

# AN INTERNATIONAL COOPERATION FRAMEWORK FOR JUST TRANSITION

**iFOREST**

INTERNATIONAL  
FORUM  
FOR ENVIRONMENT,  
SUSTAINABILITY  
& TECHNOLOGY



# **An International Cooperation Framework for Just Transition**

Just Transition Working Paper



**Author:** Mandvi Singh

**Acknowledgement:** This working paper has benefited from the feedback and comments of various experts, including colleagues of iFOREST.

**Design and Layout:** Raj Kumar Singh



November 2021

Material from this publication can be used, but with acknowledgement.

**Published by:**

Sustainability Innovations and Advisories Private Limited  
G-60, Nizamuddin (West), Delhi - 110013

---

# Table of Contents

<b>Summary</b> .....	<b>6</b>
<b>1. Introduction</b> .....	<b>8</b>
<b>2. Just Transition Initiatives and Investment Requirements</b> .....	<b>8</b>
2.1 Approach for just transition in coal regions .....	9
2.2 Emerging implementation initiatives .....	10
2.3 Costs and financing experiences .....	11
2.3.1 Compensation to coal asset owners .....	11
2.3.2 Social security net for affected workers .....	12
2.3.3 Development funds for affected regions .....	12
<b>3. Achieving Just Transition in Developing Countries</b> .....	<b>15</b>
3.1 Challenges with just coal phase out .....	17
<b>4. Components of global cooperation for Just Transition</b> .....	<b>19</b>
4.1 Co-operation experiences so far .....	19
4.2 Capacity building to support just transition .....	20
4.3 Financial support for just transition .....	21
4.3.1 Resource matrix for global just transition funding .....	23
<b>5. Framework for Global coalition for Just Transition</b> .....	<b>26</b>
<b>References</b> .....	<b>27</b>

---

## Summary

Developing countries require massive financial and technical support to ensure just and equitable phase out of coal under accelerated timelines, aligned with achieving decarbonization goals. The requirement of strengthened support has been brought up on several occasions at the ongoing COP26.

Collaboration frameworks need to be designed and built for ensuring just transition in developing countries. The UN Energy Transition Action Plan has set a deadline of 2030 for OECD countries to completely phase out coal and 2040 for non-OECD countries. Compared to a roughly equal dependence on coal about 35 years ago, the share of OECD countries in global coal has declined to about one-fifth, while the share of non-OECD countries has increased to four-fifth.

World's top 20 coal dependent countries include seven upper-middle income countries accounting for 62 per cent of global coal production and consumption; and four lower-middle income countries account for 18-16 per cent share. While almost all of these countries – China, India, Indonesia, South Africa have adopted net zero targets, firm phaseout timelines are yet to be adopted.

In this context, support for just transition is vital because part of the reluctance towards coal phase out stems from the massive existing socio-economic dependence in coal regions, besides of course energy security concerns.

Individual country experiences in Global North so far indicate that just transition requires comprehensive set of initiatives and sustained efforts to shutdown and repurpose existing coal assets; compensate, re-skill and re-engage workforce; overhaul the local economy through green industries; develop economic and social infrastructure; and rehabilitate local environment. While the amount of funds required varies substantially based on country scenarios, experiences and plans indicate that each of the cost components of just transition is substantially large, running into several billion dollars.

Achieving just transition in developing countries is likely to be much more strenuous, as majority of coal power plants in developing countries have come up in the past 10 to 15 years; employment dependence on coal sector is much higher; coal mining towns have typically have remained fully dependent on coal industry for its economic and social infrastructure; local governments have limited capabilities; coverage and efficiency of existing unemployment benefits and social security schemes is limited; while the challenge of raising funds and resources remains quite high due to overall lower development levels, and relatively limited capabilities of domestic financial markets.

Collaboration attempts being made for supporting just transition so far have been limited in scope or geography. The EU's Coal Regions in Transition Initiative is one of the most comprehensive inter-country just transition support mechanisms designed to provide both technical and financial support to member countries.

Broadly, individual country experiences and the collaboration experiences so far, demonstrate that support for just transition not only manifests as the funding support needed to meet the various cost heads, but also as extensive capacity building support for the redevelopment of coal regions and rehabilitation of coal workers.

Global experience and support can play a crucial role in selection of efficient transition pathways for coal regions, and in establishment of structures that help build capacities and competencies of a wide range of institutions and individuals involved in the transition phase as well as support initial pilot or demonstration projects to stimulate implementation. This framework can be built upon the intervention pathways already established through the multilateral and bilateral development co-operation experience. However, the multi-dimensional and localized requirements of just transition necessitate that the capacity building efforts be made even more broad-based and consultative, inclusive of all national and sub-national governments as well as relevant institutions, organisations, labour unions, and other community representative groups.

Similarly, the global financial support framework would need to be built upon the existing pool of bilateral and multi-lateral development support and carbon action funds.

- Bilateral and multilateral agencies can naturally take a lead in funding capacity development works – as majority of the just transition related requirements fall well within the purview of SDG agenda; and capacity development tools are central to their operational strategy. Specific programmes for technical assistance would need to be designed and negotiated with coal countries.
- Development banks have an important role to play in policy/programme level funding to national and sub-national governments for institutional action for just transition; as well as project financing for physical/social

---

infrastructure to private and public companies. Dedicated lending facilities and funding schemes should be needed for the coal region banks, businesses and governments.

- Existing and upcoming climate funds can be leveraged as various components of just transition action fall within the overall objective and impact areas, including clean energy, enhancing livelihoods, health and well-being, or even building climate resilience. These funds can thus fund specific projects under the community transition plans, especially demonstrate innovative business models and technology deployments.
- Carbon markets can also be leveraged for just transition funding by designing specific mechanisms accounting for the avoided carbon emissions from shut down power plants.
- Dedicated incentives and investment schemes need to be established to mobilize substantial private sector funding from foreign multi-national corporations and large institutions, as well as venture capital, private equity funds in to local corporations. This would include established techniques to investment promotion including designation of fossil fuel regions as special industrial estates or enterprise zones to provide tax breaks, easy land leases, high FDI inflow and external commercial lending limits, etc. Specific schemes can be designed to attract companies that have adopted net-zero targets. The funding for these incentives can be through national or state budgets or be backed by development banks.
- Private foundations can undertake crucial support activities such as in building engagements, public policy deliberations, identification of optimal pathways, community outreach, awareness, and capacity development etc. These funds can also be utilized for demonstrating livelihood centred sustainable business and operator models, as well as for social infrastructure rebuilding.
- Finally, global just transition support fund should be set up as a dedicated resource pool for extending grant financing for executing labour focused interventions such as direct compensation and reemployment schemes, that would otherwise have limited funding avenues besides national budgets, and existing internal carbon tax funds. The fund can be built from compulsory contributions from Global North, as well as voluntary contributions from other sources.

Further, an international coalition framework should be set up to push the agenda at the top; effectively deliver upon the requirement of just transition through internal mechanism; as well as spearhead, coordinate and facilitate, activities of various implementation agencies involved in the process.

An effective inter-government collaboration would require:

- Participation from all major coal dependent developing countries.
- A treaty that tightly defines targets and plans for member countries, clearly considering country priorities, coal technologies, development challenges etc.
- Effective burden sharing, explicitly acknowledging the requirements of developing countries.
- Dedicated multilateral Just Transition Assistance Fund, to meet just transition funding gaps.

UNFCCC can possibly lead in this, given its strong networks, structures and capabilities. However, the negotiations-based framework can be time-taking and tedious. For just transition in coal phase-out, a consensual agreement between all 197 countries is not necessary as a coalition targeting the leading 20 coal dependent countries can effectively address 96 per cent of the global coal production and 94 per cent of the global coal consumption. For delivering results, the inter-country coalition outside of UNFCCC for collaborative action for just transition would need to a broad-based inter-governmental alliance backed by a strong treaty that includes firm commitments and a dedicated funding plan.

---

# 1. Introduction

Phase-out of coal from the global energy mix is firmly central to realizing climate ambitions. Coal combustion is the single largest source of global temperature rise, with coal-based power plants accounting for 30 per cent of energy-related carbon dioxide (CO<sub>2</sub>) emissions, and other coal use accounting for additional 13.5 per cent share.<sup>1</sup> A drastic decline in coal consumption is thus needed to reduce emissions to net-zero levels by 2050, and achieve the Paris Agreement goal of restricting global temperature rise well below 2°C.

The United Nation's (UN) energy transition action plan for meeting the climate goals calls for coal to be completely phased-out from the Organisation for Economic Co-operation and Development (OECD) member countries by 2030, and from non-OECD countries by 2040.<sup>2</sup> While coal is fast losing its significance in the global energy mix due to dwindling economics, strong climate actions and enforcement of environmental legislations, achieving complete coal closure under accelerated timelines is still a tall task.

Prior to the COP26, explicit political commitment on coal closure had come forth only from 21 countries, that collectively represent less than 5 per cent of the global coal consumption.<sup>3</sup> Only seven of these have domestic coal mining industry. Several major coal dependent countries, including China, India, Russia, the US, Japan, South Korea, South Africa, Indonesia, Australia and Brazil, have adopted net zero emissions target but are yet to establish firm timelines for coal phase-out. Thus, while coal demand is expected to decline in going forward, in a business-as-usual scenario, the decline is projected to be limited to 25 per cent in the next three decades.<sup>4</sup>

There is reluctance towards complete phase-out of coal in these countries, despite visible efforts towards green energy expansion through policy and technology interventions, partly due to energy security concerns, and partly due to the massive existing socio-economic dependence on the coal sector. In absence of just and inclusive transition strategies, that ensure rebuilding of equitable and resilient local economies, coal closures can lead to huge economic disruptions for regions and populations directly and indirectly dependent on it. The economic hardship caused can cost governments politically and even derail decarbonization efforts.

As demonstrated by the experience of the Global North countries so far, just transition is primarily a massive regional re-development exercise for the coal regions. It requires multi-level, multi-agency planning targeted at simultaneously repurposing coal assets, ensuring economic rehabilitation of directly and indirectly dependent populations, and restoring local environment. Strong managerial commitment and competencies are needed to plan and execute the various inter-linked elements of just transition, while substantial financial resources need to be raised to meet the investment requirement.

