frontrunner in this conflict. He emphasized the importance of moving away from coal, citing rising costs for coal-fired power generation and declining investments in renewable energy alternatives. He stated that the seminar's purpose would be to discuss just transition pathways, emphasizing the importance of preparing for changes that will primarily affect those who will be most affected by the transition away from coal.

Dr. Jayanta Mitra, Senior Fellow, TERI, while setting the context acknowledged the need for a transition to a greener, cleaner future. He highlighted the importance of a just transition, as outlined in the Paris Climate Agreement, and the urgent need to address the long-standing reliance on coal. Dr. Mitra recognized India's transition to a thriving economy that is actively preparing its ecosystem for the future. He stressed the importance of implementing sustainable solutions and meeting the net zero target. He also discussed TERI's commitment to extensively investigating the coal economy, identifying and addressing its challenges, complexities, and vulnerabilities. This effort resulted in the creation of a just transition framework, which will inform and shape future policies and actions.

Mr. Ajay Kumar Rastogi, Chairman, Task Force, Sustainable Just Transition & Green Hydrogen, Govt of Jharkhand, in his keynote address spoke about the Paris Agreement and the importance of just transition, climate change, and sustainability. He emphasized the importance of preparing institutions to effectively manage the transition. He went into greater detail about the social and economic consequences of the shift away from coal, emphasizing the importance of a comprehensive approach that includes decarbonization efforts, energy transitions, livelihood transitions, and coal transition. He also spoke about the complexities of transition financing and the importance of establishing a new economic structure that can efficiently support the transition away from coal.



Prof. J. K. Pattanayak taking up the stage at the seminar

Prof. J. K. Pattanayak, Director, IIT (ISM) Dhanbad stressed the importance of moving away from coal and towards a sustainable, low-carbon future. He emphasized the challenges of coal's future and the government's stance on coal usage. Prof. Pattanayak identified three essential areas for a successful transition: human capital development, investment security, and leveraging research and academic institutions. He contrasted India's objective of net-zero emissions to the progression of banking towards artificial intelligence, emphasizing the importance of human capital development, investments, and research-academic partnership. He also addressed socioeconomic issues in mining areas, calling for resource repurposing, public finance efforts, and industry-academia collaborations to enable a smooth transition to renewable energy sources.



Mr. Ajay Shankar addressing the seminar

Mr. Ajay Shankar, Distinguished Fellow, TERI and Former Secretary, DIPP, Government of India, emphasized the need for a just transition in the face of global warming's existential threat, pointing out the importance of collective action to avoid exceeding a 1.5-degree Celsius increase in global temperatures. He praised Prime Minister Modi's leadership in exceeding Paris Agreement obligations and establishing ambitious targets for non-fossil fuel capacity and net-zero emissions by 2070. He talked about economic and market forces driving the transition away from coal, such as the cost competitiveness of solar power and the rising potential of electricity storage technology. Recognizing the socioeconomic consequences for coal-dependent communities, he praised Jharkhand's initiative in forming a task force on just transition and renewable hydrogen. Shankar pushed for imaginative thinking and scenario planning to enable a prosperous transition, citing Singapore and Las Vegas as instances of human ingenuity's transformative power.

Prof. Rajni Singh, Dean (Media & Branding), IIT (ISM) Dhanbad, praised the panellists for their efforts in promoting dialogues on a just transition. She stressed the need to tackle climate crisis challenges and capitalize on cost-competitive renewable energy markets. She acknowledged the contributions of participants, speakers, and organizers, emphasizing the importance of discussions for a sustainable, low-carbon future.

The introductory section laid the groundwork for comprehensive discussions about how India can successfully transition to a low-carbon economy while remaining equitable and unbiased.

Key Questions Asked

- How can India achieve a just transition away from coal, considering the economic and social implications for regions dependent on coal mining?
- What are the pathways and strategies for reducing the carbon footprint and enhancing renewable energy usage?
- How do we prepare the workforce for this transition, ensuring they are not left behind?
- What role do technological innovations and policy frameworks play in facilitating a smooth transition to renewable energy?
- How can collaborations between research institutes, industry, academia, and government be leveraged to support this transition?



