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JETCA Brief

# Strengthening The G20's Role in Enabling Just Energy Transitions

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Just Energy Transition and Climate Action Program

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**Key messages:**

- *Achieving a 1.5°C pathway requires $4.5 trillion annually, yet current flows fall short by over $3 trillion — a gap that disproportionately burdens developing economies.*
- *Without binding frameworks, G20 commitments risk remaining aspirational.*
- *CSOs must strategically integrate inside influence and outside mobilisation to ensure that G20 commitments are not only ambitious but also socially just and implementable.*

## Background

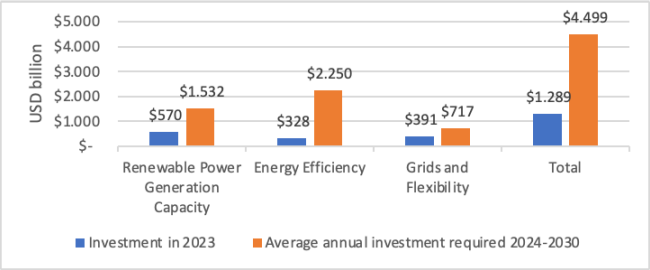
Global primary energy consumption has climbed in tandem with population growth and economic expansion, presenting policymakers with the dual imperative of ensuring affordable, reliable supply while minimising environmental harm (Kumar & Majid, 2020; Papathanasiou, 2022; Ahuja et al., 2009). In recognition of these challenges, the United Nations' Sustainable Energy for All initiative set an ambitious target to double the share of renewables in the global energy mix—from 18 percent in 2010 to 36 percent by 2030—mandating roughly a one-percent annual increase in renewable penetration (IRENA, 2013, 2014; World Bank, 2015). Meeting this goal is crucial not only for sustaining economic growth but also for keeping global temperature rise below 1.5 °C.

The year 2021 marked the largest year-on-year increase in renewable electricity since the 1970s, as renewables supplied over half of the global rise in power generation; solar photovoltaic (PV) and wind alone accounted for two-thirds of that expansion (IRENA, 2022). This surge was underpinned by extraordinary cost reductions between 2010 and 2020: weighted-average levelized costs fell by 85 percent for utility-scale solar PV, 68 percent for concentrated solar power, 56 percent for onshore wind, and 48 percent for offshore wind (IRENA, 2022).

Achieving the tripling of renewable power capacity (COP28 UAE Concensus) to reach 11.2 terawatts (TW) necessitates an average annual addition of 1,044 gigawatts (GW) between 2024 and 2030, representing a compound annual growth rate of 16.4% in total installed renewable power capacity (IRENA, 2024a). This number has increased from the 16.1% growth required over 2022–2030. Despite an acceleration in renewable energy deployment (reaching 14% growth in 2023), current progress falls short of the trajectory required. Should capacity additions continue at a rate of 14% per year until 2030, the shortfall in achieving the 11.2 TW target would amount to 1.5 TW. This is equivalent to the combined installed renewable capacity of Europe, North America, Oceania, the Middle East, Africa, Central America and the Caribbean today (IRENA, 2024). Beyond technological hurdles, a misalignment between energy-supply policies and demand-side measures hampers decarbonization; without coherent frameworks spanning electricity, transport, buildings, and industry, renewable deployment risks stagnation and grid instability (IRENA, 2022).

In 2023, global clean energy investment reached $1.29 trillion across renewables, energy efficiency, and modern grids — a record high, yet far below what science demands. To keep the 1.5°C goal within reach, the world must mobilise an average of $4.50 trillion annually from 2024 to 2030, leaving an annual gap of more than $3 trillion. Without bridging this divide, we risk locking in highcarbon systems that undermine both climate stability and economic resilience.

**Figure 1**. Investment required to meet 1.5°C in 2030




*Source: IRENA, COP28, COP29, GRA, MoEA and Government of Brazil (2024)*

*(edited by author)*

Meeting the challenge means scaling renewables from $570 billion to $1.53 trillion per year, boosting energy efficiency from $328 billion to $2.25 trillion, and expanding grids and flexibility from $391 billion to $717 billion annually. This is not only an environmental imperative but also an unprecedented investment opportunity — one that can drive jobs, innovation, and inclusive growth while steering the global economy toward a secure, affordable, and climatealigned future.

