

**An Exploratory Study on the International Just Transition
Frameworks through An Inductive Lens for Curating a
Workforce Revamping Policy Roadmap for JSW Steel**

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**Antara Maitra
HP22PPOL0100009
Under the Supervision of
Dr. Vishnu S. Pillai
Assistant Professor**



**Kautilya School of Public Policy,
Gandhi Institute of Technology and Management
(Deemed to be University)
Rudraram, Telangana 502329
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SELF-DECLARATION

This is to certify that the thesis submitted by me titled “An Exploratory Study on the International Just Transition Frameworks through An Inductive Lens for Curating a Workforce Revamping Policy Roadmap for JSW Steel” is my original work and has not previously formed the basis for the award of any Degree, Diploma, Associateship or Fellowship to this or any other University.

Antara Maitra

CERTIFICATE OF THE SUPERVISOR

This is to certify that the thesis titled “An Exploratory Study on the International Just Transition Frameworks through An Inductive Lens for Curating a Workforce Revamping Policy Roadmap for JSW Steel” is original work undertaken by Antara Maitra under my supervision and guidance as part of his/her Master degree in this Institute. The thesis may be sent for evaluation.

Supervisor's Signature

Dr. Vishnu S. Pillai

Assistant Professor

Kautilya School of Public Policy

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Executive Summary

As a sector that has a very high carbon footprint and a challenging decarbonization pathway, the journey to net zero in steel manufacturing is deemed to be challenging. While technology and innovation at scale are going to be instrumental in the greening of steel, it is the socio-economic fabric that is going to feel the ripple effects of change. Elements of a “just transition”- ensuring that the change to cleaner steel is fair and equitable will have to be given strategic importance and be incorporated into the sector’s climate transition plan. Spanning across key stakeholder groups of communities, workforce, suppliers, consumers, and the government, we delve deeper into workforce considerations of fair access to jobs, secure livelihoods, robust human rights protection, and the right to bargaining that must be deliberated and planned for a just transition. This study focuses on one of India’s largest crude steel producers and the largest exporter, JSW Steel, and makes an attempt to suggest a framework that the organization needs to follow to help build up a just transition policy response. The work is exploratory in nature and follows the inductive path of qualitative research, where best practices of just transition across the world and similar industries have been studied wherever available. Insights from the interviews covering senior leadership from and outside JSW Steel have then been corroborated with the international best practices to arrive at a just transition framework for the organization. Some of the key findings- active social dialog across all stakeholder groups, board commitment towards a just transition, and building up a skill development pipeline that is resilient have been centrally placed in the proposed framework.

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Steel is, and will remain, a vital part of our infrastructure- from buildings to cars to turbines- contributing to a significant 8-10% of total greenhouse gas (GHG) emissions globally (World Steel Association, 2021). Making steel sustainable by using new technologies, cleaner energy sources, and optimized production processes is, therefore, a critical step in tackling climate change. According to a PwC report, the industry contributes more than 2% to India's GDP (PwC India, 2019). The indirect contribution, however, is huge, considering the dependence of other sectors on steel. The industry's impact on employment and communities is huge - it employs half a million people directly and two million indirectly. The output effect of steel on the economy is about 1.4x, with an employment multiplier of close to 7x (Ministry of Steel, Government of India, 2017). The World Steel Association reports that globally, for every two jobs created in the steel sector, 13 more jobs are created in the broader value chain (Oxford Economics, 2019).

Going ahead, India's iron and steel sector will be impacted by a number of broad macro trends that have the potential to radically change the way steel is produced and consumed, with digitization and decarbonization as the primary levers. Therefore, strategies toward sustainable growth will require new approaches to material efficiency, circularity, and the decarbonization of the production process (Joshi et al., 2022). The point to note here is that the impact on the socio-economic fabric will be very significant. As per a cross-sectoral study done by iFOREST, a brief look at the iron and steel sector in India reveals that total formal employment is about 0.34mn as of 2020, out of which ~75% are employed in the top 25 steel districts (Bhushan & Banerjee, 2021) (See Appendix). Given the overall informal

employment of 88% in the Indian manufacturing sector, the overall employment in the top steel districts is estimated to be way higher. Indirect employment in the steel industry is estimated to be about 2mn. These estimates help us understand the importance of focusing on workforce considerations in a just transition plan, even if it is done for JSW Steel, which in fact, is one of the major producers of crude steel in India.

The case for environmental justice as sectors like steel decarbonize is a tad bit more complex, as the factor of social inclusion envelops the decarbonization plans- also called Just Transition (JT).

1. Background

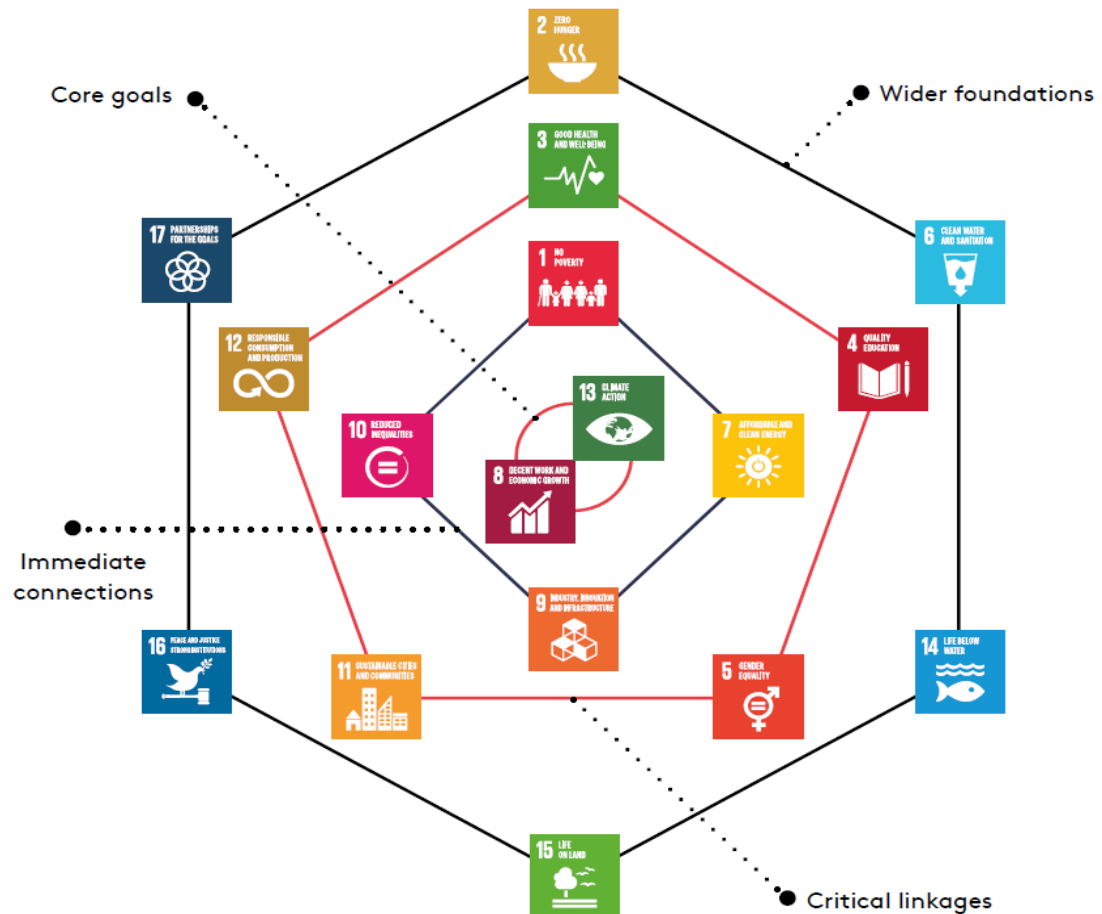
The nature of the workforce will undergo a transformation due to changes in the demand for new skills. Conceptually, the United Nations Framework Convention on Climate Change (UNFCCC) predicts that climate change will impact the nature of the employed workforce through “job creation, job substitutions, job eliminations, and job transformations” (UNFCCC, 2016). Beyond the commonsensical understanding of how communities will be affected, it is imperative to understand the need for revamping the workforce from a policy perspective. From the business’s view point, there are multiple benefits in planning for an orderly just transition (The B Team & Just Transition Centre, 2018). The company benefits through having better recruitment and retention policies, improved reputation and social goodwill to operate, increased productivity, reduced cost of resistance and conflict as a result of green transition, participative workforce, and processes that can leverage technical opportunities and be a strong advocate in the government corridors for policies that are forward looking and inclusive.

It might be worthwhile to look at the Sustainable Development Goals (SDGs) linkages to just transition (Figure 1). While the interlinkages are beyond complex, having a

well accepted and detailed just transition strategy goes a long way to ensure best practices geared towards SDG alignment.

Figure 1:

SDGs linkages with just transition



Source: Robins et al., 2018

Stavis and Felli’s work on “labour environmentalism” has necessarily established labour unions and /or workforce considerations at the heart of just transition approaches, critically placing such strategies within the doctrine of environmental justice (Stavis & Felli, 2014). Looking at the wave of socio-technical transitions that are now the key macro drivers of any industry, the questions of politics and fairness to ensure equitable access should gain a strong ground in just transition considerations, according to the authors. Workforce, encompassing on-roll employees and contract labour as a critical stakeholder group in any

just transition deliberation has been established through various available literature. As an example, the International Trade Union Corporation (ITUC) argued in Copenhagen at the Conference of Parties (COP) 15 (ITUC & TUAC, 2009) that just transition is not a balance of power, instead, it's a deliberation process based on mutual understanding and inclusive solutioning to ensure a smooth transition to a green economy. On the contrary, Stevis and Felli argue that for the sake of planetary justice, just transition requires empowering the weak and weakening the ones who are in the position of power and influence (Stevis & Felli, 2020). The concept of just transition has also been propagated by a diverse set of trade union bodies across the world like the European Trade Union Confederation (ETUC) (Niemiec, 2015) and the ILO followed by the UNFCCC, with “Just transition of the workforce, and the creation of decent work and quality jobs” adopted in 2015 at the COP 21 as one of its key programs (UNFCCC, 2016).

While we speak in detail about workforce considerations, it's important to understand the role of youth (age 15-29 years) and youth-centered interventions that will go a long way in having a successful just transition strategy. A 2023 report by the Just Transition Research Centre (JTRC) (Chatterjee & Swarnakar, 2023) aimed at equipping national and sub-national policymakers for planning a just transition for fossil fuel and/or carbon-intensive sectors focuses on keeping the youth at the center of the workforce as well as social considerations. As they form the prospective subsequent generations that will continue to live, work, and contribute to the areas that have been historically fossil fuel dependent and will undergo transition, it is inevitable that their interests and concerns are consensually met.

