

WRI’s Submission to the COP 30 Presidency Roadmap on the Transition Away from Fossil Fuels in a Just, Orderly and Equitable Manner in response to the invitation from the COP30 Presidency

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A- State of Play

The deployment of renewable energy, electric vehicles and battery storage are accelerating rapidly, accompanied by substantial growth in clean energy investment. For instance, solar and wind [increased](#) their share of global electricity generation from 8% in 2019 to 15% in 2024, and all zero-carbon sources rose from 38% to 41% over the same period. Yet the pace is not yet fast enough to drive an absolute decline in fossil fuels. Rising electricity demand has thus far offset the growth in clean energy technologies: coal and gas shares have declined modestly, but both have continued to grow in absolute terms. Fossil fuels continue to dominate the global energy system, accounting for over 80% of total energy supply in 2023, with coal alone responsible for [45% of energy sector carbon dioxide emissions](#).

This continued dependence not only slows climate progress but also exposes economies to geopolitical uncertainty, energy security risks and price volatility, with disruptions in the oil and gas markets repeatedly sending shocks across the global economy. Recent crises in global energy markets highlight the risks of relying on fossil fuels, with direct impacts on inflation, fiscal stability, and access to affordable energy, underscoring the need to accelerate the transition away from fossil fuels.

According to the [State of Climate Action 2025](#) report, achieving a transition away from fossil fuels requires a rapid and sustained decline in their production and use to achieve our climate goals. In the power sector, coal generation must fall more than ten times faster than the current trend to reach 4% by 2030, while unabated gas must decline seven times faster to 5–7%, and solar and wind need to grow more than twice as fast, at 29% per year.

However, there are major barriers to the transition and progress is constrained by economic, financial, technological, governance, and social barriers, including fiscal dependence on fossil fuels, slow deployment of clean energy, investment risks, and fragmented policy coordination. At the same time, there are clear levers to accelerate implementation, including national fossil fuel transition planning, fiscal and financial reforms, clean energy deployment, and strengthened international cooperation alongside the need to integrate social protection, economic diversification, and inclusive governance to ensure a just and equitable transition, particularly in countries and regions with high dependence on fossil fuels.

B- Barriers

Question: What are the most critical barriers — whether physical, economic, financial, institutional, technological or social— preventing a transition away from fossil fuels?

- 1- Economic and fiscal barriers** are among the most significant. Many countries and subnational regions remain highly dependent on fossil fuel revenues, which support critical public services such as healthcare, education, and public sector employment. In some cases, this dependence is extreme: oil and gas revenues represent as much as 89%, 81%, and 72% of total government revenue in countries such as Iraq, Equatorial Guinea, and Libya. At the same time, many countries face constrained fiscal space due to rising debt

burdens, energy costs, and broader economic pressures, making it more difficult to replace declining fossil fuel revenues and finance the transition. At the subnational level, many remain highly dependent on fossil fuel revenues. In Brazil, subnational governments receive around BRL 70 billion annually in oil revenues, with 87% concentrated in three states, and in some municipalities oil royalties account for more than half of local revenues. At the same time, fossil fuel support remains substantial: for every BRL 1 supporting renewables, about BRL 2.5 goes to fossil fuels. In Colombia, coal-dependent regions such as Cesar have experienced employment losses and declining fiscal revenues following mine closures. This dependence creates strong incentives to maintain fossil fuel production and slows economic diversification.

- 2- Technological and system-level barriers** are also [substantial](#). Grid constraints, including insufficient transmission capacity, limited interconnection, and inadequate system flexibility, restrict the integration of high shares of variable renewable energy. These challenges are compounded by the slow deployment of enabling technologies such as energy storage and demand-side management, as well as insufficient electricity system capacity to maintain reliability without fossil fuel backup. Infrastructure gaps extend beyond grids, with limited systems for electrification, hydrogen, and other low-carbon energy carriers, alongside the lack of mature and cost-effective alternatives in hard-to-abate sectors, delaying fossil fuel substitution in industry and transport. While some demand-side transitions, such as in transport, are increasingly feasible due to the availability of technologies like electric vehicles, other sectors, particularly industry, face more limited near-term alternatives, especially in developing countries. In addition, rapidly growing economies will continue to require reliable baseload power, while integrating higher shares of renewable energy depends on storage technologies and critical minerals.

