G20
SOUTH AFRICA 2025

SUSTAINABLE ENERGY FOR ALL

Energy on the World Stage:

Two Decades of G20 Transformation

Solidarity
Equality
Sustainability

Published in October 2025.

Opening Remarks

Fellow Ministers, Excellencies, Distinguished Colleagues and Friends,

This book is more than a chronicle of summits and communiqués. It is the living testimony of a world that chose co-operation over fragmentation and solidarity over despair. Born in the furnace of financial crisis, the G20 has evolved from crisis management to shaping the very architecture of human progress.

Energy, once peripheral to our deliberations, has emerged as the fulcrum of justice, resilience and survival. It is the bloodstream of every economy, the foundation of every household, the gateway to dignity and opportunity. The G20's journey on energy reflects a profound transformation, from narrow debates on security of supply to the recognition that energy access, affordability, sustainability and justice are inseparable from global stability and prosperity.

In recent years, the Global South has set the tempo and the tone. Indonesia convened us around the principle of a just transition and spearheaded the first Just Energy Transition Partnership, ensuring that transitioning away from coal must go hand in hand with protecting workers and communities. India carried this momentum with moral clarity, welcoming the African Union as a permanent member and advancing an agenda that connected digital public infrastructure, inclusive development and climate responsibility. Brazil placed inequality and climate resilience at the heart of the leaders' declaration and crucially drove implementation, endorsing measurable global goals to triple renewable capacity and double energy efficiency by 2030. These are not abstract ambitions, they are commitments that will shape capital flows, innovation and co-operation for a generation.

India also brought clean cooking to the centre of the G20's energy transition dialogue, linking it to equity and climate justice. Brazil followed with a Clean Cooking Roadmap, elevating this most intimate dimension of energy dignity into measurable global action. South Africa now builds on this foundation, determined that clean cooking becomes an integral marker of inclusive transitions, for energy justice cannot be spoken of while mothers and children are condemned to breathe toxic smoke in their own homes..

Our Presidency is historic. For the first time the G20 is chaired by an African nation, and for the first time the African Union sits as a permanent member. This is not merely symbolic. It affirms that a continent of 1.5 billion people is a central actor in shaping the future.

We have come to this Presidency with conviction. Energy is the justice issue of our age. Access to affordable, reliable and clean energy is a fundamental right. It is the key that unlocks education, health and livelihoods. Transitions that do not expand access or reduce inequality are not incomplete, they are unjust.

This is why our Energy Transitions Working Group is built on three inseparable priorities. Energy security with affordability and resilience, so that no nation and no household must choose between darkness and debt. Just, affordable and inclusive transitions, because climate ambition cannot be purchased at the cost of jobs and communities. And African interconnectivity, which will unlock the full promise of our continent by linking power pools across regions, creating a continental electricity market, and turning abundant resources into shared prosperity. These interconnectors are not mere wires and pylons, they are the lifelines of sovereignty, integration and growth.

Financing is the decisive test. The G20 has recognised that billions will not suffice, trillions are required. Our Presidency calls for reforms of the financial architecture that shift risk away from the poor, mobilise concessional and blended capital, and translate declarations into pipelines and projects.

This book tells the story of two decades of G20 leadership. Let it also mark the beginning of a new chapter, where the Global South is not only heard but heeded, where transitions are just in design and inclusive in delivery, where justice is not rhetorical flourish but lived reality.

Kgosientsho Ramokgopa
Minister for Electricity and Energy
September 2025

Foreword

Over the past two decades, the G20 has evolved from being just a critical forum for macroeconomic coordination into centre stage for shaping global energy, climate, and development policy, recognising the deep interlinkages between macroeconomic stability and energy, climate and development priorities. Within this shift, the Energy Transition Working Group (ETWG) has become a key platform for advancing the energy transition, championing leadership and encouraging collaboration for climate aligned development. It has helped place energy access, efficiency, and just and inclusive transitions on the G20 and global agenda, and provided space for presidencies to introduce initiatives such as the Bali Compact in 2022 to guide the acceleration of clean energy transitions and India's voluntary action plan on renewable energy in 2023. These discussions have mobilized resources, informed policy, and ensured that the priorities of the Global South are increasingly reflected.

Looking back at twenty years of the G20, it is clear that the forum has brought energy and climate issues into the mainstream of global economic governance. However, progress remains uneven. Hundreds of millions still live without electricity, and over 2 billion people still rely on polluting fuels and technologies for cooking. Most of these gaps are in the Global South, where the need for investment is greatest. Closing these gaps requires delivery: scaling local manufacturing, reducing the cost of capital, and creating jobs and prosperity for local communities that make the energy transition just and inclusive.

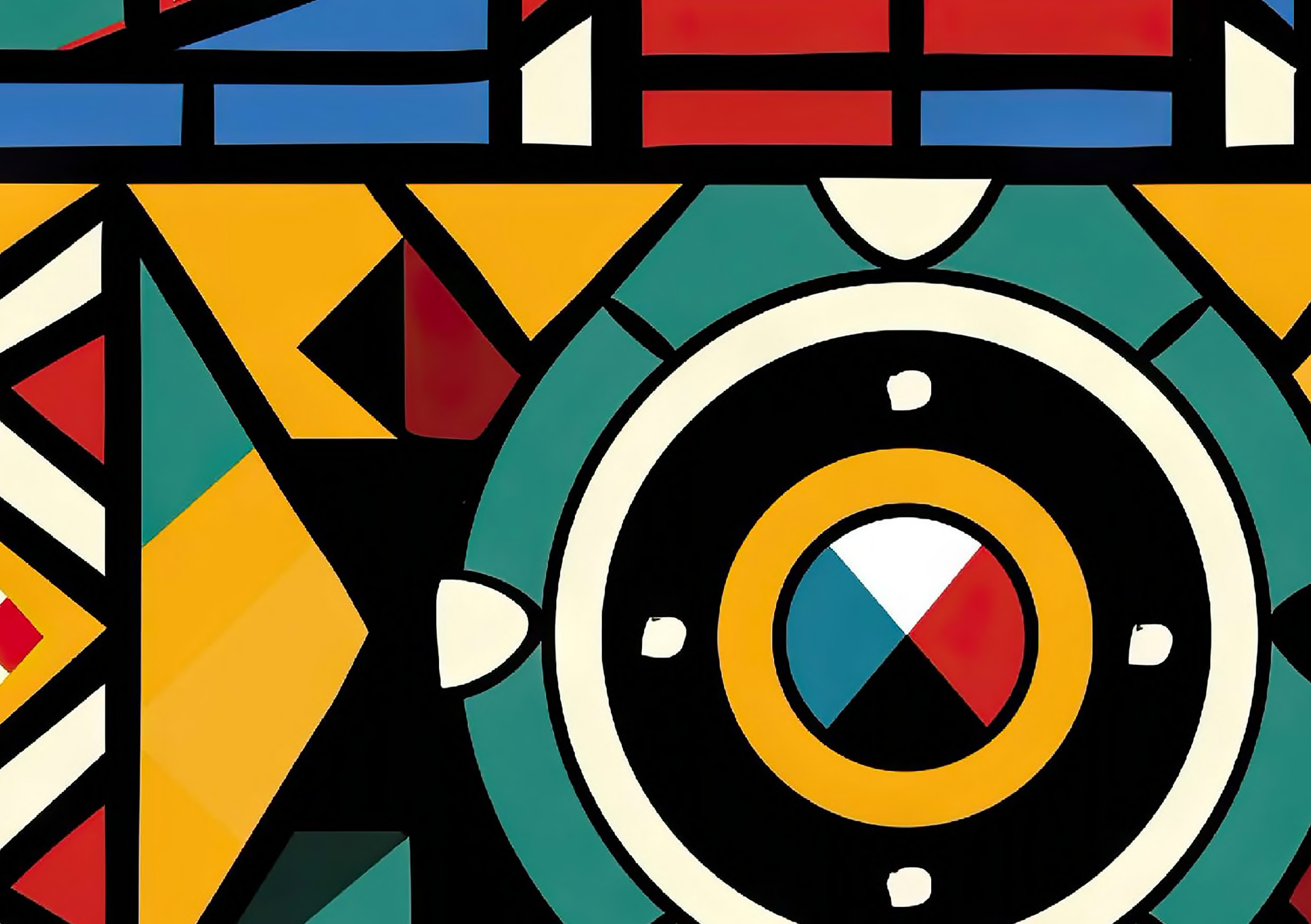
Since its inception, Sustainable Energy for All (SEforALL) has worked with successive G20 presidencies to advance sustainable energy goals. SEforALL has provided strategic and technical support to successive G20 Presidencies to help build broad political support and drive decision-making for the just and equitable energy transitions in Global South countries.

We are proud to support South Africa's G20 Presidency and its unique leadership to champion a just and equitable energy transition while elevating climate finance on the global agenda, and positioning the African continent as a leader in green growth.

Delivering a just and equitable energy transition will require faster progress on energy access, energy efficiency improvements, collaboration on green industrialisation, and greater investment in the Global South. South Africa's G20 Presidency, through the ETWG, continues to advance this agenda. With the progress already made and the partnerships now in place, there is an opportunity to close energy access gaps, unlock finance at scale, and show that the energy transition can deliver for all. The G20's lived practice of bridging negotiation with real delivery across energy, climate, finance, and security as showcased in this publication, is a critical measure of hope amid the tumult of shifting global geopolitics. At SEforALL, we remain a committed partner to the G20 to make this a reality.

Damilola Ogunbiyi

Special Representative of the
UN Secretary-General, Co-Chair of UN-Energy
and CEO of Sustainable Energy for All



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Chapter 1

Introduction & context

The membership of the Group of Twenty (G20)[1] represents over 85% of the world's GDP and 75% of international trade.[1] Established in 1999 as an informal forum for Finance Ministers and Central Bank Governors, it was designed to address macroeconomic and development issues, reduce poverty, and improve the effectiveness of development assistance. In 2008, in response to the Global Economic and Financial Crisis, the G20 was elevated to a Summit-level forum of Heads of State and Government to enable urgent and sustained crisis coordination — a necessity only possible at the highest political level.

Since its inception as a leaders' forum in 2008, the G20 has evolved from a crisis-management platform focused on macroeconomic coordination and financial reforms into a broader forum addressing financial stability, tax transparency, climate change, energy security and transition, sustainable development, and global health.[2] Emerging and developing economies played an important role in pressing for this wider agenda, one that recognised the interconnections between financial stability, environmental sustainability, and social equity.

1 The G20 is a group of 19 countries notably, Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Türkiye, the United Kingdom, and the United States and two supranational political and economic unions – the European Union and the African Union

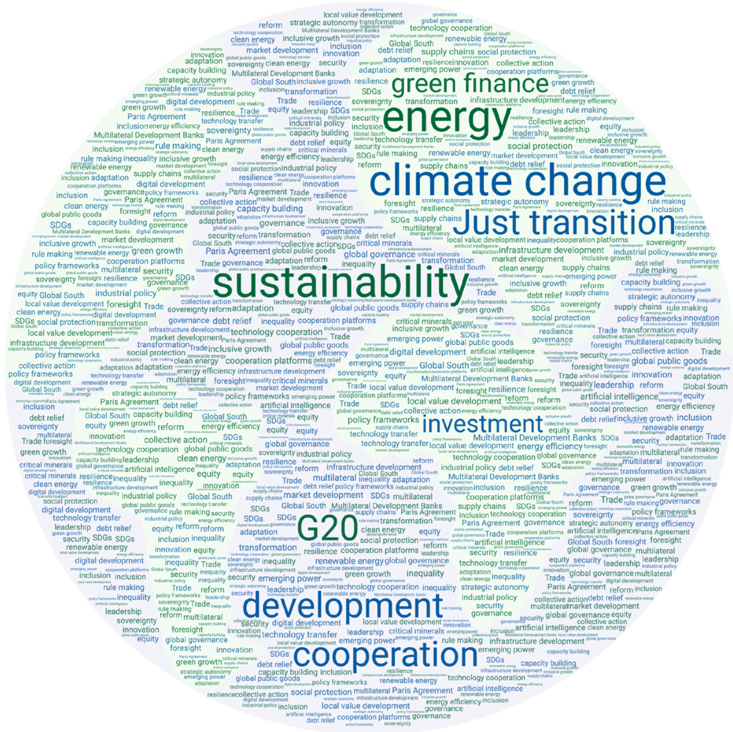
The G20 has two tracks - Finance and the Sherpa Track.
The Sherpa Track is made up of the 15 working groups, while the Finance Track has 7 technical groups.