For low- and middle-income countries, already struggling with pre-existing development gaps, limited capacities and resource crunch, this can be an insurmountable challenge. International push and support for just transition visioning, planning and execution thus becomes vital, if decarbonization targets are to be achieved.

## 2. Just Transition Initiatives and Investment Requirements

The concept of just transition originated in the 1970s as a support mechanism for workers displaced by environmental protection policies. It has now evolved into a multi-dimensional approach towards making climate action socially and environmentally inclusive across various transition sectors, including energy, agriculture, industry, transport etc. It can be defined and interpreted at multiple levels including that of region, society, and an individual. In context of coal-phase out, society-focused interpretations have been widely adopted as these incorporate and encompass broad range of interests and the widest spectrum of solutions.

In that, just transition movement has essentially emerged as an enormous development exercise, requiring parallel efforts to manage people, communities, assets, land and the local environment.

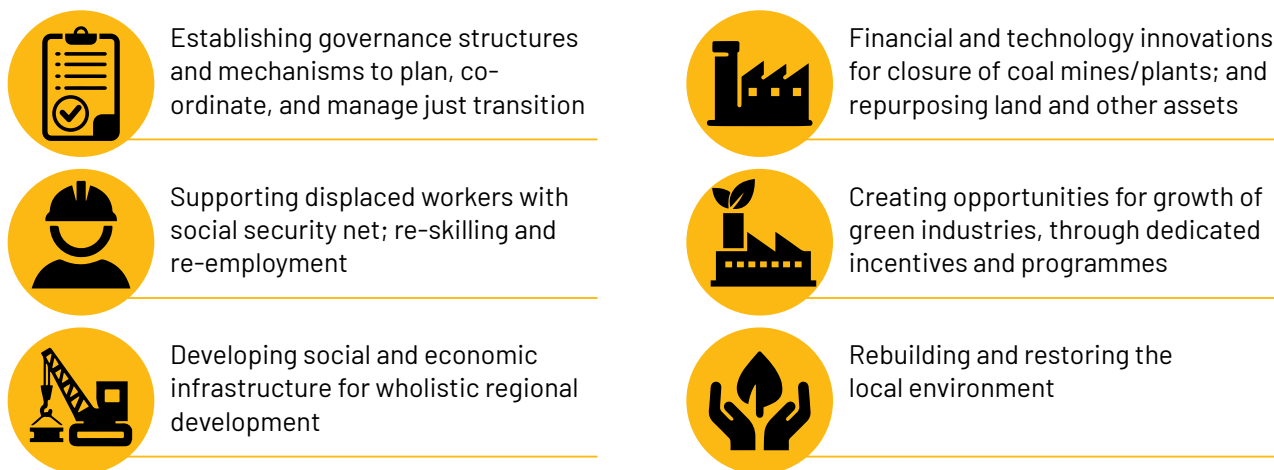


## 2.1 Approach for just transition in coal regions

Shutting down coal mines or coal power plants while ensuring just outcomes is a strenuous political, economic and social exercise. While accelerating structural transformations for inducing sustainable development and building economic resilience itself has been an overwhelming challenge for majority of the nations, the requirement of comprehensive redevelopment under coal phase-out becomes even more complex, as structural changes are to be introduced on an incumbent, already flourishing and established industry, leading to wide socio-economic implications. Coal phaseout is also far more complicated than pushing green technologies which primarily remains a technology-focused policy intervention, wherein private investments can make fair returns, new jobs are created, economy is stimulated, and the end-user is not adversely affected.

For a just transition out of coal, comprehensive set of initiatives and sustained efforts are required to shut down and repurpose existing coal assets; overhaul the local economy; compensate and re-engage workforce; and rehabilitate local environment (See Figure 1: Broad spectrum of Initiatives under just transition).

**Figure 1: Broad spectrum of Initiatives under just transition**



This requires very strong political commitment, followed by dedicated efforts towards sensitization of stakeholders and providing policy clarity on potentially contentious issues. The broad elements of the multi-dimensional approach for designing and delivering optimal outcomes include:

- Customization and tailoring of green transition and economic rebuilding plans, as local circumstances, potentials and priorities vary significantly across specific coal regions, even within a given country.
- Multi-level, multi-stakeholder engagement with those affected and with those that are part of the solution (national and sub-national government bodies, private sector, funders, civil society, community leaders, worker groups/representatives etc.). Governance structures need to ensure effective communication, engagement and collaboration.
- Building capacities and capabilities of institutions and individuals, through setting up of new frameworks and trainings of administrators, for effective planning delivery.
- Focusing on workers and communities, both directly and indirectly affected by coal closure, to avoid economic and social unrest.
- Stimulating wholistic regional development, through building of economic and social infrastructure, introduction of new age technologies as well as supporting entrepreneurial development
- Mobilization of multiple funding sources and mechanisms to meet the varied requirements of just transition interventions, including compensation to coal owners for early retirements

## 2.2 Emerging implementation initiatives

Strengthening climate commitments in Europe and North America have ensured that action on just transition is steadily expanding. While several developing countries already have strategies and practices in place for social, economic and environmental rehabilitation which are being leveraged for ensuring just transition, interventions have been introduced targeted specifically for regions facing transitions.<sup>5</sup> While these interventions are still at an initial stage, but they point to the need for integrated action across policy verticals. (See Table 1: Mapping of just transition initiatives in developed countries)

Europe, driven by the ambition of becoming carbon neutral by 2050 under the European Green Deal, has been most proactive in the area. While strong social security nets already exist in the region, dedicated initiatives and tailored support for industrial transition and regional development have been introduced both at country and at the EU-level. Canada and New Zealand have set up governance mechanisms to manage and co-ordinate change, while initiatives in the US have so far focused on providing support to displaced workers.

**Table 1: Mapping of just transition initiatives in developed countries**

Category	Interventions	Countries with interventions targeted for regions in transitions
Governance	Consultations & engagements	Canada, EU, Spain
	Multi-stakeholder collaborative platforms	Canada, New Zealand
	Coordination offices	Canada, New Zealand, Spain
Social Support	Temporary financial support	US
	Employment services	-
	Social insurance / unemployment support	-
	Pension supports	US
Workforce Development	Employment and skills strategies	Canada
	Training and education programs	-
	Job databases	-
Industrial Development	Industrial transition strategies	Australia, Belgium, Finland, France, Germany, Greece, Latvia, Lithuania, New Zealand, Portugal, Slovakia, Spain, Sweden, UK
	Business & tax incentives	-
	Sector-specific investments	Bulgaria, EU
	Small & medium-sized enterprises and entrepreneurship support	EU
Regional Development	Strategies & plans	Greece
	Regional development program	Australia, Belgium, Bulgaria, Romania, Denmark, Estonia, EU, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Portugal, Romania, Slovakia, Spain, Sweden
	Rural development program	-
	Infrastructure investments	EU
	Spatial planning	-
Knowledge Economy	Innovation investments/initiatives	EU
	Industry 4.0 strategy	-
	Funding for research & higher education	-

Source: <https://doi.org/10.3390/su13116070>

Note: Specific elements of just transition initiatives vary from country to country

## 2.3 Costs and financing experiences

So far, countries, under their respective just transition implementation frameworks, have identified and set aside funds for two key areas – (1) economic rehabilitation of coal regions and (2) meeting the immediate financial concerns of affected parties – labour and coal mine/plant owners. This broadly pertains to development funds being made available for affected regions, social security nets created for workers and compensation to coal asset owners for premature closure of operations. The experiences and plans of countries so far indicate that each of these cost components are substantially large, running into several billion dollars (See Table 2: Cost experiences of key countries with just transition).

Country	Size of coal economy	Compensation to coal owners	Social security for workers	Economic development
Germany	<ul style="list-style-type: none"> <li>• 19,500 workers in mining and plants<sup>6</sup></li> <li>• 40 GW</li> </ul>	€4.35 billion for 40 GW	€5 billion for workers 58 years of age and above (nearly half of total workforce)	€40 billion
Netherlands	<ul style="list-style-type: none"> <li>• 4 GW</li> </ul>	€328,000 per MW		
Spain	<ul style="list-style-type: none"> <li>• 1,700 mining workers</li> <li>• 4.9 GW</li> </ul>		€2.3 billion aid package for coal mining closure	
Alberta, Canada	<ul style="list-style-type: none"> <li>• 1,500 mining workers</li> <li>• 5.5 GW<sup>7</sup></li> </ul>	C\$1.36 billion for 3.5 GW	C\$40 million	About C\$250 million under various funds

Source: iFOREST research

### 2.3.1 Compensation to coal asset owners

Despite gradual decline in coal competitiveness, both in mining and power generation, countries are expending substantially large sums of money to persuade public and private operators to shut shop before end of the asset lifecycle. While these compensations should be typically based on an assessment of the asset's expected earnings over the remaining life, cost of dismantling the plant or restoring the mining site, and some additional support for business diversification; coal companies are evidently able to negotiate much higher prices for plant/mine closures.

In Germany, the national government has set aside €4.35 billion under its comprehensive coal exit law to pay power plant owners for phased shutdowns of about 40 GW of national coal-based capacity.<sup>8</sup> The compensation is being implemented through an auction-based mechanism wherein the operators submit a claim for taking the capacity offline within a pre-decided ceiling, which can range from €165,000 per MW to reward early closures (2021) to €89,000 per MW plants that close later (2024–27).<sup>9</sup> The first auction held in December 2020 for shutting down 4.8 GW of coal capacity was concluded at a weighted average of €66,259 per MW<sup>10</sup>, and the second round of tender held in April 2021 compensated 1.5 GW at an average of €59,000 per MW.

In Netherlands, the national coal prohibition law provides for a ceiling of €328,000 per closed MW or an amount equivalent to the assessed revenue loss plus the plant dismantling cost. However, only one of the country's five coal plants (Riverstone) has asked for compensation aligned to it. The other four coal plants have been seeking a much higher compensation through litigation under the Energy Charter Treaty, which grants substantial protection to foreign investors, claiming that the compensation offer does not match the depreciated value of plants. In 2020, the Dutch government agreed to extend a compensation of €52.5 million to Swedish energy company Vattenfall for closure of the 650 MW Hemweg 8 CPP, four years prior to its schedule. Another power generation company RWE AG is seeking €1.4 billion in compensation as it plans to shift its 1,600 MW plant to biomass by 2025, which it considers economically unviable without subsidies.