If we think big and out of the box, it may well happen that the coal bearing belt of India could become even more prosperous than the more advanced states because of this resource... You are actually sitting on a gold mine.

Prof. J. K. Pattanayak

Director

Indian Institute of Technology (Indian School of Mines), Dhanbad



As we think about how we handle the transition away from coal, it's clear that some point of time before 2070, coal will begin phasing down. We need to think today about how that transition does not hurt people or come as a shock.

Mr. Ajay Shankar

Distinguished Fellow, TERI



2. Thematic session I: Repurposing of Closed Mines and Diversification of the Local Economy



Thematic session I Speakers (L-R): Prof. Dheeraj Kumar, Mr. Ramapati Kumar, Dr. Vinita Arora, Prof. R. M. Bhattacharjee, Dr. Palash Bhushan Chatterjee, Mr. A.K. Saxena

The first thematic session of TERI- IIT(ISM) Dhanbad began with a presentation that set the stage for the subsequent discussions. Ms. Apoorva Singh, Research Associate, TERI from the Just Transition team revealed insights from extensive field research in Jharkhand, Odisha and Chhattisgarh, as well as experiences from mine closures in Madhya Pradesh, that led to the creation of a structured framework for a smooth and just transition. The presentation highlighted the team's efforts, which included discussions with trade union leaders and families affected by coal mining, as well as the nuanced impacts on local communities. These findings highlighted the importance of a comprehensive just transition strategy that includes both formal and informal labour forces, as well as sectors that generate indirect employment, with the goal of leaving no one behind. The discussion then shifted to the critical need to diversify the local economy away from a coal-dependent mono-economy. The presentation concluded with a showcase of successful repurposing initiatives, such as the Kenapara Eco Tourism Park in Surajpur district, Chhattisgarh, which demonstrated how alternative sources of income could improve the well-being and environmental health of local communities.

Following the presentation, a panel discussion began moderated by Mr. A.K. Saxena. The first speaker Prof. Dheeraj Kumar, Deputy Director, IIT (ISM) addressed the audience on the topic of repurposing closed coal mines, highlighting successful examples done in Bengal and initiatives by Coal India Limited. He provided lessons from a project in Makura district, West Bengal, where a closed mine was converted into a fishery, boosting local livelihoods. This venture grew to encompass a plantation and an eco-recreation park, making the area into an eco-tourism destination. Prof. Kumar stated that Coal India will be closing down approximately 16% of its operations in states such as Chhattisgarh and Madhya Pradesh,

with plans to install solar panels and investigate hydro energy technology in these areas. He also stated a recent policy statement that provided a 15% subsidy to commercial operators for coal gasification plants. The conference also discussed the Coal Bed Methane (CBM) project in Raniganj, emphasizing its environmental benefits by recycling water for industrial use. Another case study addressed was eco-restoration efforts at a BCCL project site that had been damaged by fire, which resulted in the establishment of Gokul Park, which is now used as an eco-restoration model. Prof. Kumar emphasized the global relevance of mining locations such as the Jharia Coalfield and Bhuli, while also highlighting the government's comprehensive workforce reskilling and rehabilitation efforts under JRDA. He stressed the importance of political will and comprehensive training programmes provided by the District Mineral Foundation Trust (DMFT) to promote long-term changes.



Mr. Ramapati Kumar speaking at the event

Mr. Ramapati Kumar, CEO, CEED emphasized the need of limiting global warming to 1.5 degrees Celsius, highlighted India's complex path to coal transition, emphasizing the coal industry's socioeconomic significance, and exposing misunderstandings about net-zero objectives. He proposed for increased institutional capacity and investments to ensure a long-term change, effortlessly blending this with thoughts on the transition's progression from an underappreciated topic to a critical mainstream concern. He highlighted the problems in Jharkhand, where partnership with the government task force shed light on coal dependency, land acquisition for mining, and the importance of environmentally and socially conscious land repurposing. He questioned the lack of guidelines in mine repurposing and highlighted the socioeconomic turmoil created by the coal transition,

emphasizing the importance of not only retraining but also providing significant, equal employment prospects. Kumar's support for a just transition framework, which emphasizes gender, tribal, and cultural justice, advocates for a collaborative effort between corporations and the government to facilitate a transition that balances environmental aims and socioeconomic resilience.