Two pieces of work towards a just transition at the country level across all sectors are worth mentioning and have been discussed in detail later in this report. One is by The International Forum for Environment, Sustainability, and Technology (iFOREST), which has come out with a just transition framework for India based on a detailed review of existing

frameworks, policies, and laws that are present in other countries and stakeholder interactions in the states that are heavily dependent on fossil fuel (Bhushan & Banerjee, 2023). However, there is no particular coverage for the steel sector in India, and the focus on the private sector involvement and their role hasn't been explored. Second, the steel sector inquiry conducted by the JTRC for a just transition focuses on pathways for sustainable steel development in India and the associated challenges (Chauhan & Swarnakar, 2024). While the study vocalizes the manpower disruption that will be caused as technology changes in steel-making, it focuses on the technical aspects of transition and doesn't explore the roadmap that the industry could follow to incorporate a just transition and the considerations of manpower. Thus, there has not been any earlier documented work around a just transition framework that has been carried out for the steel industry, and the focus on what a private sector steel conglomerate would need to have as a policy roadmap is a complete novelty. This paper will study the current approaches toward JT in India and look at the challenges followed by a comparative study of JT in other countries. Delving deeper into the nature of the workforce employed by the JSW Steel industry, this study will suggest a policy roadmap that will help revamp the organization's workforce for the equitable transition towards greener steel production processes.

1.1 Research Questions

1. What would be the potential corporate strategy of JSW Steel for workforce revamping to ensure a Just Transition?
2. What could be the government's potential intervention points to facilitate a Just Transition in the Indian corporate sphere?

1.2 Literature Review

The Asian Regional Office of the International Labor Organisation (ILO) has prepared an extensive report to study the preparedness for green jobs and a JT policy response

roadmap in India, which highlights that there is a lack of clear definition of the JT concept in India and the policy discourse is concentrated on the coal industry, being primarily driven by civil society and the fossil fuel heavy sectors. The proposed three-tier JT Task Force (NITI Ayog, 2021), with participation from the central government, state government, and the affected communities from the coal belt, has been constituted for states like Jharkhand and Chhattisgarh, with the factor of active social dialog as an essential feature. However, the preparedness assessment points out that policies around social protection are weak, and issues of unemployment rising out of decarbonization and climate change are not present.

Additionally, the participation of workers and affected communities through social dialogs from the sectors that would be severely affected by climate change and decarbonization is inadequate. Looking at the macro level, there is an asymmetry between the states needing JT policy support and those with high potential for jobs in the renewables sector (PAGE, 2023). While there is definitely a need to build up capacity and plan for a just transition, it is equally important to have policy directives for supply as well as the demand for green jobs. One could read this assessment as a follow-up to the preliminary framework recommendations by the ILO in 2015, which focused on social partnerships and dialogs, institutional capacities for handling transitions, public sector involvement for best practices, inter-ministerial collaborations and reskilling programs at national and state levels for JT and long-term financing need assessments (ILO, 2015).

The “Just Transition and Heavy Industry Roundtable” conducted by The Swedish Trade Union Confederation (LO Sweden), the Just Transition Centre, and IndustriALL Europe in 2019 gathered sector specialists, governments, trade unions, and industry representatives for shared perspectives on heavy industry (primarily cement and steel) and brainstorm for improved efforts towards just transition (ITUC, 2019). Best practices of just transition efforts by a Nordic steel company that had entered into collaborative partnerships

with power and mining companies to bolster just transition efforts were spoken of. Discussions on the employment situations of cement and steel industry and how there is increased non-formalization of labour, opening up avenues of higher vulnerability, exacerbates the need to have concentrated efforts towards having relevant skilling and livelihood safeguarding policies. It was also discussed that a lack of just transition approach triggers the important dimension of political consequences owing to the presence of concentrated labour supply and unionization. Further, in India, while decarbonization agenda is being pursued actively, the situation of the workforce warrants attention. Investments in technology for decarbonisation is not being adequately matched with community resilience as well as safeguarding livelihoods and social safety packages for the workforce (ITUC, 2019). This gap opens up the dire need to have a just transition approach towards workforce revamping strategies, with a focus on re-skilling, training, redeployment opportunities and building a pipeline of talent that would be job ready in the future.

It is important to remember, however, that these solutions would work best if they are locally engineered, garner a local buy-in, and are agreed mutually across all stakeholder groups following an elaborate need assessment exercise. This has also been echoed by the strong campaign by multilateral organisations like the World Bank, Climate Justice Alliance in their advocacy for “social dialogues and strong and diverse coalition to support democratic decision making” in a just transition approach (Banerjee, 2021).

A more recent piece of literature by ILO shedding light on the Indian readiness for just transition policy and green jobs is very insightful (ILO, 2024). It states that there is an asymmetrical understanding of just transition and the need to develop green jobs followed by a lack of an institutionalized approach. At the same time, while the renewables sector will see exponential growth in the future, there will be considerable retrenchment in sectors that are carbon intensive. Hence, there is a larger need to develop a strategic pipeline of skill

assessment and manpower development as a part of just transition planning. The private sector, according to the brief, should be pooled in for research, innovation and support (ILO, 2024).

Additionally, resilience building measures to safeguard livelihood security had also been stated in literature. Proposed inclusive approach that entails active social dialog, mutual understanding and solutions that are consensually arrived at, to ensure that transitions are fair and equitable follows from the sincere efforts of the organisations like the ILO and the United Nations Environment Programme (UNEP) in actively promoting green jobs for the future (Stavis & Felli, 2014). J. Mijin Cha highlights the importance of considering just transition programs at the heart of central and state-level climate change policies by looking at examples from the United States and Germany (Cha, 2017). According to the author, historical worker transition programs have been unsuccessful due to restricted participation from the worker communities, inadequate social dialogs, and inadequate remuneration benefits. As a recommendation, the author suggests incorporating a dedicated continuous funding mechanism for JT, involvement of the public sector enterprises, and strong union and non-governmental support throughout the JT phase (Cha, 2017). These examples bring out the transition strategies away from coal mines. However, they do not focus on industries (for example, steel) that greatly depend on coal for their operations. This opens up avenues for policy considerations within a steel conglomerate like JSW Steel.

While we do not yet have an estimate of the number of people in the overall steel industry or JSW Steel who are deployed in roles that could transform as a result of the green transition, the impact calculation is a little premature. However, UNFCCC's technical paper (UNFCCC, 2016), "Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs," draws from the work of Edward Louie and Joshua Pearce, which provides an estimate of the cost of reskilling coal workers in the United States for a sample understanding

(Louie & Pearce, 2016). In a best-case scenario (targeting workers in coal-specific roles), the cost is projected to be between USD 180mn-650mn, while in the worst-case scenario (all workers need reskilling), the cost is between USD 539mn- 1.9bn. These stark numbers are at the national level; however, it does give us a preliminary idea of the cost of revamping the workforce through skilling and training.

2. Research Design

2.1 Methodology

2.1.1 Analytical Framework

This piece of work is exploratory in nature and follows an inductive path (Trochim & Donnelly, 2001) of qualitative research. For a private sector steel manufacturer, the stakeholder architecture, as well as the ambit of policy influence, changes drastically compared to the central and state-level just transition towards the coal mining sector.

2.1.2 Data Collection

Data has been collected through the process of personal interviews that have been tailor made for the two categories of interviewees- one, for employees within JSW Steel to be able to assess the organization's viewpoint, and the other for people outside JSW Steel with sectoral expertise, in order to get a complete industry view. The method of interviewing has been chosen so that the perception and biases of the participants are brought out in order to have a gainful understanding of their individual beliefs, value systems (Ryan et al., 2009). As a powerful tool of qualitative research, interview guide has been tailor made to get the best out of the participants. Their experiences and knowledge, reflected through the interviews are expected to throw light on what the senior leadership foresees just transition to be along with its challenges.

Within JSW Steel, participants have been strategically chosen across different hierarchies and areas of specialization, namely, human resources (HR), operations, corporate

sustainability, and JSW Foundation- the social impact arm of the JSW Group. The aim has been to gain holistic perspectives from all departments that are directly and indirectly connected to transition planning. The finance department has not been considered, as the scope of the current project doesn't warrant the same within the current timelines. Six participants have been interviewed, five from within JSW Steel and one from a retired senior steel expert outside of JSW Steel. The selection for the number of participants has been decided by the point of saturation, i.e., till the stage where the responses became repetitive and no new insights were received. While the intent behind conducting interviews was to have an in-depth understanding of the perspectives towards just transition, the focus has been consciously kept on the context of the study. Hence, the sample size of the interviews has been based on the concept of "saturation" in qualitative research (Mason, 2010; Dworkin, 2012), collecting insights to the point where no new insights or perspectives are revealed (Charmaz, 2006, p.113). The interviews revealed an asymmetrical understanding of the just transition concept, and it was decided prudently that interviewing participants from lower ranks would not divulge newer insights. It was a strategic decision not to go to the contract workers and/or the line workers, owing to the sensitivity of the topic in question and to avoid panic.

The interview guide comprises five to seven open-ended questions that have been specifically curated to furnish insights around the central premise of inquiry of workforce revamping pertaining to just transition, as indicated earlier in the UNFCCC report – new job creation, job losses, job transformations, and the role of the government in aiding support through policy measures. Appropriate prompts are used to familiarize the concept of just transition for the participant if needed.

Two participants were virtually interviewed through the Google Meet application and the rest of them were interviewed face to face in their office premises. Informed consent was

sought from all the participants in advance of conducting the interview through email. The interviews have been recorded and then transcribed through the “Otter.ai” application. transcribed speeches have been manually worked upon, cleaning the fillers and ensuring that all identifying words are removed to maintain confidentiality, as per the protocol. The digital file of each interview and an anonymized transcript will be maintained till the completion of the project. The same had been conveyed to the participants through the consent form. All the research instruments, i.e., the interview guide and the detailed consent forms were reviewed by the Internal Review Board (IRB) and approved by February 29, 2024. A detailed data log (Table 3) with pseudonyms and a confidential master data log linking names to pseudonyms has been recorded.

For secondary data, a comparative study of international just transition frameworks and associated policy responses are studied from other countries, companies that have incorporated a just transition strategy in some capacity, as well as the ones proposed by civil society organizations, consulting firms and think tanks in order to get deeper and diverse insights. The purpose of a deep dive into diverse set of secondary data has also helped in reassuring that the underlying principles of just transition are universal.

2.1.3 Data Analysis

The data has been analyzed in two phases-first, a thorough understanding of the secondary literature has been done to have an understanding of the existing just transition frameworks and investigate to find the closest fit that can be used to fit into our scope; and second, codifying the primary data that is received through participants’ interviews to gain deeper insights for a most appropriate just transition policy response by JSW Steel. The secondary data provides us with the key considerations that need to be incorporated in the recommendations for JSW Steel, also providing with the points of inquiry that need to reflect in the interview guide. A close tally of both primary and secondary data helps build

coherence, keeps the analysis well tied to our scope and produces insightful recommendations for future action.

2.1.3.1 Secondary data

The existing literature around the national JT frameworks from other countries has been studied to gain insights into policy responses and challenges and to understand key stakeholder interactions. Companies that have incorporated a successful JT strategy in their broader corporate strategy have been studied by referencing their annual reports/integrated reports (IRs)/sustainability reports. Additionally, proposed JT frameworks by the International Labor Organisation (ILO), International Renewable Energy Agency (IRENA), GIZ, etc., have been studied for key learnings. Within India, the JT policy roadmap that is being operationalized for the coal mining sector has been reviewed. The analysis of the secondary data has been categorized under broad themes.