This coffee-table book serves as a legacy document of South Africa's 2025 G20 Presidency. It traces how the G20 expanded its remit from crisis-driven fiscal and financial debates to encompass energy transitions, climate change, green finance, equitable recovery, and sustainable development; reframing the agenda around the voices and priorities of the Global South. It is both a reflection of how far the G20 has come and a lens through which to consider how it must adapt to remain relevant in a rapidly changing world.

The inclusion of energy and climate in G20 deliberations was neither sudden nor accidental. It reflected both systemic shocks — from global recessions to the COVID-19 pandemic — and structural transformations, including the rise of emerging economies, intensifying geopolitical competition, and the urgent realities of climate change. Energy first appeared as a discrete theme at the 2008 Washington Summit, but it took several Presidencies before it became a regular feature of G20 communiqués. By 2017–2018, Presidencies such as Germany and Argentina had embedded energy transitions and clean-technology cooperation into the G20's work streams, recognising that the Group accounts for around 77% of global energy consumption and nearly 82% of carbon dioxide emissions — figures that underscore its unique capacity to advance decarbonisation and strengthen energy security.[3] Subsequent Presidencies reinforced this trajectory by placing energy and climate at the centre of stimulus and recovery packages, positioning the G20 as a forum for innovative finance, sustainable infrastructure, and equitable access to critical resources.

The G20's journey has been one of reinvention. This coffee-table book, produced during South Africa's G20 Presidency, reflects that transition. It is both retrospective and forward-looking: tracing how the G20 moved from coordinating central-bank swaps and balance sheets to addressing the broader imperatives of planetary stewardship, including green hydrogen corridors, sustainable energy hubs, renewable-energy partnerships, and data-driven vulnerability mapping. By weaving together the history, turning points, and themes of the G20's agenda over the past twenty years, the book highlights the forces that compelled change and shows how these shocks elevated energy and climate to the centre of global governance.

As a legacy document of South Africa's G20 Presidency, this book also looks ahead. It reflects on what the next two decades of G20 discussions may encompass — from artificial intelligence and digital governance to strengthened climate resilience and energy security. In doing so, it positions the G20 not only as a forum for crisis response but also as an agenda-setter for long-term global priorities. This coffee-table book is an invitation to consider how the G20 has evolved into a forum of both response and vision. It is a story of adaptation, ambition, and foresight — underscoring why the G20 remains indispensable to shaping the world's collective future and fostering international cooperation.



Africa's G20: South Africa's Presidency, significance, and priorities

South Africa's G20 Presidency in 2025 marks a historic and symbolic moment — not only for the country but for the African continent as a whole. It is the first time the rotating Presidency has been held by an African nation, coinciding with the African Union's inaugural year as a permanent member of the G20. This Presidency follows three consecutive terms led by developing countries — Indonesia, India, and Brazil — creating a rare political alignment that amplifies the voice of the Global South. South Africa has embraced this moment with the theme *"Solidarity, Equality, and Sustainability"*, signalling its intent to reshape global governance in ways that promote developmental equity and ecological resilience that better reflect the needs and aspirations of developing nations.[4]

The challenges facing Africa and other developing regions differ starkly from those of advanced economies. Many African countries are contending with unsustainable debt burdens, limited access to affordable capital, and structural inequalities that constrain development. Between 2008 and 2022, the external sovereign debt of African countries tripled.[6] These challenges are further compounded by climate vulnerability and chronic underinvestment in infrastructure. South Africa's Presidency seeks to draw attention to these disparities and advocate for systemic reforms in global financial institutions, making debt sustainability and concessional financing for low-income countries central pillars of the G20 agenda. Without such financial breathing space, countries are unable to invest adequately in essential social infrastructure, including health, education, and energy.[7]

Energy is a particularly urgent issue for South Africa and for the continent as a whole. The country faces a triple challenge: energy access, energy security, and energy transition. Load-shedding and ageing infrastructure have exposed significant vulnerabilities, while across Africa, more than 600 million people still lack reliable access to electricity.[8,9] South Africa is using its G20 platform to advocate for a just energy transition — one that balances climate goals with development needs.

Image source: Ricardo Stuckert

South Africa's Presidency will be the first time an African country has presided over the G20. We will use this moment to bring the development priorities of the African continent and the Global South more firmly onto the agenda of the G20. In this regard, we will build on the work of the most recent G20 Presidencies of Brazil in 2024, India in 2023, and Indonesia in 2022.[5]

Remarks by President Cyril Ramaphosa at the launch of South Africa's G20 Presidency

It is calling for greater investment in renewable energy as well as in transitional fuels such as natural gas, which remain critical for driving industrial growth and improving livelihoods across the continent.[10]

What makes South Africa's Presidency especially consequential is its Africa-first approach. South Africa is not only representing its own national interests; it is also serving as a continental convener. This role has required demonstrating leadership on a range of issues that are fast becoming priorities across the continent.

Critical minerals are one such priority. The Presidency has underscored its role as *"an engine for growth and development in Africa"*.[11] With around 30% of the world's critical minerals sourced from Africa, South Africa's Presidency is emphasising the need for mechanisms and collaborations that ensure economic benefits accrue to the region, the country, and local communities — the long-standing custodians of these resources — to their fullest potential.[12] The Presidency has promoted the creation of a *G20 Critical Minerals Framework* as essential both to advancing the global energy transition and to meeting Africa's development goals. To date, the Presidency's statements on critical minerals have positioned Africa at the centre of dialogue on inclusive economic growth and green industrialisation, signalling the potential for a framework that aligns with an Africa-first approach.[13] The South African Presidency is also advancing initiatives such as the Africa Water Investment Summit, which highlighted 80 bankable projects from 38 countries across the continent. Through the G20 platform, it is working to attract capital and partnerships that benefit all 54 African nations.[14] Finally, the South African Presidency is advocating reforms to multilateral development banks to unlock greater financing for African-led solutions. By positioning Africa as a solution provider rather than a passive recipient, South Africa is helping to reshape the narrative of global cooperation.

South Africa's G20 Presidency is a call to reimagine global multilateralism. It seeks to build bridges between the Global North and South, elevate African priorities to the highest levels of decision-making, and ensure that no country is left behind. This Presidency is not only about policy; it is also about power, representation, and the promise of a more equitable world order. As one of the most industrialised economies on the continent, South Africa is leading this effort and setting the tone for a new era of global solidarity.

Creation of the G7 and subsequently the G20

The first meeting of the Heads of State and Government of France, Italy, Japan, West Germany, the UK and the USA in 1975 in Rambouillet, France. Canada joined this group in 1976, forming the G7.
Image source: Bundesregierung/Schaack

Historical analysis shows that during episodes of economic and financial crisis, countries regarded as systemically significant have often established collaborative frameworks to address and mitigate transnational ripple effects.[15] The dissolution of the Bretton Woods exchange rate system in the early 1970s, combined with the severe economic disruptions of the oil crisis, exposed significant vulnerabilities in the existing framework of international economic governance. In response, the G7 — comprising Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States — was established in 1975 as an informal mechanism for high-level coordination of international economic policy. Its formation reflected a strategic effort by advanced economies to contain financial instability and to foster collective responses to the global crises that defined the decade.[16,17]

The 1980s and early 1990s brought relative economic stability, though not a full return to pre-1970s levels. During this period, many developing countries and newly independent states began integrating into the global economy. Twenty-four years after the inaugural meeting of the G7, discussions emerged on the need for an alternative forum to facilitate dialogue between developing and developed nations. This recognition was further sharpened by the financial crises in Mexico (1994) and Asia (1997).[18]

In 1997, major Asian economies — often described as the Asian Tigers, including South Korea, Thailand, the Philippines, Indonesia, and Singapore — plunged into financial turmoil after Thailand abandoned its peg of the baht to the US dollar. This decision set off a cascade of currency devaluations and significant capital flight, affecting not only Southeast Asia but also Russia — then a member of the erstwhile G8 — which defaulted on its debt, as well as Latin America, where Brazil's currency lost more than 35% of its value.[19] The crisis exposed critical weaknesses in the financial sectors of developing countries, leading to widespread currency devaluations, stock market crashes, and bank failures. In response, the G7 intervened to contain the potential global spread of the crisis and to stabilise an already fragile international financial system.

The crisis not only exposed vulnerabilities but also underscored the need for a more inclusive platform bringing together leading developed and developing

The first G20 Leaders Summit in Washington, DC in 2008.

economies. This prompted broader discussions on shaping global economic and financial policies and to *"promote co-operation to achieve stable and sustainable world economic growth that benefits all."*[20] These efforts culminated in the establishment of the G20 in 1999.

The G20 began as an informal platform for Finance Ministers and Central Bank Governors to engage in dialogue on macroeconomic and development challenges, with the aim of reducing poverty and improving the effectiveness of development aid. In the wake of the 2008 Global Economic and Financial Crisis, it was elevated to a Summit-level forum, bringing together Heads of State and Government to ensure coordinated responses — an effort that demanded leadership at the highest political level.

The first Leaders' Summit was held in Washington, D.C. in 2008, recognising that coordinated political action was needed to address the Global Economic and Financial Crisis. The global economy contracted by 0.1% in 2009, while the United States experienced its deepest recession since the Second World War, with GDP falling by 4.3% from peak to trough.[21] Developing countries also felt the spillover effects. In India, for example, overall GDP growth was nearly halved, dropping from a peak of 10.6% in the third quarter of 2006 to 5.8% in the fourth quarter of 2008.[22] The spread of these cascading crises across economies underscored the need for a platform capable of addressing global challenges in an increasingly interdependent world.

The Pittsburgh Summit of 2009 established the G20 as "the premier forum for international economic co-operation".

The London Summit in 2009, convened in the wake of the Global Economic and Financial Crisis, produced significant commitments. Leaders announced a USD 1.1 trillion package to *"restore credit, growth and jobs in the world economy"* and pledged to deploy a combined stimulus of USD 5 trillion across all G20 countries by the end of 2010 to *"save or create millions of jobs,"* revive global growth, and *"accelerate a transition to a green economy."*[23] Similarly, the Pittsburgh Summit of 2009 marked another milestone by establishing the G20 as *"the premier forum for their international economic co-operation"* and as a central decision-making body on global economic matters. This shift moved the decades-old balance of power away from Europe and displaced the G7, which for more than three decades had dominated the world financial stage.[24,25]

Since its launch in 2008, the G20 has expanded beyond its initial role as a crisis-response mechanism into a comprehensive forum addressing a wide range of global challenges — including financial stability, tax transparency, climate action, energy security and transition, sustainable development, global health, and other pressing international concerns.

The G20 is built on a similar institutional architecture to the G7; it is not a formal international organisation. It has no founding treaty or permanent secretariat, and operates instead as a flexible, consensus-driven forum designed to adapt quickly to shifting global and geopolitical challenges.[26] The G20 Presidency rotates annually among its members, with the host country responsible for shaping the agenda in response to developments in the global economy. Each cycle culminates with the Leaders' Declaration — a shared statement of commitments endorsed by the group. To ensure continuity, each G20 Presidency is supported by a Troika comprising the current, immediate past, and incoming host countries. For example, South Africa's Presidency is supported by a Troika that includes Brazil and the United States.

