

# Vichaar-Vimarsh

# JUST

# Transition

## NEWSLETTER



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**LOOKING BEYOND COAL THROUGH A JUST TRANSITION LENS**

## Message from the Desk of the Senior Director, TERI

We are happy to launch the newsletter, *Vichaar-Vimarsh* that offers an opportunity to articulate varied perspectives on Just Transition, associated dilemmas, and possibilities ahead. This offers a platform to many who share similar objective and aspirations, to draw inspiration and explore the alternative coal transition pathway to build resilience in coal producing belts through collaboration and deepening their engagement. This is also aligned with India's commitment to the net-zero target and hence coal phase-down/phase-out in due course assumes significance. We hope this newsletter allows all stakeholders to share their thoughts and voices and participate in Just Transition dialogues transparently. As we engage in mirroring the collective thoughts and innovative ideas, we would indeed succeed in creating a conducive climate for adoption of cleaner choices and sustainable local solutions geared towards promoting a fair and inclusive ecosystem.

I am sure this newsletter will prove to be a fruitful endeavour to reach out to many stakeholders, influence minds and choices they make individually and collectively, moving forward. I invite all to participate in this process of knowledge exchange and disseminate a new worldview to others, which in a way can shape our future.

A K Saxena  
Electricity & Fuels Division



## TERI's Mission

To usher transitions to a cleaner and sustainable future through the conservation and efficient use of energy and other resources, and innovative ways of minimizing and reusing waste

## Editorial

This bi-annual newsletter aims at capturing voices on just transition perspectives and is an attempt to reach out to stakeholders, thought leaders, researchers, academics, civil society and citizenry to make it a part of mainstream discourse and shape future choices. It is an effective medium also to connect with potential collaborators, planners, and community of practice. It offers space for articulation of thoughts that can determine our destiny, as we visualize a blueprint of a vibrant ecosystem in coal producing geographies. This newsletter captures Just Transition voices of thought leaders and creates a mosaic of varied perspectives.

As we co-learn while researching and dialoguing on just transition or even demonstrating a good practice, we also get an opportunity to reflect on non-linear complexities and plausible responses through this instrument of communication and generate evidence for further analysis and deliberation to co-create sustainable solutions.

It is likely to help us reach out to a wide range of stakeholders and connect with the thought leaders and community of practice. This may also enable in creating a pool of change makers whose thought leadership, competencies could be pooled for value addition and innovative ideas may get generated out of this endeavour. Such churning could result into developing a common understanding on how carbon footprints fade away in time by greener thinking. This would go a long way in guiding futuristic thinking on transitioning beyond coal and creating an actionable agenda for inclusion and building resilience.

- Jayanta Mitra, PhD



## About the project on Just Transition

We take this opportunity to express our gratitude to MacArthur Foundation for supporting this cause and our endeavour of taking a deep dive into the coal value chain and ascertaining the implications of moving away from coal.

### The project aspires to develop

- A holistic understanding and a body of knowledge that would guide futuristic thinking, policies, and action.
- A participatory, result-based, and action-oriented framework for Just Transitions.
- A database that would help predict risks, opportunities, plan mitigation and measure transformation.
- A compendium that would help generate a greater awareness leading to factoring “Just Transition” in any development and policy discourse in coal producing belt.



**Discussions on climate action must start with those people and areas which are going to have the greatest of the impact from climate change**

- Shri Rameshwar Prasad Gupta, Secretary, Ministry of Environment, Forest and Climate Change, Government of India, remarked during the launch of 'COP26 Charter of Actions' prepared by TERI at UNFCCC official side event at COP26 in Glasgow.



# JUST TRANSITION

Towards a greener future

Debanjali Dasgupta, PhD Scholar, University of Tennessee Knoxville



India's energy sector is largely dominated by fossil fuels. According to recent data, coal accounts for 47% of the country's primary energy and 71% of the country's electricity (Bhushan et al. 2020). However, with the extent of rise in the greenhouse gas, (GHG) emissions in the recent decade, there is a visible tradeoff between economic and technological growth and the environment. Thus, the ongoing research suggests that a deflection away from the fossil fuel economy is inexorable and is the utmost requirement of this hour. The question that now arises is such a transition away from coal achievable at this moment?