Commitment of the Board of Directors and Senior Management

Aligning with the relevance pertaining to the scope of the research question mentioned earlier, the World Economic Forum's (WEF) briefing paper "The Chairperson's Guide to a Just Transition" has been very helpful in understanding the key questions the Board of Directors need to answer and the engagement dimensions that they need to consider in their stakeholder considerations for a just transition (World Economic Forum & Deloitte, 2022). Based on the Five Capitals Model (Forum for the Future, 2020) of sustainability framework- *social, manufactured, financial, human and natural capital*, the unique role of the Board encompasses having a strategy to match the time and pace of the transition, deepen and strengthen social and business commitments, create sustainable and resilient communities in the areas of business operations and have a mindset that promotes active collaboration cutting across the industry as well as the region. Our key point of enquiry of workforce revamping

falls within this paradigm. The Board's responsibility of providing the right skills to the workforce so that they are able to deliver long term value in the future with appropriate livelihood support is seen as paramount. The framework that the Board can follow in order to incorporate a just transition (World Economic Forum & Deloitte, 2022) has **four** major steps-

- Understanding the context and gaining complete understanding of the interlinked complex issues pertaining to the stakeholders through active engagement and laying them over to the transition impacts
- Having a clear vision of the goals and aligning business strategy accordingly- active stakeholder engagement in goal setting and committing to just transition
- Having a clear public commitment towards just transition, prioritising set of activities for alignment and plan for resource allocation
- Continuous monitoring and reporting of key performance indicators (KPIs) related to just transition, agreed through mutual dialogs

The key considerations that this framework urges the Board to have relating to workforce are an understanding of the future skill requirement, capacity of the existing workforce to be reskilled/ upskilled as per transition requirements, changes in diversity and inclusivity over time as workforce changes and value chain impacts as a result of transition. This framework sets the stage for our subsequent recommendations in drawing up a roadmap for JSW Steel and incorporating just transition indicators.

Robust pipeline for skill development that is future-ready

ILO's guidance notes (ILO, 2015) on just transition for sustainable development and resilient economies focuses on regional solutions of greening the economy. Skill development at national and subnational levels should be mainstreamed with supportive policies of policies around occupational health and safety, human rights, social protection through safety nets,

with overarching active social dialog as the key enabler. The government's role to create opportunities for the industry and other institutions to have a just transition plan are also critical. The note (ILO, 2015) also highlights that from providing coherent and robust policy signals and ministerial commitment towards implementing just transition to financial incentives, to providing institutional arrangements for collaboration among civil society, industry, academia and government, the role of the government as a whole is very crucial. Political willpower to support just transition deliberations can be aided by government machinery. Though the primary data hasn't revealed much on what the regulator and/or the government can do to aid in just transition, mainly because of a lack of perspective or awareness, we will look at this guidance note as a beacon of light for future work. Zooming on skill development, the note (ILO, 2015) advocates that governments need to work collaboratively with the industry and civil society institutions to develop holistic programs around skill development based on need assessment from the ground. Need-based skills that have a market demand in the future and remain relevant in a green economy need to be made available. Value chain partners in the heavy manufacturing industry, which are majorly Micro, Small & Medium Enterprises (MSMEs), need to be handheld for the transition planning and be given the appropriate viable opportunity to reskill and redeploy if required. Clubbed with adequate social safety net packages, the government needs to incentivize all parties to negotiate for the common good.

The just transition experience of other countries through the "Just Transition Framework for India" report by iFOREST has been studied (Bhushan & Banerjee, 2023). The German experience has brought out the need for strong central and state-level policy measures for enforcing institutional and governance mechanisms and economic diversification in the regions that would need to transition. Specific to labour support, the key factors to be addressed are reskilling for the affected workforce, fair compensation and other

benefits for all companies in the value chain of a particular organization, and social protection in terms of safety nets. The South African example where the complete closure of coal mines is scheduled between the years 2023-2027 is following a JT framework with emphasis on reskilling of potentially affected employees, the social safety net mechanisms, diversification of economic activities, and an institutional governance mechanism for top-down policy measures.

Active stakeholder engagement and social dialog

A formal framework establishing the importance of social dialogs and participation at the grassroots level can be found in the 2021 report “Supporting Just Transitions in India” and should be at the heart of just transition efforts towards reskilling and managing workforce revamping (Climate Investment Funds & The Energy and Resources Institute, 2021). Though this framework has been put in place with the coal and the power sector in focus, its insights can be helpful for workforce interventions under JT in the unexplored private hard-to-abate sector as well.

Globally, workforce revamping measures entail reskilling for “green jobs,” investments in education and training for reskilling, the social safety net packages, and social dialogs and participatory approach across the entire spectrum (Bhushan & Banerjee, 2023). A coal belt study within India by the Just Transition Research Centre (JTRC) at the Indian Institute of Technology (IIT) Kanpur has extensively covered the perceptions of the grassroots stakeholders, reiterating the importance of trade union support for workforce welfare interventions and inclusive participation from the lowermost level (Swarnakar et al., 2022).

The B-Team, a global non-profit that works towards creating better business practices centred around humanity and climate change, published a report (The B Team & Just Transition Centre, 2018) to guide businesses who are committed to reach net zero emissions

for incorporating a just transition strategy to ensure that the communities and the workforce is supported. The broad themes are no different from what the ILO guidance (ILO, 2015) indicated or the one that the WEF published much later. For companies, according to the report just transition process involves active social dialog between the company, its workers and unions, and the communities it operates in. The end goal is to have a strategy for just transition and should have a clear emission reduction pathway in line with Paris goals along with a strategy for creation of green jobs that are decent, secure across the value chain. Their proposed framework focuses on **three** steps for companies to follow -

- Active engagement with all stakeholders for future skills assessment, skill demand and transition readiness, ensuring timely dissemination of knowledge about positive and negative impacts of transition
- Detailed planning for driving phased wise emission reduction strategies within agreed timelines, with provisions for skilling, sustainable livelihoods and community resilience
- Be transparent and deliver the programs under just transition through enabling safety net packages, skilling and training interventions and pave way for advocacy with the government that help in creating pro-business policies

The thought leadership proposed to JSW Steel follows this framework (The B Team & Just Transition Centre, 2018) and is mentioned in the recommendation section.

A 2024 technical report (Chauhan & Swarnakar, 2024) on the Indian steel sector, “India’s energy transition: An enquiry into the steel industry and its path to sustainability” follows through with a similar set of recommendations encompassing emission reduction that is fair and equitable. Apart from the critical aspects of social dialog, timely and coherent information dissemination transition planning and support, economic diversification and resilience of the communities, the recommendations also cover continuous research and

innovation to turn the transition impact into an opportunity, continuous monitoring of transition to a green economy, and a focus on renewables as one of the sources of inputs into the manufacturing process and/or value chain.

Business For Social Responsibility (BSR), a consulting firm working towards creation of a sustainable planet, has developed a toolkit for a business to plan their just transition process, essentially through active social dialog and continuous engagement with all stakeholder groups to ensure that all interventions and future solutions are fair, inclusive and equitable. Though the framework (Business for Social Responsibility (BSR), 2023) has been developed with the Energy and Utilities sectors in mind, as they are the immediate candidates for a transition, the broader themes can be applied to the steel industry as well. It is important to mention that the takeaways are quite similar to the other frameworks we have reviewed in this section, necessarily reiterating the point that there is an agreement across the industry and academia of what the broad steps of planning should be. While the complexities of planning an effective just transition are very high, owing to the interlinkages and impacts across the broader value chain, the proposed **five** phases of planning have contributed to the subsequent recommendation that has been made to JSW Steel

- In depth understanding of all just transition issues post deep engagement with all stakeholders who have been and will be impacted as a result of a green transition
- Overlay and map the company's decarbonization pathways with impacted stakeholders and the location of the impact (departments/ functions). Assess for impact on existing commitments or net zero efforts
- Assess for the current understanding and awareness levels within the organization at all levels to understand the exact context as well as the readiness for incorporating a just transition approach

- Set Board ownership towards just transition, essentially institutionalizing a governance structure that will track, monitor and follow through on the feedback received from the ground.
- Develop a just transition strategy with an overarching strategic vision. Follow it up with clear objectives and priorities that can be tracked through KPIs at agreed timelines

Planning ahead and inclusive participation

It is imperative to understand that a critical part of having a just transition plan is preparation, i.e., scaling up the readiness of the organization which entails knowledge sharing and awareness about the concept. Stakeholder engagement and active social dialog is an all-encompassing action point that cannot be underrated in such a strategy. The report (Business for Social Responsibility (BSR), 2023) also provides detailed guidance on a set of just transition indicators that need to be incorporated and tracked within the existing climate transition plan of the organization.

- A public commitment to just transition, shared vision of climate transition and just transition, underscored by the importance of human rights and diversity
- Setting a strategic vision for just transition along with goals and targets
- Enlisting priority areas of work impacting stakeholder groups that need to be central to all deliberations and interventions
- Process documentation of just transition approach, tools, etc.
- An action plan for interventions for various stakeholder groups with specific regional issues taken into consideration
- Agreed KPIs that are regularly monitored and provide a mechanism to measure progress and performance of just transition efforts

- A plan to demonstrate the company's just transition commitments, stakeholder engagements, transition impact analysis, risks associated with the change, and the company's response strategy to manage and mitigate these risks in the medium to long term.

Focusing on the scope of workforce planning, the guidance (Business for Social Responsibility (BSR), 2023) suggests having demonstratable negotiation with the workforce and the union, giving fair and equitable access to reskilling and training for decent jobs that have future prospects, providing adequate social protection and livelihood support, and relaying information well in advance of changes that are to come.

The Council for Inclusive Capitalism's framework (Council for Inclusive Capitalism, 2021) suggests a pathway for companies to follow to ensure that their transition strategies are just, fair, and inclusive. It advocates companies to work at two different levels- one, core ESG practices for just transition and two, ambitious targets and activities of just transition that the company should aspire to reach. It reads from the best practices of seven companies in the energy and the utilities sector, the suggested frameworks and guidance by the ILO, UNFCCC and inputs from think tanks. The framework is based on the four central pillars (Council for Inclusive Capitalism, 2021) of –

- i. *Decarbonization to reach net zero* – Core strategy of universal fair energy access and reaching net zero with an ambitious target of responsible closure of assets, mitigating negative impacts of transition and channeling investments for a just transition
- ii. *Workforce empowerment* – Core policies of fair pay, decent work, diversity and inclusion and upholding of human rights followed up by an ambitious commitment to retrain/reskill existing workforce for low emission jobs along with social safety net packages for sustainable livelihoods

- iii. *Community resilience and rejuvenation* – Core interventions of local development and preservation of biodiversity and cultural heritage, followed by ambitious vision to support value chain partners in just transition and collaboration with education and skilling partners for training in roles that would be relevant in the future
- iv. *Active engagement and transparency* – Core activities of active engagement with the workforce and participative decision making followed by ambitious targets of industry and peer collaboration for scaling transition efforts, creating sustainable interventions for employment and engagement, and a measurable, defined climate transition plan

It should be noted that inputs from the above-mentioned framework also feed into a benchmarking tool that we have leveraged to create a just transition framework for JSW Steel.