Chapter 2

Evolution of mandates in the G20

Early Focus on Macro-Financial Stability (2005–2008)

Before its elevation to a Leaders' Summit in November 2008, the G20 convened Finance Ministers and Central Bank Governors, serving primarily as a forum for policy deliberation rather than for formal decision-making.[27] Characterised by a consensus-based structure, the G20 functioned through non-binding coordination, reflected in the language of its official communications, which often included phrases such as *"we welcomed ...," "we noted ...,"* and *"we agreed ...."*[28] This early incarnation of the G20 represented a response to the complexities of a globalized economy, marked by financial vulnerabilities and the need for enhanced coordination in an interconnected world.

From 2005 to 2008, the G20's mandate was centred on macroeconomic policy, with a focus on finance-driven reform and the coordination of fiscal, monetary, and exchange-rate stability policies to manage *"global imbalances."*[29] A key characteristic of this period was the G20's narrow focus, with its primary goal being the protection of financial stability.

G20 leaders meet for the first time at a Summit in Washington DC in 2008.
Image source: Bundesregierung/Kugler

Within this agenda, the G20 emphasised crisis prevention and risk management through macro-financial oversight, monitoring, and the promotion of institutional reform.[30]

Before its elevation to a Leaders' Summit in 2008, the G20's working-group discussions and ministerial declarations reflected a narrow yet vital mandate, characterised by three key features: a focused policy dialogue, limited institutional scope, and significant regional and global implications.

First, the policy dialogue during this period was primarily centred on establishing financial regulation and oversight guidelines, with limited attention to broader socioeconomic issues. The early communiqués emphasised the need for stronger cooperation between the International Monetary Fund (IMF) and other Bretton Woods institutions to support effective crisis prevention.[31] The institutional design and agenda-setting processes of the G20 were closely tied to the goal of maintaining financial stability. Between 2005 and 2008, the forum focused on several major macro-financial risks. A central concern was the United States' current-account deficit and the associated capital flows, which by 2005 had exceeded 6% of GDP. At the same time, Japan, China, and other emerging Asian economies were running large surpluses, collectively reaching nearly USD 400 billion in 2005.[32] These imbalances posed significant challenges to global financial stability and limited the scope of discussions beyond traditional macroeconomic risk management.

They also underscored the G20's role as a consensus-driven policy forum, where, in the absence of legally binding mandates, reliance was placed on such platforms to promote coordinated action in response to these issues.[33]

Secondly, during this period, the G20 engaged mainly in narrow and technical discussions on financial systems, with little social or environmental content.[34] While the forum acknowledged the importance of development, social policies relating to labour, education, and health were not extensively addressed. A notable reference appeared in the G20's 2005 *Statement on Global Development Issues*, which expressed a commitment to supporting developing countries in establishing *"sound economic and social policies to attract private capital flows...."*[35] Similarly, in 2006 the G20 acknowledged linkages between climate change and energy, though discussions were largely framed around market-based mechanisms and principles for trade and investment in specific extractive industries.[36] This reflected a tendency to situate social and environmental issues within the context of economic growth and investment opportunities. For example, debates on energy were treated as external to the core financial policy framework, which remained centred on monetary policy, capital flows, and market confidence. Concrete policy frameworks or commitments on climate change or environmental protection were largely absent from G20 deliberations during this period.

Finally, the macro-financial focus meant that although the G20's mandate was

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> **Many of us are united around the vision of a new model of multilateralism which harvests individual and collective knowledge and best practices, to promote economic and social advances for the benefit of the entirety of the global community of nations.**
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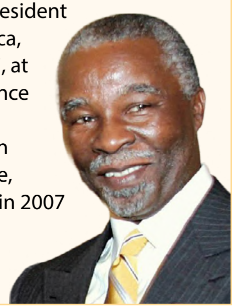
> Speech by President of South Africa, Thabo Mbeki, at the G20 Finance Ministerial Conference in Western Cape, South Africa in 2007



narrowly defined, the decisions made by the G20 during this period had far-reaching effects, particularly in shaping frameworks for crisis prevention and global financial coordination. For instance, between 2007 and the first half of 2008, there was an over 50% spike in global food prices, and fuel costs had doubled; this reaffirmed the G20's prioritization of financial oversight and risk management, especially for enhancing energy and commodity stability.[37] In this context, the 2007 South Africa Communiqué acknowledged the need for stronger financial supervision and risk management, while also highlighting emerging challenges such as climate change, energy security, and protectionism.[38]

Collectively, the G20's characteristics and priorities from 2005 to 2008 carried important implications for shaping the dialogue on global financial reform and crisis prevention. Despite its influence, the G20 operated without binding decision-making authority, which meant greater reliance on established institutions such as the IMF and the Financial Stability Forum (FSF) to advance reforms among member countries.

The Emergence of Energy and Climate Issues Post 2008: From Financial Crisis to Sustainable Growth

The 2008 Global Economic and Financial Crisis was a watershed moment that fundamentally altered the trajectory of global policy formulation. Beyond the immediate imperative of restoring financial stability and reigniting economic growth, the crisis exposed deep fault lines in the foundational assumptions of the international economic system. As noted in the 2008 *G20 Declaration of the Summit on Financial Markets and the World Economy: "Over the past months our countries have taken urgent and exceptional measures to support the global economy and stabilize financial markets."* [39]

This recognition was reinforced at the Pittsburgh Summit in 2009, where G20 leaders *"committed to additional steps to ensure strong, sustainable, and balanced growth, to build a stronger international financial system, to reduce development imbalances, and to modernize our architecture for international economic cooperation."* [40] Climate change and the goal of *"access to diverse, reliable, affordable and clean energy for sustainable growth"* were first explicitly referenced in the G20 Leaders' Declaration at the Pittsburgh Summit in 2009.[41] This marked a significant step in the G20's recognition of energy and environmental issues. These dialogues reflected a clear departure from compartmentalised policy approaches and pointed to the need for an integrated framework that acknowledges the interdependence of financial systems, long-term structural reforms, social protection, energy, and climate. The summits thus served as catalysts, sowing the seeds for integrating development, environmental, and social issues into the G20's terms of reference.

The 2010 Seoul Summit marked a defining expansion with the institutionalisation of development as a permanent G20 priority. Image source: G20 Seoul Summit

The G20 Presidency under Türkiye in 2015, convened the first G20 Energy Minsiters' Meeting. Image source: UN Photo/Rick Bajornas

The 2010s: Mainstreaming Sustainable Development, Climate and Energy in the G20

Successive G20 Presidencies used their platforms to advance priority agendas and promote institutional innovation. The 2010 Seoul Summit marked a defining expansion with the adoption of the *Seoul Development Consensus for Shared Growth*, which institutionalised development as a permanent G20 priority.[42] The Seoul Summit emphasised poverty reduction, infrastructure investment, food security, and support for fragile economies, with an explicit mandate to include the voices of the Global South. This moment set a template for continued engagement with low-income and developing countries. Similarly, the Presidencies of Mexico (2012) and Russia (2013) prioritised food security, global health, inclusive growth, and sustainable development.[43,44] These Summits treated development alongside issues such as anti-corruption, employment, and social protection, signalling a shift toward multidimensional policymaking.

The Australian Presidency in 2014, focused on *"promoting stronger economic growth and employment outcomes and making the global economy more resilient to deal with future shocks."* The Brisbane Summit set a concrete ambition of achieving global GDP growth 2 % above trend, while also mainstreaming infrastructure, gender, and labour participation.[45]

Image source: United Nations

Adoption of the Paris Agreement on Climate Change at COP21 in 2015.

The year 2015 was pivotal as the international community adopted the Paris Agreement to combat climate change and finalised the 2030 Agenda for Sustainable Development, which includes the Sustainable Development Goals (SDGs). These landmark agreements established a global commitment to a sustainable future — with the Paris Agreement focused on climate action and the SDGs aimed at eradicating poverty and promoting inclusive, sustainable development by 2030. Such global frameworks catalysed a trend toward iterative target-setting, with the regular calibration of national emissions objectives and adaptation strategies informed by new scientific and policy insights. Governments began leveraging stimulus measures to spur domestic green industries, while institutional investors started to realign portfolios toward sustainable infrastructure. The G20 mirrored this approach, with each summit refining sustainable development priorities and updating commitments.

Türkiye's G20 Presidency in 2015 adopted the theme *"Collective Action for Inclusive and Robust Growth"* and launched a targeted initiative to expand energy access in Sub-Saharan Africa through clean and sustainable investments.[46] It also convened the first G20 Energy Ministers' Meeting, marking a deeper integration of energy issues into economic planning and expanded the G20's relevance beyond finance ministers.

The Presidency also marked a strategic shift toward inclusiveness and development. It emphasised integrating low-income and developing countries into global economic discussions, prioritised small and medium-sized enterprises (SMEs) as drivers of growth, and aligned the G20 agenda with the SDGs and the Addis Ababa Action Agenda.[47]

China's G20 Presidency in 2016 stands out for its emphasis on climate, innovation, and breakthroughs in the digital economy. During this Presidency, G20 countries committed to endorsing and implementing the Paris Agreement, advancing joint climate action, and promoting green finance. Energy transition, innovation, and technology — including digitalisation for development — became priority policy areas for the first time.[48] The Chinese Presidency placed strong emphasis on infrastructure financing for renewable energy as a driver of global energy transformation. This focus aligned with China's broader shift away from a coal-dependent energy system toward substantial investments in clean energy sources such as solar and wind. The transition was motivated by two key factors: growing domestic concerns over air pollution and public health, and China's strategic ambition to position itself as a global leader in advanced energy technologies. The Presidency also introduced green finance to the G20 agenda and laid the foundations for the Sustainable Finance Working Group (formerly the G20 Green Finance Study Group), launched under Italy's Presidency in 2021, which seeks to identify institutional and market barriers to green finance, draw on country experiences, and develop options to strengthen the financial system's ability to mobilise private capital for green investment.[49]

Germany's G20 Presidency in 2017 placed strong emphasis on climate change, just transition, and the establishment of a global energy policy framework. It launched the *G20 Principles for Energy Collaboration* and the *G20 Hamburg Climate and Energy Action Plan for Growth*. The Presidency also framed energy transformation as a financial stability issue, urging its integration into the G20 finance track, rather than remaining confined to the Sherpa track.[50]

Argentina's G20 Presidency in 2018 was pivotal in cementing work on *energy transitions* within the forum, introducing and defining the term in the Leaders' Communiqué. The concept acknowledged both the role of all energy sources and

Argentina's G20 Presidency was pivotal as it introduced and defined 'energy transition' in the Leaders' Communiqué for the first time and established the Climate Sustainability Working Group. Image source: Reuters

technologies in the energy mix and the different national pathways available to achieve cleaner energy systems.[51] Furthermore, Argentina's Presidency established the Climate Sustainability Working Group to address climate adaptation, resilient infrastructure, and long-term low-emission strategies.[52]

Japan's G20 Presidency in 2019 prioritised digital governance and the potential of innovative technologies to transform energy systems and build resilience. It placed particular emphasis on innovation, launching the *G20 Karuizawa Innovation Action Plan* to accelerate energy transitions and promote global environmental sustainability by driving innovation across energy systems. The Presidency also set a precedent in shaping the G20's approach to innovation in energy R&D with the creation of *RD20*, a platform linking top research institutions across member states to collaborate on next-generation clean energy technologies.

Japan was also among the first G20 countries to place hydrogen and synthetic fuels at the centre of international cooperation, a focus later advanced by Saudi Arabia (2020), Italy (2021), and India (2023), thereby cementing hydrogen as a mainstream pillar of G20 energy discussions. Finally, by introducing *Carbon Recycling* into the G20 agenda, Japan broadened the scope beyond traditional Carbon Capture, Utilisation and Storage (CCUS), paving the way for the adoption of the *Circular Carbon Economy (CCE)* under Saudi Arabia's Presidency in 2020.