---

Compensations have been extended to power plant owners in Canada as well. In 2016, the Government of Alberta concluded a C\$1.36 billion compensation agreement with TransAlta, ATCO, and Capital Power, the major utilities in Alberta that use coal, for converting six units aggregating about 3,500 MW capacity into gas-based plants over 14 years.<sup>11</sup>

Similar payoffs are also expected in the mining segment. Recently, the Australian state of New South Wales agreed to pay \$100 million to Chinese Shenhua Energy Company for abandoning its approvals to build and operate Watermark open-cut coal mine in the Liverpool Plains for a 30-year period.<sup>12</sup>

### **2.3.2 Social security net for affected workers**

The extent of effort required to provide economic and social security to workers varies substantially, depending on existing social security structures, expectations of the workers and overall regional economic prosperity.

For instance, in case of Germany, workers below the age of 58 are already covered under a strong social security net that ensures continuation of health and retirement benefits during phases of unemployment and ensures payments under the public job retraining programme to support new vocational degrees and entry in new fields.<sup>13</sup> Coal mining in the country is estimated to employ about 19,500 workers, of which about half are younger than 58 years. To support older workers (over 58 years of age) who lose jobs due to coal phase-out an adaptation payment fund has been introduced under the coal exit law with a budget of €5 billion through 2048 to provide salaries until their pension payments kick in.

Previously, to manage the closure of coal mines in Ruhr and Saarland regions, two of the largest mining regions of Germany, the government had spent an estimated €18 billion on worker-centric policies adopted to address unemployment, such as retraining, financial aid for transfer into new employment, unemployment benefits, early retirement etc.

Labour unions and worker groups have been instrumental in pushing through such demands. In October 2018, mining worker unions in Spain had struck a deal, Plan Del Carbón, with the Spanish government for €250 million to be spent over the next decade, encompassing early retirement schemes, local re-employment in environmental restoration work and reskilling programs for green industries. Previously in 2016, the country had received an EC approval to provide a grant of €2.13 billion for closure of 26 uncompetitive coal mines directly employing 1,677 workers to cover production losses of operators, funding severance payments and social security benefits of mine workers and financing safety and remediation works necessary for mine closures.<sup>14</sup>

The worker unions managed another agreement with the Spanish government and coal plant operators in April 2020 for plant closures that include proposals to invest in new business opportunities in the same regions, and to facilitate training and re-employment of power plant workers. Coal plants in Spain employ about 2,300 workers.

In Canada, the government made a budgetary allocation of C\$35 million over a five year period to aid skills development and economic diversification activities, based on the recommendation of the December 2018 report from Task Force on Just Transition for Canadian Coal Power Workers and Communities.<sup>15</sup> Previously in November 2017, Canadian province of Alberta had announced a C\$40 million Coal Workforce Transition Fund to assist laid-off workers with income support, relocation assistance and transition advice, retraining and other resources to help those workers find new jobs.<sup>16</sup>

### **2.3.3 Development funds for affected regions**

Economic rebuilding of coal regions is at the heart of transitional justice strategy of most countries. Long-term efforts are required to attract and establish new industries to create job opportunities which accounts for the largest chunk of the transitional investment.

It is estimated that Germany spent nearly €38 billion over a 60-year long period for economic and infrastructure rebuilding of the Ruhr and Saarland due to gradual decline and eventual shut down of mining activity in the region. These measures included a stew of programmes and schemes to attract new investments and to improve infrastructure, education, innovation etc. However, a faster and more pro-active phase-out plan would have been much less expensive.<sup>17</sup> Germany has now approved support package of €40 billion for coal regions to diversify regional economies and create new jobs over the coming two decades. Around 65 per cent of these funds is for

rolling out infrastructure and other project by the national government, while the remaining 35 per cent is for regional investments. Under this, regions can apply for funds across nine categories based on how the economy is planned to be realigned.

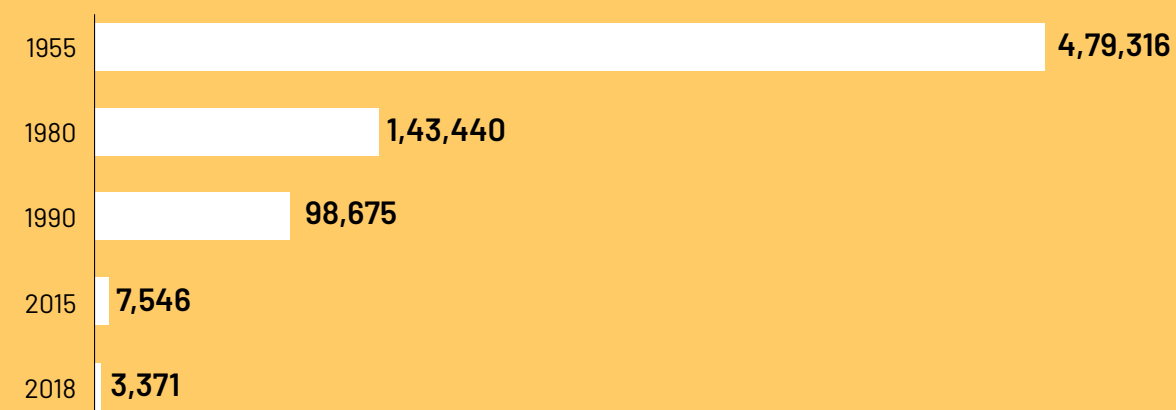
Spain is also making concerted efforts towards economic rebuilding under its Just Transition Strategy through the mechanism of Just Transition Agreements. These agreements are being developed as integrated regional action plans to support economic activity, diversification and employment in areas affected by coal phase-out. The projects under the agreements do not have a dedicated funding pool but are receiving preferential access to existing EU programs and funds.

Meanwhile in the US, the core focus of coal phase out planning has been on economic rebuilding. The Working Group on Coal and Power Plant Communities and Economic Revitalization set up by the Biden Administration earlier this year, identifies existing federal programs with potentially available funding aggregating \$38 billion to provide immediate investments to revitalize coal regions. Further, it is expected that support for these communities would also be available under upcoming economic and social strengthening programmes such as The American Jobs Plan, The American Rescue Plan, The American Families Plan etc. (See Box: Just Transition in the US: Funding Needs)

### Box 1: Germany's coal closure funding experience and plans

Gradual closure of Ruhr and Saarland coal mines over a 60-year period	Plan for phase of coal plants by 2038
<ul style="list-style-type: none"> <li>• €18 billion spent on social policies adopted to address the consequential unemployment</li> <li>• €38 billion went into economic and infrastructure rebuilding</li> <li>• €2 billion kept aside for upcoming pensions and mining damages</li> <li>• €7 billion for 'long-term eternity costs' (to be paid to future generations).</li> </ul>	<ul style="list-style-type: none"> <li>• €4.35 billion to be paid to coal and lignite plant owners as direct compensation</li> <li>• €5 billion development funds for coal regions to diversify regional economies and create new jobs over the coming two decades</li> <li>• €5 billion of social security net through 2048 for older workers (over 58 years of age) who lose jobs</li> </ul>

Graph 1: Employment in Ruhr's coal sector over the years<sup>18</sup>



Source: [https://www.researchgate.net/publication/337627084\\_Lessons\\_from\\_Germany's\\_hard\\_coal\\_mining\\_phase-out\\_policies\\_and\\_transition\\_from\\_1950\\_to\\_2018](https://www.researchgate.net/publication/337627084_Lessons_from_Germany's_hard_coal_mining_phase-out_policies_and_transition_from_1950_to_2018)

Note: The long-drawn process of Ruhr and Saarland mines closer led to substantially higher intervention costs but going forward a more focused plan for coal closure is expected to cost much less.

## Box 2: Just Transition in the US: Funding Needs

Coal industry has seen a steady decline in the US in response to declining competitiveness. However, myopic policy choices of the Trump Administration ensured that comprehensive national effort was missing for protection of affected coal communities and regions.

Limited support to coal communities in transition continued to flow from the Obama initiated Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) + Plan launched in 2015 to support economic stabilization, social welfare, and environmental actions. By the end of last year, the POWER Initiative had invested over \$238 million in 293 projects, creating over 26,000 jobs and leveraging over \$1.1 billion in additional private investment. The program funded through Congressional appropriations could never expand to the full proposed extent of \$10 billion, and its reach remained limited to the Appalachian Region, which accounts for 27 per cent of the national coal production. As of March 2021, the initiative exists solely as a funded program of the Appalachian Regional Commission<sup>19</sup>.

Meanwhile, a few legislations were proposed in the US in recent years that talked about just transition for American coal workforce. The most prominent being the US Green New Deal resolution introduced by Congresswomen Ocasio-Cortez and Senator Markey in 2019 as a comprehensive program combining climate change mitigation and elimination of economic inequality. While the deal did not provide cost details, it was estimated to cost at least \$10 trillion. Later, Senator Bernie Sanders introduced his version of the Green New Deal as a fully-fledged and costed policy. The total budget for the deal was \$16.36 trillion, with a dedicated requirement of \$1.8 trillion for supporting workers in transition.

### Cost estimates for just transition under Senator Sanders' Green New Deal

Cost heads	Amount (\$ billion)
New jobs, pensions, 5-year wage guarantee etc.	1,300
Miners Black Lung Disability Fund	15
Dept. labour training for high-risk workers	<1
Fossil fuel well & mine clean-up 100	100
Superfund sites clean-up	238
Brownfield sites clean-up	150
<b>Total</b>	<b>1,804</b>

More recently in March 2021, two senior Senate Democrats Manchin, Stabenow introduced a legislation to make \$4 billion available for clean energy manufacturing tax credits for communities affected by coal mine or power plant closures.