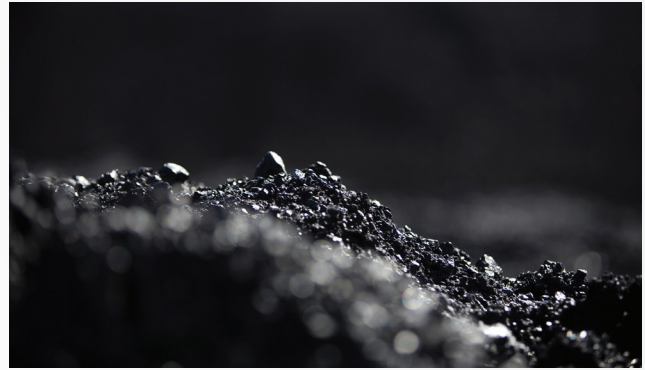
With coal being the backbone of the energy sector, this task will certainly not be a piece of cake. There will be multiple socio-economic consequences to the same. The dependency on coal is not just limited to the energy sector but it entangles the livelihoods of thousands of coal mining workers. The fate of these workers in the coal

mines and allied sectors will be at stake. Most of these workers are daily wage workers with little social security. Furthermore, there are other allied industries such as coal washeries, thermal power plants etc, that are heavily dependent on coal. In addition, the other sectors such as fisheries and agriculture are underdeveloped in these coal towns that can act as a support for the coal mine workers. Also, a substantial fraction of the government's revenue is also financed through taxes on coal. Closure of the coal will exacerbate the sufferings of the local population who already live a hand to mouth existence. For instance, in the coal town of Jharia in Jharkhand, coal accounts for 300,000 direct livelihoods and around a million indirect livelihood opportunities. Apart from these, there are other informal workers whose livelihood is solely dependent on scavenging coal. Taxes and royalties from the mining account for nearly 8% of the state's revenue (BBC 2021).





In the absence of an appropriate intervention with a solid framework to support the local economy, there could be a huge disruption to the economy. There is an urgent requirement of well-structured plan that must be supported with sound government mechanism for such a transition to be achieved without exacerbating the miseries of the coal mine workers. Provision of alternative and sustainable employment opportunities for these workers is of utmost importance. Development of other sectors such as agriculture, fisheries, forestry, and other services is required for provision of alternative employment opportunities in these towns. Innovation and investment forms of renewable resources is necessary. These objectives can be achieved through government policies and financial support, coalition among various stakeholders at different levels and engagement of the local communities in these areas. Lastly, development of social and physical infrastructure,



education opportunities, skill set development and setting up of training centres at the local level is a necessity. Hence, a strategic plan with these objectives form the baseline of the significant and crucial goal for the environment and the economy-A transition away from coal.

#### References

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THERE IS AN URGENT REQUIREMENT OF WELL-STRUCTURED PLAN THAT MUST BE SUPPORTED WITH SOUND GOVERNMENT MECHANISM FOR SUCH A TRANSITION TO BE ACHIEVED WITHOUT EXACERBATING THE MISERIES OF THE COAL MINE WORKERS



**The quandary of unsustainability may be our predicament, but the task of solving it is ours as well. The nature of the problem, its fuller appreciation and the ways and means of solving it all belong to us—humanity as a whole...**

- Amartya Sen



# INDIAN PEAK OF COAL PRODUCTION

Some thoughts

Subhomoy Bhattacharjee, Consulting Editor, The Business Standard



To assess how the transition in the coal economies will pan out, a vital necessity is getting a sense of the timelines. The transition can happen due to one or a combination of several reasons like dwindling coal reserves, or those becoming less profitable as their quality dip, or economies ramping up the capacity for alternatives. Essentially the timeline is an important metric. In this context, how would India's transition timeline play out?

In the eleven years since FY11, data for the Indian economy shows domestic coal production has lagged consumption, in each of the years. The gap included non-coking varieties too, India's nomenclature for thermal

coal. India has more than adequate reserves of this grade, yet there was a gap between demand and supply.

