Climate Strategies' submission to the COP30 Presidency on the Roadmap to Transition Away from Fossil Fuels in a Just, Orderly and Equitable Manner

Lessons from international research and practice

As an international research and knowledge brokerage organisation with a network of over 100 leading climate researchers, including IPCC contributors and authors, Climate Strategies is grateful for the opportunity to share research-based insights for the COP30 Presidency's roadmap on transitioning away from fossil fuels in a just, orderly, and equitable manner.

This submission brings in key insights from research conducted as part of our Prosperity Post Fossil Fuels (PPFF), South-to-South Just Transitions, ELEVATE and NewPathways projects.

Introduction

The global energy transition has entered a decisive yet fragmented phase. While renewables are expanding at an unprecedented pace, reshaping power systems and investment flows, fossil fuels continue to influence geopolitics, fiscal stability, and development trajectories worldwide. This reality defines the present moment: progress is undeniable, but uneven, and the economic, social, and climatic risks brought by delayed action are intensifying.

Across the world, countries are navigating a complex landscape of constraints and opportunities. This is particularly the case for economies that rely majorly on fossil fuel revenues and exports – from Canada, to Nigeria, and Malaysia. As the energy transition unfolds, such countries face considerable structural challenges brought by declining revenues, budgetary pressures, and limited spending capacity for the transition. These, in turn, may exacerbate pre-existing macroeconomic challenges.

Yet with careful and pre-emptive planning, the energy transition can open pathways to enhanced resilience, economic diversification, and long-term energy security. This is a colossal task. Countries must pursue this goal while balancing competing imperatives: security, accessibility, affordability and self-sufficiency – all amid volatile oil and gas markets and a challenging geopolitical landscape.[1] In this context, multilateral coordination and cooperation – including between fossil fuel importers and exporters – is one of the most powerful but underutilised levers to accelerate the transition.

Momentum is building around 'coalitions of the willing' with countries seeking to advance binding frameworks to implement and finance the transition away from fossil fuels. However, ambition without inclusion will falter. A credible roadmap must be grounded in Just Transition principles from the outset. If the energy transition is not a Just Transition, it will not happen.

The COP30 Presidency roadmap presents a critical opportunity to align these dynamics into a coherent global effort. One that mobilises cooperation at scale, bridges divides between countries, and translates shared ambition into actionable and equitable outcomes.

Critical Barriers

[1] Hansen, B., Hogbin, J., Rodriguez, I., & Morley-Williams, C. (2025). PPFF 2025 Salzburg Dialogue: Policy Dialogue on Just Energy Transitions—Pathways to prosperity post fossil fuels (PPFF). Climate Strategies. More info at: https://climatestrategies.org/publication/key-insights-on-just-energy-transitons/.

Climate Strategies research highlights how uncertainty over the scope and pace of the global energy transition, domestic macroeconomic constraints, and unaddressed socio-economic impacts can dampen ambitions and slow progress to transition away from fossil fuels. For many countries, especially those reliant on oil and gas revenues, these challenges are systemic and difficult to overcome. Drawing from our research on the topic, the following points outline the critical barriers shaping the pace and feasibility of transition efforts:

- Economic dependence on fossil fuel revenues and exports. Today, around twenty countries rely on oil and gas for more than 20% of fiscal revenues (the IMF's definition of resource dependency); for about ten countries, it represents more than half[2]. This dependency restricts the capacity of these countries to diversify their economies and accelerate transition efforts. Furthermore, as the global energy transition accelerates and global demand for oil and gas is expected to decline, these countries risk facing fiscal and macroeconomic risks, such as balance-of-payments pressures, loss of foreign exchange, inflation, and exchange rate instability.

- Decreasing revenues for social and economic development. Many oil and gas exporting countries use fossil fuel revenues to drive socio-economic development. Without appropriate transition plans, the energy transition will limit their resources and ability to adapt. For developing economies, this challenge comes on top of existing macroeconomic necessities that must be met before long-term prosperity post fossil fuels can be realised.[3]

  PPFF participants from Canada, Nigeria, and Trinidad and Tobago have noted the high productivity of oil and gas jobs as well as the sector's high contribution to investment in socioeconomic development, which is not necessarily matched by clean energy sectors.[4] Policymakers must establish appropriate plans to manage these impacts and ensure decent work among the affected populations.[5]

- Uncertainty about future demand and market dynamics. Stakeholders' uncertainty over the pace and scope of the global energy transition, combined with geoeconomic instability and the volatility of fossil fuel markets, can hinder the credibility and feasibility of transitioning away from fossil fuel commitments from involved stakeholders. This lack of buy-in creates obstacles for the design and sustained implementation of transition strategies.