Some concrete actions have been taken in a few states to ensure just transition of coal communities. Colorado has created a Just Transition Office and a Just Transition Advisory Committee to develop policies to support coal communities, under a legislation passed in 2019. The state has now finalized an adopted a Just Transition Action Plan to support local economies of 11 counties where coal mines and power plants are anticipated to be closed. The plan identifies detailed set of community-focused and labour-focused actions, estimated to cost at least \$100 million over a decade.<sup>20</sup>

New Mexico has enacted the Energy Transition Act, 2019 to set a state goal for renewable energy deployment and to establish a pathway for a low-carbon just energy transition.<sup>21</sup> The implementation plan is still being worked out, but the entire transition is expected to cost \$1 billion, including \$40 million to support plant and mine worker in transition.<sup>22</sup>

Kentucky has been funding local development through coal severance tax for several decade now. The tax, introduced in 1972, contributes 50 per cent to general fund and 35% goes towards economic development of coal-producing counties under 'Local Government Economic Development Fund (LGEDF)', and remaining 15% towards revenue sharing under 'Local Government Economic Assistance Fund'. The LGEDF supports

---

standalone industrial, social and educational projects, however a more coordinated strategy for economic diversification or a long-term economic development plan to ensure just transition has been missing.<sup>23</sup>

Policy action at federal level returned as US re-entered the climate action arena. In January 2021, President Biden signed a slew of executive orders including setting up of an inter-agency working group on coal and power plant communities and economic revitalization. The initial report of the working group was completed in April 2021 outlined a range of programs to support and revitalize the coal economies and identified 25 most-impacted communities across the country, as well as a broader set of coal-impacted communities that will see economic declines long-term without significant intervention.<sup>24</sup> The report identifies existing federal programs with potentially available funding aggregating \$38 billion to provide immediate investments in energy communities.

The initial report of the working group is only a small piece of the American pie, as it outlines immediate funding requirement. Going forward, more funds would need to be allocated towards meeting the just transition requirement under the Biden Administration's The American Jobs Plan, The American Rescue Plan, The American Families Plan and other such economic and social strengthening plans.

Meanwhile, there remains little clarity on the exact funding requirement of the US in ensuring an economy-wide transition away from coal. The requirement would be significant, as indicated by standalone examples and independent studies.

A preliminary assessment by researchers at UMass Amherst Political Economy Research Institute<sup>25</sup> indicates a cost requirement of about \$600 million per year over a 20-year transition period. This includes about \$300 million per year for guaranteed jobs and support for laid-off workers, \$90 million per year to provide fully guaranteed pensions, and \$200 million per year for community transition programmes.

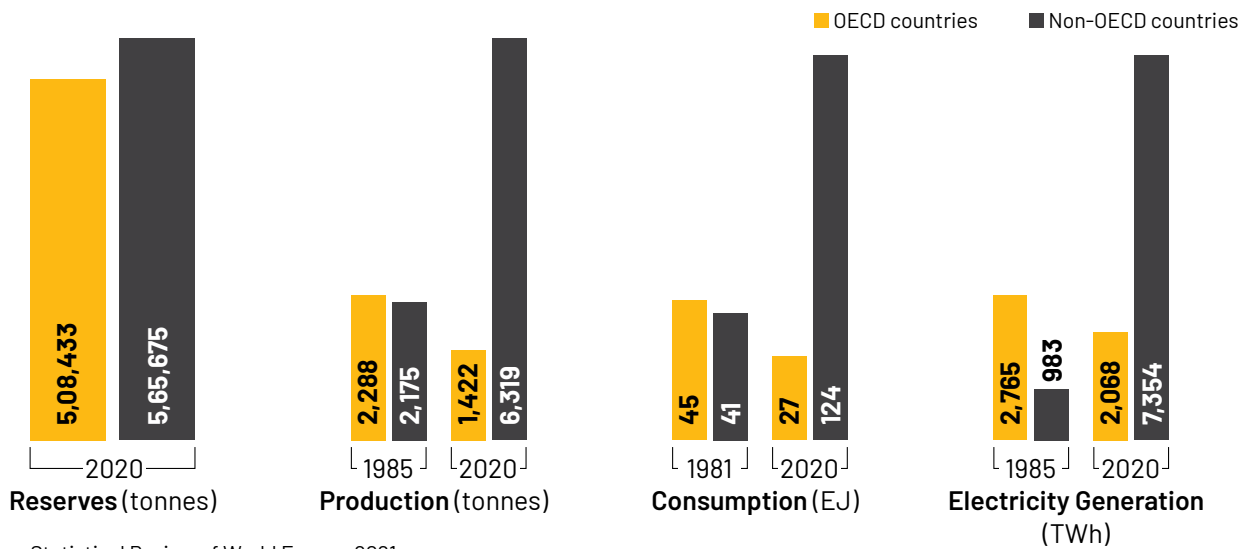
### 3. Achieving Just Transition in Developing Countries

Coal phase-out from the global energy mix cannot be achieved without participation of developing countries. While the coal reserves are broadly split equally across Organisation for Economic Co-operation and Development (OECD) and non-OECD countries, over the years the coal dependence among developed countries has declined substantially, while that of the developing countries has increased (*See Figure 2: Coal dependence in developed and developing countries*). Compared to a roughly equal dependence on coal about 35 years ago, the share of OECD countries in global coal production and consumption declined to about one-fifth, while the share of non-OECD countries increased to four-fifth. This trend has primarily been driven by coal-based power generation sector, which contracted in the OECD countries, while it expanded 7.5 times in non-OECD countries.

Overall, coal production and consumption are highly concentrated in a few countries. Top 20 coal dependent countries in the world collectively account for 96 per cent of the total coal production and 94 per cent of the total coal consumption in the world (*See Figure 3: Top 20 coal dependent countries in the world*). This includes nine high income countries accounting for 16 per cent each of global coal production and consumption, driven primarily by the US and Australia. Seven upper-middle income countries account for 62 per cent each of global coal production and consumption, however China alone corners majority of this share, followed distantly by Russia and South Africa. Meanwhile, four lower-middle income countries account for 18 per cent of global coal production and 16 per cent of consumption share, dominated by India and Indonesia.

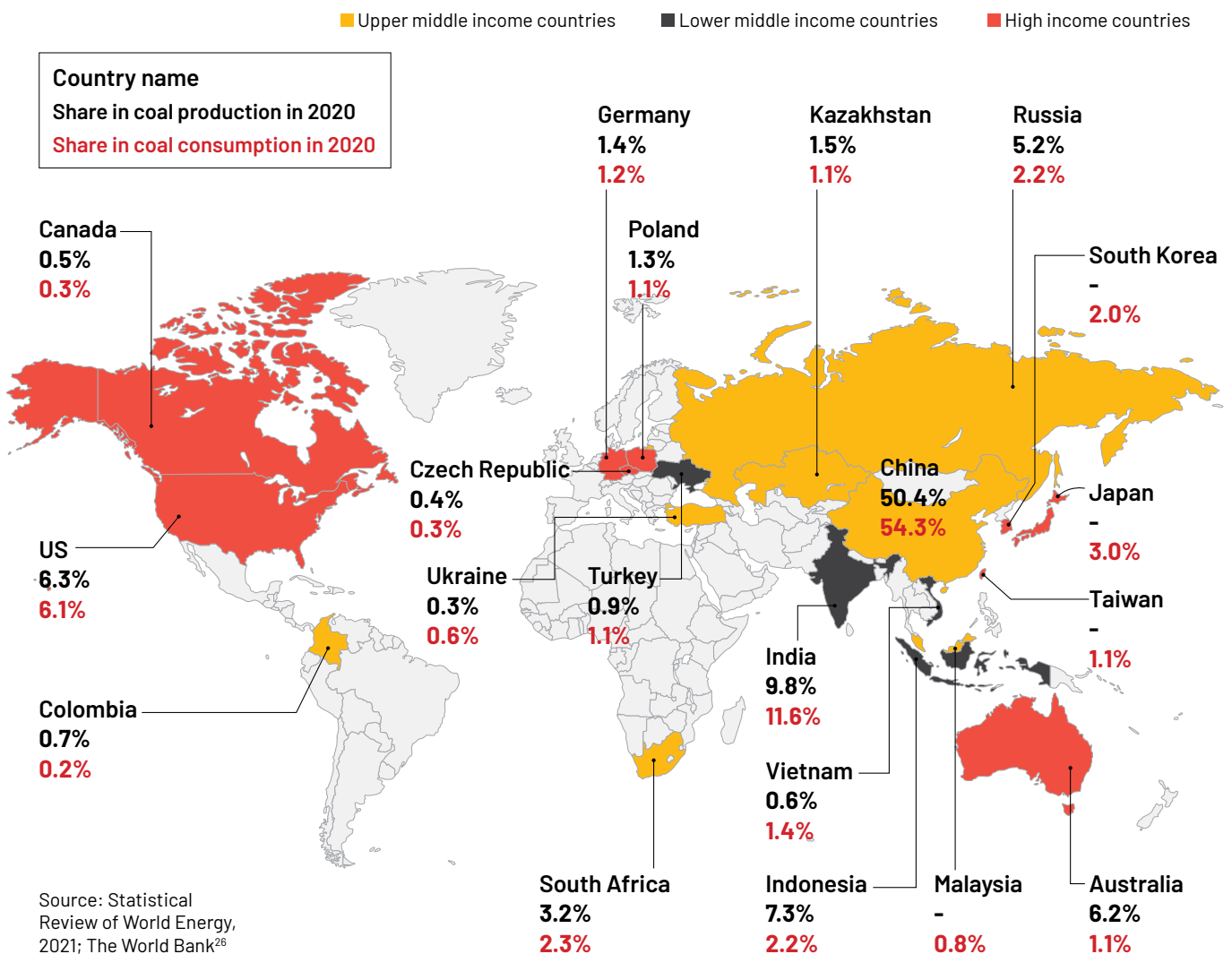
Majority of the countries with high coal dependence have announced and adopted long-term net neutrality targets, with net zero carbon emission planned to be achieved between 2050 and 2070. However, most of these countries are yet to identify a firm timeline and pathway for closure of coal-based power generation and coal mining (*See Table 3: Coal dependence and phase out policies in middle-income countries*). While green energy base in majority of these countries has been expanding, the reluctance towards coal closures stems primarily from funding and capacity constraints in rapid energy transition and ensuring just transition.

