

DEFINING AND FRAMING JUST TRANSITION FOR INDIA

Defining and Framing Just Transition for India

Just Transition Working Paper



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Executive summary

A precise definition and an appropriate framing of just transition in the context of India's fossil fuel regions and economy is essential to build policy momentum and public engagement on the issue. This is also important for formulation of relevant policies and just transition plans that are guided by the principles of social and environmental justice, and are designed to achieve net positive social, economic and environmental outcomes.

Drawing on definitions, conceptual frameworks, and policy approaches of just transition by various stakeholders and Governments of some of the key fossil-fuel dependent countries, while also considering India's own just transition context, this paper offers a definition of just transition for India and outlines the components of its policy framing.

Considering the complex nature of India's fossil fuel economy, including direct and indirect income dependence, workforce distribution, socio-economic fabric of the fossil fuel regions, issues of pollution and ecological degradation, and the need for ensuring social and environmental justice, the definition of just transition has been proposed as an overarching one covering all these aspects. With respect to its policy framing, it is proposed that this should be done as a development intervention, including a combination of inputs, well-designed processes, defined outputs, and outcomes and impacts that are aligned with the goals of decarbonizing our energy and economic systems, supporting a green economy, improving environmental and ecological conditions, and fulfilling an inclusive development agenda. The framing should specifically be sensitive to its public acceptance, without which it will be nearly impossible to further the agenda of just transition in an inclusive manner and implement transition measures on the ground.

1. Introduction

Rapid decarbonization has become necessary to limit global warming to 1.5°C and avoid catastrophic impacts of climate change.¹ It is clear that we need urgent and decisive action, and transformative changes to deal with the climate crisis. This will involve phase-down (and ultimately phase-out) of production and use of fossil fuels, transformation of the energy systems, and reinvention of industries and agriculture.

India is at a critical juncture on energy transition and climate change discourse. While the country has already embarked on an ambitious energy transition pathway, what has not gained momentum yet is the discourse on just transition, which draws attention to the social and environmental implications of the energy transition. However, a deliberation on just transition is absolutely necessary to complement the energy transition and enhance climate change action in an equitable and just manner.

A starting point of such deliberation is to define and frame just transition in the context of India's fossil fuel regions and economy. This is essential as experiences around the world shows that the just transition framing is region, sector and context specific. An appropriate framing of the issue is also necessary to build policy momentum and public engagement on the issue, and to plan a transition that is socially acceptable, economically viable, least disruptive and leads to positive environmental and developmental outcomes.

This discussion paper attempts to define and frame just transition in India's context. Towards this, the paper reviews some of the key definitions and conceptual frameworks of just transition and the policy framings of it by some of the major fossil fuel dependent countries. Based on the review, and considering the socio-economic and environmental realities of India's fossil fuel regions, the workforce and the political economy backdrop, the paper suggests how just transition can be defined, and what can be an appropriate approach for framing it in a policy context, as well as considering its public relevance.

2. Definitions and conceptual frameworks

The conceptual framing of just transition has been shaped by ideological underpinnings of both 'labour rights' and 'environmental justice' movements.² This collectively has made just transition an issue of 'social justice' and an integral component of planning a low-carbon future.³ The most prominent framings and definitions of just transition in the realm of climate change today, therefore, call for an economy-wide transition process, where the rights and well-being of the local communities in the fossil fuel regions must be protected alongside the fossil-fuel industry workers. This is reflected in definitions put forth by labour unions, civil society groups, multilateral institutions, as well as the way it is framed in global climate agreements.

For example, labour union groups, such as the International Trade Union Confederation (ITUC), outlines that on a 'national and regional scale', just transition is *"an economy-wide process that produces the plans, policies and investments that lead to a future where all jobs are green and decent, emissions are at net zero, poverty is eradicated, and communities are thriving and resilient"*.⁴ Further recognising that massive industrial transformation, involving various sectors, will also be necessary for climate action, ITUC has proposed that for industries just transition is an *"enterprise-wide process to plan and implement companies' emissions reductions efforts, based on social dialogue between workers and employers."*⁵

Similar definition also come from Labour Network for Sustainability, who emphasize that *"those most vulnerable to change will be protected. It means that the process of change will increase social justice for workers, women, the poor, and all oppressed groups"*.⁶

The International Labour Organization (ILO) has emphasized on the importance of a broad-based coalition and a comprehensive vision for just transition, highlighting four key components. These include- planning a just transition for a green transformation, developing coalition between labour unions and environmental justice groups to influence positive regulatory responses, building just transition strategies and labour market transition through support of trade unions, and allowing longer transition period to mobilize investments, and enter into agreements with affected enterprises, workers and communities.⁷

Environmental and climate justice groups also emphasize that just transition should entail a host of strategies *"to transition whole communities, to build thriving economies that provide dignified, productive and ecologically*

sustainable livelihoods”, and increase “democratic governance and ecological resilience”.⁸ Four particular components have been considered essential for a just transition – developing a strong and diverse coalition of various actors and interest groups, strong government support, secured funding stream and a plan for economic diversification.⁹

Multilateral institutions such as the World Bank, has also stressed on an inclusive idea for a just transition through well framed policies and strategies. These include a range of measures from mine closure and land reclamation policies, to those for economic support and diversification. To facilitate the transition process, engagement of local communities through social dialogue, alongside well-coordinated governance and administrative mechanisms has been emphasized.¹⁰

In context of global climate Agreements under the United Nations Framework Convention on Climate Change (UNFCCC), the Cancun Agreement (2010) first explicitly recognized that climate change action should ensure a just transition of the workforce. As noted in the agreement: *“Climate change requires a paradigm shift towards building a low-carbon society that offers substantial opportunities and ensures continued high growth and sustainable development, based on innovative technologies and more sustainable production and consumption and lifestyles, while ensuring a just transition of the workforce that creates decent work and quality jobs”*.¹¹

In 2015, the concept got included in the preamble to the historic Paris climate agreement. As noted, the parties to the agreement shall respond to the urgent threat of climate change... *“Taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities”* [Para 10 of preamble].¹²

The Katowice Conference in 2018, created a stronger platform for just transition by drafting a formal ‘Declaration’. The Polish presidency of the COP, with support of around 52 governments,¹³ drafted and launched the ‘Solidarity and Just Transition Silesia Declaration’ during the Conference.¹⁴ The document underscored that *“Just transition of the workforce and the creation of decent work and quality jobs are crucial to ensure an effective and inclusive transition to low greenhouse gas emission and climate resilient development”* [Para 1].¹⁵

Overall, the conceptual framings are much influenced by the experience of coal industries and the concern of its closure, with limited references to downstream industries in most cases. Except for the position of the civil society groups, there is a hesitant call on transformative changes involving all fossil fuel sectors and the extractive economy (see Table 1). Also, the definitions and framings as put forth by various stakeholder groups largely envision a socio-economic development involving permutations and combinations of processes, inputs, outputs, outcomes and impacts – the tools used in development interventions (see Box: Development interventions).