The Institute for Sustainable Development (IISD), having reviewed the Indian challenges of climate transition and the solutions that are workable to the Indian context for a just transition, prepared a brief in 2021, “Building Bridges to a Just Transition: Connecting India’s challenges and solutions with international experience” (IISD, 2021). The brief identifies the Indian context of just transition, focusing on the coal sector, and suggests further research in areas of stakeholder need mapping, diversification of economic avenues, ramping up of social safety packages, and repurposing of old assets to new viable sources of economic value generation, while upholding the resilience of the community and the labor intact.

A review of comparative national, sub-national, and regional level just transition policies is showcased through the work of Tamara Antonia Krawchenko and Megan Gordon (Krawchenko & Gordon, 2021). A review of just transition policies and strategies across 25

countries and more than 70 regions (Table 1) identifies the current gaps and highlights the best practices. The broad themes of intervention that come out of this survey are -

- Well-coordinated and planned governance mechanism for just transition
- Proactive preparation and awareness for climate transition, with an assessment of future green avenues
- Workforce support through skilling, training, re-deployment and timely information dissemination
- Economic diversification of the regions the business units operate in for newer opportunities
- Regional and local development of the communities where the business units operate to uphold resilience despite transition
- Investments in technology innovation and research following an informed estimation of the future need
- Appropriate social safety packages to ensure sustainable and secure livelihood through the transition phase

The table below, as compiled by the authors, maps the interventions under the themes identified across 25 countries and the European Union-

Table 1:

Mapping of key just transition themes across countries

Type of initiative	AUS	BEL	BUL	CAN	HRV	DNK	EST	EU	FIN	FRA	DEU	GRC	HUG	ITA	KOR	LVA	LTU	MLT	NZL	PRT	ROU	SVK	ESP	SWE	UK	USA
GOVERNANCE																										
Consultations & engagements		X		X				X															X			
Multi-stakeholder collaborative tables				X														X								
Coordination offices				X														X					X			
SOCIAL SUPPORTS																										
Temporary financial support for displaced workers	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Employment services	X	X	X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Social insurance/ unemployment support	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pension supports	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WORKFORCE DEVELOPMENT																										
Employment and skills strategies	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Training and education programs	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Job databases & labor market info.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ECONOMIC DEVELOPMENT																										
Industrial transition commitments/ strategies	X	X		X					X	X	X	X				X	X		X	X		X	X	X	X	X
Business and tax incentives	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sector-specific Investments	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Small and medium-sized enterprises and entrepreneurship support	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
REGIONAL DEVELOPMENT																										
Strategies & plans	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Regional development program	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rural development program	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Infrastructure investments	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Spatial planning	X					X	X		X		X	X	X		X					X	X	X	X	X	X	X
KNOWLEDGE ECONOMY, DIGITALIZATION, INDUSTRY 4.0																										
Innovation investments/ initiatives	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Industry 4.0 Strategy	X								X	X		X		X	X								X	X		X
Funding for research and higher education	X	X	X			X	X	X	X	X	X			X	X		X			X					X	X
CLIMATE SOLUTIONS																										
Binding net zero GHG commitment	2040			2050 *		2050		2050	2035	2050	2050		2050		2050		2050		2050	2050		2050	2050	2045	2050	
Climate change & energy strategies	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adaptation programs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mitigation programs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Investments in clean tech./ energy transition fund	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Source: Krawchenko & Gordon, 2021

Note: Country codes: AUS, Australia; BEL, Belgium; BUL, Bulgaria; CAN, Canada; HRV, Romania; DNK, Denmark; EST, Estonia; EU, European Union; FIN, Finland; FRA, France; DEU, Germany; GRC, Greece; HUG, Hungary; ITA, Italy; KOR, Korea;

LVA, Latvia; LTU, Lithuania; MLT, Malta; NZL, New Zealand; PRT, Portugal; ROU, Romania; SVK, Slovakia; ESP, Spain; SWE, Sweden; UK, United Kingdom; USA, United States of America.

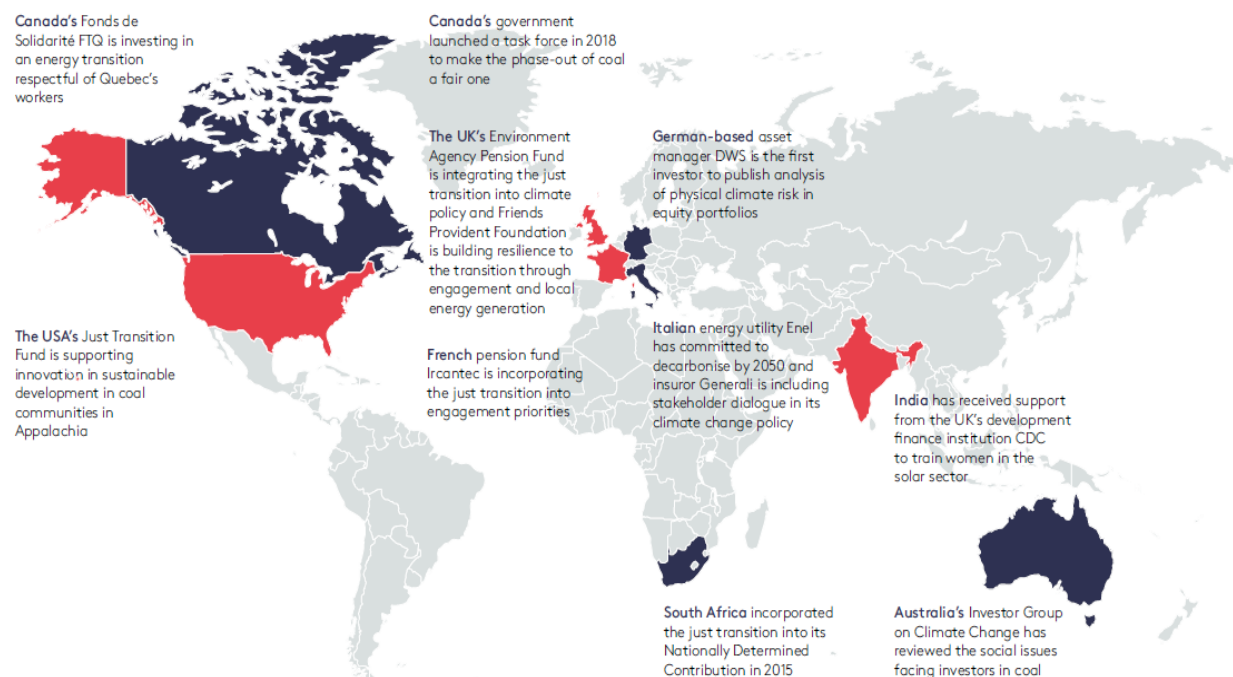
The best practices around the world have already demonstrated that a just transition plan is not a siloed approach. Instead, it must be incorporated into climate transition planning and demands action from all parties- governments, civil society, businesses, and investors.

The map here (Figure 2), drawn up and compiled by the Grantham Research Institute on

Climate Change and the Environment (Robins et al., 2018), shows the pace of progress across continents on just transition efforts.

Though financing a just transition falls beyond the scope of this project, it is interesting to look at the way investors have been engaging on this topic, thus providing a necessary impetus for companies to prioritize just transition as a part of their climate transition plan. The Grantham Research Institute on Climate Change and the Environment (Robins et al., 2018) has published the results from the work done by Vigeo Eiris, an independent ESG assessor, who has reviewed more than 350 companies across the world to see the degree of social impact considerations in the companies' transition strategies (Inter-American Development Bank, 2018).

Figure 2:
Select examples of just transition interventions from around the World



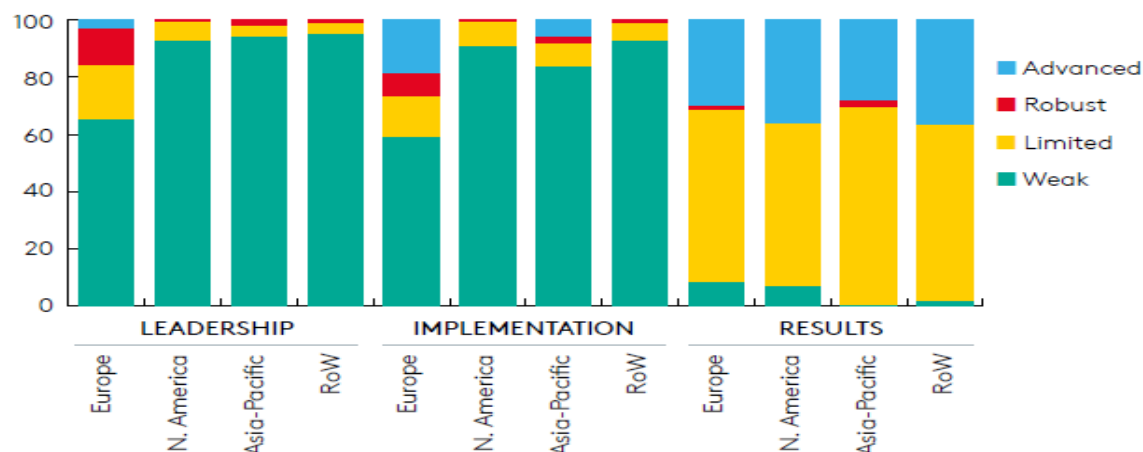
Source: Robins et al., 2018

The assessment covers three broad criteria- *leadership* (commitment towards a just transition), *implementation* (interventions for impact mitigation), and results (feedback from stakeholder groups on the company's efforts towards just transition and performance

indicators of the same). The graph (Figure 3) shows that North American companies are less prepared for a just transition compared to Europe. Asia Pacific and the rest of the world (RoW) have far poorer performance.

Figure 3:

Evaluation of companies on social impact considerations in their climate transition plans



Source: Robins et al., 2018

A detailed review of eight companies' (Table 2) that have disclosed alignment with just transition principles has been carried out to gauge their efforts in just transition and arrive at their broad intervention themes. The companies have been chosen through multiple internet searches and also through the mention of their progress across other reports. The industries covered are majorly oil and gas and electric utilities, with just one from the iron and steel industry. The broad themes that emerge from this assessment are that there has been a governance change for the ownership of just transition strategy top-down, the importance of human rights, diversity and inclusion, fair pay policy has been high, there has been a demonstratable stakeholder engagement and need assessment for skilling and redeployment, integrating a just transition approach into net zero strategies has been primary and collaboration with the government and skilling institutes have taken center stage. Additionally, it cannot be ignored that the local governments have played a crucial role in

providing appropriate policy signals and a suitable environment for this transformation to materialize.

