

# GENDER AND JUST TRANSITION

Envisioning a Gender-Transformative  
Pathway to Energy Transition in  
India's Coal States

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POLICY BRIEF

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# Executive Summary

Entrenched gender biases and injustices in the coal political economy cannot be wished away with the ongoing shift from coal to renewable energy. Rather, the energy transition must seek to unwind these entrenched patterns in the 20<sup>th</sup> century energy system while creating an equal role for and participation of women in the 21<sup>st</sup> century energy system. To do so, just transition planning must proactively engage with gender questions in coal communities and envision a gender-transformative pathway to the transition in India's coal states.

Analysing the forms of exclusions faced by women in coal economies, this brief argues that women face four structural barriers – entry barrier, distribution barrier, wage barrier and representation barrier – that are consequential for their social and economic status and agency. The combined effects of these barriers, the masculine nature of the coal industry and existing social norms marginalise women in India's coal communities and confines them to three observed patterns of engagement: 1) social reproductive labour, 2) informal casual labour and coal scavenging, and 3) formal but menial labour in coal mines.

The ongoing shifts in our energy foundations offer an opportunity to unwind the gender inequities and injustices of the coal economy and envision a gender equal energy future. In this direction, the brief suggests four immediate steps to engage with the gender question as part of just transition planning.

- Recognise women labour force in coal economy through an intersectionality-informed analytical and assessment framework.
- Ensure women's representation in just transition planning at different tiers of governance and decision making.
- Promote gender inclusive economic diversification in coal regions, with particular attention to women-centric and women-led economic opportunities.
- Treat women as change agents in the energy transition harnessing their potential role in smoothening the disruptions of the transition.

# Introduction

Globally, the emerging discourse on gender and just transition is often focused on the potential role of women in the 21<sup>st</sup> century energy system, particularly on how to ensure that women have equal opportunities to participate as actors in the clean energy ecosystem. While this is an important objective, spatially variegated clean energy development in India<sup>1</sup> implies these opportunities won't be available adequately and equally to the women in coal regions. Will the shift from coal to renewable energy (RE) exacerbate women's economic exclusion in coal regions? Alternatively, can the transition be leveraged for gender-transformative outcomes in coal regions? What would be a gender-transformative pathway to energy transition in India's coal states?

India's pledge to achieve net zero emissions by 2070 suggests the need to prepare for a phase-down of coal. Despite India's parallel pursuit of RE and coal to achieve energy security and self-reliance, the coal sector is likely to grow at a slower rate than during the past two decades. A potential consequence is stagnation and eventual decline in coal jobs and livelihoods. Although RE will create new jobs, there is no certainty on whether these jobs can compensate for the loss of coal jobs.

Moreover, the nature of RE jobs is different, and these are likely to be spatially concentrated outside coal regions. Thus, the jobs and livelihoods of the coal communities are at immediate risk. Women, in particular, who constitute half the coal communities, will bear a larger share of the unfavourable consequences of this disruption. Given the deep-rooted gender exclusions in the coal economy, women are more vulnerable and expected to be affected differently than men.

Just transition planning must engage with historic and entrenched gender injustices in coal economies. Analysing the current status of women in the coal economy, this brief makes a case for a gender-transformative pathway to energy transition in India's coal states. The brief is organised as follows. Section 2 provides an overview of patterns of gender exclusions in the coal economy globally. Section 3 analyses patterns of gender injustices and their consequences on women's status in coal regions of India. The concluding section suggests steps to engage with the gender question as part of just transition planning.

## Women in Coal Ecosystem

Historically, coal ecosystems entail entrenched patterns of gender exclusions. These exclusions are operationalised through four types of barriers to women's participation in the coal economy: a) entry barriers – difficulty in entering the coal labour market, b) distribution barriers – disproportionate gender representation in skilled and secure jobs, c) wage barriers – gender biased pay structure, d) representation barriers – weak representation in trade unions and executive positions implying poor bargaining power of women<sup>2</sup>.