Table 1: Interpretations of just transition definitions by representative groups

Organisation	Processes	Inputs	Outputs	Outcomes/Impacts	Remarks
ITUC	Economy-wide, as well as industry-wide transition process based on social dialogue and collective bargaining. ¹⁶	Policies, plans and investments to support socio-economic and industrial transition; innovation and technology sharing.	Transformation of energy and manufacturing companies along with other economic sectors; decent jobs; social protection and human rights; restored communities in industrial region to be impacted by transition.	Primarily tied to Sustainable Development Goals 8 and 13 of the UN. ¹⁷ Focus on achieving decent work and productive employment where all jobs are green; sustainable and inclusive economic growth; poverty eradication; net zero emissions; thriving and resilient communities.	Creates obligations for both Government and industries to support a just transition and achieve development and climate change goals.

Organisation	Processes	Inputs	Outputs	Outcomes/Impacts	Remarks
ILO	Meaningful and functional social dialogue; coalition between labour unions and environmental justice groups to influence positive regulatory responses.	Policies including, macroeconomic, industrial, sectoral and labour policies; plans for green transformation; strategies for just labour market transition through trade union support; public investments in greening the economy; sufficient time period to allow a deliberative decision-making and mobilize investments.	Decent jobs along entire supply chain; targeted programmes in sectors where a significant proportion of workers are informal with to promote formalization; skilled labour force for green economy; ¹⁸	A new employment and social landscape in a decarbonized economy with focus on decent work for all, poverty eradication and inclusive society. ¹⁹	Primarily emphasizes on the role of labour unions in facilitating a just transition, asking for a renewed labour and social contract in a decarbonized economy.
UNFCCC		Support to developing countries.	Creation of decent work and quality jobs; building climate resilience.		Workforce transition and job creation will be necessary in various fossil fuel sectors and downstream industries considering climate change goals.
World Bank	Social dialogue with communities in a context specific manner.	Co-ordinated governance and administrative mechanisms; policies, plans and strategies (including for coal mine closure and mine area redevelopment); sustained long-term approach; finances to support just transition, including for mine closure.			Focused on coal industry downsizing/ closure and job loss. The observations are more focused on what is needed for facilitating a just transition, and not much on outputs and impacts.
Climate Justice Alliance and other civil society coalitions	Strong and diverse coalition to support democratic decision-making; bottom-up organizational processes.	Strong government support; economic diversification plan; secured funding stream.	Democratic governance; sustainable livelihoods and ecological resilience.	Regenerative and thriving economies that is based on democratic principles; ecological and social well-being.	Complete shift from extractive economy (fossil fuel based) to regenerative economy; environmental and social justice lie at the core.

Development interventions

Development interventions include a combination of processes and inputs/instruments which are expected to produce certain outputs, and finally lead to outcomes and impacts.²⁰

As the common understanding goes, in steps of development intervention, processes include in the way in which a development intervention is carried out and is intended to influence the consequences and expected outcomes/impacts. Inputs include the financial, human, and material resources used for the development intervention, including policies, plans and activities. Outputs are products and services that results from development intervention.²¹ Outcomes are the changes in development conditions that the intervention is designed to deliver, and that results from it; and impacts are the long-term effects²² produced by a development intervention.

3. Policy framing of just transition by Governments

In recent years, some countries (primarily of the global North and few in the global South) have come up with their respective policy framing of just transition considering the country's socio-economic conditions and political climate. The framings vary from simply creating jobs in the green economy to addressing the current climate crisis and social and environmental injustice in a more holistic manner.

A brief review of some country-specific framing can be helpful to understand how just transition is being conceptualised, planned and implemented. To assess the scope of intervention, the following indicators have been considered:

- Applicability for fossil fuel sectors, i.e, whether the consideration is for all fossil fuels or only coal.
- Inclusion of downstream industries, particularly those heavily reliant on fossil fuel.
- Workforce focus.
- Spatial consideration.
- Social protection and social infrastructure.
- Compensation packages and transition support.
- Financial and structural support for the fossil fuel regions.
- Considerations of environmental pollution, land redevelopment and repurposing.

3.1 Global North

While various countries of the global North are coming up with their just transition policies and strategies, three major fossil fuel dependent countries of the global North have been considered for the review – Germany, Canada and the United States (US).

Germany

Renowned for its successful approach of coal phaseout in the Ruhr valley (that had started in the 1970s), the Government of Germany in 2020 instituted a combined package of a Coal Phase-Out Act and the Structural Development Act to support a just transition in various coal regions of the country.²³

The 'Act to Reduce and End Coal-Powered Energy and Amend Other Laws (Coal Phase-Out Act)', is primarily focused on a just energy transition process for the formal workforce in the coal industry. The Act, while proposing a three-phase plan to phase out coal-powered energy by 2038,²⁴ simultaneously outlines the compensation that must be provided to the affected mining companies and coal power plants and its workers, and the mechanisms of it.²⁵

The Structural Development Act for coal-mining regions is a complimentary one to the Coal Phase-Out Act, and focuses on the regional aspect of a just transition. The law provides for a "structural-policy support for the affected regions". The basic idea is that "the affected regions should not bear the full brunt of change". It

identifies clear financial mechanism and “guarantees financial assistance for investment and other measures up to 2038” for various coal/lignite mining regions of Germany.²⁶ The funds should be used by the federal states to invest in “economically relevant infrastructure, local public transport, mobility infrastructure, environmental and landscape conservation” among others.²⁷

Just transition considerations also has both a worker and a regional focus. However, given the nature of the workforce, the consideration is largely related to the formal workforce and a formal economy (see Table 2).

From a political economy standpoint, Germany has been explicit about its position of a coal phase-out and framing of just transition in that context. This can be attributable to the country’s nearly 50 years of experimentation and experience of coal mining phase out in the Ruhr valley,²⁸ the positive outcomes of which has aided the social acceptance. However, the country remains completely silent about an oil and natural gas transition. Petroleum and natural gas accounts for 60% of Germany’s primary energy consumption; coal only accounts for 18%.²⁹

Table 2: Key nature of just transition in Germany	
Parameters	Considerations
Applicability for fossil fuel sectors	Coal, accounts for 18% of primary energy
Considerations of other downstream industries	No
Workforce focus	Formal
Spatial consideration	Coal regions
Social protection and social infrastructure	Yes
Compensation packages and transition support	For coal mines, thermal power plants and workforce
Financial and structural support for the fossil fuel regions	Yes
Considerations of environmental pollution, land redevelopment and repurposing	Yes

Canada

In July 2021, the Government of Canada launched a ‘Just Transition Engagement’ initiative, asking the opinion of citizens on how the Government can ensure a just and equitable transition to a low-carbon future for workers and their communities. The Government has called upon various stakeholders, such as “labour, non-governmental organizations, industry, and provincial, territorial and indigenous partners, to provide feedback on potential elements of proposed just transition legislation”.³⁰

In its initial proposal, the Government has framed just transition as “an approach to economic, environmental and social policy that aims to create an equitable and prosperous future for workers and communities”. As noted by the Government, just transition involves³¹–

- Preparing the workforce to fully participate in the low-carbon economy while minimizing the impacts of labour market transitions;
- Identifying and supporting inclusive economic opportunities to support workers in their communities; and
- Including workers and their communities in discussions that affect their livelihoods.