- Contesting expectations over the transition. As the energy transition brings undeniable challenges, many countries are considering different approaches to minimise impacts

[2] Muttitt, G. (2025). Trends in oil and gas demand and their implications for exporting countries. Lead Report - Policy Dialogue on Just Energy Transitions 2.0: Identifying Pathways to Prosperity Post-Fossil Fuels. More info at: https://climatestrategies.org/publication/trends-oil-gas- demand/

[3] Hansen, B., Hogbin, J., Rodriguez, I., & Morley-Williams, C. (2025). PPFF 2025 Salzburg Dialogue: Policy Dialogue on Just Energy Transitions—Pathways to prosperity post fossil fuels (PPFF). Climate Strategies. More info at: https://climatestrategies.org/publication/key-insights-on-just-energy-transitons/

[4] Ibid.

[5] Xie, J. J., Brutschin, E., Rogelj, J., & Staffell, I. (2025). Past socio-political transitions away from coal and gas show challenges and opportunities ahead. Environmental Research Letters. Available at: https://doi.org/10.1088/1748-9326/add0c6; Xie, J. J., Brutschin, E., & van Ruijven, B. (2024). Raising policy ambitions to reduce coal- and gas-fired power generation (Policy Brief 1, ELEVATE project). International Institute for Applied Systems Analysis (IIASA). More info at: https://climatestrategies.org/publication/elevate-policy-brief-1/.

and delay a comprehensive phase-out. This is the case, for example, when focusing on developing technologies (e.g., Carbon Capture and Storage, Direct Air Capture), or on the introduction of 'transition fuels' such as natural gas, to support the phase-out of more emitting fuels like coal. Recent research questions the viability of such approaches, as it sees a risk of setting false expectations that divert attention and resources from the energy transition. Further research and constructive debate are needed to bridge these gaps.

- The 'energy trilemma' of security, affordability, and sustainability. Particularly in the current geopolitical landscape, governments must balance climate goals with concerns about energy access, security, and affordability. These necessities may take priority over efforts to rapidly reduce fossil fuel production and consumption.[6]
- Limited capacity for economic diversification against globalised trade and industrial competition. Economic diversification is a crucial adaptation strategy, yet there are many obstacles to its implementation. Countries with a pre-existing industrial base will have an advantage in capturing emerging supply chains, particularly with the current revival in industrial policy and protectionist measures. In this context, developing countries may struggle to access realistic value creation opportunities. Collaborative approaches are needed to build the financial and technical capacity to enter these sectors and overcome barriers like weak infrastructure and high capital costs.

  Resource-rich countries can expand into upstream segments of green energy supply chains, such as the production of green hydrogen and the extraction of critical minerals. However, careful planning and responsible management are needed to avoid repeating extractive patterns and to ensure that diversification supports sustainable resource use and local beneficiation opportunities.
- Fossil fuel dependency can lock in political settlements that resist change. For many oil and gas producer economies, political economy dynamics can hinder diversification as oil revenues tend to shape political settlements, and reform may incite resistance or even political instability. In addition, "Dutch disease" effects can crowd out the development of other sectors by concentrating investment and economic activity in oil and gas.[7]

Potential levers

The transition requires a comprehensive set of mutually reinforcing levers spanning economic, financial, institutional, technological and social dimensions. No single intervention will be sufficient at the scale and pace required. Instead, progress will depend on aligning incentives, strengthening cooperation, reducing uncertainty, and supporting countries in accordance with their national circumstances. The following levers highlight priority areas where targeted action can help translate high-level commitments into practical, timely, and equitable implementation.