Dr. Vinita Arora delivering her presentation

The next speaker was Dr. Vinita Arora, GM (Environment), CMPDI (HQ) who examined Jharkhand's economic reliance on coal, emphasizing on the status of the state as a major producer and outlining the vast land that Coal India had acquired for mining. She addressed the issues of energy security, financial stability, and socioeconomic stability, emphasizing the importance of gradual mine closure in accordance with just transition principles and applauding Coal India Limited's recognition of mines ready for repurposing.

Dr. Palash Bhushan Chatterjee, Joint Director, Centre for World Solidarity subsequently examined the agricultural potential of reclaimed mining lands and recommended moringa, lemongrass, and pulses as viable options for a sustainable livelihood and economic diversification. He advocated for the use of reclaimed lands and left-behind assets for community benefit, proposing collaboration with state governments and management by SHGs or cooperatives to improve financial sustainability.



Prof. R.M. Bhattacharjee sharing insights during the seminar

Prof. R.M. Bhattacharjee, Department of Mining Engineering, IIT (ISM) Dhanbad concluded the session by discussing the global and national contexts of the transition from fossil fuels to renewable energy sources. He emphasized the tension between economic growth and climate commitments, the importance of responsible coal mining, and the need to include mine closure plans in mine planning. Professor Bhattacharya advocated for regulatory support for coal mine closure and repurposing in India, as well as a two-phase approach to ensure an inclusive and sustainable transition, thereby contributing significantly to the understanding and implementation of just transition strategies in coal-dependent regions.

Key Questions asked

- How can mine closure and repurposing be integrated into mine planning effectively and sustainably?
- What are the best practices for ensuring a just transition for communities dependent on coal mining, including gender and generational considerations?
- How can regulatory frameworks be improved to facilitate mine closure and repurposing?
- What role do technological innovations play in transitioning from coal to sustainable energy sources?
- How can collaboration between government, industry, and communities be optimized for a successful transition?



Yes, the Paris Agreement did bring in the low carbon economy word, so that's where the principle of just transition was introduced, but of course, India is not going to move away from coal so fast. We'll be in a process of phasing down coal actually, and not phasing out. It is phasing down, not phasing out.

Dr. Vinita Arora

GM (environment), CPMDI (hq)



The coal which was a few years back used to be known as diamond, black diamond. Now it is dirty coal.

Prof. Ram Madhav Bhattacharjee

Professor, Indian Institute of Technology (ISM) Dhanbad





We have to do coal mining but in the most responsible manner by adopting more and more greener solutions, energy efficiency, carbon capturing, proper closure and due consideration for repurposing.

Prof. Ram Madhav Bhattacharjee

Professor, Indian Institute of Technology (ISM) Dhanbad



The progressive mine closure has to be number one priority.... And also we need not to think about the closing once we reach the end of life because most of the time what happens [is] let me do the mining first and then we'll do the repurposing. So that should not be the case actually because that's why the Coal India and the Coal India subsidy never say that the mine is closed.

Mr. Ramapati Kumar

CEO, Centre for Environment and Energy Development (CEED)



3. Thematic session II: Balancing Economic Competitiveness and Environmental Sustainability: Green Transition for Coal-Dependent MSME's



Thematic session II Speakers (L-R): Mr. Joy Chakraborty, Mr. Indranil Das, Mr. S. Mukhopadhyay, Mr. Vijay Beriwal, Mr. Vikas Varshney, Mr. Prosanto Pal

The second thematic session focused on the critical journey of Micro, Small, and Medium Enterprises (MSMEs) towards a sustainable future, emphasizing the importance of a fair transition away from coal power.