Table 2:

Just transition (JT) progress of select companies across carbon-intensive sectors

Company	Sector	Highlights of JT Progress
Mahindra Susten	Renewable Energy	<p>Provide the necessary skills for the renewable energy transition while simultaneously supporting socio-economically weaker communities.</p> <p>A preferential selection of candidates from rural areas and economically weaker sections.</p> <p>Approach</p> <p>A comprehensive understanding of solar technology installation processes in the shortest possible time.</p> <p>A focus on modules and delivery methods, structured training curriculum, advanced practical sessions, guest lectures, and case studies.</p> <p>An affiliation with the Ministry of New and Renewable Energy (MNRE) and the Government of India's Skill India Mission.</p> <p>Continuous support from senior leadership</p>
ArcelorMittal	Steel	Just Transition strategy for the group; no policy outline stated publicly, just a broad framework of stakeholders listed
Eskom Holdings	Electric Utilities	<p>Enlists the just transition enablers</p> <p>In line with South Africa JT Framework</p> <p>Rather, the framework focuses on managing the social and economic consequences of those policies while putting human development concerns at the center of decision-making.</p> <p>The framework also considers the alternative economic models that may be needed to enable a JT</p>
Enel	Energy	<p>Awareness campaigns, active stakeholder engagement, advocacy activities</p> <p>Committed to implementing requalification programs for workers affected by the ongoing decarbonization process</p> <p>High-profile social dialog through the European Works Council</p> <p>Signatory to the UNSG Summit Pledge Letter (2019)</p> <p>Targeted KPIs for community engagement (2015-2030)</p>
Sasol	Oil & Gas	<p>Commits to retaining or compensating workers affected by the transition and has a JT plan</p> <p>4 phased approach to JT: Framing of approach & diagnostics, framework development, mobilisation, feasibility & piloting and diversity & scale</p> <p>Established the JT office and Centre for Shared Value Management (2020-2021) to facilitate effective communication, collaboration, and decision-making associated with this process.</p> <p>Developed a JT roadmap with prioritized interventions focusing on affected workers and communities.</p> <p>Identified five levers-Facilitating job creation (internal and external);Facilitating access to jobs (e.g., career concierge services);Upskill and re-skill individuals to take on new job opportunities;</p> <p>Exploring financial support mechanisms; Providing well-being support.</p>
SSE	Energy	<p>Identified 20 principles of a JT, divided between transitioning into a net zero world and out of a carbon intensive world</p> <p>Orderly managed transition to net zero that creates benefits and opportunities for people across Scotland</p> <p>Invigorate communities and strengthen local economies</p> <p>Equip people with the future job-ready skills and education</p> <p>Equitable costs and benefits</p> <p>Robust relationships with its stakeholders.</p> <p>Ongoing engagement, consultation, and collaboration with these partners and others.</p> <p>Key strategy: seek input from the ones who will be impacted</p> <p>Published the first JT progress report in 2023</p>

Source: Annual Sustainability reports of individual companies; compiled by the author

Table 2 (contd.):

Just transition (JT) progress of select companies across carbon-intensive sectors

British Petroleum	Oil & Gas	Human rights and education through collaboration with key stakeholders and other industries Develop skills for future energy systems, taking a socially inclusive approach Social dialog, transparency, and capacity building in civil society organizations Strategic workforce planning exercises Social dialog & community engagement Supplier assessments to assess workforce risks; Human Rights risk assessment
Shell	Oil	Joined Energy for a Just Transition, a business-led coalition created by the NGOs Business for Social Responsibility (BSR) and The B Team (2022) Employee-centred events Building skills and employability required for energy transition (KPIs tracked) Fair pay policy Bold DE&I target around gender, race & ethnicity, LGBT+, disability inclusion

Source: Annual Sustainability reports of individual companies; compiled by the author**2.1.3.2 Primary data**

The information from the interviews will be used only for the purpose of this project. The responses received at the interviews have been analyzed line by line and codified for deeper analysis. A qualitative assessment of the codes from the primary data has been used to identify patterns and broader themes in order to determine interventions needed for strategizing just transition workforce revamping applicable to the organization. The idea is to gain a deeper understanding of the challenges of a just transition and understand different perspectives around it. The key messages emanating by identifying patterns are used to derive common themes, building on to an overarching phenomenon that the participants are showcasing. The questionnaires were designed around the central premise of workforce revamping for a Just Transition alignment. As a result, the overarching themes that come out of the responses make an earnest attempt to answer the research questions, as stated earlier. The following table (Table 3) summarises the background of the participants who have been interviewed.

Table 3
Data Log

S.N.	Date	Location	Pseudonym	Particulars
1	21-01-2024	Virtual- Google Meet	Sam	Retired steel expert; wide exposure within the industry in various capacities
2	22-01-2024	Virtual- Google Meet	Bob	Mid to senior-level employee at JSW Steel; extensive experience across operations and sustainability disclosures
3	20-03-2024	Face to Face	Paul	Senior leader in corporate sustainability
4	22-03-2024	Face to Face	Ash	Senior leadership team of JSW Foundation; diverse experience across social impact sectors & the World Bank
5	29-03-2024	Face to Face	Vick	Senior human resources leader within JSW Steel; experience in handling contract labourers as well as senior engineers
6	29-03-2024	Face to Face	Pat	Senior engineer and a steel operations expert at the Dolvi site of JSW Steel

The *themes* that have emerged out of encoding the primary data are:

- i. Need for commitment to managing the impacts of decarbonization and technological change
- ii. Economic viability of transition management is equally important for the private sector
- iii. A robust pipeline for need-based skill development needs to be worked upon
- iv. Trainings in the steel industry are undertaken at regular intervals, however, an understanding of the future skill sets is not there
- v. Asymmetrical understanding of the future impacts of decarbonization from the lens of job roles and manpower

Most of the participants are aware of the idea of a green transition of the steel industry, with a deep sense of responsibility toward society at large as the industry decarbonizes and modern technologies get adopted. They agree that there needs to be a

commitment and ownership of the impacts of decarbonization. They understand the need to avoid inequities so anomalies and disparities do not percolate. As Bob puts it,

“But having said so, companies like JSW and the likes are always knowing about this that eventually we will need to be fair and justifiable in our activities. We have to be conscious in what we do because we care for not only today but also for tomorrow”.

On another occasion, Bob says,

“....when we talk about sustainable development, it's not only what you are, you as a company or as a person are going to do, it's the overall effect of what you are doing on the society supply chain. we have to see the viability of the people who are involved in the coal mining also be with us companies.”

Sam, Ash and Pat have a more holistic understanding of the industry. In fact, a technology-based understanding of the entire steel value chain and the challenges that this would throw up as the industry decarbonizes. They outrightly agree that transitioning people will be a big challenge

“In the decarbonisation process, the biggest challenge to my mind was, not technology, but dealing with people. For example, if there is an existing steel industry, and it wants to decarbonize in phases, one needs to look at the issue of the people already employed directly as employees or engaged as contract employment, we need to think about them, we need to also think about the skills that will be required to handle the new technology.”

He goes on to say,

“We need to take care of people in India. The so-called public-sector steel industries have not only been concerned with production but also with the welfare of their employees. So, I would think that they have a legacy where they have looked up to people, but also, one needs to not only look after the employees directly but the community at large, every single member of the community will not be an employee of the steel plant, but it will be part of the

larger production unit. So, we need to look at their aspirations, and we look at two more things- their health as well as their education and skilling. All these things are very important.”

Ash, given his diverse experience across all sectors, says

“And what would happen to the communities which have been based out of those locations, because of such operations, what happens to their livelihoods? What happens to the physical infrastructure which may not be directly connected to say for example, your mining operations, but per se, even for example, if you set up a big school there, what happens to that school building at some point”.

Paul, has a 360-degree view of the entire value chain, including technology as well as the community of the steel units and raises the flag of concern through,

“but outside the organization, the community depends on these factories for their livelihood. But what is going to have impact going ahead with livelihood, there will be demand for access to clean air, clean water, clean environment. And that will be a challenge for manufacturing companies like JSW. So that means that will have indirect impact for us to clean up- not only clean our facility, we have to ensure that this community has a clean access to the water, air and environment what they are living in”.

There is an understanding of the technology progression for partial to complete decarbonisation which would pave the way for just transition considerations. Five out of six participants agree that change is very far away and can only be incorporated once there is economic viability and economies of scale is reached. Additionally, for the company to incorporate any intervention, there needs to be profits and policy signals from the government. As Paul says,

“..because if we don't make profit, nothing is going to happen.”

The primary data indicates that there is agreement for the need of appropriate skill development programs that can get jobs, with most the participants believing that the approach would be top down, coming from the government, with corporations following suit. The participants agree that there is a skill gap which is not new to the steel industry and that the current skill development mission and provisions are inadequate for the steel industry. Vick goes to point out

“But steel industry has 70% other job roles, which are only for steel industry and those are not available in ITI trades yet. Like a crane operator not available in ITI, the mills operator, the CSP castor operator, Bobcat operator and other 50 trades or 50 job roles.

Government doesn't have those trades available in their regular curriculum. Of course, government has developed, the national skill development council has developed where they have left out to the industry to create a module and implemented but no much of the industry is directly connecting with them.”

Vick gives an insight to the detailed skill development and training collaborations that are being done across different cadres within JSW Steel, however, agrees that the lowest cadre, most susceptible to a transition has not been worked upon yet. On the need for appropriate skill development programs, Paul opines that technical education for steel industry needs to be scaled up,

“We have to create the right kind of skilling we have to train people; we have to create those Institute, we have to institutionalize the development of skill in the national level and also in the company level. See, right now, we know we are producing the largest number of engineers from India, but they are not all employable... we have to create those infrastructure where we get engineers and skill them for the production facility, and that has to happen, it has to happen nationally, it has to happen and also in the organization level.”

Sam echoes this, saying,

“..this is the dimension of precise planning required to get people skilled, in other areas, how can they can retain revenue earning capacity without mining. So, this is an issue, which is a large issue for the, for the thinkers, but for the, for the policymakers, for the government, anywhere, anywhere in the world..”

Bob complements this view, however, he emphasizes that the idea of a just transition is in very nascent stages for the corporations and would need government action,

“See, today, when we talk about such words, like just transition, which are very important, these are typically nationwide approach. And the first come first basis is the bigger companies will need to embark on their journeys, the smaller companies will eventually tend to fall over a period of time. So, India, I'm sure there are a lot of things which are already under transition or maybe there might be some policy developments are so in place, but for companies, it is still into a very nascent stage.”

Paul and Pat both opine that the concept of just transition, is not known in the industry widely, in fact, the concept of sustainability is also not widespread.

The participants broadly agree that reskilling and training haven't been new to the steel industry and showcase the theme of being familiar with change, thereby hinting that skill-level changes have always been there and the industry/organization has always dealt with it organically. It is worthwhile to note that there is a lack of a futuristic vision to skilling and training. Human resources and operations experts, which one would expect to have future estimates, believe that skilling needs have been organically furnished with technology change. However, a holistic understanding of a skill assessment pipeline and risks associated with modern technologies is limited. The operations expert, for example, could not comment with conviction on the future skill needs and/or the roles that would become redundant.