[6] Hansen, B., Hogbin, J., Rodriguez, I., & Morley-Williams, C. (2025). PPFF 2025 Salzburg Dialogue: Policy Dialogue on Just Energy Transitions—Pathways to prosperity post fossil fuels (PPFF). Climate Strategies. More info at: https://climatestrategies.org/publication/key-insights-on-just-energy-transitons/

[7] Muttitt, G. (2025). Trends in oil and gas demand and their implications for exporting countries. Lead Report - Policy Dialogue on Just Energy Transitions 2.0: Identifying Pathways to Prosperity Post-Fossil Fuels. More info at: https://climatestrategies.org/publication/trends-oil-gas- demand/ .

- International signalling, transparency, and importer-exporter coordination. Clear, credible signalling from transitioning countries can reduce uncertainties over the scope and pace of energy transitions (e.g., by clarifying expected changes in fossil fuel demand and supply) in ways that foster trust among trading partners, enable pre-emptive planning for demand decline, and facilitate coordinated action for diversification.

  Coordination at both the international and national levels is essential. At the international and regional levels, open and trusted dialogue on pathways, potential unintended consequences, and distributional impacts can help to identify shared interests, align priorities, and find opportunities for mutually beneficial transitions. At the national level, institutionalised dialogue between governments, industry, and civil society can ensure that transition strategies are realistic, feasible, and socially supported.

- Collaborative governance frameworks between importing and exporting countries. Existing international institutions do not fully address the need to coordinate transition planning between fossil fuel exporters and importers.[8] Dedicated governance frameworks can align interests and priorities, clarify expectations on demand/supply trajectories, and enable shared responsibility for Just Energy Transitions. Furthermore, they can strengthen the implementation of Just Transition and economic diversification strategies by mobilising the financial and technical capacity required.

  Our research[9] shows that collaborative governance could take different forms. For example, bilateral trade agreements could allow fossil fuel trade for a defined transition period with commitments from exporters to decarbonise production. These agreements could be paired with clean energy purchase agreements that incentivise low-carbon development in exporting countries.

  Similarly, cooperation on methane mitigation and capture provides a cost-effective opportunity to decarbonise the oil and gas supply chain and meet importer standards for emissions reductions. Existing initiatives such as the Global Methane Pledge, the EU Methane Abatement Partnership Roadmap and the Coalition for LNG Emission Abatement toward Net-zero (CLEAN) demonstrate how such cooperation can be operationalised in practice.

- Cross-cutting international cooperation on finance, technology transfer, knowledge sharing and capacity-building.[10] Transitioning countries often face structural barriers: lacking access to affordable and consistent finance, infrastructure gaps, restrained technology access, high capital costs, and constrained institutional capacity for reform. Addressing these gaps is critical not only for enabling domestic transition strategies, but also for ensuring that all countries can participate effectively in international cooperation efforts. Ensuring cross-cutting international cooperation can thus be used as an enabling lever.

[8] Hansen, B., Hogbin, J., Rodriguez, I., & Morley-Williams, C. (2025). PPFF 2025 Salzburg Dialogue: Policy Dialogue on Just Energy Transitions—Pathways to prosperity post fossil fuels (PPFF). Climate Strategies. More info at: https://climatestrategies.org/publication/key-insights-on-just-energy-transitons/.
[9] Ibid.
[10] Ibid.

- Evidence-based transition modelling and open analytical tools. Robust, transparent and context-specific analysis is essential to guide transition planning and reduce uncertainties. Strengthening the analytical capacity of transitioning countries and improving access to relevant tools and data is a crucial lever, as it can provide a credible evidence base for decision-making and can support more confident, proactive policy action. Expanded sharing and use of open-source models, shared data platforms, and regional economic analysis can help governments assess viable transition pathways,[11] anticipate transition impacts, and design realistic strategies. Evidence from the ELEVATE project shows that transitions often occur in staggered phases across regions, creating opportunities to draw transferrable lessons and replicate best practices, including in renewable energy expansion, market liberalisation, and strengthening climate policy frameworks.[12]
- Using the transition as a catalyst for broader economic transformation. Economic diversification has long been associated with stronger, more resilient growth, reduced exposure to external shocks and more stable development pathways.[13] As such, it has been a priority for governments long before climate change was on the policy agenda. Proactively investing in emerging sectors and aligning transition strategies can be a development lever.
- Focusing on the effective management of the distributional impacts of transitions. Fossil fuel phase-out will have uneven effects across regions, sectors, and communities, particularly in export-dependent economies. Effectively managing the transition's distributional impacts is critical to maintaining public support and political legitimacy. Measuring the diverse impacts on different and vulnerable populations (often invisible to policymaking) and developing proactive policies to address them can serve as a social stability lever to strengthen social cohesion and reduce the risk of resistance or delay.