The moderator, Mr. Prosanto Pal, Senior Fellow, TERI kicked off the discussion by highlighting the potential negative effects of a coal transition on coal consuming MSMEs, emphasizing the critical need for policies and incentives to help these businesses. He discussed India's commitment to a sustainable future, as evidenced by the ambitious targets set at COP26, such as achieving a net-zero carbon footprint by 2070 and using 50% renewable electricity by 2030. Mr. Pal emphasized that this transition presents an important opportunity for collaboration, knowledge sharing, and job creation in new sustainable sectors, as well as the establishment of training institutions to improve skills.



Mr. Vikas Varshney addressing audience during the seminar

Building on this foundation, Mr. Vikas Varshney, Director, Megatherm looked into modernizing Indian foundries with next-generation green furnaces and Industry 4.0 automation. He emphasized the benefits of solid-state technology and induction heating over traditional, polluting methods. Varshney highlighted the financial and technological challenges that MSMEs face during this transition, emphasizing the critical role of government support in facilitating the adoption of these new technologies.



Mr. Vikas Varshney addressing audience during the seminar

Mr. Vijay Beriwal, Chairman, FCDA subsequently addressed the real-world challenges of transitioning away from coal, emphasizing the financial and technological barriers that MSMEs face. He discussed foundries' economic viability, emphasizing the significant implications of switching to induction furnaces, as well as the critical roles that lower electricity costs and government subsidies play in facilitating this transition.



Mr. S. Mukhopadhyay speaking at the event

Mr. S. Mukhopadhyay, Assistant Director (IEDS), MSME DFO, Kolkata shifted the conversation to government initiatives to help MSMEs during this transitional period. He emphasized the importance of striking a balance between economic competitiveness and environmental sustainability, arguing for a sector-specific approach to policymaking and encouraging MSMEs to collaborate to advocate for favourable policies.

Mr Indranil Das, Consultant, Mart shared his preliminary findings from surveys conducted in coal-dependent regions, revealing that the workforce is willing to adapt to the changing context if adequate retraining and alternative employment opportunities are provided. He also mentioned a general lack of awareness among workers about government programmes, emphasizing the need for improved communication and support mechanisms.

Mr Joy Chakraborty, Consultant, WBREDA subsequently explained the complexities of West Bengal's net metering policies, as well as the implications for MSMEs looking to implement solar energy solutions. He advocated for a comprehensive approach to sustainability that includes energy efficiency, water management, and waste management to help MSMEs make a fair and efficient transition.

These discussions painted a picture of the complex landscape that MSMEs must navigate as India transitions away from coal. The session's collective insights emphasized the importance of a balanced approach that takes into account economic viability, environmental sustainability, and social equity in order to ensure a fair and inclusive transition for MSMEs.

Key Questions Asked

- How can the transition impact coal consuming MSMEs, and what are the strategies for mitigating adverse effects?
- What are the opportunities for MSMEs in adopting cleaner technologies and renewable energy sources?
- How can skill development and reskilling of the workforce facilitate a smooth transition for MSMEs?
- What role do government policies and incentives play in supporting MSMEs through this transition?
- How can technological innovations contribute to reducing the carbon footprint of MSMEs?



MSME plays a very important role in Just Transition, particularly the coal consuming MSMEs... Any transition in coal will have a very adverse effect in many of the coal consuming MSMEs.

Mr. Ramapati Kumar
GAssociate Director,
Industrial Energy Efficiency



Technology development and cooperation are required to make alternative technology affordable, alongside enabling policies and capex support for a just transition.

Mr. Ramapati Kumar
Associate Director,
Industrial Energy Efficiency

We have come out with a new model that is green furnaces with Industry 4.0 automation, focusing on modernization and energy efficiency.

Mr. Vikas Varshney
Director, Megatherm

The major root of steel making is still the blast furnaces... but green furnace is the most efficient and productive induction melting furnace, incorporating the best aspects for parallel and series circuits.

Mr. Vikas Varshney
Director, Megatherm

Foundries are 90% MSME in the country, and an industry wants survival, viability. When we talk about this transition... there is also a concern about the cost implication.

