

# POLICYBRIEF

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## Advancing a Just Energy Transition for Low- and Middle-Income Economies: The Role of the G7

Mahesti Okitasari, Upalat Korwatanasakul and Akio Takemoto

### Highlights

A just energy transition is essential to meeting Paris Agreement goals while ensuring economic growth and equity. Countries must implement context-specific just energy transition strategies aligned with national priorities. The Group of Seven (G7) countries play a central role in global decarbonization efforts to pursue strategies that will advance climate action without widening the inequality, technology and development gaps.

#### Recommendations:

- Align support measures with developing countries' needs and strengthen interministerial coordination frameworks to ensure a just energy transition strategy
- Fulfil financing commitments and scale up investments in inclusive, clean energy projects
- Facilitate technology co-development systems and inclusive carbon price development
- Enhance technical assistance for vulnerable populations to ensure equal access to clean energy through evidence-based information

### Just Energy Transition

Transitioning away from fossil fuels potentially affects millions of workers and vulnerable populations facing higher energy and food costs and environmental risks. Designing comprehensive policies that address the distributional effects of climate actions is essential to mitigate transition challenges (United Nations 2023a). Countries need to develop approaches to just energy transitions through inclusive dialogues that reflect their societies' priorities and realities. However, extensive participatory approaches — while essential for inclusivity — may slow the transition process by prolonging decision making and consensus building (United Nations 2023b).

Just transition has been used strategically at the global level as an opportunity to reduce dependency on fossil fuel and pollution-intensive exports, increase production efficiency, advance structural transformation and avoid the inequality-perpetuating traps of commodity dependence (United Nations 2023a). Yet this concept, based on domestically oriented visions of developed countries, may not correspond to the needs and realities of developing countries (Azhgaliyeva et al. 2024). Multilateral rules and greater financial and institutional capacity allow developed countries, particularly those of the G7, to provide subsidies for developing new technologies,

products, standards and infrastructure, whereas developing countries face challenges of productive capacity, financial resources and policy constraints, resulting in widening technology and development gaps. Thus energy transition risks excluding developing countries from emerging value chains and jeopardizing their traditional exports (United Nations 2023a). While G7 countries must rapidly decarbonize to meet net zero targets by 2050, their policies should also foster positive technological spillovers to support developing nations in their transitions (Climate Analytics 2023). Greater efforts are needed to ensure that energy transition is undertaken in a way that acknowledges diverse needs and economic and social contexts, and embeds equity across sectoral and cross-cutting policies in addressing trade-offs. A well-designed just energy transition must integrate trade policies, labor protections and technology-sharing mechanisms, ensuring that decarbonization does not widen global inequalities.

This policy brief synthesizes perspectives on national, international and transnational aspects of just energy transition involving the G7 countries. Based on an analysis of 17 Biennial Update Reports (BURs, see Notes) and literature, it identifies issues emerging from energy transition efforts, and suggests urgent actions by G7 policymakers to support effective decarbonization and just and equitable energy transition in all countries.

## Energy Transition at the National Level

In developing countries, the transition must balance the goal of providing affordable, reliable and modern energy services for all with pressing socioeconomic development needs. For countries with significant gaps in energy access, such as Bhutan and Cambodia, energy transition is primarily to achieve economic goals, including universal energy access, economic growth and cross-border trade in electricity. Rwanda and Türkiye are among the countries prioritizing transition to renewables for self-reliance or to decrease import dependency by improving the security of supply. However, one of the challenges in phasing out fossil fuels is escaping carbon lock-in — the deeply entrenched fossil fuel-based energy system. In coal-dependent economies, such as China, India, Indonesia, Malawi, Namibia and South Africa, rapid shifts in the energy mix are challenging due to rising energy demand and risks of reinforcing lock-in. Carbon capture and storage, including at coal-powered plants, as pursued by Egypt, Indonesia, Saudi Arabia and Türkiye, plays a key role in countries' economic diversification. Countries with domestic natural gas reserves aim to increase their utilization

in the energy mix (e.g., Indonesia and Saudi Arabia), including through gas commercialization and gas infrastructure development (e.g., Ghana). These examples highlight a critical tension between development priorities, existing energy systems and decarbonization, underscoring that climate goals alone cannot dictate countries' energy transitions.