At the same time, long-lived fossil fuel assets and deeply embedded “carbon lock-in” across energy and industrial systems slow capital turnover and hinder system reconfiguration towards renewables. Rising energy demand further exacerbates these constraints, as clean energy deployment often meets new demand rather than displacing existing fossil generation.

- a. **Spotlighting rising energy demand from artificial intelligence and digital infrastructure:** Projections of electricity demand in some major economies are rising sharply, in contrast to relatively flat trends in recent decades, driven by the rapid expansion of advanced artificial intelligence technologies, growing demand for cloud computing services, re-shoring of industrial activity and manufacturing, and the electrification of buildings and transportation. Pressures to rapidly interconnect large new loads, particularly [data centers](#), are shaping power system investment decisions. Early indications suggest that fossil fuels may play a significant role in meeting this rising electricity demand, at least in the near term, with “speed to power” becoming a critical requirement for developers, and fossil fuel generation can often be deployed more quickly than renewable energy and grid infrastructure can be expanded. As a result, pressures to meet demand rapidly are driving a surge in [new gas power development](#). Where new demand is grid-connected, rising electricity demand can prolong and expand the use of existing [fossil fuel](#) generators, increase electricity market clearing prices, and lead to more frequent dispatch of coal and natural gas plants. In addition, real and perceived concerns about system

reliability and energy scarcity have led policymakers in some cases to delay the retirement of coal plants. Without targeted policy intervention, grid expansion, and demand-side management, these dynamics risk reinforcing fossil fuel dependence and slowing the transition away from fossil fuels.

- 3- Financial barriers** are systemic and deeply embedded in the structure of the global financial system, and are particularly burdensome for Emerging Markets and Developing Countries (EMDCs). Many of these barriers facing EMDCs are comprehensively set out in the Baku to Belem Roadmap for mobilizing \$1.3trn (BB1.3T) in international financial flows to EMDCs by 2035. It will be important for the development of the global Roadmap on the Transition Away from Fossil Fuels to seek maximum synergies with the BB1.3T Roadmap across each of its 5 action fronts for EMDCs: overcoming the barrier of inadequate concessional and grant-based finance for the TAFF; removing burdens of debt and limited fiscal space for the TAFF; breaking through the barriers to private investments in the TAFF (such as high costs of capital); remedying the obstacles posed by inadequate TAFF policy frameworks (for example, through the introduction of country platforms); and confronting the misalignment of rules within the financial system to support the TAFF (eg the current models of credit rating agencies). Limited and unpredictable access to dedicated international climate finance further constrains countries' ability to plan and implement transition pathways. All of this means that capital is not flowing at the scale or cost required for a successful and orderly transition. In addition, weak policy coordination and regulatory frameworks further constrain investment.

Structural features of the financial system also create misaligned incentives. Central bank frameworks for managing price and financial stability do not adequately account for fossil fuels as a source of economic and financial risk, despite their demonstrated geopolitical volatility. Prudential rules often penalize long-term green investments, particularly in developing countries, while sovereign credit rating methodologies amplify climate-related risk premiums, undervalue the risk-sharing role of multilateral development banks, and can discourage countries from undertaking transition policies by increasing the risk of downgrades. Limited access to long-tenor foreign exchange hedging instruments further increases financial and convertibility risks. As a result, financial systems do not adequately reflect the risks of continued fossil fuel dependence, creating a self-reinforcing cycle in which high perceived risks deter investment, shallow markets reinforce those risks, and the financing gap persists.