King Salman bin Abdulaziz Al Saud addressing world leaders at the G20 Summit in 2020, saying, "We have a duty to rise to the challenge together during this summit and give a strong message of hope and reassurance".
Image source: Associated Press/ Saudi Press Agency

Pandemic Presidencies: Setting the stage for a New G20 Playbook

The G20 Presidencies of Saudi Arabia (2020) and Italy (2021) were defined by the COVID-19 pandemic. Both redefined what G20 leadership could look like during a global crisis, advancing a new *G20 Playbook* that elevated health and resilience as core pillars of economic policy and linked recovery measures to sustainability, with economic stimulus tied to climate action. This shift set the stage for future Presidencies to integrate climate, equity, and digital transformation into the G20 agenda.

Saudi Arabia led the G20 at the height of the pandemic, framing health security as essential to economic recovery. Its Presidency also launched the Debt Service Suspension Initiative (DSSI), which provided temporary relief of USD 14 billion to 73 low-income countries, enabling investment in health and social protection.[53,54] In addition, Saudi Arabia placed strong emphasis on clean cooking and energy access, advocating for the *G20 Initiative on Clean Cooking and Energy Access*.

Italy built on this foundation by embedding sustainability into its core theme — *People, Planet, Prosperity* — and advancing a One Health Resilience agenda that linked human, animal, and environmental health within a unified policy framework.[55] Italy's Presidency in 2021 advanced science-based tools such as the *G20 Climate Risk Atlas*, which helped institutionalise data-driven climate policy and vulnerability mapping. This initiative influenced how G20 members assess risks and design adaptation strategies.[56] The Italian Presidency also hosted the Naples Ministerial Meeting on Environment, Climate, and Energy, aligning G20 outcomes with the goals of COP26 and reinforcing the climate–development nexus. Finally, it endorsed the *Sustainable Finance Roadmap*, developed by the G20 Sustainable Finance Working Group, to guide the evolution of future climate-aligned financial systems.[57]

Taken together, these Presidencies shifted the G20 from reactive crisis management to proactive, integrated governance — where economic recovery is understood as inseparable from climate action, health resilience, and inclusive development.

A view from the South: Setting the agenda for the world

The unprecedented sequence of four consecutive G20 Presidencies held by developing countries — Indonesia (2022), India (2023), Brazil (2024), and South Africa (2025) — marked a historic shift in global governance. These countries used their G20 leadership to amplify the voices of the Global South and to reorient the climate, energy, and sustainable development agenda around principles of equity, resilience, and inclusion. In doing so, they helped embed justice and fairness not only into climate and energy policy but also into the G20's broader approach to international finance and recovery.[58,59]

In 2022, under Indonesia's Presidency, G20 leaders emphasised green recovery in the post-COVID context, a just energy transition — particularly for coal-reliant economies — and improved access to climate finance for developing nations. The Presidency launched the *Just Energy Transition Partnership (JETP)*, securing USD 20 billion to support coal phase-out while protecting workers and communities.

India's G20 Presidency in 2023 elevated the representation of the Global South by securing the African Union's admission as a permanent member of the forum. It also sought to make the G20 more inclusive and future-ready by advancing geopolitical connectivity, strengthening digital architecture, and reframing climate responsibility — extending it beyond policy to individual actions — while promoting inclusive development as a pathway to SDG implementation.

India's G20 Presidency will attempt to voice the views of the Global South on these important issues.[60]

Prime Minister Shri Narendra Modi's Opening Remarks at the Concluding Leaders' Session of the Voice of Global South Summit

Image source: GODL-India

> **If the wealthy countries wish to have the support of the developing world to address the multiple crises of our time, the Global South must be fully represented in the main decision-making forums.[61]**
>
> Speech by President Lula at the Meeting of G20 Foreign Ministers

Image source: Palácio do Planalto

The Presidency launched the principles on *Lifestyle for Environment (LiFE)*, reframing climate action as a grassroots movement rooted in behavioural change and cultural values. It also promoted linkages across renewable energy, climate finance, and biodiversity investments, while advancing the global agenda on digital public infrastructure.

Brazil held the G20 Presidency in 2024, shaping the agenda around social inclusion, the fight against hunger and poverty, energy transition and sustainable development, and reform of global governance. The *Rio de Janeiro Leaders' Declaration* (2024) placed inequality and climate resilience at the heart of the G20 agenda, recognising that climate impacts fall disproportionately on vulnerable populations. The Presidency emphasised socially just and environmentally sustainable measures, linking climate resilience with poverty reduction, food security, and health systems.

At the G20 Energy Ministers' Meeting in 2024, members endorsed outcomes from COP28 (2023), including: i) tripling global renewable energy capacity by 2030; ii) doubling the rate of progress on energy efficiency over the same period; and iii) expanding energy storage and grid infrastructure, crucial for scaling renewables. These commitments reflected a shift from abstract pledges to concrete implementation plans. The Presidency also created the *Task Force on Climate Mobilisation* — a high-level body mandated to coordinate climate finance commitments — and launched the *G20 Principles for Just and Inclusive Energy Transitions*.

> **Our Presidency aims to champion solutions to the Global South's threats, particularly in Africa. Indeed, there are high expectations and a significant responsibility placed on South Africa to lead a progressive, inclusive, and development-oriented G20 Presidency.[62]**
>
> Remarks by Minister Ronald Lamola at the 46th Ordinary Session of the Executive Council

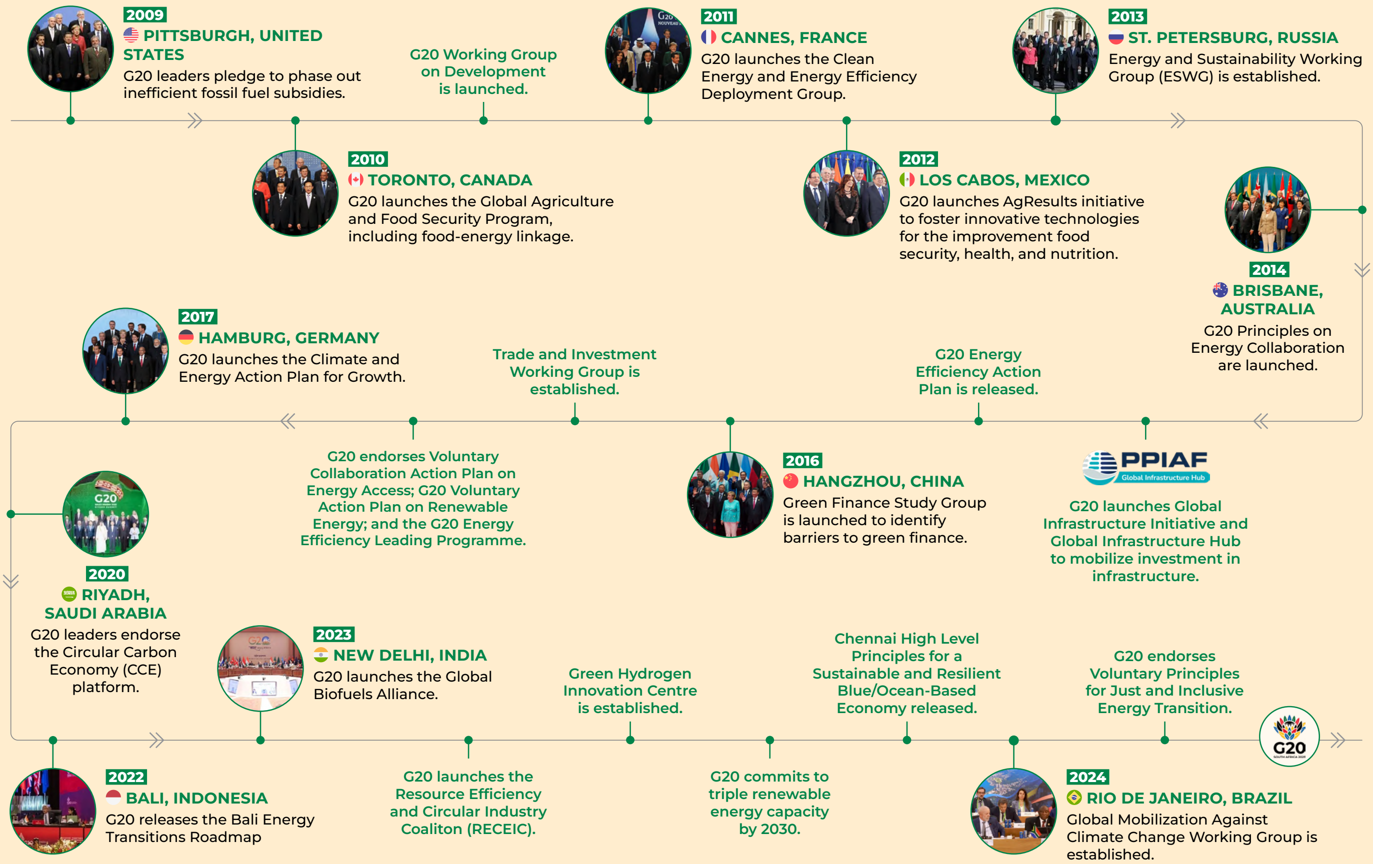
Image source: FCDO/Nacho Santana

South Africa's Presidency has called for prioritising debt restructuring, critical minerals sovereignty, and climate finance as central responses to structural inequalities — particularly those exacerbated by unsustainable debt and the disproportionate impacts of climate change on the Global South. South Africa's leadership marks a historic moment: the first time an African nation has held the G20 Presidency. It has pledged to champion solutions to the Global South's most pressing challenges, especially in Africa. The Presidency's core themes of solidarity, equality, and sustainability reflect a deliberate effort to reframe global economic governance through a lens of justice and inclusion.[63] This comes at a time when African nations are burdened with hundreds of billions of dollars in debt, posing a major obstacle to achieving the SDGs.[64]

South Africa has also emphasised the need to reform the international financial architecture and to mobilise climate finance for a just energy transition — particularly for developing economies that remain dependent on fossil fuels.[65,66] The emerging approach to critical minerals is increasingly framed as both a national security and an equity issue, with growing pressure to establish shared governance and value-added development models that avoid repeating extractive legacies.[67,68]

These Global South Presidencies have shifted the G20 narrative from top-down climate mandates to bottom-up, inclusive development, while amplifying calls for justice, equity, climate finance reform, technology transfer, and capacity-building.

G20 timeline highlighting key moments



Chapter 3

Evolving issues related to energy in the G20

The G20's agenda has gradually evolved from a finance-focused platform to a multi-track forum that now includes climate change, energy, and social inclusion as key priorities. In its earlier years, Presidencies framed most policy discussions primarily through an economic risk lens. Today, these issues are elevated and more comprehensive, supported by dedicated working groups, initiatives, and frameworks that advance significant long-term goals.

While much progress has been made in institutionalising this expanded agenda, the extent to which policies are sustained or prioritised often varies depending on the Presidency of the year. The G20 dialogue also reflects the broader geopolitical environment, which can be critical in shaping its agenda.

Given the G20's unique model of a rotating Presidency and lack of a permanent Secretariat, each host country has the discretion to develop its agenda in response to global economic developments — with energy emerging as a consistent priority over the past decade. This section provides a thematic deep dive into how topics related to climate, energy, and sustainability have evolved within the G20.