The concept of just energy transition goes beyond safeguarding society from changing energy paradigms (United Nations 2023a). Yet most relevant policy measures are industry-focused, and the notions of decent work opportunities, reducing inequality and leaving no one behind are less pronounced across BURs. The 2021 Green Deal Action Plan of Türkiye, designed to align with the European Green Deal, focuses on green transformation of resource-intensive industries and measures related to trade and industry. Countries participating in Just Energy Transition Partnerships do not sufficiently prioritize and deliver fair outcomes for workers, communities and marginalized groups.

Attracting private sector investment in energy infrastructure is a key priority for developing countries. This includes production, transmission and distribution, focusing on modern technology, economic efficiency and reduction of negative social and environmental impacts. The renewable energy strategy of Malawi aims to enable private sector involvement through an Independent Power Producer Framework, a Standard Power Purchase Agreement for Electricity and a Minigrid Regulatory Framework. Similarly, the National Renewable Energy Program of Saudi Arabia aims to implement comprehensive reforms, regulations and policies to stimulate private sector investment, research and development, and employment in renewables.

In Ghana and Malawi, technological innovations for clean energy transition, such as clean cooking stoves, are geared to address social challenges of gender equality and inclusion. Countries are also adopting — or intend to adopt — emerging technologies such as green hydrogen fuel, green ammonia and energy storage schemes (e.g., Bhutan, China, Republic of Korea and Türkiye). Least developed countries, including Bangladesh and Cambodia, rely on initiatives such as the Climate Technology Centre and Network and Joint Crediting Mechanism to access technological support for clean energy solutions. Bilateral cooperation on carbon credits (i.e., Article 6.2 of the Paris Agreement) can also fund clean energy projects, such as the Switzerland–Ghana partnership on energy-efficient cookstoves.

## Policy Recommendations

### 1. Align support measures with developing countries' priorities and realities and strengthen inter-ministerial coordination frameworks to ensure a just energy transition strategy

Across sectors, just transition requires balancing security of supply, economic competitiveness and climate change mitigation. In designing just energy transition support measures for developing countries, the G7 must promote policies aligned with developing nations' priorities and realities. This includes alleviating energy poverty commensurate with energy security concerns. Clarifying the scope, timeline and implementation mechanisms for decarbonization targets is essential, particularly for energy-intensive industries and the transport sector. For such complex transitions, support measures must incorporate a comprehensive mix of stringent sectoral policies, including carbon pricing, regulatory standards, technology incentives and infrastructure investments. Similarly, G7 countries should clarify these targets along with domestic coal and fossil gas power generation phase-out timelines in their upcoming Nationally Determined Contributions (NDCs).

Coherent policy requires coordination and sufficient political capital to minimize trade-offs (e.g., energy efficiency vs. energy poverty) and mitigate investment competition (e.g., energy efficiency vs. low-carbon energy). Developing countries need support to overcome political, institutional and investment barriers. The G7 could assist in improving governance mechanisms to harmonize climate change policies with socioeconomic measures to maintain an adequate standard of living for all. This includes encouraging countries to strengthen inter-ministerial coordination to align energy, climate and social policies. An example is the Intersectoral Commission on Climate Change in Colombia, which oversees the country's NDC and energy transition policies. South Africa established a Presidential Climate Commission to oversee just transition, emphasizing measures for workforce reskilling and job absorption, social protection and livelihood creation, and developing labour and social plans when aging coal-fired power plants and associated coal production infrastructure are decommissioned.

### 2. Fulfil financing commitments and promote investments in inclusive energy projects

G7 countries mobilized \$115.9 billion in 2022, exceeding the target of \$100 billion per year (Climate Analytics 2023). At the 29th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP29), the G7, alongside other developed nations, pledged to collectively

mobilize at least \$300 billion annually by 2035. Monetary and in-kind support to support just energy transitions can help vulnerable countries implement social protection measures (Azhgaliyeva et al. 2024). Implementing clean energy solutions requires high upfront investment, so financing instruments are key to accelerate accessible finance to vulnerable countries. The G7 have the power and resources to influence multilateral and regional development banks in derisking and crowding in private sector investment while supporting universal access to essential services. The Asian Development Bank, for example, provided a partial credit guarantee to derisk utility-scale solar lending in India. Eco Invest Brazil by the Inter-American Development Bank uses blended finance to reduce the risks of green projects, including clean hydrogen.