- 4- Institutional and governance barriers** also constrain progress. Many countries face limited policy coherence across energy, fiscal, industrial, and social domains, and fragmented policymaking across ministries and levels of government slows decision-making and implementation. The absence of comprehensive national transition or national TAFF roadmaps further constrains the ability to define sectoral pathways, align investment priorities, and coordinate action across key sectors such as power, industry, and transport. Moreover, insufficient national policy coordination remains a key constraint, with transition-related policies often siloed and not embedded in broader economic planning. Coordination challenges also extend across countries and markets. Limited alignment between fossil fuel producers and consumers can hinder the synchronization of supply-side phase-down with demand-side reduction, while long-term fuel supply agreements and other contractual arrangements create legal and institutional barriers to transitioning away

from fossil fuels. In addition, mechanisms for technical assistance, knowledge sharing, and implementation support are still evolving, limiting the ability of countries, particularly developing countries, to design and implement coherent transition strategies and align policy, finance, and investment decisions with the transition away from fossil fuels.

- 5- Social and political barriers** such as high levels of inequality, poverty, unemployment, and informality reduce the capacity of workers and communities to adapt to economic change associated with the transition away from fossil fuels. In many contexts, the impacts of the current energy system are uneven, disproportionately affecting low-income households, who face higher energy cost burdens, limited access to reliable energy, and reduced capacity to adapt, as well as small and medium enterprises, and rural, Indigenous, and remote communities. Energy poverty remains a significant constraint on access to services and limits participation in economic activity. Dependence on fossil fuel revenues, combined with strong vested interests, can create political constraints around the pace and direction of the transition. In addition, limited social dialogue and insufficient participation of affected communities can reduce the effectiveness and legitimacy of transition policies, particularly in regions most exposed to structural economic change.

C- Levers

Question: What potential levers, whether economic, financial, institutional, social or technological, exist for accelerating the implementation of the transitioning away commitment?

1- National Fossil Fuels Transition Roadmaps

Developing national transition roadmaps is a critical lever to address institutional, financial, and coordination barriers. These plans can provide a national framework to reduce fossil fuel dependence while ensuring energy security and development, helping to overcome fragmented policymaking, limited policy coherence, and long-term investment uncertainty.

National TAFF roadmaps can define sectoral pathways, policy reforms, investment priorities, and timelines across key sectors such as power, industry, transport, and buildings. They can guide the phase-down of fossil fuel production and consumption, while accelerating electrification, scaling zero-carbon power, improving energy and material efficiency, and deploying sustainable alternatives such as bioenergy, hydrogen, and e-fuels. These national plans can also help reduce investment risks and support the reallocation of capital toward clean energy systems and more diversified economies.

As the COP30 Presidency develops the global TAFF roadmap, COP31 could invite countries to voluntarily develop national TAFF roadmaps, in line with equity and national circumstances. These plans could build on the first Global Stocktake and the global TAFF roadmap and be submitted on a voluntary basis to the UNFCCC to inform the second Global Stocktake process and support the translation of global commitments into nationally determined implementation.

2- Finance and Financial System Alignment

Aligning finance and financial systems with transition objectives is a critical lever to accelerate the transition away from fossil fuels. This includes increasing access to grant-based and concessional finance, particularly for emerging markets and developing countries facing constrained fiscal space and high debt burdens, and redirecting public finance and investment away from fossil fuels toward clean energy and economic diversification. Reforms to public finance frameworks, including subsidy reform and the development of bankable clean energy projects, can help reduce investment risks and crowd in private capital. At the same time, broader financial system alignment is needed to address structural constraints that deter investment, including improving risk assessment, reducing the cost of capital through risk mitigation instruments, strengthening investment frameworks, and expanding access to financial tools such as long-term hedging.

- a. Spotlight the Role of Central Banks and Financial Regulators:** Central banks and financial regulators can play an important role by integrating climate-related risks into financial stability and monetary policy frameworks, supporting green financial instruments, and strengthening data and analytical capacity. Addressing misaligned incentives in prudential rules and credit rating methodologies can help reduce risk premiums and enable countries to undertake transition policies without facing financial penalties. Central banks are increasingly cooperating to confront climate-related risks to price, financial, and economic stability, notably through the Network for Greening the Financial System (NGFS), which has 149 members across 92 countries. The NGFS has advanced the integration of climate factors into prudential and monetary policy, scenario development, and central bank operations. Building on this, a new international collaborative initiative focused on the role of central banks in TAFF could develop solutions to critical financial system barriers, including green refinancing schemes, differential interest rates, and reforms to credit rating methodologies. Such an initiative could bring together central banks and supervisors, alliances such as the NGFS, researchers, civil society, and other market participants to identify practical options for action within existing mandates, supported by robust governance, capacity building, and clear implementation structures. Establishing this initiative in the near term could help accelerate central bank action and strengthen the alignment of financial systems with the transition.