**Figure 2: Coal dependence in developed and developing countries**



Source: Statistical Review of World Energy, 2021

**Figure 3: Top 20 coal dependent countries in the world**



Source: Statistical Review of World Energy, 2021; The World Bank<sup>26</sup>



Table 3: Coal dependence and phase out policies in middle-income countries			
Country	Coal production in 2020 (mt)	Installed coal-based power capacity in 2020 (MW)	Coal phase out plans/target
China	3,902.0	1,042,947	Phase down of coal consumption from 2026, Net zero by 2060; No new construction of coal plants overseas
India	756.5	229,247	Net zero target by 2070
Indonesia	562.5	33,966	Coal phase out by 2056, Net zero target by 2060
Russia	399.8	44,845	Net zero by 2060
South Africa	248.3	41,904	Net zero by 2050
Kazakhstan	113.2	12,704	Net zero by 2060
Turkey	70.8	18,113	Net zero by 2053
Colombia	50.6	13,529	Net zero by 2050
Vietnam	48.6	20,317	No net zero target
Ukraine	24.1	22,265	Net zero by 2060
Malaysia	-	13,529	Net zero by 2050

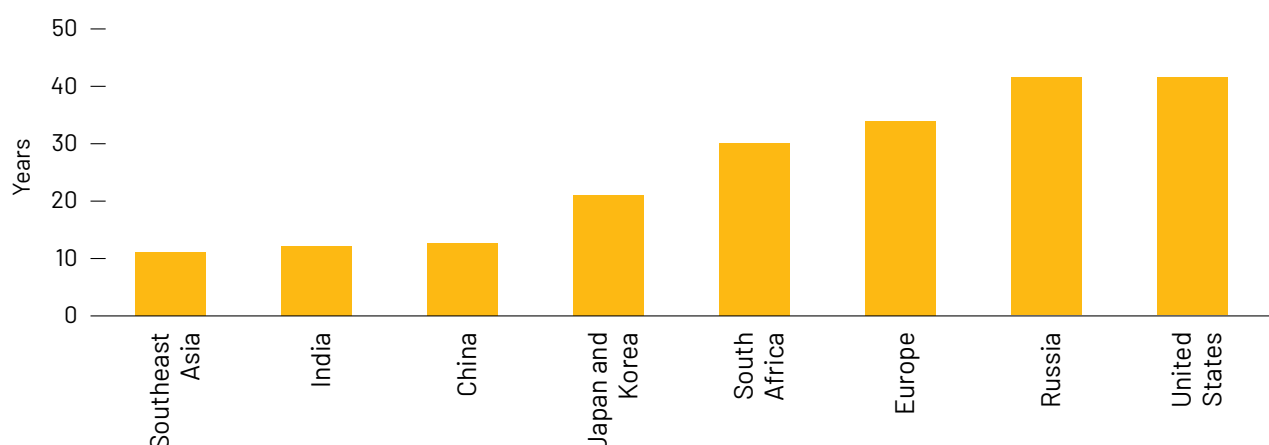
Source: Statistical Review of World Energy, 2021; Boom and Bust, 2021 Report

### 3.1 Challenges with just coal phase out

The experience of the Global North demonstrates that the resource requirement for various components of just and equitable coal closures is substantially large, running into billions of dollars. It is expected that the resource requirement would be much higher in case of the developing countries due to a number of factors:

- **Age of coal-based power plants:** Majority of the coal power plants in the developing countries have come up in the past 10 to 15 years. The average age of plants in China, India and Southeast Asia thus ranges from 10 to 12 years (See Figure 4: Average age of coal power plants in key counties). Majority of the plants are yet to depreciate, and the loans are yet to be paid off. Substantial amounts of money would need to be raised, perhaps much higher than that amounts paid in Europe where the average plant age was over 30 years, in order to compensate the power plant owners to close operations. According to a recent study, decommissioning India's 130 plants today would cost \$32 billion to \$48 billion, including payouts to promoters and debt holders. These estimated costs average between \$0.33 million per MW to \$0.51 million per MW.<sup>27</sup>

Figure 4: Average age of coal power plants in key counties



Source: World Energy Outlook 2021, IEA

- 
- **Higher employment share of coal sector:** Over the past decades, labour intensity of coal sector has declined across all countries, however employment remains considerably large in developing countries. In China, the employment in coal mining sector has halved over the past 25 years, but it still remains at about 2.5 million, as per the National Bureau of Statistics. In India, while formal employment in coal mining is estimated to be around 0.8 million, there is another 1.8 million employed in informal coal jobs.<sup>28</sup> Similarly, 0.13 million Indians are employed with formal jobs in the coal-based power sector, and another 0.05 million in informal sector. Compared to this, EU's labour rehabilitation challenge is limited to around 53,000 people employed in power plants, 185,000 workers employed in mines, and 215,000 people employed in indirect activities in coal value chain.<sup>29</sup> Similarly in the US, coal mines employ about 42,300 people<sup>30</sup> while coal plants employ 32,960 operators.<sup>31</sup>
  - **Coal regions typically remain mono-economies:** The development challenge in mining towns is compounded by the fact that these coal towns and cities remain solely dependent on coal, with fully dependent economic and social infrastructure and limited alternate employment avenues. Particularly in developing world, these regions have remained economically backward due to limited efforts from industry and government to diversify the economy and build social infrastructure. These areas thus struggle to attract new enterprises. A recent survey of Indian coal mining district of Ramgarh, Jharkhand had revealed that coal-mining had not contributed to the overall upliftment of the region for decades. It created isolated pockets of relative affluence in mining areas, while majority of the district remained impoverished.<sup>32</sup> This remains typical of most of India's coal mining regions.
  - **Limited reach of social security schemes pertaining to unemployment:** Significant incremental effort would be needed by developing countries to compensate and rehabilitate coal workers as existing unemployment benefits and schemes have a limited reach compared to Europe. According to International Labour Organization (ILO), unemployment related schemes already cover about 61 per cent of the population in Northern, Southern and Western Europe, while their coverage is only 24 per cent in case of China, 12 per cent in South Africa and 9 per cent in Kazakhstan.<sup>33</sup> No such unemployment related support is available in Indonesia and India. Further, the comprehensiveness and adequacy of the existing systems in developing countries to support coal workers is unclear. In past, China has announced and extended targeted unemployment benefits and services to coal workers affected by environmental conservation measures.
  - **Challenge of challenge of raising funds and resources:** For developing countries, the challenge of raising funds and resources remains quite high due to overall lower development levels, and relatively limited capabilities of domestic financial markets. The broad-based financial market development index developed by the World Economic Forum covering 151 countries<sup>34</sup>, ranks emerging economies of China, India and Indonesia at 48, 42 and 37, the US is ranked at 2 and Germany at 12; reflecting a less strong internal capability to raise required funds. There is already substantial dependence on external development funds, with India receiving \$4.2 billion in ODA gross disbursements in 2019, highest in the world, and another \$887 million on other official flows and private development finance<sup>35</sup>. Total development assistance flow for China, Indonesia and South Africa was also substantial at \$1.9 billion, \$1.5 billion and \$884 million respectively in 2019.

---

## 4. Components of Global Cooperation for Just Transition

Developing countries have been steadily committing to a net zero target, but with a longer time horizon. There is also a clear understanding that the pace of effort by developing countries cannot be accelerated in absence of explicit support from the developed world. At COP26, India has called upon the developed nations to make \$1 trillion available as climate finance as soon as possible. Indonesia has indicated that in order to reach its net zero target of 2060, it requires \$200 billion annually until 2030, and over \$1 trillion annually in the next four following decades. Meanwhile, to help accelerate the transition away from coal, Canada has announced a contribution of up to \$1 billion to help developing countries, through the Climate Investment Funds' Accelerated Coal Transition Investment Programme. Significantly, South Africa has managed a \$8.5 billion Just Energy Transition Partnership with France, Germany, UK, US and EU, a first of its kind agreement between a coal-intensive developing country and a group of donor governments to work together and fund a just transition away from coal.

The required support in just transition not only manifests as the funding support needed to meet the various cost heads but also as extensive capacity building support for the redevelopment of coal regions and rehabilitation of coal workers. The cooperation experiences so far have been limited in either scope and geography and a more comprehensive technical and financial support mechanism would be required to support just transition in coal dependent developing countries.

### 4.1 Co-operation experiences so far

One of the first global coalitions for just transition to emerge was the Powering Past Coal Alliance (PPCA) set up by the UK and the Canadian governments in 2017 at COP23 to accelerate the phase-out of coal-fired power plants in a sustainable and economically inclusive way. At present, it includes 38 national governments, 38 sub-national governments (provincial, state and city), and 51 businesses and organisations. The membership is open to countries and businesses that demonstrate ambitious action on coal phase-out, and to financial institutions that commit to ending new investments in unabated coal power. PPCA also encourages knowledge exchange as alliance members and partners (which includes civil society, think tanks, and trade union representatives) engage in peer-to-peer knowledge exchange and diplomatic outreach, including through taskforces on just transition and finance.

Despite its intent, the current principles of PPCA are not comprehensive enough to deliver on the Paris Agreement goals. The alliance by design only focuses on coal users and not producers, and on 'unabated' coal-based power generation and not completed abandonment. There is no clear evidence of the alliance's effectiveness in pushing decarbonization. Further, PPCA member countries use and extract less coal compared to non-members; and are wealthier nations with generally transparent and independent governments.<sup>36</sup> A recent study also pointed out that PPCA's financial members have presently invested USD38 billion in coal sector companies.<sup>37</sup> Knowledge exchange programmes has not been aggressively pursued, despite its collaboration with Bloomberg New Energy Finance to identify best practice approaches to the coal transition.

A more comprehensive collation has been designed in the EU in the form of the "Coal Regions in Transition Initiative" operational since 2017. Its objective is to ensure that EU becomes the first climate-neutral bloc in the world by 2050 as planned under the European Green Deal, in a manner that is fair and just for the 230,000 people working in coal mines and coal power stations across 31 regions and 11 coal dependent member countries. The initiative adopts an inclusive, bottom-up approach to addressing the concerns of the EU coal regions, through three key measures:

- Open forum for stakeholder dialogue on decarbonizing energy production and diversifying local economies with the wider community participation, including regional and local administration, civil society, industry, trade unions, NGOs, academia etc. through regular physical and virtual gatherings.
- Tailored technical assistance to coal regions through the Secretariat Technical Assistance to Regions in Transition (START) programme, which adopts a needs-based, co-creation approach to develop just transition strategies and governance arrangements, design and development of priority projects, including appropriate financing strategies. For delivering on cross-cutting issues, START works national and regional authorities and

other stakeholders, as well as relevant EC partners from the Directorates of Energy, Regional and Urban Policy, and Structural Reform Support. So far, seven regions have been selected to receive the support.