G7 countries have already implemented financial mechanisms to support their domestic just energy transition efforts. Despite differences in levels of economic and social development, these experiences offer valuable lessons for developing countries. France rolled out Ecological Transitions Contracts in 2018 to translate national climate commitments to the local level through industrial conversion (e.g., vocational training) and local job creation (e.g., new training courses) in fossil fuel-dependent regions. More than 100 local areas implemented more than 1,000 projects, with over €1.5 billion in funding. Inclusive planning and implementation involving diverse stakeholders enable local authorities to pool funds and leverage private investments. Moreover, G7 countries with significant coal reserves have demonstrated the potential to align decarbonization with decent employment opportunities in coal phase-out strategies. Germany combined coal phase-out measures with cost-efficient alternatives (e.g., industry scheme, carbon pricing) and coalition building to offset industry opposition (Jakob et al. 2020).

### 3. Facilitate technology co-development systems and inclusive carbon price development

G7 countries' policy mechanisms to curb and mitigate greenhouse gas emissions and drive investment in just energy transitions have implications across borders and markets, particularly through carbon pricing policies. The European Union (EU) Carbon Border Adjustment Mechanism (CBAM), currently applied to sectors such as aluminum, cement, electricity, fertilizers, iron and steel, poses challenges for developing countries exporting these goods to the EU (e.g., India, South Africa and Türkiye). To ensure a fair and just energy transition, G7 countries should consider the economic realities of their trade partners and avoid imposing rigid decarbonization timelines that do not account for national circumstances. Carbon pricing must be designed more inclusively and proactively reach stakeholders outside the G7

to promote common principles, enhance coordination across systems and minimize the risk of carbon leakage and free riding.

G7 countries must also partner with developing countries on climate and energy issues. Germany, for instance, maintains bilateral climate, energy and hydrogen partnerships and energy dialogues with more than 30 countries (e.g., Argentina, Egypt, Namibia and Saudi Arabia), driving innovation in energy-intensive industries and economic cooperation. Such partnerships must promote the expansion of renewables and technology transfer and reflect the contribution of developing country markets in securing commercially viable scale for new technologies. To achieve inclusive technology application, the G7 should facilitate technology co-development systems by pooling financial, human and technical resources and intellectual property rights under a co-ownership model to ensure solutions are tailored to and co-created with developing countries.

#### **4. Enhance technical assistance for vulnerable populations to ensure equal access to clean energy through evidence-based information**

Many trade-offs in energy system deployment stem from the tension between rapidly expanding access to basic services and ensuring long-term efficiency. G7 countries should ensure that their technical assistance programmes integrate rights-based, justice-oriented and equity-focused solutions tailored to country-specific energy dilemmas. Identifying gaps, needs and opportunities for energy transition through data collection and analyzing the relationship between decarbonization actions and socio-economic challenges for vulnerable populations should be a prerequisite for technical assistance deployment. The G7 should support developing

countries in establishing inclusive monitoring, reporting and evaluation frameworks that are people-centered and gender-sensitive.

Integrating social protection systems with clean energy initiatives can be critical to ensure that vulnerable populations benefit equitably from the energy transition and that policies are designed and implemented in alignment with broader social welfare objectives, reducing disparities in access and affordability. In countries with limited social protection coverage, combining energy projects with targeted support to establish or expand social protection programmes can mitigate socioeconomic risks from energy transitions. By embedding clean energy access within existing or newly developed social protection frameworks, G7-supported initiatives can enhance energy affordability, create economic safety nets and promote equitable climate resilience.

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Authors: Mahesti Okitasari, Upalat Korwatanasakul and Akio Takemoto

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NOTE: BURs are reports submitted by non-Annex I Parties to the UNFCCC containing updates on actions undertaken by a Party to implement the Paris Agreement, including actions to reduce emissions. This brief is based on a thematic analysis of energy policies in 17 BURs submitted in 2018–2023 by Bangladesh, Bhutan, Brazil, Cambodia, China, Egypt, Ghana, India, Indonesia, Malawi, Malaysia, Namibia, Republic of Korea, Rwanda, Saudi Arabia, South Africa and Viet Nam. Where countries submitted multiple BURs, the latest version is referred to.