At the same time, the climate finance architecture has failed to provide the scale or predictability needed. Although developed countries have recently edged closer to fulfilling their US $100 billion-per-year commitment under the Paris Agreement, this sum remains insufficient to support mitigation, adaptation, and loss-and-damage needs in developing economies already burdened by rising public debt and pressing social priorities (OECD, 2023).

Governance fragmentation exacerbates those financial constraints. A proliferation of overlapping initiatives and institutions—each with divergent mandates and limited coordination—has diluted policy coherence and impeded unified action on energy transition (Gaetani & Albuquerque, 2023). The resulting institutional complexity undermines investor confidence, slows regulatory reform, and leaves critical gaps in monitoring and accountability.

The G20 has served as a key platform for addressing these interlinked challenges. With South Africa at the helm in 2025, the G20 has a pivotal opportunity to harness its unique convening power to mobilise scaled climate finance, align policy across supply and demand sectors, and spearhead reforms of multilateral financial institutions. By strengthening regional cooperation and reinforcing governance coherence, the G20 can catalyse an inclusive, zero-carbon energy transition that safeguards both economic development and the global climate.

## A chronicle of the G20's commitments

The G20's journey toward a just energy transition began at least in 2009, when the UK presidency placed clean and renewable energy at the forefront of its agenda. Leaders pledged not only to invest in these sectors but also to facilitate technology transfer, joint research, and capacity building — setting the stage for a shared global effort.

By 2013, under Russia's leadership, the narrative expanded to link renewable energy with inclusive, long-term prosperity. Commitments were made to improve transparency and predictability in energy and commodity markets, enhance energy efficiency, and safeguard the marine environment (G20 Russian Presidency 2013a, no date). The presidency also drew attention to sustainable bioenergy and endorsed the World Bank's *Toward a Sustainable Energy Future for All*, a call to extend affordable, reliable energy access in developing nations (G20 Russian Presidency 2013b, 09/2013).

In 2014, Australia highlighted the enormous untapped potential of renewables, especially given the G20's dominant role in global deployment and investment (IEA, 2022). Leaders committed to sharing best practices, raising voluntary funds, and scaling up the Energy for the Poor Initiative. Nine guiding principles for collaboration were adopted, three of which directly supported

renewable energy expansion (G20 Australia 2014, 16/11/2014).

The following year, 2015, Turkey emphasized that each country's path to a clean energy future depended on its unique context. Innovation, strong policy frameworks, and effective risk management were championed as essential tools to avoid high-GHG development. The G20 reaffirmed its energy cooperation principles — prioritizing access, sustainable growth, and climate alignment — and endorsed the G20 Toolkit of Voluntary Options on Renewable Energy Deployment (Ministry of Foreign Affairs of Japan, 2015). China, taking the helm in 2016, continued to press forward on clean energy investment and technology sharing.

Under Germany's 2017 presidency, the focus turned to scaling renewable energy in developing countries. The G20 endorsed the UN's "Sustainable Energy for All" initiative, promoted low-carbon policies, and supported widespread sharing of best practices — an effort to anchor policymaking in global experience.

The 2018–2020 period saw sustained momentum. Argentina and Japan strengthened the link between clean energy, innovation, and job creation. MDBs financing was urged to expand sustainable energy access, Japan launched its "3E+S" framework — combining Energy Security, Economic Efficiency, and Environment + Safety — and the RD20 initiative for clean energy R&D. Saudi Arabia added an emphasis on using the broadest range of fuels and technologies in line with national circumstances.

A defining moment came in 2021 when Italy formally introduced the term "Just Energy Transition" into G20 discourse. Members committed to accelerating clean solutions, expanding R&D, mobilizing finance, and ensuring that the transition was equitable, orderly, and aligned with both the Paris Agreement and the 2030 Agenda.

In 2022, Indonesia unveiled the *Bali Energy Transition Roadmap*, built around energy security, new energy drivers, and decarbonisation. The roadmap called for smart and clean technology adoption, expanded financing, and equitable access, while urging developed countries to fulfill UNFCCC commitments to support developing nations.

India's 2023 presidency prioritized scalability, technology sharing, and agreed principles for green hydrogen. Initiatives like the National Hydrogen Mission and the Global Biofuel Alliance were framed within the unifying theme "One Earth, One Family, One Future," underlining South-South cooperation and consensus on tripling renewable capacity by 2030.

In 2024, Brazil pushed for sustainable fuels — biofuels, hydrogen, and renewables — while integrating social and environmental considerations into energy policies, ensuring that vulnerable communities were not left behind in the transition.