The entry barrier is the foremost obstacle faced by women in the coal ecosystem. Globally, women are underrepresented in energy sectors. In the coal labour market as well, their entry is obstructed in various socio-spatial contexts. Preference for men in the coal industry and lack of alternative work opportunities for women further exacerbates the economic marginalisation of women.

Drawing on the UK experience, Hudson and Beynon (2021) find that while women were prohibited by law to work underground, they contributed to the coal ecosystem largely through domestic labour disguised as 'unproductive labour'. Similarly, nearly three-fifth of working age women were either not in the labour force or worked part-time in the coal mining towns of Australia (Sharma, 2010).

Distribution barrier implies a gender-biased distribution of coal jobs. The few women who break the entry barrier manage to get only menial, unskilled, contractual and low-paid jobs. Skilled technical and executive jobs are dominated by male and have insignificant representation of women. In the United Kingdom, women workers were concentrated in canteens and offices (Fine, 1990). In Kazakhstan, women's participation in energy jobs, including coal, was concentrated in low-skilled and non-core occupations (Atkhanova and Howie, 2022).

<sup>1</sup> Aggarwal, M. 2020. "East and West: The Parallel Worlds of India's coal and Renewable Sectors". Mongabay. August 13. Available at: <https://india.mongabay.com/2020/08/east-and-west-the-parallel-worlds-of-indias-coal-and-renewable-sectors/>

<sup>2</sup> Based on Ben Fine, 1990

In the United States of America, job level gender segregation shaped the narrative around women as inferior workers and maintained the assignment of stereotypical work to women (Tallichet, 2016). In the Global South countries, women are largely situated in the invisible and informal coal mining workforce; they are largely present in artisanal and small-scale mining in India and Indonesia (Lahiri-Dutt, 2015; 2017).

Wage barrier is another form of marginalisation for the women employed in the coal industry. Gender wage gaps - women getting lower salaries for the same job - are widely prevalent in both Global North and Global South countries.

Evidence from countries such as Austria, France, Germany, Spain and Portugal shows that women earn lower wages than men in the energy sector (IEA, 2022). The gender wage gap in the energy sector is more than double that of non-energy sectors (ibid). In India, a similar gender gap in wages is reported by the public sector coal producer and the largest coal employer, Coal India Limited (CIL) (See Table 1). Strikingly, the wage gap is wider in the non-executive segment where most of the women employees are placed. Female non-executive employees are paid on average 72.5 % of the salary received by their male colleagues. A similar gender wage gap is also observed in informal coal jobs (Banerjee, 2022).

**Table 1: Gender-wise Average Monthly Salary for CIL Employees, 2021-22 (INR)**

Job Category	Average Salary – Male (INR)	Average Salary- Female (INR)	Gender Wage Gap (%)
Board of Directors	416,016	372,645	10
Executives	213,122	170,404	20
Non-executives	120,686	87,613	27.5

Source: CIL, 2022.

Representation barrier is another challenge for women in the coal ecosystem. Given their minority in decision-making executive positions and trade unions, the bargaining and negotiating power of women within the coal industry is extremely poor. Evidence from different countries shows that it is difficult for them to access union structures (Walk et.al, 2021). The low presence of women in the formal workforce combined with unequal representation of women in the labour union results in lack of sensitivity and consideration for women's issues and interests by the unions and employers (Lahiri-Dutt, 2012). As a consequence, gender wage gap, lack of career advancement for women, concentration in lower-end jobs alongside other long-standing gendered concerns remain unaddressed.

These structural barriers and gender power asymmetries in the coal ecosystem, prevalent across both the Global North and South, shape differential experiences of the coal transition for men and women (Braunger and Walk, 2022; Lahiri-Dutt et.al, 2022). Though women are marginalised in the coal economy, they are more vulnerable to the negative consequences of coal decline.