Earlier in 2018, the Government had created a Task Force on Just Transition to provide an understanding on elements of a just transition. The Task Force in its report had highlighted certain elements for just transition positioned around six pillars/principles³²–

- Embed just transition principles in policy and processes;
- Ensure locally available support;
- Provide a retirement pathway to workers;
- Transition workers to sustainable employment;
- Invest in community infrastructure, and
- Establish a dedicated just transition funding programme.

The country has also aligned its just transition pathway with its plan to achieve net-zero emission targets. In November 2020, the Canadian Net-Zero Emissions Accountability Act was introduced in the Parliament, to have a formally binding obligation of achieving net-zero emissions by 2050.³³ If the law gets passed, the next 30 years remain crucial for achieving a just transition across various sectors in the country.

The Canadian observation overall suggest that just transition is a socially accepted idea, which has facilitated the scope of a 'formal' public dialogue on the issue (see *Table 3*). However, like Germany, here too, just transition framing is largely around the formal labour force. The focus is on providing them suitable economic opportunities and preparing them to participate in a low-carbon economy.

Table 3: Key nature of just transition in Canada

Parameters	Considerations
Applicability for fossil fuel sectors	Not specified, but focuses on coal, which accounts for just 9% of electricity production. ³⁴ In 2018, the government of Canada announced regulations to phase out traditional coal-fired electricity by 2030.
Considerations of other downstream industries	Not explicit, but since it will be aligned with the net-zero emissions law, it can be presumed to be including downstream industries as well in the future.
Workforce focus	Formal largely
Spatial consideration	Country-wide
Social protection and social infrastructure	Yes
Compensation packages and transition support	Not specified
Financial and structural support for the fossil fuel regions	Not explicit, presumably yes
Considerations of environmental pollution, land redevelopment and repurposing	Not clear

United States

The United States (US) until recently (on a federal level) did not take any formal position on supporting a just transition, while there have been few important regional measures. For example, 'The Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Initiative' commenced by the Obama administration in 2015, within Appalachian Regional Commission (ARC) program, focuses on addressing worker dislocation and workforce development issues in communities and regions negatively impacted by changes in the coal economy in the Appalachian states. The initiative looks into the entire coal supply chain, including coal mining, coal-based power plants and coal-related supply chain industries.³⁵ Besides, initiatives in other states such as Colorado has largely focussed on the formal workforce and the formal economy.³⁶

In 2021, the US has put a renewed emphasis on integrating 'environmental justice' consideration in mechanisms of dealing with the climate crisis and a clean energy transition. The 'Executive Order on Tackling the Climate Crisis at Home and Abroad' signed by President Biden (January 2021).³⁷, elaborates on a wide range of transition priorities and environmental justice measures in the pathway for dealing with the climate crisis. The Executive Order, while not a legislation, sends a strong signal about the Federal Government's position on the concerned issue.

While there is no explicit mention of a just transition, but the Order emphasizes on a number of issues which are extremely important from a just transition perspective. These include:

- **Empowering workers through revitalizing energy communities:** The primary focus of this is to address the historical environmental injustice that communities of colour, women, and those in the rural areas have faced due to operation of extractive industries such as mining and oil. To revitalize these areas and the communities, and create well-paid unionized jobs (including for women and people of colour), emphasis has been laid on

reclamation and redevelopment of these areas, including “plugging leaks in oil and gas wells and reclaiming abandoned mine land, while restoring natural assets”.

- **Creating jobs by harnessing natural resource base:** Advancing conservation measures, boosting agriculture and undertaking reforestation, has been underscored as some of the key measures through which jobs can be created for the marginalized communities, and workers can be strengthened.
- **Building clean energy economy in an equitable manner:** With a focus on securing environmental justice, a primary focus of the clean energy economy and job creation is to create “well-paying union jobs” and turn “disadvantaged communities into healthy, thriving communities”. There is also emphasis on training and workforce development.
- **Investments in social infrastructure:** A major emphasis has been given on social infrastructure investments, such as in clean water, clean energy and energy efficiency, clean transit, affordable and sustainable housing, pollution abatement and remediation etc. To ensure that benefitting disadvantaged communities remain a key focus, it has been noted that the “Federal investments might be made toward a goal that 40% of the overall benefits flow to disadvantaged communities”.

The report (April, 2021) of the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization,³⁸ which followed the Presidential Executive Order, has emphasized on most of these components, including a priority intervention need and mechanisms for communities who will be hard-hit by coal mine and coal power plant closures. With a strong focus on social dialogue and community engagement to facilitate the process, the report had laid emphasis on six key principles aligned with the Order. These include:

- Creation of good-paying jobs.
- Federal investments to catalyse economic revitalization.
- Supporting energy workers by securing benefits and providing opportunity.
- Prioritizing pollution mitigation and remediation.
- Adopting a government-wide approach.
- Formalizing stakeholder engagement measures.

While the final framing of just transition can be altered if the provisions of the Order are incorporated in a law and debated in the Capitol, nonetheless the US framing in its current form is the most comprehensive one for addressing just transition issues (see Table 4). The positioning of it within the context of environmental justice,³⁹ an idea that is far more acceptable to fossil fuel workers, communities and other stakeholders,⁴⁰ can also help to implement many of the critical elements.

Table 4: Key nature of just transition in the US

Parameters	Considerations
Applicability for fossil fuel sectors	Coal (and coal-based power), oil and gas; priority is coal. Coal accounts for 10% of primary energy consumption; oil and gas have 69% share. ⁴¹
Considerations of other downstream industries	Yes, industries such as steel and cement (noted in the Working Group report)
Workforce focus	Formal and also indirect employment
Spatial consideration	Country-wide
Social protection and social infrastructure	Yes
Compensation packages and transition support	A federal budget has been specified; no specific compensations detailed out.
Financial and structural support for the fossil fuel regions	Yes
Considerations of environmental pollution, land redevelopment and repurposing	Yes

3.2 Global South

The definition and framing of just transition, and its place in policy is in infancy in the global South. However, two countries can be looked into in this respect, South Africa and Indonesia, where just transition has formal recognition by the Government.