Experiences, best practices and lessons learned

International experiences show that successful transitions away from fossil fuels are not accidental but a result of deliberate, well-analysed, and well-sequenced strategies that align economic diversification, fiscal reform, and energy system transformation. Below we list some best practices identified through our research:

- Strategic, targeted diversification is essential for reducing fossil fuel dependence. Countries that have succeeded at diversification have done so through concerted industrial strategies aligned with their strengths and comparative advantages. For example, the UAE leveraged Dubai's geographic location and mercantile history to

[11] Hansen, B., Hogbin, J., Rodriguez, I., & Morley-Williams, C. (2025). PPFF 2025 Salzburg Dialogue: Policy Dialogue on Just Energy Transitions—Pathways to prosperity post fossil fuels (PPFF). Climate Strategies. More info at: https://climatestrategies.org/publication/key-insights-on-just-energy-transitons/.

[12] Xie, J. J., Brutschin, E., Rogelj, J., & Staffell, I. (2025). Past socio-political transitions away from coal and gas show challenges and opportunities ahead. Environmental Research Letters. Available at: https://doi.org/10.1088/1748-9326/add0c6.

[13] Muttitt, G. (2025). Trends in oil and gas demand and their implications for exporting countries. Lead Report - Policy Dialogue on Just Energy Transitions 2.0: Identifying Pathways to Prosperity Post-Fossil Fuels. More info at: https://climatestrategies.org/publication/trends-oil-gas-demand/.

develop trade and logistics, later expanding into finance, real estate and tourism. More broadly, investments in enabling conditions (e.g., infrastructure, education and innovation systems) have been critical to unlocking new sectors and long-term growth.[14]

- Strengthening and diversifying public revenues is a critical early step. As part of their fossil fuel phase-out strategy, countries are improving tax collection and/or introducing new revenue streams where possible. Nigeria, for example, focused on increasing the efficiency of existing taxes; Saudi Arabia, the UAE, and Oman introduced or expanded taxes such as VAT, corporate taxes and excise duties on, for example, tobacco and soft drinks.[15]
- Country-led investment platforms can be effective in mobilising transition finance at scale. By aligning decarbonisation goals with national development priorities, these platforms provide a clear framework for attracting international public and private investment. Colombia's USD 40 billion investment plan, setting out its financial needs for both transitioning away from fossil fuels and adapting to climate change, is a notable example of how countries can articulate their needs.[16]
- Sequencing and prioritisation across sectors, rather than simultaneous action everywhere.[17] Experience from the EU shows that transitions typically proceed in stages: first decarbonisation of the power sector (through large-scale deployment of renewable energy); then direct electrification of end-use sectors such as buildings, transport and parts of industry; and finally, de-fossilisation of residual combustible fuels in hard-to-abate sectors (such as aviation, shipping and chemicals) through alternative fuels like hydrogen and e-fuels.[18] This staged approach reflects technological readiness and cost dynamics, enabling early, low-cost measures in the power sector.
- Gradual and credible policy sequencing reduces disruption and enables investment. Early action to redirect financial flows away from fossil fuels, combined with clear, predictable policy signals, enables a smoother transition. Public financial institutions play a crucial role in scaling up renewable energy investments and ensuring the transition proceeds in a coordinated and stable manner.[19]
- Comparative, multi-model evidence strengthens transition planning and decision-making. A key lesson from pathway modelling experience is the importance of comparing multiple energy system models to guide transition planning and policy design, rather than relying on single-scenario projections, to better capture uncertainty and support more robust decision-making. EU-wide analyses draw on several large-scale models to assess pathways toward a fossil-free energy system, enabling a more