Mr. Vijay Beriwal
Chairman, FCDA



The transition is really possible by addressing challenges for the MSME industries such as reduction in the electricity cost, KPEX subsidy, net metering in solar power.

Mr. Vijay Beriwal
Chairman, FCDA



The government has launched schemes like Zero Defect Zero Effect (ZED), Lean Manufacturing Scheme, and Digital MSME to encourage energy efficiency in MSMEs.

Mr. Sitanath Mukhopadhyay
Assistant Director,
Min. of Micro Small & Medium Enterprises, Govt of India



The skill development part is very vital for this labour force... they view skill development as an opportunity for alternate income or to sustain their current jobs during the transition.

Mr. Indranil Das
Consultant, Mart



We should not have a single use of water; days are coming when single use of water will also be banned... A holistic circle including energy efficiency, renewable energy, resource optimization, water, and waste management is required for a just transition.

Mr. Joy Chakraborty
Consultant, WBREDA



4. Thematic session III: Reskilling and Up-skilling for Green Jobs – Opportunities as the Coal Sector Transitions to a Low-Carbon Economy



Thematic session III Speakers (L-R): Mr. Sushim Banerjee, Dr. Parveen Dhamija, Prof. Ernesto Noronha, Ms. Roli Srivastava, Prof. Biswajit Paul, Prof. Pradip Swarnakar

The third thematic session delved into the necessity of efficiently transitioning from traditional to clean fuel-based energy generation, with a strong focus on prioritizing the welfare of coal mine workers, particularly those in informal contracts and jobs induced by the coal economy. This imperative involves the implementation of a comprehensive strategy that includes the development of a skill action plan to address economic vulnerabilities and the establishment of a reskilling framework to ensure the successful rehabilitation of local communities dependent on coal.

Prof. Rajni Singh, Dean (Media and Branding), IIT - (ISM) Dhanbad, started the conversation, emphasizing the importance of understanding workforce heterogeneity and industry-academia collaboration in solving real-world problems, particularly those involving workforce challenges. Prof. Singh emphasized the funding challenges that academic institutions face when conducting relevant research and training, the importance of effective community-based centres for participatory solution discussions, and the challenges of accurately capturing data on the informal workforce in sectors such as mining. The gender disparity in mining and the need for inclusive working conditions were also emphasized, alongside IIT- ISM's contributions to workforce training and the institution's role under the Pradhan Mantri Kaushal Vikas Yojana 4.0.



Dr. Parveen Dhamija presenting her views during the seminar

Dr. Parveen Dhamija, Adviser, Skill Council for Green Jobs, discussed the concept of just transition, which called for "reset, resist, rethink, and restructure," in order to manage the transition from coal to renewables while avoiding displacement or inconvenience. The emergence of green jobs in the renewable sector was emphasized as an opportunity for those affected by coal's decline, with Skill Council for Green Jobs playing an important role in training the workforce in all green sectors.

Mr. Sushim Banerjee, CEO, IISSC, contributed to the discussion by recognizing the gradual transition from coal to renewable energy, which is consistent with government policies. He cited a survey that showed potential job losses and creation as a result of decarbonization, as well as the Sector Skill Council's role in reskilling and upskilling affected employees. Mr. Banerjee also discussed the iron and steel industry's training initiatives and advocated for incentives to promote the use of green steel production methods.

Prof. Biswajit Paul, Department of Env Sc & Engg, IIT (ISM) Dhanbad shed light on India's vast coal reserves as well as societal perceptions of coal mining as an undesirable profession, emphasizing the importance of leadership in addressing the environmental and social issues associated with coal use. Prof. Paul spoke about the Sustainable Development Goals (SDGs) and the paradox of resource-rich but economically disadvantaged mining regions, recommending retraining in critical minerals.



Prof. Biswajit Paul sharing his insights during the seminar

Ms. Roli Srivastava, Founder, The Migration Story, pointed to the socioeconomic implications of the energy transition, urging a bottom-up approach to ensure that interventions address the needs of coal-dependent communities. The significance of conducting a comprehensive "coal census" and evaluating educational and vocational training facilities in these regions was highlighted, as was the potential for expanding opportunities through the involvement of local educational institutions.