The reasons are several. Of them the chief is the nature of production arrangements. 88.6 per cent of Indian coal is still produced by the two government run coal producing companies, Coal India Ltd (CIL) and Singareni Collieries Company Ltd (SCCL). This has been so for 50 years since 1973 when coal mining was nationalized. Till commercial coal mining was finally allowed in 2020,<sup>1</sup> the efforts to expand coal production by bringing in the private sector had not succeeded in breaking this iron grip.

<sup>1</sup> Amendment of CMSP Act and the MMDR Acts. <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1685058>





As a result, the investments necessary to expand coal production were concentrated either with CIL or SCCL. In the absence of support from the state to expand the scope of coal mining for the private sector, foreign companies were not willing to undertake the risk of mining coal, to become mine development operators either under CIL or for the few captive mines in the private sector. For the same reasons, large investments from domestic companies were also not available.

This stymied the pace of additional production over the years. The compounded annual growth rate of domestic production is now just 3.6 per cent since FY11. In fact, the rate is slower in the second half of the past decade (FY15-FY20), at 3.08 per cent.

Production statistics for the private sector are, meanwhile, equally soft. For instance, even in FY22 (as on 8th March), the private coal mines have achieved only 73 per cent of their annual target. This shortfall is, despite, the sharp rise in demand for coal, experienced this year. In aggregate, then, the gap between the demand and domestic supply of coal has expanded. The gap has led to larger percentage of downstream companies, that use coal as a fuel, to opt for substitutes.

To put an end to the shortages, the GOI had announced plans to reach an annual target of one billion tonnes of domestic coal production, by FY25. Yet going by current production trends, this seems a long haul. In March this year, aggregate production was 703.06 million tonnes (MT), even now far below the highest production reached by the economy in FY20, at 730.87 MT.



To reach a billion tonnes from here, will need an improvement in CAGR of 8.18 per cent. An International Energy Agency estimate puts the necessary growth rate at 6 per cent. In absolute terms, it implies an increase of 163 MT. Either way, both rates seem far too ambitious.

Instead at the current rate, for domestic coal production to reach 800 million tonnes, will take India to the end of FY24. A Coal Ministry response to Parliament acknowledges “to meet the rise in demand, CIL has to ramp up the production from Oct 2021 onward”. A NITI Aayog model estimates that the domestic supply of coal shall peak at 1.4 BT by the year 2040, including about 300 MT from the commercial coal mines. Imports shall supply the remaining 200 MT India will need, mostly coking coal. CIL and SCCL production shall peak out at 1.05 BT or 1.1 BT much earlier, mostly 2030. So, the incremental coal will only come from commercial private sector miners.

**A NITI AAYOG MODEL ESTIMATES THAT THE DOMESTIC SUPPLY OF COAL SHALL PEAK AT 1.4 BT BY THE YEAR 2040, INCLUDING ABOUT 300 MT FROM THE COMMERCIAL COAL MINES.**

It is important to discount the current rate of production from CIL and SCCL. This sharp rise to over 2 MT per day is difficult to sustain, due to the following reasons. The biggest of those is that the growth rate of the Indian economy, is expected to average 7.4 per cent per annum, till the year FY25. Essentially the size of the Indian economy shall be smaller than the trend value till FY24. For instance, in FY23, it will be 10.2 per cent lower than if there had been no interruption due to COVID-19. A continued weakness in private consumption and investment demand is estimated to contribute 43.4% and 21.0%, respectively, to this shortfall.<sup>2</sup> The NITI Aayog estimate of coal growth was based on a higher rate of growth of the economy. The lower rate will correspondingly dampen the demand from the coal mines.

The other is the trend in mining of coal. The productivity of mining coal has not risen significantly. Output per man shift has slipped from a peak of 9.64 achieved in FY20.