[14] Ibid.
[15] Ibid.
[16] Ibid.
[17] Schreyer, F., Ueckerdt, F., Pietzcker, R., Odenweller, A., Merfort, A., Rodrigues, R., Strefler, J., Lécuyer, F., & Luderer, G. (2025). From net-zero to zero-fossil in transforming the EU energy system. Nature Communications, 16, 10700. More info at: https://doi.org/10.1038/s41467-025-66682-z.
[18] Ibid.
[19] Censkowsky, P., Waidelich, P., Shishlov, I., & Steffen, B. (2025). Quantifying the shift of public export finance from fossil fuels to renewable energy. Nature Communications, 16, 900. More info at: https://doi.org/10.1038/s41467-025-55981-0

comprehensive understanding of transition dynamics. Importantly, and despite differences in model structures and assumptions, such comparisons identify consistent patterns across scenarios, strengthening confidence in key transition insights. At the same time, differences between models help highlight critical uncertainties and trade-offs, including those related to technology deployment, system costs, and sectoral dynamics.[20]

Making sure the energy transition is a Just Transition and is reflective of the diverse realities of countries

Any Just Transition must move beyond a one-size-fits-all approach, to embrace differentiated, context-sensitive approaches that reflect global inequalities, development needs, and structural dependencies. Drawing from Climate Strategies' extensive experience with Just Transitions research, we outline the following recommendations:

- Recognise and strengthen the international dimensions of Just Transitions. The transition away from fossil fuels is a global effort, because climate change and energy systems are globally interconnected. Equity between countries must be upheld as a guiding principle for this roadmap, ensuring fair burden-sharing based on historical emissions and capacity, and aligning it with broader frameworks of climate justice and sustainable development.
- Recognise, assess, and openly discuss cross-border impacts and unintended consequences. Transitions in one country can externalise environmental and social risks to other countries. For example, our recent Just Transitions research in Uganda noted that current trade requirements under the AfCFTA and the European Union's deforestation free standards are affecting smallholders.[21] Similarly, supply chains for renewable technologies may create new dependencies or injustices in other regions. Our research in Indonesia found that greening global supply chains are undermining Indonesia's energy transition, as the country has designated nickel mining and downstream processing as national strategic projects to support the global effort. Moreover, increasing demand from other countries and regions are raising concerns over "greening" advanced economies at the expense of deforestation and environmental degradation in Indonesia.[22] A true Just Energy Transition requires that climate action in one part of the world does not exacerbate inequalities elsewhere.
- Account for differentiated pathways and timelines. The best way to reflect countries' vastly different positions and contexts is to provide space for asynchronous transitions. Our research finds that, to enable feasible and fair phase-out pathways in developing

[20] Schreyer, F., Ueckerdt, F., Pietzcker, R., Odenweller, A., Merfort, A., Rodrigues, R., Strefler, J., Lécuyer, F., & Luderer, G. (2025). From net-zero to zero-fossil in transforming the EU energy system. Nature Communications, 16, 10700. More info at: https://doi.org/10.1038/s41467-025-66682-z

[21] Lule, I. (2026). Safeguarding a Successful Just Transition in Uganda. Supporting Frameworks with Data and Governance. Policy Brief. More info at: https://climatestrategies.org/wp-content/uploads/2026/02/CECG-Uganda-Policy-Brief-1802.pdf.

[22] Lestari, S. (2026). Implementing a Just Transition in Indonesia: Challenges and Opportunities. Policy Brief. More info at: https://climatestrategies.org/wp-content/uploads/2026/02/Indonesia-Policy-Brief-230226.pdf.

countries, we will require more ambitious actions in developed countries, especially by reducing gas-powered electricity generation.[23]

- Incorporate restorative justice. Beyond distributive fairness, we must strive for real systemic change that addresses the historical injustices that many communities have disproportionately borne from fossil fuel extraction and energy transition efforts, while benefiting least from its gains. Truly repairing past inequalities requires prior acknowledgement of past and current harms, as well as the empowerment of affected communities.
- Enable collaborative and inclusive governance. Collaborative governance across governments (local, national, regional and international), private sector actors, labour unions, affected workers, civil society, local communities and vulnerable underrepresented groups is essential. Collaborative and inclusive governance builds legitimacy and trust, ensures policies that reflect lived realities, and facilitates collective problem solving and policy alignment.
- Mobilise finance for the justice dimensions of the transition. Justice is not cost-neutral. Transitioning countries must undertake livelihood restoration efforts, re-skilling, and SME re-tooling (among other measures), yet this is a current gap in transition finance. Establishing grant facilities in transitioning sectors would ensure that vulnerable groups are not left behind and demonstrate commitment to equity in climate action.[24]
- Provide international differentiated support and compensation. Context-specific support is much needed for low and lower-middle income countries that rely on fossil fuel exports.[25] This support can be tailored to national circumstances, designing compensatory mechanism for economic losses linked to global decarbonisation, or providing technical assistance, capacity building, and technology transfer on fair terms.