- Resource repository creation, which includes toolkits, guidelines, and reports on wide range of issues such as governance, environmental rehabilitation, employment, financing, clean air and clean technologies etc. To build upon and expand the initiative’s work, the EC has created a Just Transition Platform as a single access point for support and knowledge related to the just transition, including a database of projects and experts.

Moving beyond the EU countries, the EC launched a similar initiative for just transition in December 2020 for knowledge sharing, capacity building and technical assistance for Western Balkans and Ukraine. Given the limited technical and economic capacities of the region and in view of the dedicated attention required, the initiative included additional capacity building measures of twinning or partnering and establishment of a Coal Regions in Transition Academy, in addition to financing for transition projects.

EC is implementing the initiative through a dedicated secretariat set up in Brussels, in collaboration with six partners – the World Bank, the Energy Community Secretariat, the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), Poland’s National Fund for Environment Protection and Water Management (NFOSiGW), and the College of Europe in Natolin. Initially, 17 regions in six countries with significant coal mining activities and coal-based energy production have been identified to benefit under this initiative.

While the two linked initiatives of EU are commendable for pioneering a systematic collaborative approach to just transition planning and implementation, there is an immediate requirement to expand the scope of dialogue and co-operation beyond Europe.

Recently, at COP26, Germany, the UK, the US, France and the EU came to together to provide financial support to South Africa to accelerating energy transition with a particular focus on coal phase out. The total package is valued at around \$8.5 billion to be paid over the next five years, including a mix of grants, loans from multilateral banks, guarantee schemes and direct private investment. It also includes technical support on improving the framework for private investment in renewable energy and to mitigate the social impact of a coal phase-out on 90,000 coal miners in the country.

As support to developing countries are extended by developing countries either in individual capacity or as a collation, it is important to build a comprehensive understanding of the required technical and financial support.

## 4.2 Capacity building to support just transition

A global collaboration framework for technical cooperation would need designed drawing upon the lessons learnt and the intervention pathways established through the multilateral and bilateral development co-operation experience. The cooperation approach would thus entail engagement, needs assessment, programme formulation, implementation support, and evaluation of impact. However, the multi-dimensional and localized requirements of just transition necessitate that the capacity building be made broad-based and consultative, inclusive of all national and sub-national governments as well as relevant institutions, organisations, labour unions, and other representative groups.

**Table 4: Mandate for a global alliance for technical assistance for just transition**

Global knowledge sharing	Capacity development of coal regions
<ul style="list-style-type: none"> <li>• Establish structures that facilitate inter-country dialogue for sharing of planning and execution experiences and results, to identify and promote best practices.</li> <li>• Document experiences and learnings; and develop knowledge</li> <li>• Create a repository of resources and track global progress.</li> </ul>	<ul style="list-style-type: none"> <li>• Support national and sub-national governments in evidence-based design of just transition plans, including identification of funding sources.</li> <li>• Develop and implement capacity building (learning) strategies at institutional and individual level.</li> <li>• Set-up national, sub-national just transition centres</li> <li>• Pilot/demonstrate high-impact, technology-driven, innovative implementation models.</li> </ul>

---

Just transition requires a paradigm shift in development approaches and countries are currently at different points in the learning curve. Significant handholding is particularly needed for low- and middle-income countries during the initial stage, given their limited experience and capacity in implementing such economic and social transformations, as they continue to struggle with the pre-existing development challenges. Global experience and support can play a crucial role in selection of efficient transition pathways for coal regions, and in establishment of structures that help build capacities and competencies of a wide range of institutions and individuals involved in the just transition phase as well as support initial projects to stimulate implementation.

- **Designing implementation plans:** Exposure to plans and experiences of Europe and America through the global knowledge sharing platform can improve planning efficacy in developing countries. While these may not be directly transferable, they can provide a base for the developing countries to build upon, after accounting for local context and challenges. Further, focused assistance, to national and sub-national governments for developing mine/plant/region specific plans, can help identify appropriate policy pathways, through iteration of ideas that inform and validate solutions. These “external inputs” need deep engagement to ensure that solutions correspond to real regional demands and agendas, accounting for local characteristics, uncertainties, complexities, and ambiguities. A consultative and collaborative approach would not only ensure relevance of solutions but also to create shared ownership of the solutions.
- **Strengthening of implementation capabilities:** The technical assistance for designing and implementing a capacity development strategy for national, regional, and local stakeholders involved in the just transition process must be designed as a long-term engagement following a detailed gap assessment. At an institutional-level, national systems may need to be strengthened through reform or completely new systems such as a national just transition coordination center and sub-national JT centres, depending on the country scenario. Global technical assistance can facilitate these processes.

At an individual-level, management capabilities of national and regional authorities would need to be built to improve technical knowhow, service delivery, adaptability, communication, and interpersonal skills for developing and implementing solutions in transitional justice. Specific effort would be needed for training of provincial/regional/district government officials as they draw out regional plans, manage execution, and manage stakeholders.

- **Skilling/Reskilling of labour:** Another stakeholder group in need of dedicated training attention is the displaced coal workforce that needs reskilling to enhance employability in alternative industries. Existing training structures in countries would need to be leveraged and strengthened to execute and manage massive capacity development demands put forth by climate action. At the same time, new institutions such as national-level capacity development hubs may need to be set up for focused support. Both can be facilitated by global technical assistance, through identification and development of appropriate course structures, training of trainers, facilitation of exposure visits and twinning programmes, building linkages with industry, etc.
- **Supporting pilot engagements:** While the requirements in coal dependent countries like India and Indonesia may be quite vast, global technical assistance focused on ‘implementation support’ in a few high impact geographies or in specific technology driven themes (such as resuscitation of mine sites, conversion of coal power plants etc.) or deployment models (such as community owned industrial development) can provide significant push by demonstrating success stories. This may require building collaborations with ground-level implementation partners, sourcing larger funding, longer-term engagement of 3 to 5 years, and a detailed monitoring and evaluation of impact; however, these micro-level engagements can go a long way in anchoring the just transition agenda.

### 4.3 Financial support for just transition

Coal producing and consuming countries will need to generate substantial internal budgetary sources for funding the various initiatives, programmes and schemes required for economic and social reorientation of the coal communities. This would include identification of new budgetary sources, as well as substitution of fossil fuel subsidies which stands substantial in most countries. For instance, The Australian Institute estimates that federal and state governments in the country funnelled A\$10.3 billion in tax breaks and subsidies to the fossil fuel industry in 2020 to make up for the continuous decline in competitiveness. Such funds need to be diverted towards just transition investments with a longer-term perspective.

---

Another obvious internal source are royalties and taxes collected from coal mining and power sector. Australian state of New South Wales announced a A\$25 million fund in April 2021 through mining royalties to help regions develop new industries beyond coal. Kentucky, US has been funding local development through coal severance tax for several decade now. However, half of this severance tax feeds into state funds and only half is reserved for local use. In India, taxes imposed on coal such as royalties, coal cess, exploration fund, goods and services tax etc. aggregate to about 60% to 114% of the final coal prices of ₹447 to ₹1,140 depending on the quality of coal. On an average, these levies add up to ₹0.40 to ₹0.50 in the final per unit price of coal-based power supplied to consumers.<sup>38</sup> Of these levies, only 10-30% of the royalties collected flow directly to coal communities in the form of DMF funds while most of the money flow back to the national and state kitty. Utilization of carbon taxes being imposed in various forms in coal countries need to be reformed to directly benefit the coal communities as decarbonization becomes an immediate requirement.

Meanwhile, these effort of the national or sub-national governments need to be supplemented by additional funding sources, given the massive requirement of economic rebuilding which may run into a couple of trillion dollars for each of the major coal countries. These could stem from existing pool of bilateral and multi-lateral development support and carbon action funds in the form of grants, equity, loans and guarantees, as well as substantial mobilization of private funding through incentives, while additional dedicated pool of resources would also need to be set up for just transition particularly focused on workforce rehabilitation.

At present, EU provides the only example of comprehensive financial planning for multi-country funding for ensuring a fair transition towards a carbon neutral economy. As part of the European Green Deal, the EC has introduced the Just Transition Mechanism (JTM) to mobilise €65-75 billion of investments over 2021-2027 for regions most affected by coal phase-out. The funding support is designed to provide comprehensive support centred around three pillars – €17.5 billion Just Transition Fund (JTF) focusing on coal community redevelopment; promotion of private projects through budgetary guarantee and advisory support under InvestEU Just Transition Scheme; and promotion of public projects under a facility that provides mix of grants and loans. The mechanism is designed to set up dedicated funding for wide range of projects through new budgetary resources, while tapping into existing economic rebuilding structures, as well as be complemented by internal national funds. (See Table 5: *Funding available under EU's Just Transition Mechanism*)

The JTM is open to all EU member states that have signed up to climate neutrality by 2050 and focuses specifically on most carbon-intensive regions or regions with highest coal dependent populations. Coal regions can access these funds after approval of their territorial just transition plans for 2030 by the EC. The technical support for the regions at the planning stage is available to the coal regions under the various pillars of the “Coal Regions in Transition Initiative” (as detailed earlier) as well as through the InvestEU Advisory Hub.