South Africa

The framing of just transition has found place in South Africa's climate policy dialogues and deliberations since 2011, around the time of the Durban Climate Change Conference. Initially, the framing has been heavily influenced by labour unions who "prioritized the interests of the working class", in the process of reducing carbon emissions.⁴²

In 2012, the National Development Plan (NDP) included a complete chapter on "Transition to a low carbon economy", with a focus on just transition.⁴² Recognizing that the poor and the vulnerable are, and will continue to be disproportionately affected by climate change, alongside the country's heavy employment dependence on energy-intensive sectors and revenue dependence on mining, the need for a "judicious transition" was emphasized. In the event of a transition, specific emphasis was laid on to deal with job losses of particularly the poor and vulnerable, skill development for a low-carbon economy, and protection from inflation in food, energy and transportation cost.⁴⁴

In 2015, South Africa was the only country to mention just transition in its initial Intended Nationally Determined Contribution (INDC). In the INDC, just transition was framed as an inclusive process towards building a climate resilient economy and society, taking into account "local and indigenous knowledge, gender considerations, as well as social, economic and environmental implications".⁴⁵

The concept over the years has been shaped by Government policies (national and regional), union perspectives, civil society engagement, and most recently the business community. In December 2020, a 'Presidential Climate Commission' (a multi-stakeholder body), has been established to "advise on the country's climate change response and pathways to a low-carbon climate-resilient economy and society".⁴⁶

The Commission has been entrusted with a number of responsibilities for facilitating "a common vision for a net-zero" by 2050, including those for supporting a just transition. From the tasks that the Commission has been entrusted with, the focus and components of a just transition can be understood.

The achievement of a just transition has been aligned with the country's "broader development objectives". The emphasis is on a "well-managed, just, and equitable" process,⁴⁷ with particular focus on the poorest and most vulnerable. Besides job substitution and creation of income opportunities for coal mining and coal-based power workers, the other components which should get due attention in just transition planning include, "energy security, water security, food security, infrastructure resilience (urban, rural and coastal), land-use and the mobilisation of the necessary technological innovation and climate finance".⁴⁸

The country's latest revised NDC, as submitted to the UNFCCC in September 2021, reflects these priorities. The submissions note that "a just transition is core to shifting development pathway to increased sustainability, fostering climate resilient and low greenhouse gas emissions development, while providing a better life for all". It further specifies that a just transition requires "procedural equity to lead to equitable outcomes".

To meet the just transition objectives, certain key elements have been emphasized upon. These include:

- Plan for workforce reskilling and job absorption.
- Social protection and livelihood creation.
- Incentivising new green sectors of the economy
- Diversifying coal dependent regional economies.
- Developing labour and social plans as and when ageing coal-fired power plants and associated coal production infrastructure are decommissioned.

South Africa evidently is the leading country of the global South with respect to just transition. However, the focus so far remains on coal mining and coal-based power. The revised NDC while mentions "shifting development pathways", but the consideration of a sector-wide transition all fossil fuel sectors, and allied industries is yet to be seen (see Table 5). There are also outstanding concerns of the informal workers and gender inequality in the way of a coal transition.⁴⁹

Table 5: Key nature of just transition in South Africa

Parameters	Considerations
Applicability for fossil fuel sectors	Coal mining and coal-based power. Coal accounts for 70% of the country's primary energy consumption, followed by oil (22%) and natural gas (4%). ⁵⁰
Considerations of other downstream industries	No
Workforce focus	Formal and informal
Spatial consideration	Coal regions
Social protection and social infrastructure	Yes
Compensation packages and transition support	Not explicit (as per available documents)
Financial and structural support for the fossil fuel regions	Yes
Considerations of environmental pollution, land redevelopment and repurposing	Not clear

Indonesia

While Indonesia became a signatory to the Silesia Declaration in 2018, there has been very little progress in framing the idea of just transition in the country's context and developing the framework for it. However, in its first NDC submitted to the UNFCCC in July 2021, the Indonesian Government had outlined its position and focus on just transition (see Table 6).⁵¹

As evident from the submissions, the country has positioned its just transition vision aligning with its growth pathways, which should be inclusive. Specific emphasis has been laid on four components. These include:

- A regional focus for addressing "challenges faced by sectors, cities and regions in the process of transitioning to low carbon development", besides "ensuring a decent future for workers affected by the transition".
- Promotion of sustainable economic activities to create quality jobs in cities and regions.
- Building workforce capacity to "facilitate access to decent work and quality jobs, taking into account gender and inter-generational equalities, as well as the needs of vulnerable groups".
- Enhancing participatory public dialogue to support employment, ensure adequate social protection, labour standards and wellbeing of workers and their communities.

Table 6: Key nature of just transition in Indonesia

Parameters	Considerations
Applicability for fossil fuel sectors	Coal, which accounts for 37% of the country's primary energy consumption. Petroleum (32%) and natural gas (17%) are also significant. ⁵²
Considerations of other downstream industries	Yes
Workforce focus	Formal and others
Spatial consideration	Not clear
Social protection and social infrastructure	Yes
Compensation packages and transition support	Not specified
Financial and structural support for the fossil fuel regions	Support of international community sought
Considerations of environmental pollution, land redevelopment and repurposing	No

Overall, the framing of just transition in the context of various countries show that the emphasis is largely on coal mining and coal-based thermal power industry, both in the global North and South. However, coal is not a significant part of the energy mix in the global North, though it is a major source of primary energy in emerging economies like South Africa, Indonesia, India and China.

There are three critical aspects which are not mainstreamed and/or properly articulated in the just transition discourse, barring some. These include:

- The oil and gas industry transition (with respect to decline in production and demand),⁵³ which remains extremely important and urgent for addressing the climate crisis as well, is barely a focus. This is especially for the US, Germany and Canada, who are predominantly oil and gas economies.
- Environmental protection, land redevelopment and repurposing aspects, are absent from many of the framings, while ensuring environmental well-being and environmental justice is extremely important.
- With respect to workforce, while there is a consideration for informal workers (such as in South Africa), clear mechanisms of organizing them is unclear, including building their support and engagement in the transition process.
- Countries of the global South have challenges with respect to just transition financing, far more pronounced than the global North.

4. India's just transition context

It is evident from the above discussions that while there are certain overarching principles that should guide just transition, the actual framing of the issue should be country and region-specific, being sensitive towards the socio-economic and political realities. Therefore, a nuanced understanding of just transition is essential.

For framing just transition in the Indian context, there are four main factors that need to be considered:⁵⁴

- The question of justice in the fossil fuel regions.
- The nature of workforce and income dependence.
- The extent of economic dependence of the region (state/district) on fossil fuel.
- The outlook about a fossil fuel transition.