Over the years, we have consistently expanded the G20 agenda. Our motivation was that after overcoming the acute crisis, we wanted to become more open towards what has recently often been referred to as inclusive growth. That is why the issues of climate change, poverty, health, displacement and migration, and development have appeared on the agenda alongside the traditional economic and financial topics.[69]

Speech by Federal Chancellor Angela Merkel at the G20 Dialogue Forum with Business Associations (B20) in Berlin

Image source: Raimond Spekking

Fossil fuel subsidies

Fossil fuel subsidy reform has been a recurring but uneven topic in G20 discussions since the 2009 Pittsburgh Summit, where leaders first committed to phasing out inefficient subsidies that encourage wasteful consumption and undermine climate goals.[70] From 2010 to 2015, successive Presidencies reaffirmed the commitment to fossil fuel subsidy reform, but progress was constrained by the absence of binding timelines, enforcement mechanisms, and sufficient political will. During this period, the focus remained largely on voluntary reporting and market transparency, with limited progress on actual subsidy removal.[71]

A modest breakthrough came in 2016–2017, when countries such as the United States and China joined the G20 Voluntary Peer Review process, signalling growing interest in transparency and accountability. These peer reviews provided a structured framework for assessing national subsidy regimes, though participation remained limited and implementation uneven.[72] The Italian Presidency in 2021 marked a shift toward more action-oriented language, with leaders committing to "*end the provision of international public finance for new unabated coal power generation abroad by the end of 2021*".[73] However, several G20 members continued to resist deeper reforms, citing concerns over energy security and economic dependence.

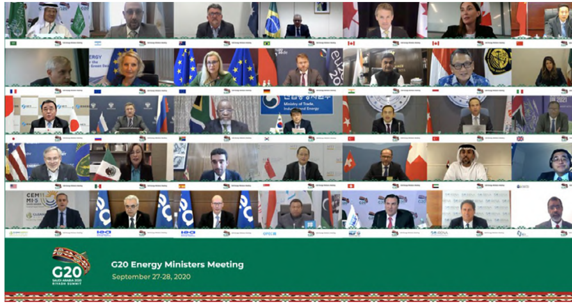
The global energy crisis of 2022 triggered a sharp increase in fossil fuel subsidies. G20 governments collectively provided approximately USD 1.1 trillion — more than four times the 2021 level — largely to shield consumers from soaring energy prices.[74] Since then, language on subsidy phase-out has largely reiterated earlier commitments. For example, under India's Presidency, leaders reaffirmed "*efforts to implement the commitment made in 2009 in Pittsburgh to phase out and rationalise, over the medium term, inefficient fossil fuel subsidies*."[75] Brazil's Presidency in 2024 also echoed this stance by reiterating the *2023 New Delhi Declaration*.[76]

Energy security

Energy security has evolved from a peripheral concern into a strategic pillar of the G20's global governance agenda. Initially defined in terms of market transparency, price volatility, and supply stability, the concept has since expanded to encompass sustainability, geopolitical risk, and equitable access — reflecting the increasing complexity of global energy systems.

The 2009 Pittsburgh Summit marked a turning point, as G20 leaders first acknowledged the link between energy security and sustainability, particularly through their commitment to phase out inefficient fossil fuel subsidies.[77] In the years that followed, however, energy security was inconsistently prioritised. Presidencies such as the United Kingdom (2009) and the United States (2010) focused heavily on post-crisis economic recovery, while Canada (2010) and South Korea (2010) emphasised regulatory reform and market oversight, with energy discussions largely limited to transparency and data-sharing.

The creation of the G20 Energy Ministerial, under the Türkiye Presidency in 2015helped institutionalise energy security within the G20's architecture and mark a deeper integration of energy issues into economic planning. It also expanded the G20's relevance beyond finance ministers. A more integrated approach emerged under Germany's 2017 Presidency, when the G20 adopted the *Principles on Energy Collaboration*. This established energy security as a cornerstone of energy system transformation, alongside



Extraordinary G20 Energy Ministers' virtual meeting organised by the Saudi Arabia G20 Presidency in 2020, to foster global dialogue and cooperation to alleviate impacts of the COVID-19 pandemic on the energy markets, stablise energy markets and enable a stronger global economy.
Image source: International Energy Forum

commitments to open, flexible, and transparent energy markets to drive investment.[78] This agenda was further advanced under Saudi Arabia's Presidency in 2020, which endorsed the *G20 Energy Security and Markets Stability Cooperation*. The Presidency positioned energy transformation as a guiding principle for long-term sustainability and economic diversification, while also recognising the establishment of the Energy Focus Group to help rebalance energy markets and ensure their stability and security.[79]

Emerging economies such as India (2023) and Brazil (2024) have championed energy security alongside equitable access, green hydrogen, and just transitions. With South Africa holding the Presidency in 2025, energy security is expected to be more firmly linked to universal access, just transitions, and resilience for the Global South, under the G20 Energy Security Framework. This would embed equity, alongside market stability and sustainability, into the G20's energy agenda.[80]

Türkiye's G20 Presidency in 2015 elevated energy access as a core development priority, launching the *G20 Energy Access Action Plan*, with a specific focus on Sub-Saharan Africa.
Image source: Republic of Türkiye Ministry of Energy and Natural Resources

Energy access

Energy access has gradually emerged as a central theme in G20 discussions, reflecting the growing recognition that equitable access to energy is foundational to sustainable development, poverty reduction, and climate resilience. In the early years — particularly between 2009 and 2011 — energy access was framed primarily as a development imperative. The Pittsburgh Summit (2009) and the Cannes Summit (2011) highlighted energy access as a tool for economic empowerment in low-income countries, aligning it with broader objectives of financial inclusion and infrastructure investment.

Momentum resumed under Russia's 2013 Presidency, which explicitly recognised energy access as essential to improving quality of life, promoting social inclusion, and eradicating poverty.[81] Türkiye's G20 Presidency in 2015 played a pivotal role in elevating energy access as a core development priority by launching the *G20 Energy Access Action Plan*, with a specific focus on Sub-Saharan Africa. It marked the first coordinated G20 effort to address energy poverty through voluntary collaboration, investment mobilization, and policy support. This initiative laid the groundwork for integrating energy access into broader sustainable development and climate agendas.

The period from 2016 to 2019 marked a shift toward integrating energy access with climate action and technological innovation. During this time, the G20 increasingly recognised the role of renewable energy and energy efficiency in expanding access to clean and affordable energy. By 2019, the framing of energy access had broadened to include affordability, storage technologies, and innovation, reflecting rising concerns about energy security and the need for inclusive decarbonisation pathways.[82]

The *Bali Energy Transitions Roadmap* (2022), launched under Indonesia's Presidency, further advanced this agenda by linking energy access to climate finance and just transitions. It emphasised the need for scalable investment in clean energy infrastructure, particularly in developing economies.[83] India's Presidency in 2023 marked a significant shift by explicitly linking renewable energy access to equity and climate justice, positioning energy access as a cornerstone of the Global South's development narrative. India's leadership reframed energy access not merely as a technical challenge, but as a moral and political imperative tied to global climate goals.[84,85] Similarly, Brazil continued this trajectory by prioritising social inclusion and sustainable development in its energy access initiatives. South Africa's 2025 Presidency builds on this foundation by championing Just Energy Transition Partnerships (JETPs) and advocating for equitable investment flows to expand energy access in Africa and other underserved regions. This evolution suggests that energy access will remain a central pillar of G20 energy dialogue, increasingly intertwined with climate finance, critical minerals governance, and inclusive development.[86]

Clean Cooking

Clean cooking has steadily gained visibility within the G20 framework, evolving from a marginal concern into a recognised pillar of energy access and sustainable development. Its first formal appearance came at the 2011 Cannes Summit, where it was framed as part of the broader effort to address energy poverty and improve household energy access.[87] This marked an early alignment between energy access and development goals, though clean cooking remained a secondary concern. Momentum increased under Türkiye's 2015 Presidency, which introduced the *G20 Energy Access Action Plan*, explicitly prioritising household energy — including clean cooking — as a critical enabler of health, gender equity, and climate resilience. China (2016) and Germany (2017) continued this trajectory by embedding clean cooking into their sustainable development and climate action frameworks, recognising its cross-cutting impact on public health, emissions, and women's empowerment.[88,89]

The issue was revitalised under Saudi Arabia's 2020 Presidency, which launched the *G20 Initiative on Clean Cooking and Energy Access "to ensure access to affordable and reliable energy for all,*

Image source: Sustainanble Energy for All *recognising the urgency of achieving universal access to energy by 2030."*[90] This signalled renewed interest from fossil fuel–producing nations in diversifying energy narratives. Italy's Presidency in 2021 and India's in 2023 carried this agenda forward, with India notably linking clean cooking to equity and climate justice and positioning it as a Global South priority within the energy transition dialogue.[91] In 2024, Brazil introduced the *Clean Cooking Roadmap*, marking a milestone in positioning clean cooking as a strategic policy area. The roadmap outlined strategies to accelerate the adoption of clean cooking technologies, with a focus on affordability, accessibility, and sustainability.

Under South Africa's 2025 Presidency, clean cooking is expected to gain further traction. At the *Global Summit on Clean Cooking for Africa* in 2024, governments and the private sector pledged USD 2.2 billion for clean cooking investments on the continent. Building on this momentum, South Africa's G20 Presidency aims to present a *Clean Cooking Infrastructure Investment Action Plan*, providing an "*opportunity to translate committed funds into bankable infrastructure investment projects that deliver meaningful advances in access to clean cooking for African households."*[92]

Energy efficiency

Within the G20, energy efficiency has evolved from a post-crisis economic recovery tool into a cornerstone of sustainable development, energy security, and climate action. Early Presidencies such as the United Kingdom (2009) and the United States (2009) referenced energy efficiency in their Leaders' Declarations, as committing to "*stimulate investment in clean energy, renewables, and energy efficiency and provide financial and technical support for such projects in developing countries."*[93]; the language remained broad and aspirational, with limited operational frameworks or measurable targets.

A major turning point came under Australia's Presidency in 2014 with the launch of the *G20 Energy Efficiency Action Plan*. The plan outlined six priority areas for voluntary collaboration, including vehicles, buildings, industrial energy use, and finance. It also formalised cooperation through the International Partnership for Energy Efficiency Cooperation (IPEEC), marking the first structured effort to institutionalise energy efficiency within the G20 process.[94] The Action Plan also emphasised flexibility, allowing countries to opt into workstreams aligned with their domestic priorities, and was supported by international organisations such as the IEA, OECD, and IRENA. This shift represented a step toward institutionalising energy efficiency within the G20 agenda and underscored its recognition as a cost-effective mechanism for reducing greenhouse gas emissions.[95]

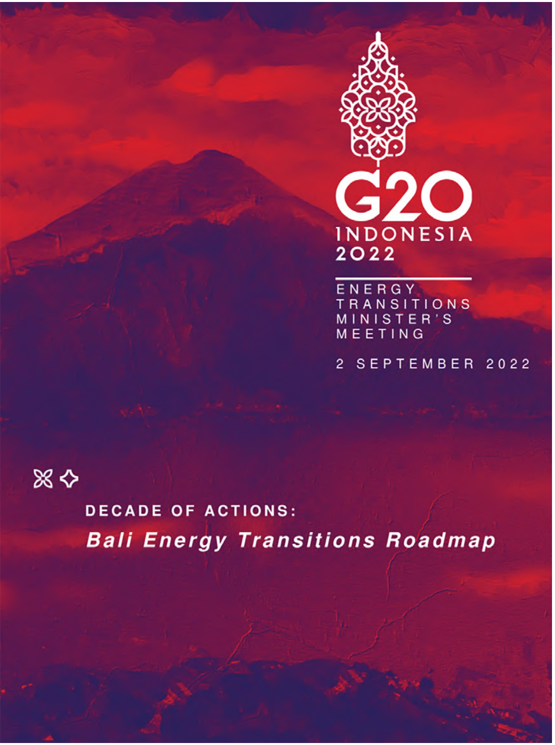
China's Presidency in 2016 further advanced energy efficiency by launching the *Energy Efficiency Leading Program (EELP)*, a voluntary platform for sharing best practices and promoting investment. The EELP represented the G20's first long-term plan for energy efficiency, with a horizon extending to 2030.[96] Germany's Presidency in 2017 highlighted energy savings and the energy productivity of economies as integral to the successful transformation of energy systems. These Presidencies framed energy efficiency as a strategic enabler of innovation, emissions reduction, and competitiveness.