In the UK and the USA, gender inequity persisted in the form of an increase in women's employment in precarious and low-paid service sector jobs during the historical decline in coal production (Braunger and Walk, 2022). Similar patterns were observed during the coal decline in Russia, Ukraine and Romania (Aung and Strambo, 2020). Moreover, women were doubly burdened with social reproductive work and additional emotional support to family members as the male members lost their coal jobs. As a result, women faced enormous psychological impacts, and gender relations deteriorated at the household level.

Furthermore, women's vulnerabilities and experiences with coal transition are not homogeneous (ILO, 2022). Social categories such as race, ethnicity, caste, immigration status, sexuality, age are factors that exacerbate the vulnerabilities for some, and thus, crystalize differential experiences among women. A World Bank report, drawing on experiences of women in the Global South, calls for an intersectionality-informed analytical and assessment framework to engage with the gender question in just transition planning (Lahiri-Dutt et.al, 2022).

# Women in India's Coal Economy: Marginalised and Invisible Labour

CIL, which accounts for more than 80% of India's domestic coal production, embodies this pattern of gender exclusion. The national coal producer (including its subsidiaries) reports less than 8% women (19,610 out of 2,48,550) in its formal workforce in 2021-22<sup>3</sup>. Women were integral to the Indian coal mining workforce during the colonial period and constituted around 37.5 % of the total coal mining workforce according to a survey conducted in 1924 (Simeon, 1998). Lahiri-Dutt (2012) suggests four reasons for withdrawal of women from coal mining in India: a) ban on women's employment in the underground coal mines in the 1920s, b) use of heavy machineries in the opencast coal mines, c) neglect of women's issues and interests by the trade unions, and d) gender discriminatory attitudes by the mining companies.

Women's status in coal economies is also shaped by two socio-cultural norms. First, patriarchal norms around men as the protector and provider for families, and women needing protection from hazardous and hostile work environments, limits women's willingness to and demand for work in coal mining. Second, gendered practices around land ownership and transfer - predominantly male ownership of land - further ails women's status in the coal economy. A significant part of the formal coal jobs are allocated as a rehabilitation measure for land acquisition. Consequently, the compensatory jobs go to the male landowners. Women are not only excluded from coal jobs, but are also displaced from their economic engagement in farmlands and forests. Depending on their economic and social context, Ahmad and Lahiri-Dutt (2006) argue, gender-specific experiences of women could include homelessness, loss of livelihoods, food insecurity, poor health and frequent illness, psychological trauma, social and cultural threats and risks, and degraded status within the household and community. For example, when land is acquired for a new coal mine, women from landless households, in addition to losing their livelihoods, are denied any compensation in form of jobs or monetary support (Nayak, 2020).

Minimal opportunities for formal coal jobs implies that women end up engaged in unpaid, underpaid, devalued, invisible and most precarious labour (Nayak, 2022). They are either care providers, informal workers, or both in the coal economies. In particular, women of marginalised socio-ethnic identities are burdened with both unpaid care work and underpaid informal coal jobs. The combined effects of gender-blind compensation policies, the masculine nature of the coal industry, and existing social norms at the household level marginalises women's position in India's coal communities and confines them to three observed patterns of engagement<sup>4</sup>.

## a) Social Reproductive Labour

Women's exclusion from job compensation in coal mines leads to a phenomenon termed as 'housewifisation of women's labour'<sup>5</sup> (Nayak, 2020) or 'miners' wife' (Lahiri-Dutt, 2012). In the absence of alternative employment options in a coal mono-economy, most women are pushed into invisible and unpaid social reproductive work. In a series of ethnographic interviews with 195 women in Talcher coalfields of Odisha, more than two-thirds of the women interviewed were found to be housewives (Nayak, 2020). Similar patterns were observed in the coalfields of Jharkhand (Noy, 2020). In both the cases, housewifisation of women is found to be common in the households which received job compensation towards land acquisition. While housewives are economically marginalised, given their landowning class, often aligned with higher rank in caste hierarchy, they get better social stature in the society.