To reflect diverse national realities, a Just Energy Transition away from fossil fuels must be globally coordinated yet locally informed and grounded. It must combine equity, flexibility, and solidarity. This is the only way transitions can be both effective in reducing emissions and genuinely just for affected countries and communities.

About Climate Strategies

Climate Strategies is an international, not-for-profit research network with a Secretariat based in the UK and the Netherlands. Our international network includes some of the foremost thinkers and researchers on a range of multidisciplinary climate change topics. Climate Strategies enables its members and other researchers to place impact at the heart of their research. We catalyse climate action by providing robust evidence for decision-making and facilitating meaningful interactions between decision-makers and researchers.

---

[23] Xie, J. J., Brutschin, E., & van Ruijven, B. (2024). Raising policy ambitions to reduce coal- and gas-fired power generation (Policy Brief 1, ELEVATE project). International Institute for Applied Systems Analysis (IIASA). More info at: https://climatestrategies.org/publication/elevate-policy-brief-1/.

[24] Lule, I. (2026). Safeguarding a Successful Just Transition in Uganda. Supporting Frameworks with Data and Governance. Policy Brief. More info at: https://climatestrategies.org/wp-content/uploads/2026/02/CECG-Uganda-Policy-Brief-1802.pdf.

[25] Xie, J. J., Brutschin, E., Rogelj, J., & Staffell, I. (2025). Past socio-political transitions away from coal and gas show challenges and opportunities ahead, *Environmental Research Letters*. Available at: https://doi.org/10.1088/1748-9326/add0c6.

About Prosperity Post Fossil Fuels

The Policy Dialogues on Just Energy Transitions 1.0 and 2.0: Pathways to Prosperity Post Fossil Fuels are an initiative that convenes policymakers, researchers and key stakeholders from select oil and gas dependent countries to increase capacity and confidence in strategies that acknowledge challenges faces by oil and gas dependent countries, foster a visionary leadership, and surface evidence-based policy solutions to support the phasing out of fossil fuels and enable Just Energy Transitions.

About South to South Just Transitions

South-to-South Just Transitions (S2S) is a multi-layered (and multi-year) initiative that supports and empowers countries in the Global South to advance research on Just Transitions in diverse national contexts. Our project currently works with research partners in nine countries in the Global South to develop national recommendations for strategies on Just Transitions. The initiative aims to spearhead Just Transitions by identifying cross-cutting issues, challenges, opportunities and trends for Just Transitions in key sectors drawing from Just Transition applications in diverse countries of the Global South.

About ELEVATE

ELEVATE aims to develop new scientific insights to support the preparations of Nationally Determined Contributions (NDCs) and national climate policies focused on achieving net-zero emissions in line with the Paris Agreement. The project is developed by a transdisciplinary consortium of national and international climate research teams interacting actively with policymakers and other stakeholders in climate policy and the Sustainable Development Goals (SDGs).

About New Pathways

NEWPATHWAYS aims to provide up-to-date scientific information to policymakers and key stakeholders at the international and national levels to strengthen national policies including NDCs and Long-term Strategies (LTSs), ultimately informing the next Global Stocktake (GST) in 2028. The project will do so through combining the development of next-generation global and national low-emission transformation pathways with a thorough analysis of opportunities, risks, synergies and trade-offs associated with these pathways.

Contacts

Inés H. Jiménez Rodríguez (she/her)
Projects Officer
Climate Strategies
ines.jr@climatestrategies.org

Ana Paola González Alonso (she/her)
Head of Projects
Climate Strategies
ana.ga@climatestrategies.org