Italy's Presidency in 2021 reintroduced energy efficiency through a modernised lens, linking it to digitalisation, cybersecurity, and resilience in energy systems. This signalled a shift in how geopolitical risks and technological disruptions were influencing energy efficiency priorities within the G20.[97]

Under South Africa's Presidency in 2025, energy efficiency has been reframed as a driver of job creation, affordability, and just transitions. The Presidency emphasises energy efficiency as a pathway to inclusive development, particularly in the context of Africa's industrialisation and youth employment strategies.[98] Building on this approach, the G20 is expected to position energy efficiency within the broader context of equity and job access, with experts emphasising that "*new work opportunities will emerge in green jobs, particularly in renewable energy, energy efficiency, and the extraction and recycling of critical minerals.*"[99]

Clean Energy Transition

The clean energy transition within the G20 began as part of a broader narrative on sustainable growth and technology collaboration. Early efforts, such as the 2010 Seoul Summit, highlighted clean energy technologies as instruments of green growth, linking renewable energy deployment to long-term sustainable development.[100] However, subsequent Presidencies varied in emphasis. While they acknowledged renewable energy cooperation, they offered few concrete frameworks,



prioritising macroeconomic stability and employment over sustained energy dialogue.

A decisive turning point came with Argentina's Presidency in 2018, which for the first time introduced the term *"energy transitions"* in the Leaders' Communiqué.[101] This shift recognised the plurality of pathways available to countries, highlighting the role of diverse energy sources and technologies, as well as national circumstances, in achieving clean energy systems.[102] Argentina's framing laid the foundation for a more strategic conversation on energy transitions, which subsequent Presidencies could build upon.

Despite this progress, the emphasis on energy transitions remained uneven. Japan's Presidency in 2019 advanced discussions on energy innovation and hydrogen, but adopted a cautious framing, reflecting domestic energy debates. Saudi Arabia's Presidency in 2020 prioritised energy security and oil market stability during the pandemic, focusing on the *Circular Carbon Economy (CCE)* approach — a framework relevant to emissions reduction but one that did not place renewable energy or equity-based transition planning at its centre.[103]

Over time, the G20's energy transition dialogue has expanded to include value-chain integration, technology diversification, and nation-specific planning. The most significant development came under Indonesia's Presidency in 2022 with the introduction of the *Bali Energy Transitions Roadmap*.

This three-pillar framework emphasised accessibility, technology scaling, energy security, and financing, while embedding equity and flexibility to reflect national contexts.[104] Indonesia's roadmap provided a structured foundation for long-term collaboration. During India's G20 Presidency in 2023, the G20 Energy Ministers agreed on voluntary principles for several key areas of the energy transition, including collaboration on Critical Minerals and Hydrogen, and Energy Efficiency Investments. These voluntary, non-binding principles and action plans foster technology cooperation, financing access, and local value creation and development of sustainable supply chains to accelerate the clean energy transition. Brazil's Presidency in 2024 reinvigorated the energy transition agenda by hosting the *G20 Energy Transitions Ministerial Meeting*, which reaffirmed commitments to tripling renewable energy capacity and doubling energy efficiency improvements by 2030.[105] Brazil emphasized system flexibility, grid modernization, and energy storage as key enablers of transition resilience.

Looking forward, South Africa's Presidency is expected to carry forward this momentum, placing emphasis on equitable access and resilient supply chains.[106] The evolving dialogue suggests that future G20 discussions will prioritise critical minerals management, the diversification of clean energy technologies, and resilience against geopolitical shocks — ensuring that the energy transition is both sustainable and just.

Mobilizing clean energy financing and investment

Clean-energy financing within the G20 has evolved from ad hoc crisis responses and calls for multilateral development bank (MDB) support into a more strategic pillar of the G20's energy and climate agenda, aimed at mobilising public and private capital at scale.

In the immediate aftermath of the 2008–09 Global Economic and Financial Crisis, G20 leaders called for additional resources through international financial institutions. The London and Pittsburgh discussions led to agreements on "*a substantial increase in lending of at least USD 100 billion by the Multilateral Development Banks (MDBs)*" and on making additional resources available through the

IMF and MDBs to support recovery and lending.[107] During the 2008–09 global crisis, G20 economies allocated approximately 16% of their total fiscal stimulus to green investments, including low-carbon energy, energy efficiency, and pollution abatement — marking the first coordinated effort to link economic recovery with environmental goals.[108] This early focus on MDB capital and the global financial safety net reflected the priority of restoring liquidity and growth, while laying the groundwork for subsequent G20 engagement with development and climate-related finance.

As the climate and clean-energy agenda matured, the G20 increasingly turned to measures aimed at scaling private capital for green investment. Under China's Presidency in 2016, leaders welcomed the work of the *G20 Green Finance Study Group (GFSG)* and "*welcomed options put forward by the GFSG that are mandated to develop voluntary proposals for scaling up private capital for green investment*" — language that signalled a strategic pivot from public-only responses to blended and private finance mechanisms.[109] The GFSG's recommendations helped establish sustainable finance as a cross-cutting theme in the G20 finance track and laid the groundwork for integrating climate risk into financial systems and strengthening green bond standards. The *G20 Green Finance Study Group* was subsequently established as the *Sustainable Finance Working Group (SFWG)*, launched under Italy's Presidency in 2021.

Momentum continued to build across subsequent Presidencies. By the 2020s, the G20's framing of climate finance had become explicitly about scaling ambition from "*billions to trillions*."

South African President Cyril Ramaphosa, Indian Prime Minister Modi, and Brazilian President Lula on the sidelines of the G7 Summit in 2025.
Image source: Sputnik India

Indonesia's Presidency in 2022 advanced the agenda through structured roadmaps and sustainable finance frameworks, including the launch of the *Bali Energy Transitions Roadmap*. The *New Delhi Leaders' Declaration* (2023) affirmed that the G20 "*recognise the need for increased global investments to meet our climate goals … and to rapidly and substantially scale up investment and climate finance from billions to trillions of dollars globally from all sources*."[110] The declaration went further, noting an estimated requirement of "*USD 5.8–5.9 trillion in the pre-2030 period for developing countries*," and endorsed leveraging public finance—including MDBs and blended instruments—to mobilise private flows.[111] This marked a shift from merely ensuring MDB capacity to actively designing roadmaps and mechanisms to attract large volumes of private capital.

Brazil's Presidency in 2024 elevated clean-energy investment by convening the *G20 Energy Transitions Ministerial Meeting*, which reaffirmed commitments to tripling renewable energy capacity and doubling energy efficiency improvements by 2030. Brazil also emphasised mobilising the international private sector, particularly through partnerships with development banks and institutional investors.

Under South Africa's Presidency in 2025, the *Sustainable Finance Working Group (SFWG)* is advancing cooperation between MDBs, national development banks (NDBs), and vertical climate funds to strengthen co-financing and private-sector mobilisation.

Climate change and climate finance

Climate change and climate finance have evolved from peripheral concerns in the G20's early economic agenda to central pillars of its role in global governance. Between 2004 and 2015, climate change was primarily recognised as a systemic risk, typically embedded within broader energy and development discussions. The absence of concrete mitigation or finance commitments reflected both the G20's limited institutional mandate and the lack of consensus on climate action among major economies. Climate finance came to be recognised as a critical enabler of global climate action, with commitments becoming more structured after 2015, particularly in the wake of the Paris Agreement. Developed countries had made a climate finance commitment to jointly mobilise USD 100 billion per year by 2020 to help developing countries meet their climate change commitments.[112] This set the stage to expand climate finance discussions within the G20 as well.

A turning point came under China's Presidency in 2016, which formally introduced adaptation into the G20 agenda, marking its recognition as essential to managing the adverse impacts of climate change and strengthening global resilience.[113] The *2016 G20 Leaders' Communiqué* emphasised the importance of aligning financial flows with climate objectives and launched the *Green Finance Study Group (GFSG)* to explore mechanisms for mobilising private capital toward low-carbon investments. This development marked the beginning of structured discussions on climate finance, particularly in support of developing countries.

Since then, the G20 has progressively promoted the integration of adaptation strategies into national development plans to strengthen the resilience of vulnerable sectors such as agriculture, water, and health against climate shocks. Under Germany's Presidency in 2017, the G20 reaffirmed its support for the Paris Agreement and emphasised the need to mobilise USD 100 billion annually by 2020 for climate action in developing countries, with Germany's leadership helping to institutionalise climate finance as a recurring G20 priority.[114]

Between 2018 and 2019, the Presidencies of Argentina and Japan shifted the focus toward climate-risk management within financial systems. Japan notably introduced ocean-based climate action into the G20 agenda[115], laying the groundwork for Indonesia's

Under Brazil's Presidency in 2024, the Task Force for a Global Mobilisation against Climate Change brought the Sherpa and the Finance tracks together for the first time to advance technical discussions on mainstreaming climate change into the global economic agenda. Image source: G20 Brasil Summit

later *Ocean Engagement Group* and India's *Chennai High-Level Principles for a Sustainable and Resilient Blue Economy*.

The COVID-19 pandemic catalysed a new phase of climate-finance integration. Between 2020 and 2022, the Presidencies of Saudi Arabia, Italy, and Indonesia embedded climate mitigation and finance into recovery strategies. Indonesia's *Bali Energy Transitions Roadmap* emphasised scaling up private-finance mobilisation, operationalising JETPs, and enhancing access to concessional finance for vulnerable economies.

In 2023, India's Presidency advanced these priorities through dedicated working groups on energy transitions, renewable-energy deployment, and fossil-fuel subsidy reform. India also endorsed frameworks for blended finance and MDB reform. The *New Delhi Leaders' Declaration* (2023) recalled the collective goal of mobilising USD 100 billion per year by 2020, called on the G20 to support the operationalisation of COP decisions on funding arrangements for loss and damage, and urged progress towards establishing a New Collective Quantified Goal (NCQG) for the post-2025 period.[116]

Under Brazil's Presidency in 2024, the *Task Force for a Global Mobilisation against Climate Change (TF-CLIMA)* was established, "*bringing together for the first time the Sherpa and the Finance tracks to advance technical discussions on further mainstreaming climate change into the global economic agenda*" and proposing a forward-looking, non-binding agenda to help the G20 cooperate on climate ambition while respecting national circumstances.[117] Looking ahead, South

Africa's Presidency in 2025 is expected to deepen the equity dimension of climate finance. The TF-CLIMA and the *Sustainable Finance Working Group (SFWG)* have proposed aligning G20 financial-architecture reforms with UNFCCC priorities, emphasising predictable capital flows and inclusive investment platforms.

Development and inequality (in relation to energy, climate, and sustainable development)

The G20's approach to development and inequality has undergone a significant transformation — from a reactive, finance-driven posture to a more integrated framework that links development with energy transition, climate resilience, and equity. In the wake of the 2008–09 Global Economic and Financial Crisis, the G20's earliest large-scale operational interventions were development-oriented and framed as a crisis response.

At the London Summit in 2009, leaders committed to support a "*substantial increase in lending of at least USD 100 billion by the Multilateral Development Banks (MDBs), including to low-income countries,*" and pledged to "*make the transition towards clean, innovative, resource-efficient, low-carbon technologies and infrastructure*" as part of stimulus measures to restore growth and jobs.[118] This framing connected immediate development needs — such as credit, social protection, and trade finance — to green recovery priorities, but remained largely reactive and supply-focused.

It is time for the G20 to set the post-crisis agenda, and to build the platform that will ensure the sustained and balanced growth of the world economy in the months and years ahead. At the November Seoul Summit, we will place development issues firmly on the agenda.

Remarks by President Lee Myung-bak during the Davos Forum Special Address in 2010

Image source: Korean Culture and Information Service (Jeon Han)

A just world is a world in which people have unimpeded access to food, health, housing, education, and decent jobs. These conditions are essential to building prosperous, free, democratic and sovereign societies.