3- Power Sector Transformation and Demand-Side Measures

Accelerating power sector transformation and demand-side action is essential to address technological and system-level barriers and reduce fossil fuel dependence. This requires rapidly scaling zero-carbon power, modernizing electricity grids, and improving system flexibility to integrate higher shares of renewable energy. Governments can support this transition through investments in grid infrastructure, market reforms that enable clean energy deployment, and policies that remove barriers to renewable energy integration.

At the same time, managing demand growth is critical to avoid locking in new fossil fuel capacity. Electrification across buildings, transport, and industry must be paired with improvements in energy and material efficiency to reduce overall energy demand.

- a. Spotlight on addressing rising energy demand from digital infrastructure:** There is emerging evidence that a combination of [technological](#) and [operational](#) solutions could avoid or minimize the risks that new data center electricity demand

pose to the transition away from fossil fuels. Policymakers at all levels of government are exploring legislative and regulatory strategies to shape how the electricity system responds to this new paradigm. Local governments have employed zoning tools to encourage development of solar energy plus storage. State legislatures and electricity regulators have begun to require utilities to offer [large load tariffs](#) or to [tie eligibility](#) for state [tax incentives](#) to implementation of energy efficiency measures. Federal energy regulators are considering reforms to provide the benefit of an accelerated interconnection timeline to large loads that agree to be [flexible and curtailable](#), which would avoid or minimize the system's reliance on highly polluting peaking resources to meet data center demand.

b. Spotlight on the use of biofuels for the transition

As countries undertake their transitions away from fossil fuels, it will be vital for them to closely examine the potential implications of fossil-fuel replacement strategies on people, nature, and climate. In the case of biofuels production, this requires locally-grounded research to inform country strategies about how to best meet their nature and climate goals while using their available land, to meet needs for food, animal feed, wood products, jobs, revenue and energy, and also advancing gender equity and human rights.

Evidence-based and inclusive land-use planning at the local level, including for degraded lands, will be essential to balance competing priorities. Because the world's land base is finite, it is essential to consider both domestic and global effects of potential changes in biofuels policy, and strategies should be considered in the context of national pledges to halt deforestation and preserve existing ecosystems. In addition, use of biofuels should be considered in the broader context of strategies involving transport, both for passengers and freight, including electrification and developing alternative low-carbon modes of transport.

These questions are critical to address in part because of the need to provide more food and wood products for 9-10 billion people by 2050. Food insecurity has many causes, and access to food reflects political and economic inequalities shaped by income, geography, gender, and other structural factors. In addition, WRI's [global research](#) shows expansion of land dedicated to biofuel production globally would have serious negative impacts on food security, nature, and climate to the degree it competes with food and feed production, timber production, and natural ecosystem conservation and restoration. At [present rates of cropland expansion](#) to meet growing food and feed needs, without adequate land management and efficient cropping measures, an area nearly the size of India is on track to be converted from nature to agriculture between 2020 and 2050. Increasing biofuel mandates would further add to land conversion pressures. Thus, avoiding trade-offs among energy security, food security, nature protection, and nature restoration will be essential and should be pursued.

It will also be important to undertake country- and local-level assessments of the carbon effects of biofuels. To avoid undercounting biofuels' land carbon cost, which has historically been the case in many models, the Greenhouse Gas Protocol's [Land Sector and Removals Standard](#) specifies that "leakage" associated with crop-based biofuel production is quantified using the carbon opportunity cost metric to calculate carbon losses from replacing displaced crops at average yields. This type of analysis can help provide the basis for country- and local-level assessments of the land use and carbon effects of various decarbonization pathways and inform decision-making that best balances goals related to people, nature, and climate.