4.1 Question of justice in the fossil fuel regions

To answer how just transition should be framed in the context of India, it is important to understand the inequality and injustice that has historically burdened many of India's fossil fuel regions, particularly the coal regions. The coal regions also hold special significance considering the centrality of coal in India's energy landscape, and the socio-economic fabric of the coal bearing regions.

Most of India's top coal mining districts suffer from the classic problem of 'resource curse', where the local people have been facing displacement and deprivation due to resource extraction. At the same time, there have been incidences of social exclusion where people have been left out of decision-making processes. The injustice and inequality that burdens India's coal regions therefore must be looked into in the context of- displacement, poverty and deprivation, pollution and social exclusion.

Displacement and poor rehabilitation: Coal mining has been controversial over the years due to displacement and resettlement issues. Displacement of people from their lands and livelihoods is one of the worst impacts mining-affected communities have had to endure. However, the data on displacement and rehabilitation is very poor. Even company records of project affected families include those who have lost their lands, not the ones that depended on the land for their livelihoods.⁵⁵ This has led to a situation where people have been rendered labourers in their 'own land'.⁵⁶

Poverty and deprivation: The coal regions of India suffer from poor socio-economic indicators that increases their vulnerability not just to an unplanned fossil fuel transition, but also undermines their resilience and adaptive capacity in face of climate change and any unplanned industrial and economic transition.

For example, the top three coal states (which also has the top coal districts) in India have been identified as the “most vulnerable” to climate change (among top five) considering the high proportion of below poverty line (BPL) population in these states (besides other factors).⁵⁷ The other factors that contribute to such vulnerability and poor resilience include, poor status of healthcare and high disease burden, access to clean drinking water, female literacy, marginal landholdings, lack of high yield-variability of food grains etc (see Figure 1 and Figure 2).⁵⁸

Similar observations also come from the high proportion of multidimensionally poor people in many of India’s top coal districts. In many of these areas, more than 40% of people are multidimensionally poor (exhibiting poor status of healthcare education and living standards), which is much higher than India average of 27.5%.⁵⁹

Pollution: Environmental pollution and ecological degradation is a critical problem in India’s coal regions. Both coal mining activities and coal-based power generation contribute to significant air, water and soil pollution, which in turn affects public health, limits access to clean water, reduces agricultural productivity, among other things.

Coal mining also generates a large amount of pollution and waste. Coal mines, especially abandoned mines, are a significant source of water pollution owing to the leakage of highly toxic acid (acid-mine drainage) in the ground and surface water. The overburden and waste generated from the mining activities also cause air and water pollution. As a result, coal mining areas are critically polluted in terms of air, water, and soil pollution. Given the high pollution levels, the union environment ministry (now MoEF&CC) in 2010 had identified most of the top coal mining areas as ‘critically polluted areas’- Hazaribagh and Dhanbad in Jharkhand, Singrauli in Madhya Pradesh, Korba in Chhattisgarh, and Angul-Talcher areas of Odisha, among others. A temporary moratorium was imposed on these areas, and all new and expansion projects were stopped till an action plan was developed to improve the environmental quality. While the moratorium has been removed, these areas now have to implement short-term and long-term action plans to reduce pollution levels. If they fail to do so, they can be penalised, including the imposition of another moratorium.⁶⁰

Coal mining has major impacts on forestland and forest resources as well. Considering mining practices in India, which is largely opencast, a huge amount of forestland gets diverted, which is about 20%-25% of the total forestland diversion. Coal mining accounts for about half of this.⁶¹

On the other hand, thermal power plants (TPP) are the largest source of industrial pollution in India. TPPs are a significant source of inorganic particulate matter (PM) emission- mainly ash, along with sulphur dioxide (SO₂), nitrogen oxides (NOx), mercury (Hg), and other trace metals. Of the entire industrial sector, it alone accounts for 60% of suspended particulate matter (SPM) emissions, 50% of SO₂, 30% of NOx, and 80% of Hg emissions.⁶² What makes it worse is the inadequate monitoring of pollution parameters and compliance by the industry.

Besides air pollution, high water consumption by TPPs and water pollution are also significant issues. India’s power plants are estimated to withdraw around 22 billion cubic metres of water, over half of India’s domestic water demand. The poor fly ash handling, storage, and disposal systems of TPPs also lead to the discharge of ash slurry into water bodies causing water pollution. Nearly 50% of fly ash generated (total generation of about 170 million tonnes per year) remain unutilised and is dumped into poorly designed and maintained ash ponds. Nearly a billion tonnes of these toxic ashes lie in these ponds currently, polluting land, air, and water. Ash dyke breach and the resultant pollution of land and water bodies are quite common in the country.⁶³

Besides, coal-based industrial activities, such as coal washeries, coke oven, and soft coke plants, have also been identified by the Central Pollution Control Board (CPCB) as the key contributors to the pollution of ambient air, water, and soil in the coal regions.⁶⁴

Social exclusion: The local communities in India’s coal region (as well as many other parts of the country), has been excluded from various decision-making processes, while their participation and engagement has been emphasized and safeguarded through a number of laws. Also, in the interest of ‘national goals’ the engagement of local communities has been undermined.

A classic example of this is with respect to land acquisition. While land acquisition is a highly sensitive issue, but considering coal to be a resource for ‘public purpose’ (such as ensuring energy security), regulations pertaining to land acquisition for coal mining confers certain exclusive power to the government to acquire such land. In this respect, the most important regulation is the Coal Bearing Areas (Acquisition and Development) Act, 1957 (CBA). The CBA (which remains effective till date), was enacted to ensure greater government control over the coal mining industry. For this, the law facilitates land acquisition by the state government, in a process akin to