President Lula's speech at the pre-launch of the Global Alliance against Hunger and Poverty

Image source: Palácio do Planalto

Following the crisis, the G20 moved to institutionalise development as a standing theme. At the Toronto Summit in 2010, leaders agreed "*to establish a Working Group on Development*," and later that year the *Seoul Development Consensus for Shared Growth* set out a multi-year action plan built around nine pillars: infrastructure; private investment and job creation; human resource development; trade; financial inclusion; resilient growth; food security; domestic resource mobilisation; and knowledge sharing.[119,120] This sequence established the *Development Working Group (DWG)*, launched under South Korea's Presidency in 2010, and marked the transition from ad hoc crisis assistance to a sustained G20 development agenda that explicitly linked shared growth, poverty reduction, and resilience.

After the Paris Agreement in 2015, the G20's development dialogue increasingly referenced climate as a cross-cutting challenge for growth and inequality. Presidencies and workstreams began to draw explicit connections between climate impacts, vulnerability, and financing needs for developing countries. At the Hangzhou Summit in 2016, under China's leadership, leaders endorsed the *G20 Action Plan on the 2030 Agenda for Sustainable Development*, which emphasised integrating climate and energy goals into national development strategies.[121]

A renewed emphasis on equity emerged during the COVID-19 recovery phase, particularly under the Presidencies of Italy (2021) and Indonesia (2022). Italy prioritised an inclusive recovery, while

Indonesia's *Bali Energy Transitions Roadmap* linked energy access and clean-energy investment to just transitions and financing for vulnerable economies.

More recently, Brazil, India, and South Africa have sought to reframe G20 climate and energy priorities through a justice and equity lens. South Africa's Presidency in 2025 has emphasised debt relief, critical minerals sovereignty, and climate finance as responses to structural inequality — all aimed at ensuring that development pathways for the Global South are not sacrificed in the energy transition.[122] These interventions signal a stronger effort by emerging economies to position energy policy and transition finance as development-first issues.

Looking ahead, the G20's development and inequality dialogue — as it intersects with energy and the clean-energy transition — is likely to prioritise three interlocking areas: (1) debt relief and better sovereign debt tools so countries can invest in clean energy and social protection without unsustainable burden; (2) climate finance scaling and MDB reform to improve concessional windows and leverage private capital for equitable energy access; and (3) critical minerals governance and supply-chain arrangements to ensure that countries with mineral endowments can capture value and avoid exploitation while the world scales renewables.[123,124,125,126]

> **South Africa has pioneered the use of country platforms to coordinate funding through the Just Energy Transition Partnership. We continue to advocate for greater concessional and grant funding to support the energy transition in developing economies....**
> **A priority of our G20 Presidency is to harness critical minerals for inclusive growth and sustainable development. We need a G20 framework on green industrialisation and investment that promotes value addition to critical minerals close to the source of extraction.**
>
> Address by President Cyril Ramaphosa at the G20 Finance Ministers' and Central Bank Governors' Meeting in February 2025

Image source: Ricardo Stuckert

This is a clear signal that the international community is committed to improving debt sustainability and restoring macroeconomic stability in debt-distressed countries. Inclusive representation is essential for fostering a truly cooperative and responsive global financial order.

Remarks by Deputy Finance Minister Dr David Masondo at the third G20 Finance Ministers and Central Bank Governors Meeting, in Durban, South Africa

Image source: www.treasury.gov.za

Debt and Financial Resilience

The evolution of debt sustainability and financial resilience has been a central theme of the G20's agenda since the 2008 global economic and financial crisis. Initially, discussions centred on restoring financial stability and reforming the global financial architecture. Over time, however, the G20's approach expanded to address sovereign-debt challenges in developing countries, integrate climate considerations, and promote inclusive economic growth.

In the immediate aftermath of the 2008 Global Economic and Financial crisis, the G20's primary focus was on strengthening the global financial system. The Pittsburgh Summit in 2009 operationalised global financial regulatory reforms — including the implementation of Basel III — and shifted oversight from the G7 to a consensus-based G20 framework. At this stage, discussions on debt sustainability were largely embedded within broader efforts to restore fiscal stability in advanced economies and to enhance global financial governance.[127]

Between 2010 and 2014, the G20's agenda remained focused on financial stability, with limited attention to sovereign-debt challenges in developing countries. The Eurozone debt crisis prompted G20 coordination to reinforce financial firewalls and augment IMF resources, but developing-country debt issues were not prioritised.[128] Presidencies during this period — such as Russia and Australia — emphasised strong, sustainable, and balanced growth, the strengthening of public finance frameworks, and the resilience of financial systems through continued implementation of Basel III and derivatives regulation.[129,130]

Under Argentina's Presidency in 2018, debt sustainability gained greater prominence, linked to mobilising infrastructure finance and sustainable investment in emerging markets.[131] This marked the beginning of a shift toward integrating debt sustainability with broader development and climate objectives.

It was during Saudi Arabia's Presidency in 2020, amidst the COVID-19 pandemic, that sovereign-debt relief emerged as a core G20 agenda item. The Riyadh Declaration underscored the urgency of coordinated debt treatments to support vulnerable countries during pandemic recovery, leading to the launch of the *Debt Service Suspension Initiative (DSSI)*, which temporarily eased fiscal pressures in 73 low-income countries.[132] This was followed by Italy's Presidency in 2021, which endorsed the *Common Framework for Debt Treatments* beyond the DSSI, designed to provide more structural debt solutions for eligible countries facing insolvency risks.[133]

India's Presidency in 2023 prioritised strengthening multilateral debt-restructuring processes and amplifying the voice of Global South borrowers in debt negotiations, reiterating that debt sustainability is critical for enabling inclusive economic recovery and achieving the SDGs.[134]

Image source:
Saudi Press Agency

We (G20) provided emergency support to the most vulnerable countries in the world, where the pandemic risks jeopardizing decades of development progress already achieved. With the Debt Service Suspension Initiative, we made available more than $14 billion in debt relief to the most vulnerable countries, whose collective population exceeds one billion.

Remarks of His Royal Highness Prince Mohammed Bin Salman Bin Abdulaziz Al Saud during the G20 Riyadh Summit in 2020

South Africa's Presidency in 2025 introduced a more comprehensive approach, with key priorities including debt sustainability for low-income countries and the mobilisation of finance for a just energy transition. The *Energy Transitions Working Group (ETWG)* places emphasis on advancing an energy transition that is just, affordable, and inclusive. This dual approach sought to address both debt sustainability and the need for sustainable energy infrastructure in developing countries.[135,136]

Trade and Investment (in relation to energy, climate, and sustainable development)

The G20's approach to trade and investment has evolved from a narrow focus on economic recovery in the aftermath of the 2008 Global Economic and Financial crisis to a broader framework that integrates sustainability and equity. Successive Presidencies have played a pivotal role in shaping this agenda, emphasising the alignment of trade and investment policies with the clean-energy transition and reflecting a wider recognition of the interconnections between trade, investment, and the SDGs.

In the immediate aftermath of the 2008 crisis, the G20 underscored the importance of trade and investment as drivers of economic recovery. The Pittsburgh Summit in 2009 highlighted the need to phase out inefficient fossil-fuel subsidies, recognising both their distortionary impact on markets and their role in hindering investment in clean-energy sources.[137]

Multilateral cooperation is our only hope of overcoming unprecedented challenges, including slow and uneven growth, rising debt burdens, persistent poverty and inequality, and the existential threat of climate change.

Address by President Cyril Ramaphosa at the G20 Finance Ministers' and Central Bank Governors' Meeting in February 2025

Image source: Ricardo Stuckert

The establishment of the *Trade and Investment Working Group (TIWG)* in 2016 marked a significant step in integrating sustainable development into trade and investment discussions. At the Hangzhou Summit, leaders adopted the *Guiding Principles for Global Investment Policymaking*, which emphasised the role of trade and investment in achieving the SDGs and highlighted the need for policies that promote inclusive growth and environmental sustainability.[138] Under Argentina's Presidency in 2018, the G20 Trade and Investment Ministerial Meeting addressed the growing inequality associated with trade, signalling a shift towards integrating equity into trade policy.[139]

Italy's Presidency in 2021 elevated "*trade and environmental sustainability*" as a central theme, reflecting increasing recognition of the interlinkages between trade policy and environmental objectives. The *Rome Leaders' Declaration* committed to strengthening actions to halt and reverse biodiversity loss by 2030, underscoring the role of trade in advancing environmental goals.[140] Building on this momentum, Indonesia's Presidency in 2022 launched the *G20 Compendium on Promoting Investment for Sustainable Development*, which identified renewable and clean energy as priority sectors for sustainable investment promotion.

In 2023, India's Presidency elevated the role of trade in building resilient and sustainable Global Value Chains (GVCs). The G20 endorsed *High-Level Principles on Digitalisation of Trade Documents*, aimed at reducing trade barriers for developing countries and micro, small and medium-sized enterprises (MSMEs), thereby improving access to clean-energy technologies and markets.[141] Brazil's Presidency in 2024 further advanced the integration of trade and sustainable development. The Leaders' Declaration endorsed the *G20 Principles on Trade and Sustainable Development*, reinforcing the commitment to ensuring that trade and sustainable development are mutually supportive.

South Africa's Presidency in 2025 has sought to integrate trade, investment, and the clean-energy transition, with the *Energy Transitions Working Group (ETWG)* advocating for an energy transition that is just, affordable, and inclusive, and aligning trade and investment policies with clean-energy objectives.

Chapter 4

Levers of shift: From finance to climate

Geopolitical and economic triggers, and global crises as catalysts

The rise of emerging powers such as China, India, Brazil, and South Africa drove demands for a more inclusive global development agenda. Their growing economic weight led to formal commitments within the G20 to shift IMF quotas towards dynamic emerging economies and to integrate development as a core pillar of the global economic agenda.[142] This structural shift moved the G20 beyond its G7-centric roots, embedding Global South priorities — including infrastructure finance, food security, and sustainable growth — into its communiqués.[143]

Strategic debates on energy security further shaped the G20 agenda. Beginning with fossil-fuel subsidy reform at the Pittsburgh Summit in 2009, energy security became embedded as both a climate and geopolitical concern.[144] These debates intensified with oil-market volatility, underscoring the interdependence of energy policy, development, and macroeconomic stability.[145]

The COVID-19 pandemic reinforced the links between global health, climate, and the economy, elevating debt relief, pandemic preparedness, and green recovery to the centre of the G20 agenda under Saudi Arabia's Presidency in 2020.[146] The *Debt Service Suspension Initiative (DSSI)* was launched to address urgent liquidity needs in 73 low-income countries, while G20 communiqués emphasised sustainable and inclusive recovery pathways.[147]

Climate-induced disasters have also acted as catalysts, underscoring the economic implications of environmental crises. The increasing frequency and severity of such events have prompted the G20 to integrate climate resilience into economic planning, as reflected in recent Presidencies' emphasis on adaptation finance, disaster-risk reduction, and just energy transitions.[149] This marks a growing recognition within the G20 of climate change as a systemic risk to global economic stability.[150] Overall, these geopolitical shifts and crises have expanded the G20's role from macroeconomic stabilisation to broader global governance, integrating development, health, energy, and climate into its economic coordination agenda.