Few of the participants who have a systemic understanding of the value chain of the steel industry speak of the *challenges* that need to be dealt with under a just transition

program, *namely resource security, access to energy, health and education* of the workforce as well as the community in which the business unit operates. With experience leading a diverse set of programs under the Foundation, Ash reiterates the importance of educating women, water management, waste management, need-based skill development, and creating communities that are independent of JSW Steel's presence.

While the participants seem to converge to some extent on the themes discussed above, a strong divergence is observed in the understanding of the concept of Just Transition and the understanding of the impact on the workforce and the need for revamping it. Coming across as a visionary, Sam is quick to draw parallels with other technological developments like automation or Industry 4.0 and its impact on the workforce. He is able to foresee there would indeed be job losses and transformations which will have socio-economic impacts-

“and there'll be other areas, which will be partly because of lack of skill or and not upskilling in tandem with the skill gaps. So, I think these are basically not technological issues; these are what I call socio-economic issues. These are very serious issues. The general feeling is that decarbonization will reduce the number of employees. People will still be required in maintenance work that can be contracted. The job profiles in green steel works will still be direct employees and contracted people. Okay. The number of people will reduce, I think, because of high levels of automation.”

On the contrary, Bob isn't too convinced about the phenomenon of job losses or transformations, emphasizing that the scale of decarbonization, which will entail major job losses and transformations, is in very early stages and lacks viability. To me, this seems shortsighted, owing to the lack of any supportive argument when he says,

“So, we will definitely keep transitioning without removing manpower to achieve this transition to cleaner technologies.”

Ash critically pointed out the need for *timely information dissemination* about the changes that the industry will go through to all stakeholders, especially the labourers and the communities that will be impacted or displaced. This has not been echoed by any other participant. Drawing from his previous experience in an oilfield, he says,

“The challenge was, nobody had kind of communicated it in clear terms to the people who had deployed their tankers, that at what point of time with what amount of notice period those tankers would be done away with.”

And follows it up with

“rings in my mind that for just transition, it's very important to reach out to the community, well in advance, work very closely with them to let them know what all is going to happen in times to come. If we have clear different timeline boundaries in front of us, it's important for us to go and engage with them..”

This theme is crucial, as understood through our secondary data and international frameworks that have been proposed. Pat sticks to his opinion that the change will affect only mining and that steel wouldn't change much. The manpower, he believes, would just have to be moved from one operating floor to the other as technology advances. We can thus see a lot of divergence in the general understanding and envisioning of the concept of workforce revamping.

While most of the participants clearly understand the corporate priorities in the medium to long term and the phase-down of fossil fuels, the depth of an understanding of the spillover effects varies. A true assessment of how the future technology would play out regarding process details is still not known in great detail. This could be attributed to the serious lack of clarity from the policy circles or the economically viable pathways the government plans to take towards steel sector decarbonization. Additionally, for organizations like JSW Steel to take cues, national and sub-national institutions might have to

play as well as demonstrate greater involvement towards training and skilling the workforce for green jobs that are future-ready.

It is also worthwhile to point out that primary data collection has not revealed much insights into the proactive need for active stakeholder engagement and continuous social dialog. Contrary to what secondary data states through best practices, the majority of the participants have not demonstrated that they understand the need for this intervention. Additionally, the perceptions from the participants fail to throw light on what they think could be interventions from the government that could be helpful. Beyond stating that the country needs to create a better skill development program and provide incentives so that decarbonization becomes viable, which are very generic, there have not been any further revelations around roadmap, milestones, or even a plan.

2.1.4 Validity Threats

- Selection bias: The participants that have been interviewed and the ones who have been left out have been strategic choices. However, it could be possible that the selected participants and their biases could predominate the study's perspectives and not be completely representative of the actual issue
- Reactivity or reflexivity: The way questions were curated and the line of questioning could have an impact or show an underlying bias to the participants, thus influencing their responses (Hammersley & Atkinson, 1995). Though specific care was taken to curate an interview guide that was neutral in nature, the possibility cannot be completely omitted

3. Discussion

A review of secondary data, as well as insights from our primary data, suggest that the approach to just transition needs to have involvement of all concerned directly and indirectly. Moreover, the concept needs to be ingrained into the governance model for percolation through policies and interventions. More importantly, the strategy needs to be ingrained into

the net zero plan of climate transition and should not be pursued in silos. A ‘whole of the systems’ approach has been integrated and the concept of multidimensional energy justice (Abram et al., 2022) has been used to set the foundation for building up a roadmap for JSW Steel. Energy justice could be of the following types:

Procedural: Impacted groups are consulted regularly

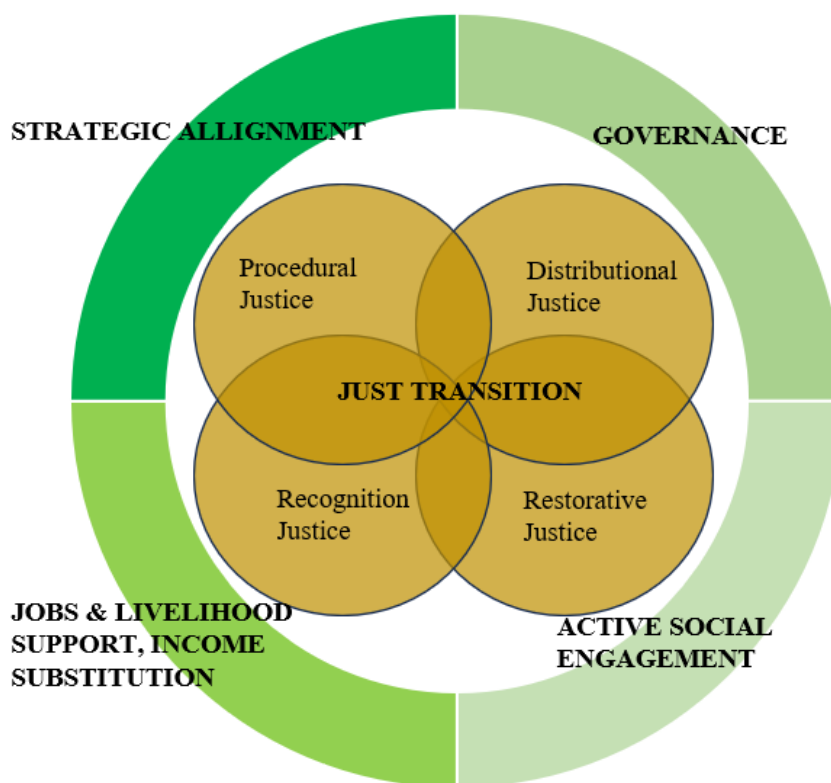
Distributive: Fair and equitable sharing costs and benefits of transition

Restorative: Compensating for harms; reducing future harm

Recognitional: Acknowledge inequities in society and focus on vulnerable groups

The basic considerations of governance/ Board readiness, social engagement and dialog, livelihood support, and strategic alignment with net zero plans have been listed for a policy workstream (Sharma et al., 2023) to be built up in the future (Figure 4).

Figure 4:
Policy workstream basis energy justice



Source: Sharma et al., 2023, author’s compilation

3.1 Recommendations for JSW Steel

Seven principles have been collated post an exhaustive review of the various international frameworks (Table 4) A gap assessment of the underlying components under each principle (collated across various literature previously reviewed) and existing provisions in JSW Steel (gathered through the company's annual Integrated Report and insights from participants) are mapped to understand the principle- wise action items for JSW Steel to follow.

Table 4:
Key Strategic Principles

S.N.	Principles	Components	Current Status
1.	Workforce Support & Preparation	<ul style="list-style-type: none"> Reskilling/Upskilling Severance pay Investments in education Worker Transition Support (cross mobility, training) 	<ul style="list-style-type: none"> Skill assessment pipeline for future roles absent, reskilling and training undertaken, however tagging it for future readiness needs to be undertaken No information about cross mobility within group companies as a transition plan
2.	Social Welfare	<ul style="list-style-type: none"> Curating Safety Net Package & Social Security Funds Creation Improving Development Outcomes in Impacted Locations 	<ul style="list-style-type: none"> No additional benefits offered beyond what is stipulated by the government No fund/SPV set up for the sake of JT exclusively
3.	Economic Diversification, innovation& Jobs	<ul style="list-style-type: none"> Investments & training in renewables & tech innovation Strategic plans for repurposing mining assets 	<ul style="list-style-type: none"> Existing social impact programs well directed towards diversification Trainings/upskilling/ collaborations for RE roles absent Indicative plans of repurposing mines in future not publicly disclosed
4.	Social Infrastructure, Local Development & Resilience Building	<ul style="list-style-type: none"> Local education infrastructure & support Community empowerment in terms of future ready job access & capacity National heritage conservation Gender responsive development 	<ul style="list-style-type: none"> Well established through interventions of JSW Foundation; narrative building of tying up these efforts under JT can be undertaken Focus on women, and marginalized sections to be deepened
5.	Environmental Sustainability	<ul style="list-style-type: none"> Circular economy interventions Climate Adaptation Support (water, biodiversity, waste management) 	<ul style="list-style-type: none"> Existing interventions on increased focus on resource efficiency, waste management , water & biodiversity conservation can be used for JT narrative building
6.	Active Social Dialog	<ul style="list-style-type: none"> Regular social engagement for understanding future skill needs/aspirations Timely information dissemination of transition impact & risks through engagement forums Build local support groups (civil society, community volunteers, trade unions) 	<ul style="list-style-type: none"> Knowledge forums about transition & its impacts absent Consultative approach towards skilling not evident JSW Foundation's strong network of existing partnerships to be leveraged for empowering and informing local support groups that can handhold for transition
7.	Government Support	<ul style="list-style-type: none"> Active advocacy for regulations, policies Collaboration for task forces on JT, Partnerships/collaborations for access to funds at national level (example: JET-P) 	<ul style="list-style-type: none"> No public mention yet

Based on the framework proposed by the WEF (World Economic Forum & Deloitte, 2022) and IISD's recommendations (IISD, 2021) for incorporating a just transition strategy, the following roadmap (Figure 5) for the process has been drawn up. This is a result of reviewing the best practices in the industry and reviewing the existing interventions that exist within JSW Steel. The timelines have not been mapped due to the paucity of information from JSW Steel about its commitment of resources towards it. However, this can be built up in future work once there is a leadership buy-in on the topic.

Figure 5:
Roadmap



Source: World Economic Forum & Deloitte, 2022; IISD, 2021

Simultaneously a guide to develop and institutionalise a strong thought leadership is devised, based on the recommendations of the B-Team (The B Team & Just Transition Centre, 2018).