Ms. Roli Srivastava speaking at the event

Prof. Ernesto Noronha, Professor, Organizational Behaviour Area, IIM Ahmedabad, highlighted the renewed emphasis on skill development as a result of the just transition, contrasting India's low-skilled workforce with that of developed countries. The challenges that Industrial Training Institutes (ITIs) face in meeting employer needs, as well as the larger implications of skilling for workforce productivity and community development, were discussed.

These discussions collectively highlighted the multifaceted challenges and opportunities presented by India's transition away from coal, emphasizing the critical need for a balanced approach that considers economic viability, environmental sustainability, and social equity to ensure a just transition for MSMEs and the general workforce.



Prof. Ernesto Noronha addressing the seminar

Key Questions asked

- How can we ensure a just and equitable transition for workers and communities affected by the move away from coal?
- What strategies and policies are needed to support renewable energy adoption and reduce carbon emissions effectively?
- How can technological innovation and investment in clean energy contribute to sustainable economic growth?
- What role do education and skill development play in preparing the workforce for new opportunities in the green economy?

Industry and academia need to work together for real-life problem solving, particularly for those situated in the workspaces. Identifying the heterogeneity within the workforce is crucial for skilling, preparing, and capacitating them for a just transition towards sustainable and equitable futures.

Professor Rajni Singh

Professor, Indian Institute of Technology (ISM) Dhanbad

Just transition means ensuring no one is displaced or put to inconvenience when moving from one profession to another. Green jobs are presenting an opportunity for more jobs, making it imperative to capitalize on this for skilling the workforce that will be displaced.

Dr. Parveen Dhamija

Adviser, Skill Council for Green Jobs (SCGJ)

With decarbonization, we're looking not for a rapid transition but a gradual one, ensuring that the people who will be uprooted are supported through re-skilling, redeployment, and up-skilling.

Mr. Sushim Banerjee

CEO, IISSC



Understanding the substantial coal reserves we have, it's clear that we are in for a long-term energy security. However, as we aim for cleaner energy modes, leadership in dealing with environmental and social issues is paramount.

Professor Biswajit Paul,
Department of Env. Sc. & Eng., IIT (ISM) Dhanbad



A ground-up approach is vital in transition discussions. It's crucial to conduct a 'coal census' to understand the actual number of people needing interventions and to ensure that facilities and training programmes are accessible and relevant to their needs.

Ms. Roli Srivastava
Founder, The Migration Story



The focus on skills has become paramount with just transition. Our workforce is poorly skilled, and infrastructure like ITIs does not meet the current industry needs. A coordinated effort in skilling and re-skilling is essential for meaningful and productive work.

Professor Ernesto Noronha,
Indian Institute of Management Ahmedabad



5. Plenary session: Charting a Sustainable Path: Co-Creating Action for a Low-Carbon, Resilient Future in the Coal Sector



Plenary session Speakers(L-R): Mr. Ajay Shankar, Mr. Vinod Pandey, Dr. Dipayan Dey, Mr. Partha S. Bhattacharyya

The final closing session of the TERI -IIT(ISM) Dhanbad seminar provided an overview and understanding of India's path towards a cleaner energy future which would be inclusive in nature while also being sustainable. The plenary session emphasized the importance of developing innovative policies, fostering international cooperation, and developing inclusive strategies that balance economic development, environmental stewardship, and social justice, uniting all stakeholders around India's sustainable and equitable energy future.

Mr. Partha Sarathi Bhattacharyya, Chairman, Peerless Group and Former Chairman, Coal India Limited addressed the session by talking about pressing issue of global warming, citing the recent increase in extreme weather events as an example of the challenges in limiting global temperature rises. He commented on the slow progress of the UN's Sustainable Development Goals (SDGs) and the widening gap between developed and developing countries in climate talks. Mr. Bhattacharyya emphasized India's reliance on coal, advocating for benefiting processes to increase coal efficiency and reduce emissions, as well as pricing changes to incentivize quality improvement. He proposed thoughtful transition strategies for coal industry employees, emphasizing the importance of incorporating high-efficiency, low-emission technologies and carbon management practices to achieve net-zero targets.