**Table 5: Funding available under EU's Just Transition Mechanism**

Mechanism	Funds available	Project types
Just Transition Fund	<ul style="list-style-type: none"> <li>• €17.5 billion approved by EU in May 2021 to mobilise nearly €30 billion in investments for enabling green transition in coal communities</li> <li>• Includes €7.5 billion to be financed by EU budget during 2021-2027 and €10 billion to be provided as external assigned revenue stemming from European Recovery Instrument (2021-23).</li> <li>• Implemented under EU's Cohesion policy (which aims to reduce regional disparities), and thus requires co-financing from national governments.</li> <li>• Voluntary contributions by members are allowed from their allocations under the European Regional Development Fund and the European Social Fund Plus, but total amount transferred amount should not exceed three times the JTF allocation.</li> </ul>	Grants to be provided for: <ul style="list-style-type: none"> <li>• Economic diversification – clean energy, small and medium-sized enterprises, new firms, research and innovation</li> <li>• Environmental rehabilitation</li> <li>• Up- and reskilling of workers, job-search assistance, and active inclusion of job-seekers programmes</li> <li>• transformation of existing carbon-intensive installations</li> </ul>
InvestEU Just Transition Scheme	Dedicated scheme under EU's InvestEU programme to mobilize about €10-15 billion in private sector investments through budgetary guarantees and advisory support	Covers wide range of private sector projects - energy and transport infrastructure, decarbonisation projects, economic diversification and social infrastructure.
Public Sector Loan Facility	€1.5 billion of grants financing from EU budget and €10 billion loan financing from European Investment Bank to mobilise between €25-30 billion of public investment to meet development needs of coal communities	Supports public infrastructure development, such as in energy and transport, district heating, energy efficiency, and social infrastructure.

### 4.3.1 Resource matrix for global just transition funding

Some of the funding requirements for just transition of coal economies fits well into the existing framework of bilateral and multilateral funding available for development and climate mitigation financing. However, dedicated support frameworks, programmes, schemes, or facilities would need to be created to meet the massive and focused requirement of the coal-intensive regions. Developed countries would need to pledge assistance through multiple routes to achieve the intended goal.

- **Funding for just transition capacity building through bilateral and multilateral technical assistance programmes:** Bilateral and multilateral agencies have been funnelling large sums of money into middle- and low-income countries to support implementation of sustainable development goals. These agencies can take a lead in capacity development of national and sub-national governments as – majority of the just transition related requirements fall well within the purview of sustainable development agenda; the agencies have pre-established relations with various national and sub-national government; and capacity development tools are central to their operational strategy. Also, most bilateral agencies represent countries, such as Germany, US, and UK, that have already made some strides in just transition. Specific programmes for technical assistance would need to be designed and negotiated with coal countries, to then engaging in a deeper interaction with specific coal regions, leveraging existing national structures, programmes and schemes for sustainable growth.
- **Funding through multilateral and bilateral banks for infrastructure building:** Significant economic and social infrastructure rebuilding is required to transition away from a coal economy. While investments in sustainable transport, clean energy and communication infrastructure are crucial for attracting new private

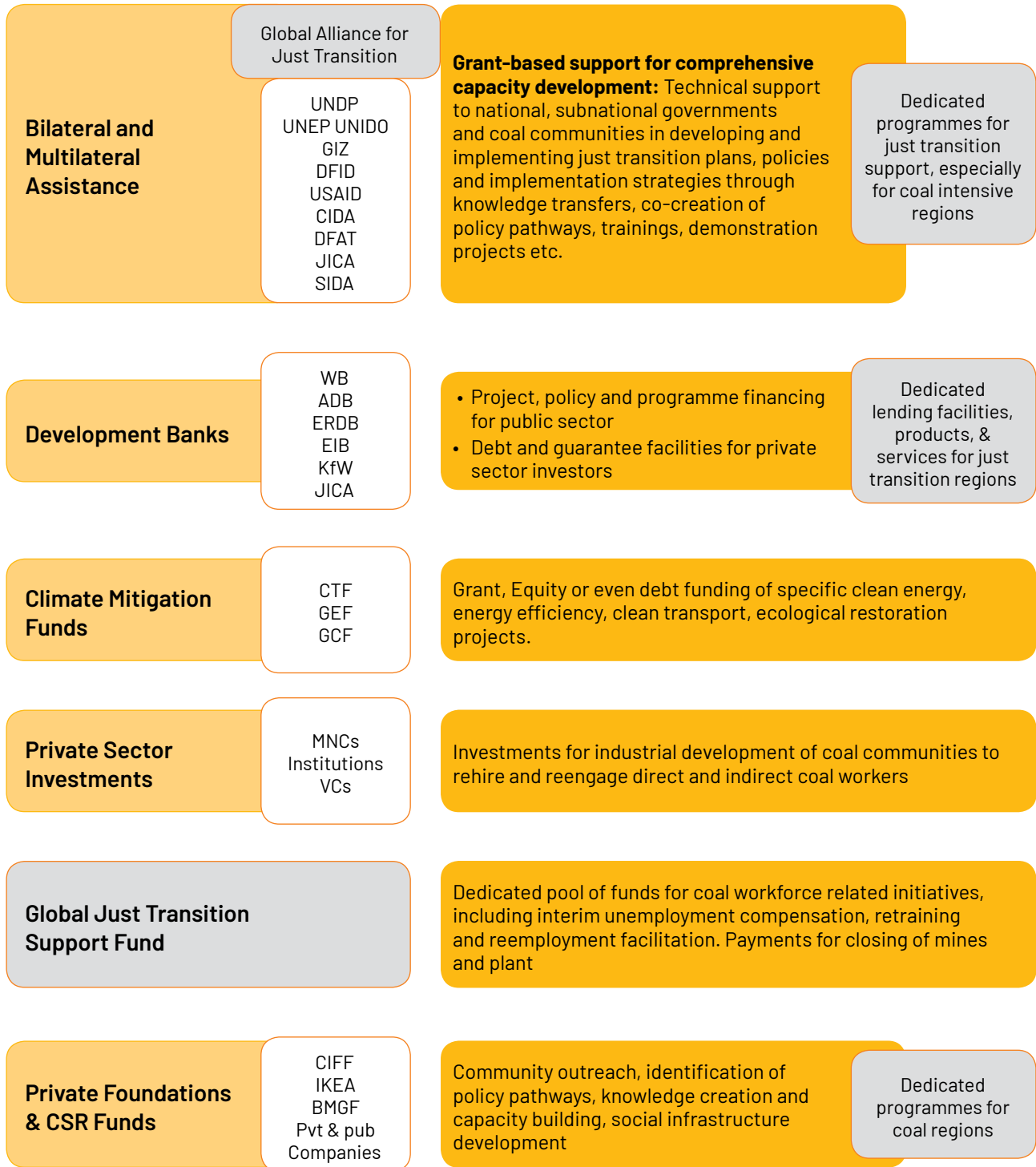
---

investments and creating new jobs; investments in health, education and other community support infrastructure are essential for ensuring long-term sustainability of development efforts. Development banks have been providing funding support through various instruments to meet such development requirements. Depending on internal priorities and preferences, individual banks can extend grants, contingent grants, concessional loans, equity and guarantees etc. for policy/programme level funding to national and sub-national governments for institutional action for just transition; as well as project financing for physical/social infrastructure to private and public companies. Dedicated lending facilities and funding schemes should be created for the coal region banks, businesses and governments, given the focused and immediate nature of efforts required. These banks can also play a crucial role in funding focused advisory and consulting for local development.

- **Leveraging existing climate funds supporting mitigation action for just transition action:** Several funds under the UNFCCC framework are dedicatedly supporting climate mitigation action. Such funds, like Global Environment Facility and Green Climate Fund, support broad range of sustainable development strategies by focusing on renewable energy, energy efficiency, enhancing livelihoods, health and well-being, and building climate resilient infrastructure and ecosystems. Just transition action falls within the overall objective and impact areas of these funds, and there are substantial funds remaining unutilized. For instance, in case of Green Climate Fund (GCF-1) which has been operational since 2015 pledges worth \$10 billion have been put together however projects worth \$836 million have been approved and only \$11 million allocated.<sup>39</sup> These funds can be leveraged for funding specific projects under the community transition plans, especially for demonstrating innovative business models and technology deployments.
- **Designing incentives and schemes to boost private sector investments in coal regions for economic diversification:** The task of industrial re-development of coal regions is massive and would require support both from domestic and international private investors and businesses. Designation of fossil fuel regions as special industrial estates or enterprise zones to provide established incentives of tax breaks, easy land leases, high FDI inflow and external commercial lending limits, etc. can help attract the needed investments, both from foreign multi-national corporations and large institutions, as well as venture capital, private equity funds in to local corporations. Specific schemes can be designed to attract companies that have adopted net-zero targets. These private sector promotion scheme can be designed with the support of bilateral or multilateral development agencies, while the funding for these incentives can be through national or state budgets or be backed by development banks.
- **Private foundations and corporate social responsibility funds for social infrastructure deployment:** Substantial funds can be mobilized through private foundations supporting climate action and sustainable development in developing countries to undertake support activities such as national level advocacy for decarbonization through just transition; public policy deliberations for identification of optimal pathways; community outreach, awareness, and capacity development. These funds can also be utilized for demonstrating livelihood centred sustainable business and operator models, which can then be taken up for wider deployments in coal communities. Support for social infrastructure rebuilding particularly focused on health, education and clean energy access can be sourced from private corporations through their corporate social responsibility funds.
- **Global Just Transition Support Fund for supporting rehabilitation of coal workers and closing of mines and plants:** A global fund can provide much needed grant financing for supporting developing countries in executing labour focused interventions such as direct compensation and reemployment schemes, that would otherwise have limited funding avenues besides national budgets, and existing carbon tax funds. Compulsory financial contributions to the fund can be made available from countries in the Global North, while it can be kept open to voluntary contributions from other governments, corporations committing to net zero targets, and pantropic organizations and individuals. The dedicated fund can be governed by a treaty-based inter-government body, including nation states strongly committed to coal phase out. National/regional funding request should be accompanied by co-financing from national governments to ensure strong national commitments.
- **Leveraging carbon market:** Carbon markets currently represent a cost-effective \$100 billion offset market, available in nearly 40 national and 30 subnational jurisdictions, covering nearly 20% of the global GHG emissions. Specific mechanisms can be devised for coal regions to leverage existing and upcoming carbon market, accounting for the avoided carbon emissions from shut down power plants.



**Figure 5: Global sources of financing just transition**



---

## 5. Framework for Global coalition for Just Transition

Just transition sits at the cross section of climate and development, and the multilateral structure that supports its implementation would need to consider and address both.

There is a strong case for an international coalition to push just transition in low-income countries to be anchored in the international environmental governance framework because while just transition is a development intervention, bold action against climate change remains the strongest imperative for driving this agenda.