This entails

Engagement

- Detailed consultations and timely knowledge dissemination
- Clear decarbonization pathway with interim milestones, human rights, and diversity and inclusion policies
- Target setting through collaborative dialogs and institutionalizing mechanisms for reporting, monitoring, and tracking

Planning

- Curate the emission reduction pathway in line with net-zero plans with clear, concrete, and measurable indicators with agreed timelines
- Human rights risk assessment of the workforce and the communities impacted as per government guidelines
- Update policies for decent work, diversity, minimum wages, occupational hazard and safety, collective bargaining rights, and forming associations freely, if applicable
- Assess for future skills requirements, have a risk assessment of current talent
- Focus on women, marginalized communities, and informal labor to ensure equity
- Plan to invest in economic diversification and resilience of communities and supply chains impacted by the business

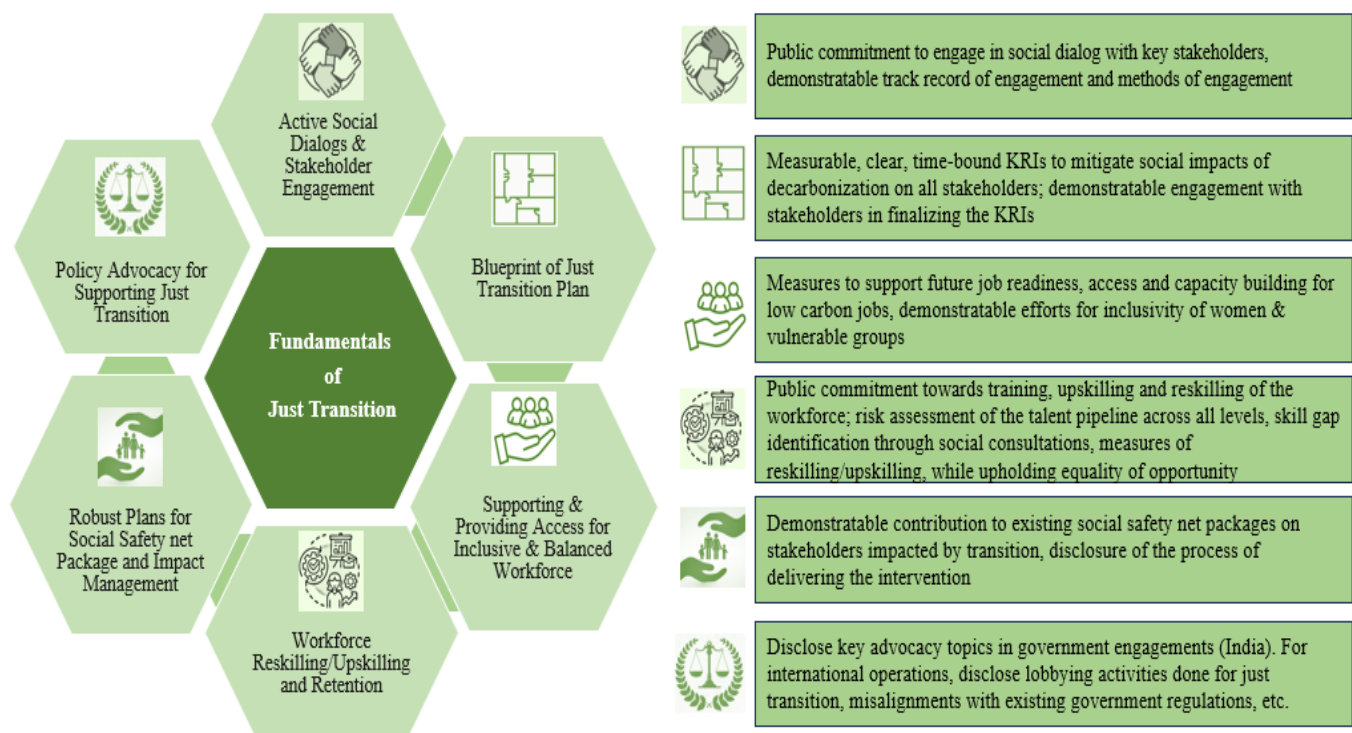
Execution

- Assess and curate appropriate social safety net packages for impacted workforce and communities (eg: early retirement, healthcare, education for subsequent generations)
- Enact training and reskilling/upskilling programs. Deliver plans for fellowships/ scholarships/ technical assistance in collaboration with specialized institutes (result of social engagement)
- Be transparent with all stakeholders and report progress at regular intervals

- Be an active negotiator with the government to bring in policies that are business friendly as well as help you to enact a Just Transition plan

The World Benchmarking Alliance (WBA) has released a benchmarking tool to assess companies for their just transition efforts. To begin with, they have covered about 450 companies from the electric utilities, oil and gas, and auto industries and released a report (2021 Just Transition Assessment, 2021). The indicators used for assessment have been arrived at after extensive consultations across the industry, following the frameworks as proposed by the ILO and UNFCCC, which have been discussed earlier in this report. These indicators have been used as checkpoints, as in the figure below (Figure 6), for JSW Steel to pursue workforce revamping interventions for a just transition.

Figure 6:
Key Just Transition Indicators for JSW Steel to Incorporate



Source: 2021 Just Transition Assessment, 2021

3.2 Recommendations for Policy Makers (Government)

While organizations like JSW Steel, which have a high carbon footprint, need to plan for a just transition and integrate such an approach into their climate transition plan and decarbonization pathways, it is important to understand that their efforts will need government support and enabling policies at the national and state levels. This has already been evident in our literature review of countries that have successfully incorporated a national just transition plan. Hence, efforts should be made by the government to

- Provide supportive policy signals for timely technology availability that is economically viable
- Build up skill development plans on a need basis and curate it as per the industry demands as well as the job sector will demand in the future. Make provisions for reskilling and retraining that are job-ready in the future
- Ramp up green skilling program (Skills Council for Green Jobs) after detailed industry consultations and link it with industry incentives
- Provide an environment where active social dialog and stakeholder engagement can happen and coherent information dissemination can happen well in advance
- Similar to the task force set up for Just Transition for the coal belt in India (Jharkhand & Chhattisgarh), begin deliberations for sectors like iron and steel and cement
- In the medium to long term, reporting requirements should be revisited for measurable transition plans to be included in annual filings, essentially capturing social and governance parameters

4. Conclusion

This study has earnestly attempted to produce a set of just transition policy responses by a private-sector steel conglomerate for workforce revamping. This also highlights the current state of just transition frameworks available compared to existing provisions within

JSW Steel, the strategic roadmap that the organization should begin to conceptualize, the key indicators that can be incorporated, and the possible points of intervention by the government for the same. A well thought after approach to just transition goes a long way in making it successful. Examples from around the world have evidenced that planning for a just transition takes time and requires the active involvement of all stakeholder groups.

For a private steel manufacturer like JSW Steel, essentials of active social dialog, inclusive stakeholder engagement at all levels, commitment from senior leadership and the Board of Directors, and a skill development pipeline that is monitored for risk and is future-ready have been incorporated into the recommendations. This study is a modest attempt to provide a framework for JSW Steel to follow for incorporating a just transition strategy in its vision.

Limitations and future work

The secondary data review has been done on a best-effort basis, with no existing framework for the steel industry to refer to for deeper understanding. For the sake of primary data collection, contract labourers, ground-level workforce, and community representatives have not been interviewed owing to the topic's sensitivity. However, a brief meeting with the local union leaders was done informally. While no formal questioning was done, keeping in mind the nature of the matter, their casual conversation revealed their happiness and how content they had been with JSW Steel's negotiation and social interventions. It needs to be mentioned that while there is ample evidence in the secondary literature of the need for the role of the Board of Directors in driving a just transition, interactions with the Board within JSW Steel could not be arranged in the limited timelines of this study. Hence, their perspectives on the topic have not been explored, and they are open to future work.

The financial aspects of just transition have not been explored and will be worked upon in the future. National and state governments' perspectives for just transition in the

overall steel industry have not been queried through primary data collection and are left for future work. Additionally, this piece of study only focuses on workforce revamping; the other key stakeholders- community, suppliers/ value chain partners, consumers, and the government have not been explored here.

5. References

- Bhushan, C., & Banerjee, S. (2023). *Just Transition Framework for India: Policies, Plans and Institutional Mechanisms*. iFOREST. <https://iforest.global/wp-content/uploads/2023/03/Just-Transition-Framework-For-India.pdf>
- Business For Social Responsibility (BSR). (2023). *The Just Transition Planning Process for Business*. <https://www.bsr.org/reports/BSR-Just-Transition-Planning-Toolkit.pdf>
- Cha, J. M. (2017). A Just Transition: Why Transitioning Workers into a New Clean Energy Economy Should be at the Center of Climate Change Policies. *Fordham Environmental Law Review*, 29(2), 196-220. <https://www.jstor.org/stable/26413303>
- Charmaz, K. (2006). *Constructing grounded theory: A Practical Guide through Qualitative Analysis*. SAGE Publications.
- Chatterjee, R., & Swarnakar, P. (2023). *Just Transition and the Youth*. Just Transition Research Centre, IIT Kanpur. https://www.iitk.ac.in/JTRC/file/Just%20Transition%20and%20the%20Youth_JTRC%20IIT%20Kanpur_Brief%20Report_April%202023.pdf
- Chauhan, S., & Swarnakar, P. (2024). India's energy transition: An enquiry into the steel industry and its path to sustainability. DOI:10.13140/RG.2.2.33420.90249
- Climate Investment Funds, & The Energy and Resources Institute. (2021). *Supporting Just Transitions in India: Just Transition Case Study*. https://www.teriin.org/sites/default/files/2021-04/Project_Report.pdf
- Council for Inclusive Capitalism. (2021). *Just transition framework for company action*. <https://www.inclusivecapitalism.com/just-energy-transition-home/#elementor->

action%3Aaction%3Dpopup%3Aopen%26settings%3DeyJpZCI6Ijk5NjkiLCJ0b2dn
bGUiOmZhbnNlfQ%3D%3D

Dworkin, S. L. (2012). Sample size policy for qualitative studies using in-depth interviews. *Archives of Sexual Behavior*, 41(6), 1319-1320. <https://doi.org/10.1007/s10508-012-0016-6>

Enel. (2022). *Open power for a brighter future: We empower sustainable progress*. <https://www.enel.com/content/dam/enel-com/documenti/investitori/sostenibilita/2021/just-inclusive-transition.pdf>

Eskom. (2023). *Eskom 2022 Sustainability Report*. : https://www.eskom.co.za/wp-content/uploads/2022/12/2022_sustainability_report.pdf

Forum for the Future. (2020). *The five capitals - a framework for sustainability*.

Retrieved April 12, 2024, from <https://www.forumforthefuture.org/the-five-capitals>

Hammersley, M., & Atkinson, P. (1995). *Ethnography: Principles in practice*. Psychology Press.

Hood, C. (1983). *The Tools of Government*. Macmillan Publishers Limited.