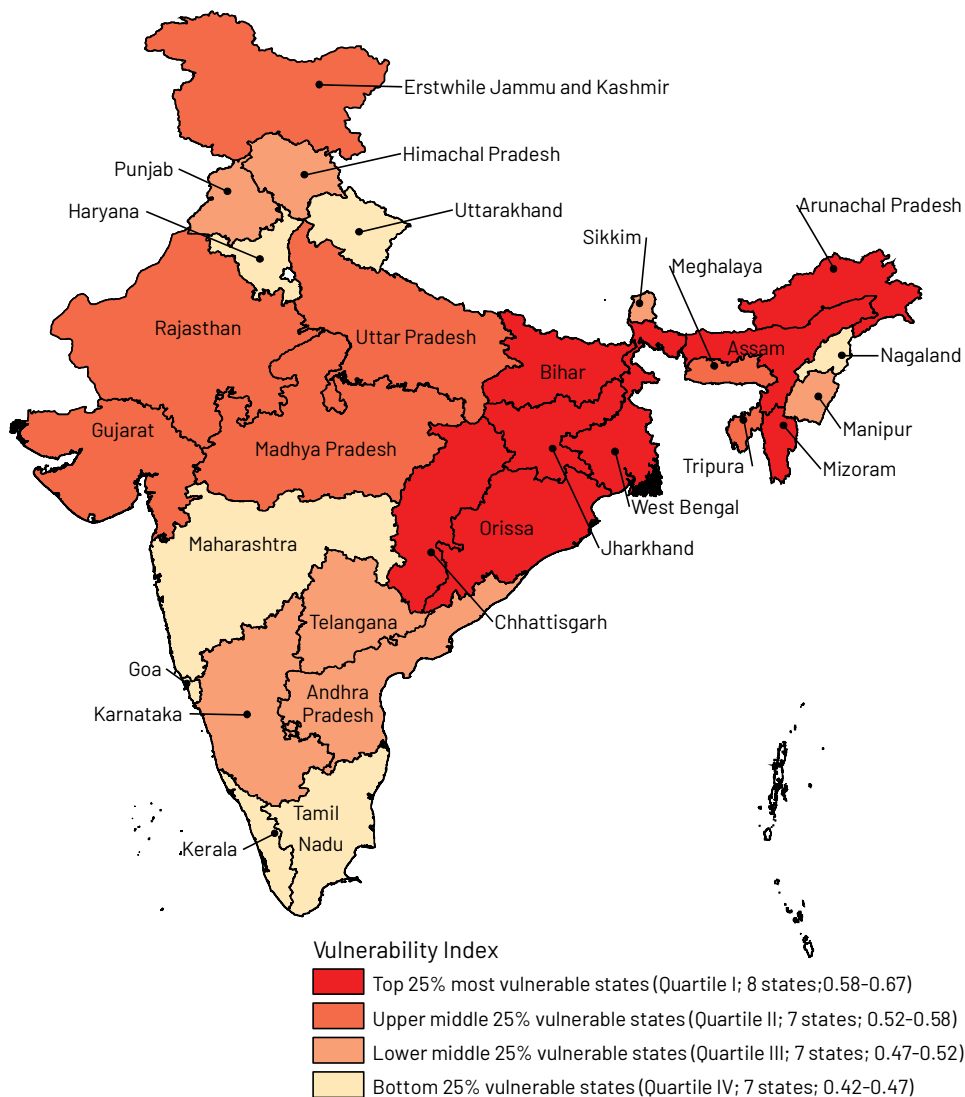
the exercise of eminent domain. Over the years, the CBA has allowed public sector companies, the CIL and its subsidiaries, to acquire substantial stretches of land for prospecting and mining purposes.⁶⁵

The globally agreed principle of “Free, Prior and Informed Consent” (FPIC), has also been included in various regulations pertaining to public decision-making. These include, the the consultation and consent of Village Councils (Gram Sabhas), under the Scheduled Tribes and Other. Traditional Forest Dwellers (Recognition of Forest Rights) Act (2006), and the consent of Village Councils for various social and developmental works and planning processes for it under the Panchayat (Extension to the Scheduled Areas) Act (1996). Besides these, the requirement for public consultation has been specified under the Environmental Impact Assessment Notification (2006), where the right of knowledge about proposed developmental projects and decision of the local community has been recognized.

However, despite such safeguards, there are instances of violation of these laws by various industries and authorities as has been noted in various Court litigations, research documents and media reports.⁶⁶

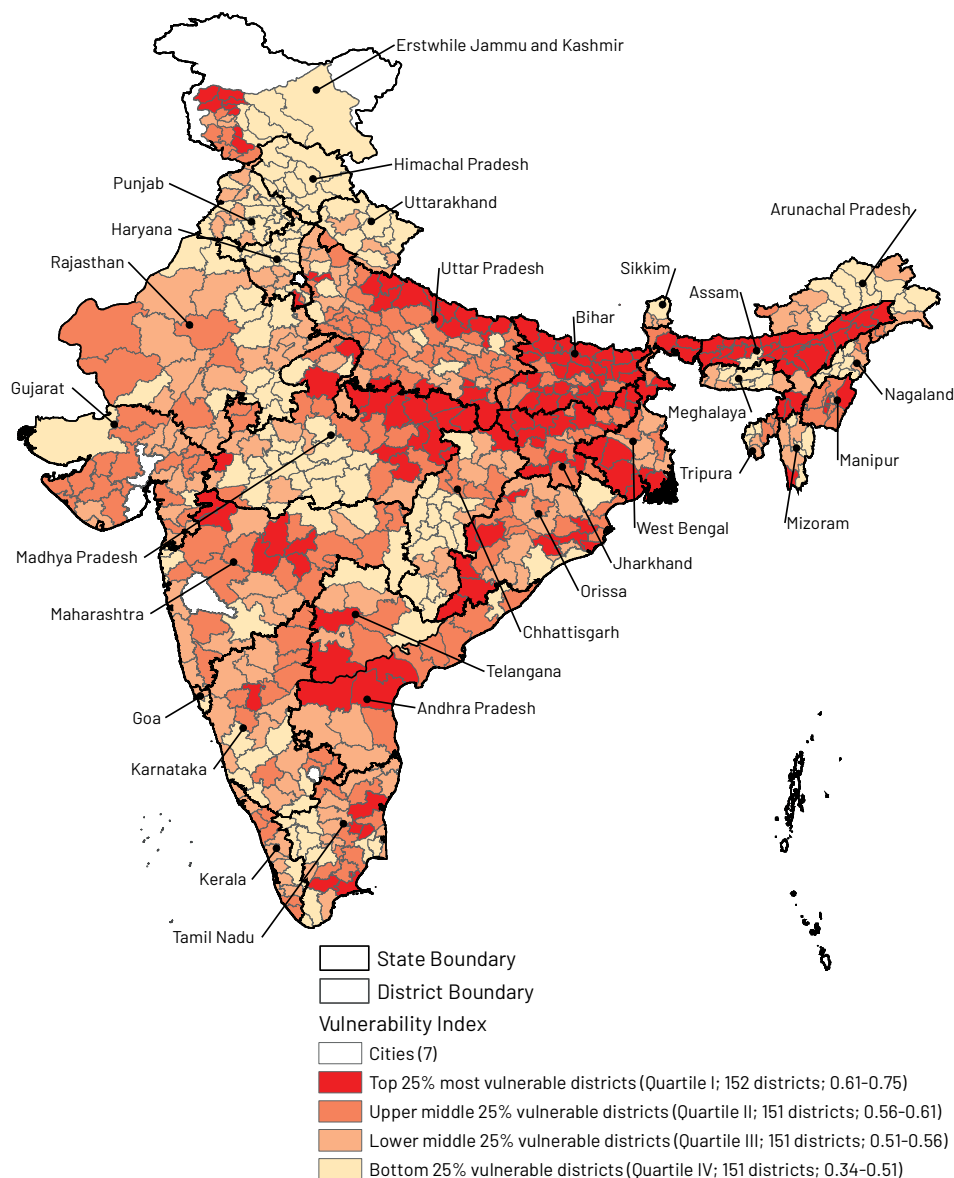
Therefore, for just transition to be an inclusive process, issue of distributive injustice related to resource benefits, economic stratification, and social exclusion must be considered. The resource curse that has historically saddled these communities must be reversed.