<sup>2</sup> <https://www.indiaratings.co.in/PressRelease?pressReleaseID=57299&title=FY23%20to%20Witness%20Meaningful%20GDP%20Growth%20but%20Consumption%20Demand%20will%20Pose%20Challenges%20>





Remember, for CIL, salary and wages account for close to 60 per cent of the total costs.<sup>3</sup>

The final reason is that what the industry needs is not available under the Indian soil. Due to 'drift origin', Indian coal resources mostly consist of poor quality non-coking with even coking coal containing high inherent ash. Even this coking coal is in short supply. Almost all the incremental coal demand is from downstream steel industry, which needs coking coal. India plans to triple its annual production of steel from the current 100 million tonnes. Demand for non-coking coal, chiefly led by the power sector has hardly risen. In six years from FY15 to FY21 the compounded annual growth rate for off take of domestic non-coking coal is just 3.06 per cent. Of the 22 coal mines CIL plans to open in the next few years, only one is a coking coal mine. While the Coal Ministry expects the production from the private mines to double from the

current 68 MT by next year, this will depend on whether the mines get railway connectivity and the necessary land usage approvals. The NITI Aayog estimate too does not expect the total to reach 200 MT before 2030. Each year's delay makes the odds against, higher.

Yet as CIL and SCCL try to substitute for the low-grade coal with better output they shall mechanize mine operations, even more. This will also raise the price of domestic coal, one of the lowest in the world. Paradoxically, the higher price will reduce the attractiveness of domestic coal bringing their prices closer to international prices. It is these combination of circumstances that would impede the pace of growth

**PARADOXICALLY, THE HIGHER PRICE WILL REDUCE THE ATTRACTIVENESS OF DOMESTIC COAL BRINGING THEIR PRICES CLOSER TO INTERNATIONAL PRICES.**

<sup>3</sup> Biswaranjita Mahapatra \*, Chandan Bhar and Sandeep Mondal © 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>)





of coal production to make it reach its peak, sooner at a lower altitude.

The plateauing of the domestic supply, has significant implications for downstream industry. The current jump in gas prices, notwithstanding, the government expects large segment of them to switch over. The other entrant is hydrogen. The GoI has recently notified a Green Hydrogen Policy which expects to reach 5 million tonnes of production by 2030.<sup>4</sup>

<sup>4</sup> <https://pib.gov.in/PressReleasePage.aspx?PRID=1799067>

All of these investments shall have a long lead time. The user industries have already begun to make the consequential decisions. As more of those get made, retracing to the coal pathway shall become more difficult. Some of the trends are already visible in the financial statements, about which we shall have more to discuss, in future. In sum, the decade and more of shortage in coal has become hardwired in the investment plans of the downstream industries. The tepid pace of investments into new coal capacity, is a reflection of that trend.

## Voices from the ground captured by TERI...



### Running an eatery – no more a gainful idea

Nanku Mahto has been running a small dhaba (Rakesh Hotel) for years in Bhuchundi village in the CCL mining area in Jharkhand and catering to the contractors, loaders, truckers, regular or contractual employees of CCL. He laments how things have changed over the last 4 years. Earlier around 500 trucks used to remain parked in this location regularly and demand for tea, snacks, and food was so high but now several roadside dhabas have closed down. Local mine closure resulted in job and business losses. Earlier, he could easily earn more than ₹10,000 but it reduced to almost half now. Many migrated to Chhattisgarh, Odisha, and other cities like Mumbai, Hyderabad in search of jobs. The roadside shade behind the dhaba where truckers and loaders used to rest and assemble looks deserted and dilapidated now.

### Residual in vessels and desolate food joint – A struggle for survival

Jhala Devi along with her husband runs a small dhaba but narrated how their earnings declined due to reduced coal loading and lesser trucks seen these days. Earlier her earning ranged between Rs. 700-800 a day and now it is about Rs. 100-150/ day. In a month they procure 30 kg. of rice out of which about 5 kg. is used for their family's consumption and the rest is used in dhaba to run the business. The rate per plate meal is Rs. 25 and that is their main source of income.

The cooking fuel used in this dhaba is coal due to its easy access to local mines and availability. Interestingly, despite the government's emphasis on universal access to cleaner fuel, the coal attraction has not gone away yet and the adoption of cleaner options like cylinder gas still has not gained traction in poorer segments especially in the coal belt.