So far, attempts have been made at UNFCCC to push the just transition agenda. During COP24, 52 Heads of States and Governments, as signatories to the Solidarity and Just Transition Silesia Declaration, expressed support to just transition as an essential part of achieving the Paris Agreement and the SDGs. The signatories, however, exclude most of the major fossil fuel dependent countries, except Indonesia, Mexico, Argentina, Serbia and Nigeria.

UNFCCC can lead the movement from the top to mobilize target setting for fossil fuel phase out, and to draw commitments from the global north for supporting and from global south for executing just transition. It already has strong networks, structures and capabilities to push the agenda. It is also adept at delivering interlinked decision-making, encompasses wide array of interventions including financing, mitigation, adaptation, technology transfer etc. However, the challenge with UNFCCC is that negotiations have been slow and tedious, and the resulting outcomes are often the lowest common denominator, rather than the most optimal. The last few conferences have thus struggled to produce consensus and vast majority of parties have failed to put forward any worthwhile targets.<sup>40</sup> For just transition in coal phase-out, a consensual agreement between all 195 countries is not necessary.

There is thus a convincing argument for building an inter-government coalition outside of UNFCCC, focusing the attention only on leading coal consuming and producing countries. A coalition targeting the leading 20 coal dependent countries in the world can effectively address 96 per cent of the global coal production and 94 per cent of the global coal consumption.

Inter-country coalition attempts outside of UNFCCC are being made for collaborative action for just transition. As discussed earlier, the EU is not only providing capacity building and financial support to member states but has also expanded it to neighboring West Balkan countries. EU has further come together with Germany, France, UK and US to provide comprehensive support to South Africa for coal phase out. Such coalitions should be extended in a more comprehensive and structured manner to address wider requirements around the globe.

The effective framework of the alliance, however, would need to be strongly built as a treaty-based inter-governmental organization. Outside of UN, International Solar Alliance (ISA) has emerged as one of the largest groupings of nations for scaling up solar applications. While the alliance has made some progress since its inception in 2015 even in terms of working with funding agencies for accelerating finance mobilization, it is limited in pushing the solar agenda aggressively due to lack of target and commitment structure.

Given the urgency of coal-phase out through a just transition framework, a dedicated international treaty for coalition must include firm commitments and a dedicated funding plan. This could be aligned with framework previously developed and adopted for Montreal Protocol on Substances that Deplete the Ozone Layer which is widely hailed as the most successful international agreement till date. Thus, an effective inter-government collaboration for just transition would require a treaty that tightly defines targets and plans for member countries, clearly considering country priorities, coal technologies, development challenges etc. The mechanism must include effective burden sharing, explicitly acknowledging the requirements of developing countries, and help mobilize funding to assist developing country, including through a dedicated multilateral Just Transition Fund. Such a Fund can be backed by the coalition executive committee and utilized through implementing agencies.

These implementation agencies include a complex and rich network of organizations providing technical and financial support for development-related works, including UN programmes and specialized agencies, multilateral banks, EU, bilateral organizations etc. These organizations can be leveraged for just transition due to clear alignment of objectives and purposes, through setting up dedicated programmes and schemes. The just transition coalition can spearhead and coordinate the activities of these organizations to prioritize tasks, avoid duplication and optimize impact.

**Overall, a global coalition framework can play a vital role in supporting the just transition in coal regions of developing countries in not only directly providing technical and financial assistance, but also in mobilizing and coordinating various assistance avenues otherwise available for climate mitigation and sustainable development.**

---

## References

- 1 IEA, Global Energy & CO<sub>2</sub> Status Report 2019
- 2 [https://www.un.org/sites/un2.un.org/files/2021-twg\\_2-062321.pdf](https://www.un.org/sites/un2.un.org/files/2021-twg_2-062321.pdf)
- 3 IEA, Phasing Out Unabated Coal Current status and three case studies
- 4 IEA, World Energy Outlook 2021
- 5 Krawchenko, T.A.; Gordon, M. How Do We Manage a Just Transition? A Comparative Review of National and Regional Just Transition Initiatives. *Sustainability* 2021, 13, 6070. <https://doi.org/10.3390/su13116070>
- 6 <https://brill.com/view/journals/cla/11/2/article-p176.xml?language=en>
- 7 <https://www.auc.ab.ca/Shared%20Documents/InstalledCapacity.pdf>
- 8 <https://www.businessinsider.com/germany-agrees-40-billion-euro-coal-exit-deal-for-states-companies-2020-1?IR=T>
- 9 <https://www.powerengineeringint.com/coal-fired/germany-passes-2038-coal-exit-law-with-compensation/>
- 10 <https://www.spglobal.com/platts/en/market-insights/latest-news/coal/120120-germany-awards-coal-closure-compensation-to-48-gw-to-shut-2021>
- 11 [https://d3n8a8pro7vhmx.cloudfront.net/parklandinstitute/pages/1763/attachments/original/1574261140/coal\\_phaseout.pdf?1574261140](https://d3n8a8pro7vhmx.cloudfront.net/parklandinstitute/pages/1763/attachments/original/1574261140/coal_phaseout.pdf?1574261140)
- 12 <https://www.afr.com/companies/energy/nsw-government-pays-100m-to-shenhua-for-scrapping-coal-mine-20210421-p5712j>
- 13 Thomas Kruppe & Julia Lang (2018) Labour market effects of retraining for the unemployed: the role of occupations, *Applied Economics* <https://www.tandfonline.com/doi/full/10.1080/00036846.2017.1368992>
- 14 [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_16\\_1910](https://ec.europa.eu/commission/presscorner/detail/en/IP_16_1910)
- 15 [https://publications.gc.ca/collections/collection\\_2019/eccc/En4-361-2019-eng.pdf](https://publications.gc.ca/collections/collection_2019/eccc/En4-361-2019-eng.pdf)
- 16 <https://www.iisd.org/system/files/publications/alberta-coal-phase-out.pdf>
- 17 Pao-Yu Oei, Hanna Brauers & Philipp Herpich (2020). Lessons from Germany's hard coal mining phase-out: policies and transition from 1950 to 2018, *Climate Policy* <https://www.tandfonline.com/doi/full/10.1080/14693062.2019.1688636>
- 18 [https://www.researchgate.net/publication/337627084\\_Lessons\\_from\\_Germany's\\_hard\\_coal\\_mining\\_phase-out\\_policies\\_and\\_transition\\_from\\_1950\\_to\\_2018](https://www.researchgate.net/publication/337627084_Lessons_from_Germany's_hard_coal_mining_phase-out_policies_and_transition_from_1950_to_2018)
- 19 <https://www.wri.org/just-transitions/usa-federal-funding>
- 20 Colorado Just Transition Action Plan (December 2020), Department of Labor and Employment <https://cdle.colorado.gov/sites/cdle/files/documents/Colorado%20Just%20Transition%20Action%20Plan.pdf>
- 21 Energy Transition Act Factsheet <https://y00bn3l6sa11vcw1pmj6um14-wpengine.netdna-ssl.com/files/2019/02/190204-ETA-fact-sheet-v1.pdf>
- 22 <https://cvnm.org/press-releases/report-new-mexicos-clean-energy-economy-begins-by-investing-in-workforce-development/>
- 23 <https://www.wri.org/just-transitions/kentucky>
- 24 Initial Report to the President on Empowering Workers Through Revitalizing Energy Communities (April 2021) [https://netl.doe.gov/sites/default/files/2021-04/Initial%20Report%20on%20Energy%20Communities\\_Apr2021.pdf](https://netl.doe.gov/sites/default/files/2021-04/Initial%20Report%20on%20Energy%20Communities_Apr2021.pdf)
- 25 The economics of just transition: a framework for supporting fossil fuel-dependent workers and communities in the United States (2016) [https://www.umass.edu/economics/sites/default/files/Pollin\\_Callaci.pdf](https://www.umass.edu/economics/sites/default/files/Pollin_Callaci.pdf)
- 26 <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>
- 27 Singh, Vaibhav Pratap, and Nikhil Sharma. 2021. Mapping Costs for Early Coal Decommissioning in India. New Delhi: Council on Energy, Environment and Water.
- 28 Chandra Bhushan and Srestha Banerjee. (2021). Five R's: A cross-sectoral landscape of Just Transition in India, International Forum for Environment, Sustainability & Technology (iFOREST), New Delhi.
- 29 <https://ec.europa.eu/jrc/en/news/eu-coal-regions-opportunities-and-challenges-ahead>
- 30 <https://data.bls.gov/timeseries/CES1021210001>
- 31 <https://www.bls.gov/oes/current/oes518013.htm>
- 32 <https://iforest.global/research/just-transition-book-request-download/>
- 33 [https://www.ilo.org/global/publications/books/WCMS\\_817572/lang-en/index.htm](https://www.ilo.org/global/publications/books/WCMS_817572/lang-en/index.htm)
- 34 [https://tcddata360.worldbank.org/indicators/inn.fin.mkt.dev?country=IND&indicator=740&countries=CHN,DEU,IDN,USA&viz=line\\_chart&years=2007,2017](https://tcddata360.worldbank.org/indicators/inn.fin.mkt.dev?country=IND&indicator=740&countries=CHN,DEU,IDN,USA&viz=line_chart&years=2007,2017)
- 35 <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>
- 36 Mathieu Blondeel, Thijs Van de Graaf, Tim Haesebrouck. (January 2020). Moving beyond Coal: Exploring and explaining the Powering Past Coal Alliance. <https://www.sciencedirect.com/science/article/abs/pii/S2214629619300520>
- 37 Yann Louvel, Lucie Pinson, Ryan Cooper, Angus Satow. Reclaim Finance (April 2021). Reclaim Finance. Last Chance for Powering Past Coal Alliance. [https://reclaimfinance.org/site/wp-content/uploads/2021/04/PPCA\\_Report.pdf](https://reclaimfinance.org/site/wp-content/uploads/2021/04/PPCA_Report.pdf)
- 38 <https://www.timesnownews.com/business-economy/industry/article/clean-energy-cess-tax-on-coal/683809>
- 39 <https://climatefundsupdate.org/the-funds/>
- 40 <https://www.youthpolicy.org/blog/sustainability/1-should-we-persist-with-unfccc/>

**iFOREST**

INTERNATIONAL  
FORUM  
FOR ENVIRONMENT,  
SUSTAINABILITY  
& TECHNOLOGY