4- Just Transition and Social Protection

Embedding just transition approaches into national and local policies can help ensure that economic restructuring does not deepen existing inequalities. This includes:

- a. Strengthening **social dialogue**, enabling meaningful participation of workers, communities, and other stakeholders, and improving coordination between public and private actors to support inclusive decision-making and more effective policy implementation.
- b. Developing **national just transition monitoring frameworks** can help track indicators related to declining fiscal dependence on fossil fuels, shifts in economic and labor structures, [social safety nets](#) for affected communities, workforce transition programs including reskilling, and investment in cleaner economic sectors and [SMEs](#). Monitoring should also include procedural justice elements such as stakeholder participation and restorative justice measures such as environmental remediation of closed mines. Robust monitoring and evaluation systems can inform policymaking, improve accountability and transparency, guide resource allocation, and attract investment to support the transition.
- c. Complementing national approaches with **subnational just transition strategies** is critical in regions most exposed to fossil fuel phase-down, where job losses and declining fiscal revenues can have significant local impacts. Strengthening access to finance for regional economic diversification, aligning national and local policies, and [applying lessons from existing transition experiences](#) can help ensure that the transition supports resilient, inclusive, and locally driven development outcomes.
- d. At the international level, establishing new initiatives such as a **Just Transition Technical Support Network** could help address these gaps by facilitating technical assistance and knowledge exchange for countries implementing just transition measures. Developed under the UNFCCC’s Just Transition Work Programme (JTWP), the network could support the operationalization of the Just Transition Mechanism by providing guidance, sharing lessons from existing support mechanisms such as the Climate Technology Centre and Network (CTCN) and Santiago Network, organizing expert working groups, and creating platforms for collaboration and exchange of good practices. Such a network would help countries navigate the social and economic dimensions of transitioning away from fossil fuels.

5- Fiscal and Economic Diversification for Fossil Fuel-Dependent Economies

To shift away from economic dependency on fossil fuels, producing countries will face significant declines in government revenue. With [about half of the world’s oil and gas being produced by “middle-income” developing countries](#), this raises serious just transition-related concerns for populations dependent on services made possible by such revenue, in addition to potential job displacement and loss of income for dependent workers and communities. Transitioning away from fossil fuels will require innovative solutions supporting economic diversification to help address the implications for public spending on social programs and infrastructure, education, healthcare, public sector employment, and [fossil fuel subsidies](#) for vulnerable groups. The ways that fossil fuel revenues are shared with subnational governments – derivation or indicator-based distribution systems – can have implication for the political economy of the transition away from fossil fuels, as this can impact the volatility, benefits, and downsides of the industry, experienced locally. Careful

place-based and locally-focused planning and engagement with impacted communities will be necessary to address declines in revenue for areas where fossil fuel extraction and exploitation are geographically concentrated or revenue from such is directed.

This reality also highlights the need to develop a more resilient and diversified economy, adopting a just transition approach in national and local policies, ensuring that structural changes do not deepen existing inequalities and that the most vulnerable communities are an active part of the process. Some key factors to consider are the strengthening of social dialogues, articulation between actors, such as the private sector and public entities at the national and local levels, access to finance, and application of lessons learned from other contexts.

6- International Cooperative Initiatives

International cooperative initiatives (ICIs) are an increasingly important and underutilized lever for accelerating the transition away from fossil fuels. Operating outside UNFCCC consensus-based constraints, these coalitions can move faster, attract broader state and non-state actors, and catalyze domestic policy and market shifts that formal multilateral processes have struggled to achieve. Governments play a leading role in many of these initiatives and coalitions, such as the Powering Past Coal Alliance, Global Methane Pledge, Clean Energy Transition Partnership, and Climate Club.

Where well designed, international cooperative initiatives can accelerate fossil fuel transition by supporting sector-specific cooperation on coal phase-down, methane abatement, fossil fuel finance reform, and clean power deployment. ICIs can help countries move from commitments to implementation by facilitating policy coordination, peer learning, technical assistance, and access to finance, while building political confidence that transition efforts are being pursued collectively, rather than in isolation.