# JUST TRANSITION VOICES & VARIED PERSPECTIVES



**Coal is going to plateau in 5-10 years and we have to look for alternative technologies... A resilient pathway is critical towards a responsible climate action.**

- Dr Anil Kumar Jain, IAS, Secretary (Coal), Government of India



**If the coal related activities shut down in the major 20-30 coal bearing districts, there would be a major setback in the economy of these areas....Optimum use of land under coal mines, skilling, redeployment, retraining are major areas of intervention to deal with transition challenges.**

- Mr Sumanta Chaudhuri, IAS, Former Secretary (Coal), Government of India



**Just transition to happen in a gradual and phased manner... Lack of advanced agricultural skills, opportunities other than coal related activities, political willpower, presence of experienced administration, corporative societies for agriculture would be big challenges in these transitions.**

- Dr Kunal Khemnar, IAS, Addl. Municipal Commissioner (Estate), Pune Municipal Corporation



**We have to focus on Sub-national, state level approaches for Just Transition... Capturing local voices is crucial especially while engaging with the vulnerable communities.... Collective engagement and just transition discourse can perhaps pave the way for a brighter decade ahead and redefine the development model.**

- Mr Jarnail Singh, Deputy Director, India Office, MacArthur Foundation





**Trust deficit to be bridged by engaging local people, SHGs, community, etc, during this transition... Local democracy, people and district level actors are the key stakeholders.**

- Mr Ayaskant Kanungo, General Manager (Commercial & Corporate Affairs), Odisha Coal & Power Limited



**Need to think about just transition as an opportunity for development of the local areas and the people... Politics is often driven by protection of the coal economy and just transition narrative must align with the political priorities and it needs to be made part of developmental policy.**

- Dr Ashwini K Swain, Fellow, Centre for Policy Research



**Just Transition may be ahead of its time but is very necessary... The coal production is peaking in 5-10 years and after that industry will start unbundling which would make Just Transition easy.**

- Mr Subhomoy Bhattacharjee, Consulting Editor, The Business Standard



**Reskilling & retraining of workers for business switch over is an essential prerequisite.**

- Sri Surendra Kumar Pandey, All India Secretary of BMS and Deputy In charge for Coal Sector





# TERI's past initiatives on Just Transition

## Case study

TERI had initiated research on "Mapping the Impact of Coal Mines and their Closure: A Case of Betul" and our report was released in WSDS 2021

## National Policy

TERI's suggestions for draft National Electricity Policy 2021 – Just Transition, sectoral planning based on demand profiles

## Project Report

The project entitled "Ensuring that India's energy transition away from fossil fuels like coal is both just and equitable is crucial" looked into the socio-economic impacts and the need for strategizing policies for an inclusive and sustainable transition (2020-2021)

## Working Papers

TERI launched two working papers at the event 'Just Transition - Planning for a Post Coal Future' (2021)

WSDS thematic track on Just Transition - **Responsible climate action towards a low carbon & resilient pathway: An inclusive worldview**

WSDS website [Know More](#)

WSDS 2022 Tracks on Just Transition – visit following links to know more details

<https://www.youtube.com/watch?v=BUmHzP7MBWQ>

<https://www.youtube.com/watch?v=ydXDhakUccU>

[https://www.youtube.com/watch?v=c1M\\_fD5jbyY](https://www.youtube.com/watch?v=c1M_fD5jbyY)

Just Transition Web portal link [Know More](#)



“Sharing experiences of successful transitions – as well as failed approaches to restructuring local economies – will speed up the diffusion of insights and knowledge.”

- Mark Conway, WRI

## Let's ponder over...

- Can we think beyond coal economy?
- Do we not invest in land, forest resources and market creation to promote alternative economic choices?
- What do we do to minimise vulnerability of the poor unorganised workers?

## Contact us for more information and queries

The Energy and Resources Institute (TERI)  
Darbari Seth block  
IHC Complex  
Lodhi Road  
New Delhi - 110003

Tel: (+91 11) 24682100  
Email: [just\\_transition@teri.res.in](mailto:just_transition@teri.res.in)  
Website: [www.teriin.org](http://www.teriin.org)  
[www.teriin.org/electricity-fuels](http://www.teriin.org/electricity-fuels)