Finally, 2025, under South Africa's presidency, brought a clear focus on investment in smart, low-carbon infrastructure and stronger MDB–private sector collaboration. Building on Brazil's equity-driven approach, the G20 reinforced its commitment to just and inclusive transitions, regional interconnectivity, and energy security. The agenda was aligned with the African Union's *Agenda 2063* and the Nairobi Declaration, signaling a commitment to industrial growth in the Global South while narrowing global inequality gaps.

## Strengthening the G20's Role: Challenges and Opportunities

The G20, representing the world's largest economies, holds a pivotal role in steering the global shift toward a low-carbon future. Yet the path to a *just* energy transition is neither linear nor uncontested. It is shaped by intertwined technical, financial, governance, and social dimensions that

demand both political will and coordinated action. The measure of success will not be in gigawatts installed alone, but in whether the benefits and burdens of the transition are shared equitably — across nations, sectors, and communities (Jaeger & Machry, 2014; Kabeyi & Olanrewaju, 2022; IRENA, 2022).

*Technical Balancing Constraints*

The transition from fossil fuels to renewables is not a simple substitution. Wind and solar, while abundant, are inherently variable, creating mismatches between supply and demand. Without adequate storage — from grid-scale batteries to seasonal reserves — these fluctuations threaten power quality and reliability, particularly in emerging economies with underdeveloped grids (Schill, 2020; Kalair et al., 2021).

Opportunities emerge in the G20's ability to act as both architect and catalyst. Legal frameworks can be designed to localise technology deployment, requiring foreign investors to train engineers, adapt designs to local conditions, and build domestic supply chains. Public–private partnerships, bound by equity clauses, can ensure that battery storage and smart grids reach underserved regions, not just profitable urban hubs. Regional cooperation — for example, pooled procurement under initiatives like the African Renewable Energy Initiative — could drive down costs and accelerate deployment.

*Financing and Justice Gap*

The International Energy Agency estimates that middle- and low-income countries (excluding China) require around USD 4.5 trillion annually to align with a 1.5°C pathway, yet current flows fall far short (IRENA et al, 2024). High borrowing costs, debt distress, and limited access to concessional finance deepen the divide. For many G20 members, this is not just a financing challenge but a justice issue, constraining the integration of social protection, retraining, and equitable access into transition plans.

The G20 can close this gap by championing innovative financing mechanisms — blending concessional loans, green bonds, and instruments tailored to developing economies. Embedding justice criteria into all endorsed financing would make social safeguards prerequisites for funding. Debt-for-climate swaps, coordinated with multilateral development banks, could free fiscal space while advancing renewable energy and resilience.

*Governance and Accountability*

The G20's rotating presidencies and voluntary commitments make continuity fragile. Initiatives such as the Energy Transitions Working Group's Bali Roadmap risk losing momentum without a centralised mechanism to track and enforce progress. In the absence of binding accountability, pledges risk drifting into aspirational rhetoric, eroding trust among stakeholders.

A G20 Just Transition Accountability Framework could address this gap, incorporating annual progress reviews, peer assessments, and binding reporting requirements — balanced with flexibility for national contexts. Harmonised global–national legal frameworks, coupled with deeper collaboration with the UNFCCC and regional bodies, would prevent duplication and ensure coherence.

*Social Dimension*

The "just" in just energy transitions often remains underdeveloped. Worker protection, affordable energy access, and the eradication of energy poverty are frequently sidelined in favour of investment and innovation narratives. Adaptation and loss-and-damage measures remain chronically underfunded, and emerging disclosure standards risk excluding smaller enterprises and less-resourced economies unless paired with capacity-building.

The G20 can shift this narrative by making social safeguards non-negotiable. Drawing from models such as South Africa's Just Energy Transition

Framework, members could legislate worker retraining, income support, and community participation. Minimum standards for inclusive policymaking would ensure that marginalised groups, indigenous communities, and SMEs have a voice. A fixed share of climate finance could be earmarked for adaptation, loss-and-damage, and social protection, aligning with human rights and equity safeguards.

*Fragmentation of Global Efforts*

The G20's role overlaps with other multilateral processes, particularly the UNFCCC. Without deliberate coordination, duplication of mandates can dilute effectiveness, fragmenting global efforts at a time when coherence is essential.

The G20 could use its summits as platforms for legal harmonisation, aligning national laws with global frameworks like the Paris Agreement while respecting local realities. A G20 Just Transition Knowledge Hub could share best practices, legal templates, and case studies from Africa, Asia, and Latin America. Integrating G20 financing pipelines with UNFCCC mechanisms would streamline access and reduce administrative burdens.