Yet the transformative potential of these initiatives and coalitions remains unevenly realized. Many face structural weaknesses: vague phase-out commitments, weak accountability, and insufficient support for countries most dependent on fossil fuel revenues navigating the economic consequences of transition. To fully support the Roadmap, these initiatives must become more delivery-oriented and more responsive to differentiated national circumstances, grounded in clear transition objectives and targets, linked to implementation support and strategies coherent with domestic planning, and better equipped to serve countries with high fossil fuel dependence and limited capacity.

WRI's [research](#) identifies key dimensions of initiative effectiveness including the breadth of participation among high-dependence economies; specificity of phase-out goals; governance and accountability structures; implementation support including finance and technology transfer; and monitoring and reporting frameworks that track real-world fossil fuel displacement against pledges and commitments made.

The COP30 Presidency Roadmap offers a timely opportunity to integrate ICIs as key vehicles that can galvanize countries to raise ambition and translate commitments into realistic pathways toward an orderly, just, and equitable transition away from fossil fuels.

D- Country, regional, and sectoral experiences

Question: What country, regional or sector roadmap experiences, best practices, and lessons learned can be shared?

Country and regional experiences highlight the importance of aligning the transition away from fossil fuels with broader development objectives.

In Brazil, the transition is both a climate and development challenge, requiring the country to balance reducing fossil fuel dependence, ensuring energy security, and promoting economic growth and social inclusion. However, existing policies and market structures continue to support fossil fuels—for every BRL 1 supporting renewables, about BRL 2.5 goes to fossil fuels, creating lock-in effects and slowing investment in low-carbon technologies. At the same time, strong fiscal dependence persists, with subnational governments receiving around BRL 70 billion annually in oil revenues. A key lesson is that successful transition pathways require integrated national strategies that combine regulatory reform, financial innovation, infrastructure investment, and social inclusion, while aligning energy transition goals with economic diversification and competitiveness.

India's just transition experience is largely policy-driven, which accounts for a few harsh realities. For example, in the energy sector, coal currently accounts for [55% of energy needs](#) and employs approximately [500,000 direct coal miners](#), which makes a rapid phase-out of coal challenging given development priorities. In response, Niti Aayog developed a [three-tier institutional framework](#) to enable the implementation of a just transition in the coal sector. Tier 1 is constituted at the central level (Ministry of Coal-led), which will set guidelines, track mine closures, and ensure convergence with existing government policies such as MNREGA, NRHM and NRLM. Tier 2 operates at the state level, developing a regional development framework, skill development, and industrial policies. Tier 3 is constituted at the asset level and is responsible for consultative, asset-specific redevelopment and repurposing plans. At the subnational level, three states, namely [Jharkhand, Odisha, and Chhattisgarh](#), are at different stages in their transition plans. These three states together hold [69% of India's coal reserves and produce 63% of India's coal](#). Among these three states, Jharkhand is the most advanced, with a Just Transition Task Force established and a vision [document](#) published. That said, there are a few other sectors where the transition is occurring, for example, ICE vehicle manufacturing. While a [formal just transition policy and dedicated just transition funds](#) are prerequisites for implementation, different financial mechanisms, such as [blended finance, impact-linked financial instruments, and localised funding strategies](#), can also be developed and implemented. That said, financial ecosystems need to be accessible to affected stakeholders, such as marginalized communities and groups and women. India can unlock innovation, create new livelihoods, and build a resilient economy by aligning finance with social equity.

Across Latin America, countries such as Mexico, Colombia, Ecuador, and Venezuela, demonstrate the structural challenges of transitioning away from fossil fuels in economies that rely heavily on fossil fuel revenues. Evidence from WRI Mexico highlights that the abrupt phase-out of the oil and gas sector does not, in itself, guarantee national emissions reductions and can generate negative economic spillovers across supply chains, growth, employment, and macroeconomic stability. These findings highlight the need for gradual and planned transition strategies that align emissions reductions with economic development objectives, particularly in countries with limited economic diversification and high fiscal dependence on fossil fuels.