Figure 1: Most vulnerable states to climate change



Source: Department of Science and Technology, Government of India, 2020

Figure 2: Most vulnerable districts to climate change



Source: Department of Science and Technology, Government of India, 2020

4.2 Nature of workforce and income dependence

More than 90% of the workforce in India are linked to the informal economy, comprising people who belong to socially and economically backward sections of the society.⁶⁷ The fossil fuel sector, which is dominated by coal, is little exception to this.

The nature of income dependence in the coal sector is primarily informal (with poor skill and education), non-unionized and low income. This grossly undermines the bargaining power of the workforce, changes of having protection in the face of any unplanned transition, and increases their vulnerability.

For instance, the formal employment in coal (and lignite) mining operations, which can be estimated to be about 0.75 million, reflects a fraction of the overall income dependence on the coal industry. There is a huge number of informal workers associated with the coal industry supply chain. Even going by conservative official estimates, the proportion of informal workers directly related to coal mining activities is nearly 2.5 times the formal workers. Besides, there is a huge section of people in India's old coal mining areas for whom coal is a subsistence resource. In the coal-bearing areas of Eastern India, which spans across Raniganj coalfields of West

Bengal to Jharia and North Karanpura coalfields of Jharkhand, there are millions of people who earn a living by gathering coal manually and selling in local markets.⁶⁸

The informal and unorganised workforce also do not have any bargaining power, which is a major challenge. Though there are several labour laws to protect them such as the Unorganised Workers Social Security Act (2008) and the Minimum Wages Act (1948), including state-specific rules, these are barely exercised. The desperation of 'some income' sustains an ecosystem of exploitation (by various middlemen), and labour rights take a backseat.⁶⁹

Gender inequality is also a critical issue in the fossil-fuel industry, particularly coal. The gender proportion in coal mining activity is highly skewed towards men,⁷⁰ considering the formal employment. It has been estimated that overall men proportion in the formal workforce is 2.5 times than that of women.⁷¹ The gender bias of coal mining activities also results in a concentration of women in lower-level work, which are manual, often unsafe, low waged and lacks security.⁷²

4.3 The extent of economic dependence of the region

The fossil fuel states and districts are also considerably dependence on these industries as a source of tax and non-tax revenue. Overall, coal, oil, and gas collectively contribute 18.8% of the total revenue receipts of the Central Government and about 8.3% of the total revenue receipts of the State Government.⁷³ About 91% of revenue contribution is from the oil and gas sector; coal contributes only about 9%. Therefore, at the national level, oil and gas revenue loss and substitution remains a far bigger challenge than coal for the future.⁷⁴

However, the extent of economic dependence on coal is far pronounced at the sub-national level, in the major coal producing states and districts. For example, in top coal states such as Jharkhand and Chhattisgarh, the share of tax and non-tax revenue from coal mining constitutes about 5% to 6% of the state's total revenue receipts. The estimates are however based on annual financial reports of the coal PSUs operating in these states and districts (PSUs account for majority of the coal production in these regions).

Another factor is the coal-centric nature of the economy is many of the coal districts. In India, most of the top coal mining districts are mono-industry districts. In these districts, the economy is heavily reliant on coal mining, coal-based power plants, and other coal-dependent industries. This has stymied the development of other sectors and undermined. For example, micro-level assessments show that in Korba Chhattisgarh, which produces nearly 20% of India's coal (and also a major power producer), mining accounts for over 50% of the district's GDP. In Ramgarh, Jharkhand, the share of coal mining in the districts GDP is estimated to be over 21%.

The poor status of other economic sectors, has also affected people's psyche in many of these regions, creating a sense of 'perceived dependence'. Various economic activities and income opportunities therefore has an indirect linkage to the mono industry and has an overall bearing on the region's economy.

4.4 Outlook about a fossil fuel transition in India

Coal is the single largest source of primary energy (45%), followed by petroleum and other liquids (26%), and traditional biomass and waste (20%). To limit global warming to 1.5 °C and to achieve a net-zero economy, the fossil fuel transition plan for India should be a comprehensive one, including phase-down of the production and use of major fossil fuels (coal and oil), shift from thermal power to renewable electricity, and re-invention of downstream sectors that are dependent on fossil fuel, especially steel, cement, automobile and fertiliser. Any isolated focus will not help to achieve the rapid and transformative changes that are necessary to address the climate crisis.

Such a system-wide consideration is also necessary considering the huge income dependence of people on industries that are coal dependent, such as steel and cement. The latter two combined, employs more than twice the number workers than coal mining and coal-based power combined. Therefore, unless a just transition in the coal mining sector, also takes into consideration the transition needs of these coal dependent industries, a net-zero emissions target cannot be achieved.

Similarly, transition questions for the oil sector should also be considered simultaneously. For example, it can be reasonably assumed that the automobile sector employs in excess of 12 million in India. Auto component manufacturers and service centres—the two most important sub-sectors which are likely to be impacted by the energy transition—employ 70% of the people.⁷⁵ In fact, considering level(s) of technological readiness and

significant changes in production processes, oil dependent sectors, such as the automobile, will face a much urgent transition question than many of the coal-dependent industries.

However, it is undeniable that the discourse of a fossil fuel phase out is a difficult one. There are a number of reasons for this.

At a national level, the fossil fuel industry is a major revenue source for the Government, as discussed earlier. Besides, coal is viewed as the backbone of India's industrial and energy security till date. The revenue from coal freight also cross-subsidizes the Indian railways, the transportation lifeline of the country's poor.

At the sub-national level, the fossil fuel supply chain is a major employment generator in various states and districts. For example, in districts like Korba and Angul, nearly 6% to 7% of the district's population are formally reliant on coal mining and coal-based power sector jobs. The informal and indirect dependence is far higher. The income dependence on steel, cement, road transport sector is spread across the country. In essence, the economic fabric in many of the districts (at least 120 districts), are centred around the fossil fuel sector and dependent industries.⁷⁶

Besides these, there are entrenched issues of political and cultural dynamics particularly in the old coal regions of India. A point in case is Jharkhand's coal regions. The demand for control over the mineral resources was, in fact, an important reason for carving out Jharkhand from Bihar in 2000.⁷⁷ Since then, illegal coal mining and coal mafia have increased their stronghold over the local politics

Therefore, for framing just transition, the socio-economic realities of the fossil-fuel regions, the income dependence, labour and gender issues, and the political and cultural context of it must be well understood and considered. The framing should specifically be sensitive to its public acceptance. Without this, it will be difficult to further the agenda of just transition in India in an inclusive manner, where the process remains truly 'just', can be sustained, and transition measures can be implemented on the ground.