**Table 1**. Challenge-Opportunity-Action Framework

| Challenge | Opportunity | Action |
|---|---|---|
| Technical balancing constraints – Intermittency of renewables and inadequate storage threaten reliability | Technology transfer & localisation – Legal frameworks can mandate local capacity-building and supply chain development. | Negotiate G20wide technology transfer agreements with enforceable training and localisation clauses; support pooled procurement of storage tech via regional platforms. |
| Financing & justice gap – USD 4.5T annual need for developing economies; high borrowing costs | Innovative, equity-linked finance – Blended finance, concessional loans, and debtforclimate swaps | Expand the G20 Sustainable Finance Working Group mandate to include justice-linked conditionalities; coordinate MDBs on debtforclimate swaps. |
| Weak governance & accountability – Rotating presidencies and voluntary commitments limit continuity. | Binding accountability frameworks – Harmonised but adaptable legal models | Establish a G20 Just Transition Accountability Framework with annual peer reviews; embed reporting requirements adaptable to national contexts. |
| Social dimension sidelined – Worker protection, energy poverty, and adaptation are underfunded. | Just transition legal mandates – Worker retraining, income support, community participation. | Require G20 members to legislate social safeguards; earmark a share of climate finance for adaptation, lossanddamage, and social protection. |
| Fragmentation of global efforts – Overlaps with other multilateral processes. | Legal harmonisation & knowledge sharing – Align with the Paris Agreement while respecting local realities. | Launch a G20 Just Transition Knowledge Hub; integrate G20 finance pipelines with UNFCCC mechanisms to streamline access. |

In sum, the G20's challenge — and opportunity — lies in mobilising unprecedented levels of finance, technology, and infrastructure while embedding equity, accountability, and resilience into the architecture of the transition. By turning structural constraints into levers for systemic change, the G20 can help ensure that the global energy transition is not only rapid, but also just.

## How can the civil society foster JET in the G20?

Civil society organisations (CSOs) employ diverse advocacy strategies to influence international environmental protection norms in multilateral forums. Research identifies several key approaches used by environmental CSOs. Organisations utilise both "inside" and "outside" lobbying strategies when engaging with international institutions (Dellmuth & Tallberg,

2016). Inside strategies involve cultivating stable, interactive relationships with government officials through existing institutional channels, while outside strategies focus on obtaining media exposure to mobilise societal support and pressure governments (Dai & Spires, 2018). Strategic framing represents another crucial advocacy tool, where organisations carefully select how to present their policy goals and preferred outcomes to maximise influence (Dai & Spires, 2018).

CSOs occupy a unique position in the G20 landscape: they are neither formal decision-makers nor passive observers, but active shapers of the political and policy environment in which commitments are made. Their influence is most potent when they weave together two complementary modes of engagement — the quiet, persistent work of inside lobbying and the visible, mobilising force of outside lobbying. Each approach serves a distinct purpose, yet their true strength lies in how they reinforce one another.

*Inside Strategy*

Inside lobbying operates within the corridors of influence, where access to working groups, sherpas, and ministerial advisers allows CSOs to shape the technical architecture of G20 commitments. Here, credibility is currency. Civil society actors can bring forward detailed policy proposals on renewable energy deployment, financing mechanisms, and social safeguards, ensuring that equity considerations are embedded from the outset. They can act as conduits for the voices of workers facing industrial transition, indigenous communities defending their land rights, and small enterprises navigating new energy markets. Through informal consultations, closed-door briefings, and participation in engagement groups such as the Civil 20 and Think Tank 20, or in international platforms like the Foundations 20, they can cultivate trust and position themselves as indispensable partners in problem-solving.

*Outside Strategy*

Outside lobbying, by contrast, unfolds in the public arena. It is the realm of narrative framing, coalition-building, and visible pressure on political leaders. Here, CSOs can harness the power of media campaigns to reframe the just energy transitions as not only a climate necessity but also a driver of economic renewal and social stability. They can orchestrate public actions and digital advocacy that resonate across borders, using moments like G20 summits to galvanise attention and demand accountability. Parallel civil society gatherings can amplify alternative visions, spotlight marginalised perspectives, and create a counterpoint to official proceedings that leaders cannot easily ignore.