## b) Informal casual labour and coal scavenging

Women from landless and low-income households are often part of the informal workforce of coal mines. Among the women engaged in income generating activities in the coal regions, this group represents the bottom of the pyramid. Noy (2020) points out that truck loading and coal scavenging are prominent informal jobs carried out by women in many coalfields areas. Lahiri-Dutt (2015) suggests that a larger number of women from poor and marginalized households work as artisanal miners in the eastern coal belt areas.

<sup>3</sup> Calculation based on data provided in CIL's [Annual Report & Accounts 2021-22](#).

<sup>4</sup> Drawn on Nayak (2020).

<sup>5</sup> The term is coined by Maria Mies (1982) where she explored the process of the devaluation of women's social reproductive work in households and its implications for women's position in paid work. The term is often referred to while engaging with the process of women's unpaid work and domesticity.

Besides, women also work in coal washeries and coal handling plants as well as at construction sites, gardening, as domestic help and sanitation workers in mine areas under local contractors. Given that land ownership and caste hierarchy is often correlated, Dalit (scheduled castes) and Adivasi (scheduled tribes) women are part of this informal workforce. Not only do they have the lowest social and economic status in the coal community, but also they are triple burdened with informal casual labour, illegal coal scavenging and social reproductive work (Nayak, 2020; 2022).

### **c) Formal but Menial Labour in coal mines**

Even when women manage to get into the formal workforce, particularly in absence of a male claimant for compensatory employment, they are often placed in menial and non-technical jobs in offices, canteens, blasting sections and workshops, with lower wages.

While 95% of the female workforce is in the non-executive category, being excluded from better paying skilled jobs, most women employees belong to the lower rungs without much scope for career advancement. Excavation jobs are considered to be hyper-masculine and are kept away from women as it involves the operation of heavy earth moving machines in the opencast mines (Lahiri-Dutt, 2015). Women with formal employment in coal mines not only get a lower social stature for their menial job, but also locked-in to a lower economic status due to the gender wage difference (see Table 1).

## The Way Forward

India's energy transition is taking place in the backdrop of this gender-biased coal political economy. As discussed in previous sections, the coal transition is already disproportionately affecting women. Therefore, just transition planning must simultaneously focus on two complementary priorities: first, seeking an equal role for and participation of women in the 21<sup>st</sup> century energy system; and second, leveraging the transition to unwind the entrenched patterns of gender injustice in the 20<sup>th</sup> century energy system.

The first priority has got some attention in the emerging discussions on gender diversity in the renewable energy workforce (Pearl-Martinez and Stephens, 2017), women's representation in energy decision making (IEA, 2018), [access to clean energy](#), and clean energy based economic opportunities (Nelson and Kuriakose, 2017). But, there is not enough engagement with gender inequities and biases in the current energy ecosystem. A technology-led transition does not automatically address structural problems like gender injustice. Rather, without adequate attention and engagement, there is a serious risk of reproducing and exacerbating these patterns in the 21<sup>st</sup> century energy system. Building on the four pillars of justice essential to a just transition - recognition, procedural, distributive and restorative (Abram et al., 2022) - this brief suggests four steps to engage with the gender question as part of transition planning.

### **A. Recognise women labour force in coal economy:**

Women constitute one half of the coal community, but as a labour force they remain largely invisible. In the past, during coal mine developments, women were marginalised due to lack of land rights. To avoid repeating such gender marginalisation, just transition planning for rehabilitation of the coal workforce must count the invisible women labour in the coal regions, recognise their contributions to the coal economy and assess their vulnerabilities to the transition. This approach is essential to ensure 'recognition justice' for women in the coal communities and requires an intersectionality-informed analytical and assessment framework to identify the vulnerable and the beneficiaries at different tiers of the coal economy.