Given the strategic importance of fossil fuel infrastructure, transition strategies should also account for physical and transition-related climate risks. Robust evidence on the current and projected impacts of climate change on sectoral infrastructure and operations will be critical for building a solid public policy narrative grounded in empirical data and economic modeling. Likewise, the risk of stranded assets must be explicitly incorporated into national economic and climate assessments, including analyses of potential alternative uses, repurposing, or decommissioning of existing infrastructure.

In this context Latin American experience also highlights the importance of embedding just transition principles into national and subnational planning. Managing labor impacts, supporting workforce reskilling, and ensuring inclusive access to new economic opportunities are critical to maintaining social and political support.

Regional experiences also underscore the importance of place-based approaches and just transition strategies. In Colombia, subnational regions such as Cesar illustrate how fossil fuel phase-down can lead to significant employment losses and declining fiscal revenues, with uneven impacts across regions. These experiences demonstrate that transition policies must be tailored to local conditions and supported by strong social dialogue, coordination between national and local governments, and access to finance for economic diversification. A key lesson is that subnational planning and inclusive governance are essential to manage distributional impacts and ensure that affected communities are active participants in the transition.

Cross-cutting experiences from countries highlight the growing importance of just transition monitoring frameworks. Some countries such as Brazil, Nigeria, Scotland, and South Africa are already leading on developing just transition monitoring frameworks, identifying indicators and integrating them into their national planning and budgeting processes.¹ They have all included energy sector in their first phase of understanding how to monitor their transitions, e.g., in [South Africa](#) through indicators developed under their JET-IP (such as Number of FTE staff employed to implement residential solar projects, Number of FTE staff employed in supply chains for renewable energy, Number of households benefiting from livelihoods support in Mpumalanga's coal districts, etc.) and in [Scotland](#) by monitoring their North Sea oil and gas phase down including plans to support workers and communities (e.g., Proportion of households reporting that they are managing well financially in local authorities with a high proportion of employment in oil and gas industries, Number of recipients of the Oil and Gas Transition Training Fund, etc.). Many other countries have expressed interest in just transition monitoring with [over 70 countries noting the inclusion of just transition metrics into their MRV systems for the first time in the third generation NDCs](#). Such monitoring and evaluation will be crucial to keep track of countries' efforts to transition away from fossil fuels, and ensure they are done in just, equitable, and inclusive ways.

E- A just, orderly and equitable transition

Question: How can a just, orderly and equitable transition best reflect the diverse realities of countries at different stages of development and with different degrees of dependence on fossil fuels?

A just, orderly and equitable transition must be nationally determined and differentiated, reflecting countries' levels of development, fiscal capacity, and degree of dependence on fossil fuels. Many

developing and emerging economies face structural constraints, including high dependence on fossil fuel revenues, limited fiscal space, and elevated debt burdens, alongside broader challenges such as inequality, poverty, and informality. These conditions shape both the pace and pathways of transition. Ensuring equity requires aligning transition strategies with national development priorities, enabling countries to pursue economic diversification, energy security, and social inclusion while reducing fossil fuel dependence.

Operationalizing this requires integrated approaches that combine national planning, financial support, and inclusive governance. For example, national TAFF plans can provide a framework to translate global commitments into country-specific pathways, identifying national sectoral priorities, investment needs, and policy reforms. At the same time, access to concessional and grant-based finance is essential to support countries with limited fiscal capacity and to manage the economic and social costs of transition. Strengthening international cooperation, including technical assistance and knowledge-sharing mechanisms, can help address capacity gaps and support implementation.

A just transition also requires targeted support for affected workers, communities, and regions, particularly in areas highly dependent on fossil fuel production. This includes social protection, workforce transition programs, and place-based economic diversification strategies, supported by strong social dialogue and inclusive participation. Monitoring frameworks can help track impacts and ensure accountability over time. Together, these measures can enable countries to pursue transition pathways that are also responsive to their economic structures, social conditions, and development aspirations.