*Strategic Integration*

When inside and outside strategies are integrated, their impact multiplies. Public mobilisation can open political space for policy innovation, making decision-makers more receptive to proposals advanced through inside channels. Likewise, the technical precision of inside lobbying lends credibility to the demands voiced in public campaigns, ensuring they are seen as actionable rather than aspirational. The sequencing of these efforts — using outside pressure to set the agenda and inside engagement to shape its content — allows civil society to navigate the G20's consensus-driven, non-binding framework with greater effectiveness.

**Table 2**. Dual approach for CSOs

| Inside Strategy | Outside Strategy |
|---|---|
| • Providing technical expertise to working groups (e.g., Energy Transitions, Sustainable Finance) on renewable energy scaling, social safeguards, and financing models.<br>• Representing affected constituencies — from fossil fuel workers to indigenous communities — to ensure equity and inclusion are embedded in commitments.<br>• Engaging in Track II diplomacy, building trust with sherpas, ministry officials, and multilateral development bank representatives through targeted briefings and consultations.<br>• Using engagement group and international platforms (C20, T20, F20) to insert just transition language into communiqués and recommendations. | • Coordinated media campaigns framing the just transition as both a climate imperative and an economic opportunity.<br>• Public mobilisation and coalition-building through petitions, symbolic actions, and transnational campaigns timed with G20 milestones.<br>• Digital advocacy using targeted social media strategies to reach domestic and global audiences.<br>• Parallel civil society summits to showcase alternative proposals and amplify marginalised voices. |
| **Integration** | |
| • Sequencing: Use outside mobilisation to open political space, then deploy inside access to shape technical details.<br>• Mutual reinforcement: Public campaigns strengthen CSO credibility in closed-door negotiations.<br>• Tailoring to organisational structure: Some CSOs may lean on outside tactics; while some CSOs can focus on inside engagement. | |

In the context of the just energy transitions, this dual approach is not a matter of preference but of necessity. Without inside access, civil society risks being excluded from the technical design of commitments; without outside mobilisation, even the most robust proposals may fail to gain political traction. The challenge, and the opportunity, lies in aligning narratives and evidence so that the story told in public squares and the language drafted in policy rooms reinforce one another. Coordination across networks, careful timing of interventions, and adaptability to the shifting priorities of each G20 presidency will be essential.

Ultimately, the G20's ability to deliver just transitions will depend not only on the resolve of its member states but also on the persistence and ingenuity of the civil society actors who hold them to account. By speaking fluently in both the language of policy detail and the language of public mobilisation, CSOs can help transform high-level commitments into tangible, equitable outcomes that resonate far beyond the summit halls.

## Conclusion

The G20, as the world's influential economic forum, has both the responsibility and the opportunity to lead a just energy transitions. While renewable energy deployment is accelerating, it remains insufficient to meet the 1.5°C target. The financing gap, governance fragmentation, and social justice dimensions remain critical barriers. The G20 must therefore act as a catalyst for scaled finance, coherent governance, and inclusive social safeguards, while civil society must strategically combine inside and outside advocacy to ensure accountability and equity. The success of the transition will be measured not only in gigawatts installed but in whether its benefits are shared equitably across nations, communities, and generations.

For the G20 to lead credibly on just energy transitions, its members must treat civil society not as an external pressure group but as a strategic partner in shaping solutions. This means opening structured, predictable channels for CSO engagement across the full cycle of

the G20 process — from agenda-setting to implementation review. Civil society groups such as the F20, C20, and T20 should be empowered with clearer timelines for input, ensuring that justice-oriented proposals are not relegated to the margins but integrated into ministerial communiqués and leaders' declarations. The G20 should also commit to transparent follow-up on civil society recommendations, reporting back on how inputs have been considered and acted upon. By institutionalising these practices, the G20 can move beyond symbolic consultation toward genuine co-creation of policy frameworks that balance climate ambition with social equity.

For civil society groups' part, CSOs must approach the G20 process with both strategic patience and tactical agility. Inside the process, they should cultivate long-term relationships with sherpas and working groups (chairs), positioning themselves as trusted sources of evidence and policy innovation. Outside the process, they must sustain public attention and political pressure through compelling narratives, coalition-driven campaigns, and visible demonstrations of public support. The most effective interventions will be those that align the moral force of justice claims with the practical detail of implementable policy. This requires coordination across sectors and geographies, so that messages are consistent, demands are mutually reinforcing, and the collective voice of civil society is amplified rather than fragmented. By mastering this dual role — as both insider advisors and outside mobilisers — CSOs can help ensure that G20 commitments on the just energy transitions are not only ambitious on paper but transformative in practice.

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