### **B. Ensure representation of women in just transition planning process:**

From the 'procedural justice' standpoint, it is important to ensure meaningful inclusion of affected women's voices and their perspectives in the just transition strategies at the national, state and local levels. Given their historical marginalisation, women's voices are muted in the public sphere and are less likely to find their way to public consultations. Proactive measures are required to inform and empower women and existing women collectives to participate in accessible forums, and sustained consultations with women by the state agencies.

Existing women networks from successful state innovations for women's empowerment can provide insights, and such networks in coal regions could be mobilised for the purpose. For example, [Kudumbashree programme](#) in Kerala is a community network for poverty eradication and women's empowerment through their participation in political arena and public spaces. Similarly, [Mission Shakti](#) in Odisha seeks to empower women through gainful activities by providing credit and market linkages to six lakh women self-help groups in the state. Further, leveraging local governance institutions such as Gram Panchayats, which have a share of women representatives by constitutional mandate, could ensure some representation of women's perspective from coal regions in just transition planning.

### **C. Gender-inclusive economic diversification in coal regions:**

Mono-economy in coal regions - all economic activities being directly or indirectly dependent on coal - is seen as a challenge to coal transition. Simultaneously, as discussed earlier, lack of alternative well-paying jobs and exclusion from mining are the key reasons for women's economic marginalisation in these regions. The solution to both challenges is economic diversification in the coal economy. While emphasising the need for diversification, the energy transition discourse focuses on large scale industrialisation to compensate for coal largesse or prioritises energy security by using coal fields for RE deployment. Such diversification will be time-intensive and dependent on the retirement of the coal assets.

However, decentralised and small-scale productive activities hold equal promise for jobs, can be promoted faster, and if strategically purposed, could also address gender injustices in coal regions. One opportunity lies in pursuing a 'productive power' approach (Swain & Dubash, 2019) to promote women-led, income-generating activities in the coal regions. This would require complementing reliable electricity supply with targeted interventions to mobilise its productive use at household or community level. Further, decentralised RE could be used to ensure reliability of power supply while socialising a shift in energy technology. Promotion of decentralised RE for productive use, if targeted, could also create livelihood opportunities for women. Baruah (2015) suggests that Lighting a Billion Lives and Hariyali Green Energy Initiatives in Rajasthan created economic opportunities for rural women.

Promotion of women-led micro, small and medium enterprises (MSMEs)<sup>6</sup> in coal regions could be a complementary instrument to ensure distributive justice by offering economic opportunities to women. Such an approach to gender-inclusive economic diversification could build on existing Central and state schemes. For example, Centre's [Skill India Mission](#) could be targeted to train the women beneficiaries, while state initiatives like [Startup Odisha](#) (which has a specific focus on women-led start-ups) could provide financial grants and incubation support.

### **D. Seeing women as change agents in the energy transition:**

Prioritising women for economic diversification in coal regions makes women change agents in the energy transition, and thus, helps to achieve restorative justice. Creating economic opportunities for women helps to prepare coal communities for an imminent energy transition by securing alternative livelihoods at the household level, building strong cushioning capacity, and thus, reducing a barrier to the transition away from coal. Economic empowerment of women in coal regions can also prevent larger disruptions like stress-driven [massive migration](#) from eastern to western and southern states. At the same time, such an approach would create gender equal conditions in coal communities and improve gender relations at the household level.

As we shift from coal to RE, it is critical to ensure that the gender inequities and injustices of the coal economy are not reinforced in the RE ecosystem. This cannot be ensured without engagement with these patterns and proactive efforts to unwind them. For example, RE is also land intensive and requires technical skills, which have largely been male entitlements, more so in rural areas. The ongoing shifts in our energy foundations offer an opportunity to envision a gender equal energy future.

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<sup>6</sup> The MSMEs are an important pillar of the Indian economy and they employ the bulk of the workforce, including women.



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