5. Defining and framing just transition

Considering the complex nature of the fossil fuel economy, including direct and indirect income dependence, nature of the workforce, socio-economic factors of fossil fuel regions, pollution and ecological aspects, and the need for ensuring social and environmental justice particularly for the most vulnerable and marginalized people, the definition and framing of just transition in India should be an inclusive one. It should reflect the vision of inclusive economic and social transformation to enable rapid technological transition to achieve net-zero emissions and build resilience against climatic disruptions. In other words, Just transition in India is not be a linear question of substituting a 'mono' industry (say coal mining) along with its workforce. It is a development agenda and must be framed as such.

5.1 Defining just transition

A definition of just transition for India should take into account the following key aspects:

- i. Just transition should not be considered only from the perspective of coal, but must include all major fossil fuels and fossil-fuel dependent industries.
- ii. It should be a broad-based socio-economic development, requiring structural changes to ensure positive outcome for all categories of the workforce, is sensitive to the issues of gender and marginalized communities, builds social and economic resilience of fossil fuel dependent regions, and contribute towards a green economy.
- iii. It should be an inclusive process to ensure procedural justice for workers and the communities, and to have a shared vision for a sustainable economy that ensures balanced regional development.
- iv. It should help to provide universal livelihood, ensure social welfare, and eradicate poverty and deprivation.
- v. It should be help to achieve net zero emissions, secure energy justice in the transition to low-carbon systems, and improve environmental and ecological conditions through transition of energy systems and technological innovation.

Considering these, just transition can be defined as an equitable and inclusive socio-economic development process aligned with the goals of phasing out fossil fuels and transforming fossil fuel dependent sectors to achieve net zero emissions, building a green economy, ensuring energy justice, securing universal livelihood and

social welfare, eradicating poverty and deprivation, building resilient communities and ensuring environmental justice and social equity.

5.2 Framing just transition

The framing of just transition should be done as a development intervention. This means that the just transition should align with the components of development planning – processes, inputs, outputs, and outcomes and impacts (see Figure 3).

Figure 3: Components of just transition framing



Inputs

The following set of input factors will be required to support a just transition.

- **Governance:** A governance mechanism based on principles of co-operative federalism will be necessary to facilitate a just transition securing local (district), regional (states), and national interests. Strong national and state government support will be essential to strategically plan a just transition, aligning with India's energy transition pathways, climate commitments, and sustainable development goals.
- **Policies and plans:** Policies and plans need to be developed to support crucial components of a just transition. These will include:
 - » A national just energy transition policy including components of fossil fuel phase-out strategy at the national and state-levels, plan for phasing out coal-based power and simultaneous incentivization of clean energy, plan for clean energy transition in other fossil fuel reliant industrial sectors, regulatory revisions pertaining to issues of labour, social protection and welfare etc.
 - » Fossil fuel sector restructuring and transition: Policies, plans and investments for restructuring and transitioning the fossil fuel sector and allied industries, considering technological alternatives and readiness, greenhouse gas emission reduction potential and market opportunities/economic viability.
 - » Policies for responsible environment and social practices including reforms in regulatory provisions related to mine closure and mine area redevelopment, policies for land repurposing, reuse of industrial assets, ensuring environmental justice, community engagement and benefits etc.
 - » Plan(s) for economic diversification and revenue substitution to shift the focus from a mono-industry led economy. This should take taking into account local resources potential, investment potential (including incentives) of the region, workforce capacity, infrastructure status etc. Reclamation and repurposing of mining and industrial lands (brownfields) and associated infrastructure holds significant opportunity for economic diversification and socio-economic development in fossil fuel regions.
 - » Reskilling and skilling policies and programs aimed at creating diversified opportunities of 'job substitution', 'job creation' and 'job transformation' in the new green economy.
- **Financing:** Public and private investments will be essential for supporting a just transition. Identifying the scope of local, national and international funding sources will be necessary to create a dedicated public fund for just transition and attracting private financing. Investments will be necessary for:
 - » Closing down existing facilities and building new ones and support accelerated transitions to a low-carbon economy.
 - » Building social and physical infrastructure: Investments in infrastructure, such as for education, healthcare, clean water, energy, connectivity and urban amenities to improve social capital to build community resilience and to attract businesses and investors.
 - » Compensations and transition support for workers: Public financing for early retirement, transition support and compensation packages for fossil fuel industry workers.

Processes

There are three important processes that must be considered for a just transition to make it inclusive. These include:

- **Diverse coalition-** A strong and diverse coalition of various actors and stakeholders (including workers, labour unions, civil society organizations, public representatives, businesses, and local level institutions) will be important to work towards a shared vision of just transition through co-ordination and consensus.
- **Effective communication strategy-** An effective and transparent communication strategy to reach out to all stakeholders, from national to local levels, to clearly convey the objective, need and opportunities of a just transition, to deepen stakeholder knowledge and build public support and engagement for it.
- **Local support system-** Local support systems, engaging local civil society groups and frontline workers, will be essential to create a sustained engagement mechanism for just transition, and for implementation of policies and plans.

Outputs

Based on the processes and inputs as mentioned above, a just transition should be aimed at achieving the following five outputs.⁷⁸

- Restructured economy and industries in fossil fuel-dependent districts and states with a shift from a 'brown economy' to a thriving 'green economy';
- Repurposed land and infrastructure that are with various fossil fuel (especially coal mining) and allied industries to boost economic activities;
- Re-skilled, upskilled, and a newly skilled workforce for a green and sustainable economy;
- Revenue substitution for the district, state and central governments; and,
- Responsible social and environment practices, with a new 'environmental and social contract' between the people, the government, and the private sector. The new social contract shall ensure inclusive decision-making, poverty alleviation, fairer income distribution, and improved social infrastructure and human development outcomes. The new environmental contract shall ensure ecological protection and restoration, also contributing to the enhancement of sustainable livelihood and income opportunities.

Outcomes/Impacts

Just transition in India should be framed to achieve overall positive outcomes with respect to environmental, social and economic conditions. This will include:

- Net-zero emission outcome within a defined timeframe.
- Net positive employment outcome, including enhancement of job quality.
- Net positive environmental and ecological outcomes, involving pollution reduction, conservation of land and biodiversity, ecological protection and restoration, enhancement of ecosystem services, all of which will also contribute to better health and sustainable livelihood outcomes.
- Improvement in human development and human capital outcomes.
- Environmental justice outcomes for communities in the fossil fuel regions, including enhancement of community engagement.
- Net positive outcome with respect to climate resilience, economic growth and prosperity.

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