Mr. Vinod Pandey describing the delicate balance required to reconcile India's poverty-eradication efforts with its climate action commitments. He emphasized coal's socioeconomic importance in Prime Minister Modi's vision of climate justice, which aimed to balance developmental priorities and environmental imperatives. Mr. Pandey also emphasized the importance of a diverse energy portfolio in ensuring long-term energy security, as well as environmental conservation as an essential component of promoting a low-carbon economy. The discussion also touched on the methodical approach required for mine closures, emphasizing coal's continued relevance to India's energy matrix and the importance of comprehensive closure strategies that take into account technical, safety, environmental, and social factors.

Drawing on this, Dr. Dipayan Dey delved into the complexities of the concept of a just transition, specifically challenging the mixing up of emissions reduction with pollution control, as well as the myth that electrification always results in cleaner energy. Dr. Dey criticized India's alignment of climate commitments with development goals, pointing out coal's dual role in contributing to emissions while also supporting energy security and economic growth. He urged the development of innovative financing models to mitigate the socioeconomic consequences of a rapid transition away from coal, as well as investment in natural carbon sinks, highlighting a gap in India's carbon management framework.

These insightful discussions highlighted the numerous challenges and opportunities associated with India's transition to a greener economy.

Key Questions Asked

- How can a just transition framework ensure fair and inclusive participation in decision-making processes?
- What mechanisms are required to distribute the benefits of an energy transition equitably among all stakeholders?
- How can the redevelopment of coal mining regions lead to a greener future and improve the socioeconomic status of these areas?
- What roles do national and state-level just transition bodies play in facilitating cooperation across different sectors and jurisdictions?
- How can participatory governance mechanisms, training, and capacity building at the grassroots level be leveraged for a successful transition?



So far, the climate actions have not yielded desired outcomes...2023 has witnessed the highest emission in recent years and has been the warmest....The divide between the developed and the developing nations seems to get sharper at successive COPs.

Mr. Partha Sarathi Bhattacharyya

Chairman,
Peerless Group and Former Chairman, Coal India Limited



In my opinion, there is a need to conduct a root cause analysis to understand why, despite the region being rich in mineral resources, its people are dependent on the coal ecosystem.

Mr. Vinod Pandey

GM (Environment),
CMPDI (Central Mine Planning & Design Institute) (HQ)



Speakers of the TERI- IIT (ISM) Dhanbad seminar

6. Actionable Messages & Recommendations

- Implementation of the Just Transition Framework to support both the formal and informal workforces affected by coal mining. Establish community-based centres to encourage participatory discussions about viable solutions.
- Implement innovative projects to repurpose closed mines as fisheries, eco-recreation parks, solar farms, and other sustainable ventures to promote livelihood generation. Encourage private and public investment in green initiatives and technologies to help with the transition to a more sustainable future.
- Integrate skilling, reskilling, and upskilling programmes into national policies to help the workforce transition from coal to renewable energy sectors.
- Develop a skilled workforce through the creation of varied green jobs which encompass the renewable energy sector.
- Provide financial and policy assistance to MSMEs that use coal to mitigate the economic impact of switching to cleaner technologies. Encourage government schemes and incentives to help MSMEs adopt greener practices, with a focus on energy efficiency and waste management.
- Create innovative financing models to address the social costs of coal phaseout and compensate affected communities. Invest in natural carbon sinks and create a comprehensive carbon framework to help guide the transition to an energy-independent economy.
- Encourage collaboration among Central governments, State government departments, public sector enterprises, and stakeholders to ensure a smooth transition. Create a green transition roadmap that incorporates a variety of energy sources while emphasizing energy security, environmental sustainability, and social equity.
- Participate in collective action and policy advocacy to address specific sector challenges, including advocating for standardized approaches to energy efficiency and carbon footprint reduction. Organize consultations and create cluster-level roadmaps for the MSME transition, with a focus on specific regional issues and opportunities.



For more information, please visit: <https://justtransition.in/>



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