IISD. (2021). *Building bridges to a just transition: Connecting India's challenges and solutions with international experience*. <https://www.iisd.org/system/files/2021-06/building-bridges-just-transition-india-en.pdf>

ILO. (2015). *Guidelines for a just transition towards environmentally sustainable economies and societies for all*. https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_ent/documents/publication/wcms_432859.pdf

ILO. (2024). *Policy Brief: Green jobs and just transition policy readiness assessment in India*. International Labour

Organization. https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/briefingnote/wcms_873078.pdf

Inter-American Development Bank. (2018). *What is Sustainable Infrastructure? A framework guide to sustainability across the project cycle* (Technical Note No. IDB-TN-1388). <https://publications.iadb.org/bitstream/handle/11319/8798/What-is-Sustainable-Infrastructure-AFramework-to-Guide-Sustainability-Across-the-Project-Cycle.pdf?sequence=1&isAllowed=y>

ITUC, & TUAC. (2009). *A just transition: A fair way to protect the climate*. International Trade Union Confederation - Building Workers' Power. Retrieved April 11, 2024, from <https://www.ituc-csi.org/IMG/pdf/01-Depliant-Transition5.pdf>

ITUC. (2019). *Just Transition and Heavy Industry Roundtable - Summary*. https://www.ituc-csi.org/IMG/pdf/190827_summary_just_transition_heavy_industry_roundtable.pdf

Joshi, S., Mete, G., Sethi, G., & Mullick, A. N. (2022). *Insights from the steel sector decarbonization road-map workshop in India*. Leadership Group for Industry Transition. <https://www.teriin.org/sites/default/files/2022-09/Insights%20from%20the%20steel%20sector%20decarbonization%20road-map%20workshop%20in%20India.pdf>

Krawchenko, T. A., & Gordon, M. (2021). How do we manage a just transition? A comparative review of national and regional just transition initiatives. *Sustainability*, 13(11), 6070. <https://doi.org/10.3390/su13116070>

Louie, E. P., & Pearce, J. M. (2016). Retraining investment for U.S. transition from coal to solar photovoltaic employment. *Energy Economics*, 57, 295-302. <https://doi.org/10.1016/j.eneco.2016.05.016>

Mason. (2010). Sample Size and Saturation in PhD Studies Using Qualitative Interviews. *Forum: Qualitative Social Research Sozialforschung*, 11(3). Article 8

Ministry of Steel, Government of India. (2017). *National Steel Policy*

2017. https://steel.gov.in/sites/default/files/NATIONAL_STEEL_POLICY_2017.pdf

Niemiec, J. (2015). *What is just transition, and why do we all need to get behind*

it? European Trade Union

Confederation. https://www.etuc.org/sites/default/files/speech/files/what_is_just_transition.pdf

NITI Ayog. (2021). *Report of the Inter-Ministerial Committee on Low Carbon Technologies*

formed under the India-US Sustainable Growth Pillar of the Strategic Clean Energy

Partnership. https://www.niti.gov.in/sites/default/files/2022-11/Report_Just-Transition-Committee_compressed.pdf

Oxford Economics. (2019). *The Role of Steel Manufacturing in the Global Economy.* World

Steel Association. <https://worldsteel.org/wp-content/uploads/The-role-of-steel-manufacturing-in-the-global-economy.pdf>

PAGE. (2023). *Assessment of India's Green Jobs and Just Transition Policy Readiness.*

ILO. <https://www.un-page.org/static/2cad640e9ca92c8c6d7b307ab4aed698/231023-assessment-of-indias-green-jobs-and-just-transition-policy-readiness.pdf>

PwC India. (2019). *The Indian steel industry: Growth, challenges and digital disruption.*

Indian Steel Association. <https://www.pwc.in/assets/pdfs/consulting/technology/the-indian-steel-industry-growth-challenges-and-digital-disruption.pdf>

Robins, N., Brunsting, V., & Wood, D. (2018). *Climate change and the just transition: A*

guide for investor action. Grantham Research Institute on Climate Change and the

Environment. [https://www.lse.ac.uk/granthaminstitute/wp-](https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2018/12/Climate-change-and-the-just-transition_Guide-for-investor-action.pdf)

[content/uploads/2018/12/Climate-change-and-the-just-transition_Guide-for-investor-action.pdf](https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2018/12/Climate-change-and-the-just-transition_Guide-for-investor-action.pdf)

- Ryan, F., Coughlan, M., & Cronin, P. (2009). Interviewing in qualitative research: The one-to-one interview. *International Journal of Therapy and Rehabilitation*, 16(6), 309-314. <https://doi.org/10.12968/ijtr.2009.16.6.42433>
- Sasol. (2024). *Sustainability Report 2023*. https://www.sasol.com/sites/default/files/2023-09/SASOL%20Sustainability%20Report%202023%2020-09_0.pdf
- Sharma, V., Loginova, J., Zhang, R., Kemp, D., & Shi, G. (2023). How do past global experiences of coal phase-out inform China's domestic approach to a just transition? *Sustainability Science*, 18(5), 2059-2076. <https://doi.org/10.1007/s11625-023-01312-5>
- Shell Global. (n.d.). *A just transition*. Retrieved April 14, 2024, from <https://www.shell.com/sustainability/our-climate-target/a-just-transition.html>
- SSE. (2023). *Just transition: Measuring progress*. <https://www.sse.com/media/zzxoym2/just-transition-measuring-progress-report-2023.pdf>
- Stavis, D., & Felli, R. (2014). Global labour unions and just transition to a green economy. *International Environmental Agreements: Politics, Law and Economics*, 15(1), 29-43. <https://doi.org/10.1007/s10784-014-9266-1>
- Stavis, D., & Felli, R. (2020). Planetary just transition? How inclusive and how just? *Earth System Governance*, 6, 100065. <https://doi.org/10.1016/j.esg.2020.100065>
- Swarnakar, P., Singh, M. K., & Chatterjee, R. (2022). *What is Just Transition? Perception of Grassroots Stakeholders*. Kanpur, Uttar Pradesh: Just Transition Research Centre, Indian Institute of Technology Kanpur. https://www.iitk.ac.in/JTRC/file/What%20is%20Just%20Transition_JTRC_IIT%20Kanpur_1st%20December%202022.pdf
- Trochim, W.M., & Donnelly, J.P. (2001). Research methods knowledge base.

UNEP, ILO, IOE (International Organisation of Employers), & ITUC (International Trade

Union Confederation. (2008). *Green jobs: Towards decent work in a sustainable,*

low-carbon world. [https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_158727.pdf)

[emp_ent/documents/publication/wcms_158727.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_158727.pdf)

United Nations Framework Convention on Climate Change. (2016). *Just transition of the*

workforce, and the creation of decent work and quality jobs: Technical

paper. <https://unfccc.int/sites/default/files/resource/Just%20transition.pdf>

World Economic Forum, & Deloitte. (2022). *The Chairperson's Guide to a Just Transition-*

Briefing Paper. World Economic

Forum. [https://www3.weforum.org/docs/WEF_The_Chairpersons_Guide_to_a_Just](https://www3.weforum.org/docs/WEF_The_Chairpersons_Guide_to_a_Just_Transition_2022.pdf)

[Transition_2022.pdf](https://www3.weforum.org/docs/WEF_The_Chairpersons_Guide_to_a_Just_Transition_2022.pdf)

World Steel Association. (2021). *Climate change and the production of iron and*

steel. <https://worldsteel.org/wp-content/uploads/Climate-policy-paper-2021-1.pdf>

Appendix

Interview Guide

Category: People outside JSW Steel

1. How long have you been associated with the steel industry?
2. What has been the nature of your association?

Regular Questions

3. What are a few of the challenges that you foresee the steel industry will face in the medium to long term in terms of technological progress toward greener methods of producing steel?
4. Speaking of the diverse set of work profiles in the industry today (full-time employees as well as contractors), how do you see them changing as the industry moves to greener methods of producing steel?

(Prompt- Do you see increased employment/ employment requiring more precision in terms of tech understanding/ more automation?)

5. With your experience, as you understand the broad operations of the industry that are currently in place, do you think some job profiles will become obsolete? (Yes/No)

Yes- What kind of roles will become obsolete? Can you give some examples?

No- What are some major workforce changes you foresee?

6. Going down the line, the industry will need to adopt newer technologies in phases for decarbonization. What, in your understanding, are the potential skill gaps that the industry might face?
7. Given your experience, understanding of the industry, and the development the steel industry is undergoing, are you aware of the “Just Transition” conversations happening worldwide?

Category: People from JSW Steel

1. Please explain your current role in JSW Steel.

Regular Questions

2. What are a few of the challenges that you foresee JSW Steel will face in the medium to long term in terms of technology progress towards greener methods of producing steel?

(Prompt- You may choose to give a broad view or speak about something very specific thing you feel)

3. Speaking of the diverse set of work profiles in JSW Steel today (full-time employees as well as contractors), how do you see them changing as the company moves to greener methods of producing steel?
4. With your experience, as you understand the broad operations of the organization that is currently in place, do you think some job profiles within JSW Steel will become obsolete? (Yes/No)

Yes- What kind of roles will become obsolete? Can you give some examples?

No- What are some major workforce changes you foresee?

(Prompt- You may choose to give a broad view or speak about something very specific thing you feel)

5. Going down the line, JSW Steel will need to adopt newer technologies and move towards greener methods of steel production. What, in your understanding, are the potential skill gaps that the organization might face?
6. Given your experience, understanding of the industry, and the development the steel industry is undergoing, are you aware of the “Just Transition” conversations happening worldwide?

(Prompt- Provide a brief understanding of JT if the interviewee sounds a little unsure)

Informed consent form (sent as email)

Dear Sir/Ma'am,

My name is Antara Maitra and I am a postgraduate student of Public Policy with 12 years of corporate experience prior to this.

I am doing a research project on curating a *Policy Roadmap for Just Transition for JSW Steel, specifically exploring their workforce revamping strategy to be best aligned to a Just Transition*. I am especially interested in understanding the impact of greener methods of steel production and decarbonization on the workforce of the company.

Your insights on the need and the challenges of workforce revamping involving new job creation/loss, job transformations, and job substitutions as the steel industry transitions towards decarbonization will be extremely helpful for the project.

This interview should not take more than 45 minutes of your time. I will not disclose your participation in the study. In the final report, I will change your name and any other identifying information that you may reveal. Our interview will be held virtually on a video/audio call, which will be recorded. I will destroy the digital file of our interview within seven days from the interview date. I will retain an anonymized transcript until I complete my project (for virtual calls).

OR

Our interview will be held face to face within the premises of JSW Steel and it will be recorded. I will destroy the digital file of our interview within seven days from the interview date. I will

retain an anonymized transcript until I complete my project (for face-to-face personal interview).

You may choose not to answer a question and/or stop the interview at any point of time, should you deem fit. There are no risks to you from your participation with no direct benefits to you either. However, you will be helping me make a contribution to our knowledge and creating a policy road map. The study results will act as inputs to the workforce considerations JSW Steel will need to have for a 'Just Transition' framework.

Please feel free to contact me or my professor, Dr. Vishnu S Pillai, at vishnu2@kautilya.org.in if you have any questions.

Kindly respond to this mail in the following format:

“The nature and purpose of this project have been sufficiently explained, and I agree to participate in this study”

OR

“The nature and purpose of this project have been sufficiently explained, and I do not agree to participate in this study”

Thank you very much for your response.

Date:

Figure: Formal employment distribution in India (district level)