Influence on and by global governance narratives

The G20 has played a pivotal role in shaping global governance narratives on climate, energy, and development by embedding these priorities within the international economic agenda. Moreover, alignment between G20 agendas and UN milestones remains evident. The adoption of the *2030 Agenda for Sustainable Development* in 2015 marked a milestone in aligning global development priorities. The following year, China's G20 Presidency (2016) explicitly linked its sustainability agenda to the SDGs by prioritising green finance, energy transition, and implementation of the Paris Agreement.[151] China's Presidency also created the *Green Finance Study Group* to promote green bonds and financial flows aligned with sustainable development, representing the first systematic inclusion of green finance within the G20.[152] This positioned the forum as an influential platform for operationalising green financing and the implementation of the SDG agenda.[153]

India's G20 Presidency in 2023 came at the "*midpoint of implementation of the 2030 Agenda*", offering an opportunity for reflecting on the progress, impact, and highlighting a significant SDG financing gap of USD 4 trillion annually by 2023.[154]

Given this, the Presidency emphasized "*guiding the future direction of the G20 to accelerate implementation of the 2030 Agenda* and facilitating the adoption of the *G20 2023 Action Plan to Accelerate Progress on the SDGs*".[155] This Action Plan is a multi-year live document, focusing on areas such as "*digital transformation, gender equality and empowerment of women, and implementing sustainable, inclusive and just transitions globally, while leaving no one behind*".[156]

Over the past two decades, the G20's influence in global climate and development governance initially expanded as it became the premier forum for economic coordination, with climate framed as a macroeconomic risk.[157] The G20 remains a critical platform for aligning economic, climate, and development narratives with UN milestones. Its unique composition of advanced and emerging economies positions it as an operational bridge between political commitments made under the UN and their financial and regulatory implementation at the global level.[158] [159]

Image source: GODL-India

The world looks upon the G20 to ease the challenges of growth, development, economic resilience, disaster resilience, financial stability, transnational crime, corruption, terrorism, and food and energy security. In all these areas, the G20 has capacity to build consensus and deliver concrete results.

Prime Minister Narendra Modi's address during the meeting of the G20 Foreign Ministers

India's Prime Minister Shri Narendra Modi welcomes the African Union President Comoros Azali Assoumani as a permanent member of the G20 at India's G20 Leader's Summit in September 2023. Image source: Sputnik India

Expanding membership and participation

The expansion of membership and participation in the G20 represents an important opportunity to confront critical global challenges such as pandemics, climate change, poverty, and sustainable development. As the G20 adapts its agenda to today's challenges, broadening its membership is crucial for strengthening both its representation and its reach.

The inclusion of the African Union (AU) as a G20 permanent member represents an important shift in Africa's integration into global governance, as the G20 provides a high-level platform for advancing critical development and climate priorities.[161] As a G20 member now, the AU can better promote the continent's economic and environmental concerns, especially regarding climate finance and inclusion in the global financial system.[162] On energy specifically, Africa's representation is vital, given the continent's disproportionate vulnerability to climate change despite contributing less than 4% of global emissions.[163] Under its current Presidency, South Africa has advanced this agenda by championing the *Just Energy Transition Partnership (JETP)*, an initiative to expand global climate finance and support an inclusive global energy transition.[164]

On the development and climate front, South Africa has emphasised climate-adaptation financing and deepened G20–AU collaboration through frameworks such as the *G20 Compact with Africa*, which seeks to mobilise private-sector investment to drive sustainable growth.[165]

South Africa's Presidency has advanced this dialogue by placing financial reform, equitable climate and development frameworks, and the mobilisation of funding for vulnerable countries at the centre of its agenda.[166] While bringing its own national perspective, South Africa has also amplified broader African priorities by drawing attention to the structural inequalities that continue to constrain developing economies. With the AU now a permanent G20 member, the agenda will increasingly emphasise inclusive and sustainable development, further advancing both representation and momentum for the Global South.

This push for inclusion is vital, as membership of the G20 allows the African Union to amplify Africa's voice in global economic governance while ensuring that the development priorities of the African Continent and the Global South find expression firmly and permanently on the G20 agenda.[163]

Remarks by Minister Ronald Lamola at the 46th Ordinary Session of the Executive Council

Image source: FCDO/Nacho Santana

Chapter 5

Looking ahead: The next two decades of the G20

Over the next two decades, the G20 stands at a critical inflection point in shaping global responses to energy and climate challenges, amid rapid technological, environmental, and socio-economic change. The preceding analysis has traced the forum's evolution from a financial-crisis response mechanism into a central platform for navigating planetary risks, advancing innovation, and addressing systemic inequality. Drawing these threads together, the conclusion distils the lessons, dilemmas, and opportunities that will shape the G20's legacy over the coming decades — and considers how the choices made today may set the trajectory for global governance tomorrow.

Emerging technologies as catalysts and challenges: Artificial intelligence, quantum computing, and machine learning in energy and climate

Artificial intelligence, quantum computing, and advanced machine learning now form the technological infrastructure through which governments and industries pursue decarbonisation and climate resilience. Looking ahead, the G20 is no longer content to discuss these tools in the abstract; it is directly engaged in setting global standards for their responsible development and deployment, building on the groundwork laid in recent years. Under Japan's Presidency in 2019 the G20 released a set of AI principles that acknowledged the societal challenges associated with artificial intelligence and committed to a "*human-centred approach to AI*." G20 leaders also emphasised the importance of data privacy, AI capacity-building and skills development, and international coordination on AI research and innovation.[167]

This trajectory advanced further with the landmark *2024 Rio Communiqué* and the accompanying Science20 Brazil recommendations, which formalised a G20 commitment to develop a common ethical framework for AI and quantum technologies across the energy–climate nexus. The Science20 engagement group specifically recommended "*encouraging global AI governance and ethical use, knowledge sharing, and responsible management of AI technologies to benefit countries equitably*" in areas spanning the bioeconomy, energy transition, and health challenges. More recently, South Africa's Presidency in 2025 established the *Task Force on AI, Data Governance, and Innovation for Sustainable Development*, underscoring the growing importance of these technologies in the G20's agenda.[168]

As the technological, economic, and social implications of AI expand, the G20 is likely to continue advancing global, principles-based standards. These efforts reflect an acknowledgement of both the transformative potential of AI and quantum mechanics — enabling hyper-precise energy-system optimisation and breakthrough climate modelling — and their risks, including deepened inequality, digital surveillance, and transnational vulnerabilities. By cultivating shared standards and public–private investment platforms for energy-focused AI and quantum applications, the G20 is actively seeking to balance innovation with precaution. Intergovernmental pilot initiatives such as quantum-enhanced forecasting and climate-vulnerability analysis are already underway, as evidenced by the forum's support for AI-driven solutions in climate adaptation and energy-system optimisation.

Managing planetary boundaries and scarcity: Food-Water-Energy nexus

Central to the G20's agenda is the recognition that the world's biophysical limits are inseparably linked to questions of technology, development, and security. In 2011, the forum led by France, addressed the food–water–energy nexus by creating the *Agricultural Market Information System (AMIS)* to promote transparency and stability in global food markets.[169] In 2016, the adoption of the *G20 Initiative on Supporting Industrialisation in Africa and Least Developed Countries (LDCs)* acknowledged the nexus between food security and sustainability, calling for industrialisation strategies that integrate agriculture, food, energy, and water.[170] A year later, leaders committed to improving water-resource management as a foundation for food security and sustainable development. Under India's Presidency in 2023, the G20 endorsed the *Deccan High-Level Principles on Food Security and Nutrition*, which included commitments to strengthen climate resilience in agriculture and to develop sustainable technologies addressing climate change and biodiversity loss.[171] Collectively, these milestones illustrate the gradual institutionalisation of the food–water–energy nexus within the G20 agenda.

Image source:
Palácio do Planalto

Nothing is as absurd and unacceptable as the persistence of hunger and poverty when we have so much abundance at our disposal, so many scientific and technological resources, and the artificial intelligence revolution. The Global Alliance was born out of this political will and spirit of solidarity [to fight hunger and poverty worldwide].

President Lula's speech at the pre-launch of the Global Alliance against Hunger and Poverty in 2024

President Lula da Silva of Brazil and FAO Director-General QU Dongyu at the G20 Summit in 2024 unveiling of the Global Alliance against Hunger and Poverty initiative. Image source: FAO/Max Valencia

The food–water–energy nexus has also become a proving ground for the G20's legitimacy. Water scarcity increasingly shapes agricultural output across entire regions; energy policy underpins the resilience of food and water systems; and climate shocks reverberate unpredictably across all three sectors. From 2023 onwards, G20 summits have spearheaded the development of cross-border data-sharing platforms and early-warning systems targeting food-security risks in the Global South. The creation of the *Task Force for the Establishment of a Global Alliance against Hunger and Poverty*, under the Brazilian G20 Presidency in 2024, reflects this integrated approach to nexus challenges. New institutional mechanisms — such as joint investment in planetary-boundaries research and scenario-based planning — point to the emergence of a more holistic risk-governance philosophy. By framing food, water, and energy as inseparable from planetary health, the G20 is helping to drive both global research and political consensus toward integrated rather than siloed solutions.

Debt architecture reform and alternative development models for the Global South

For developing economies, climate and energy transitions are inseparable from questions of financial sustainability and systemic risk. The G20 now faces mounting pressure to steward a new era of debtor–creditor relations, particularly for climate-vulnerable nations. Recent presidencies have advanced bold—if overdue—positions that green and climate-linked bonds, sovereign debt-for-nature swaps, and concessional development finance are indispensable tools.

As the premier platform for debt-architecture reform, the G20 provides both convening authority and political legitimacy to enable adaptive debt-relief frameworks. These frameworks can incentivise climate-positive investment and support a new generation of alternative development models. The COVID-19 pandemic exposed stark vulnerabilities in the global debt system, especially for low- and middle-income countries.[172] In response, Saudi Arabia's Presidency (2020) launched the *Debt Service Suspension Initiative (DSSI)*, which paused debt repayments for low-income countries and suspended USD 12.9 billion in debt service.[173]

Beyond emergency relief, the G20 has since shifted toward expanding climate and clean-energy finance. The endorsement of the *Roadmap towards Better, Bigger, and More Effective Multilateral Development Banks (MDBs)* under Brazil's Presidency in 2024 marked a critical milestone, positioning MDB reform at the centre of sustainable finance mobilisation.[174] Equally significant, the inclusion of the African Union as a permanent member in 2023 created space for debt-vulnerable regions to shape reform discussions from within.[175]

Taken together, these actions demonstrate the G20's evolving approach to debt sustainability: from crisis-driven relief to a more systemic framework that prioritises climate, equity, and resilience. In linking sovereign financial health to planetary boundaries, the G20 is redefining debt sustainability not only as an economic concern, but as a foundational pillar of a just energy and climate transition.

Disasters should not be feared or avoided, but rather studied, understood, and used as catalysts for preparedness, innovation, and long-term development.

Speech by Shri Nityanand Rai, Minister of State for Home Affairs, Government of India in 2025 on the 21st Anniversary of the National Disaster Managment Authority

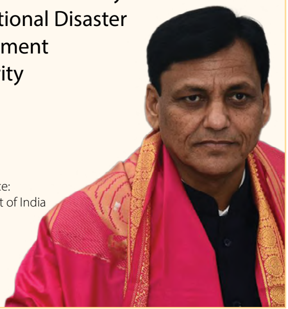


Image source: Government of India

Resilience amid crises and building adaptive capacity

What emerges from the G20's recent record is a forum that no longer responds to crises in isolation. Financial disruption is now joined by health emergencies, migration surges, pandemic spillovers, and climate-fuelled disasters—risks that interact and amplify one another. At the epicentre of these systemic risks lies energy security, increasingly recognised as the connective tissue between economic resilience, social stability, and climate action.

Recent G20 resilience frameworks emphasise pre-emptive investment in infrastructure—whether health systems, digital networks, or energy grids—combined with joint risk data-sharing, regional adaptation funds, and coordinated scenario analysis for multi-dimensional global shocks. Under Italy's Presidency in 2021, the G20 established the *Joint Finance–Health Task Force* to strengthen collaboration between finance and health ministries for pandemic preparedness and response.[176] Indonesia (2022) advanced this by launching the *Pandemic Fund*, designed to improve financing and resource mobilisation for global health security.[177] Recognising the intensifying risks posed by climate-induced disasters, India's Presidency (2023) created a permanent *Disaster Risk Reduction Working*

Group, tasked with promoting resilient infrastructure, enhancing early-warning systems, and building disaster-response capacity.[178] Today, the G20 also partners with the *Financial Stability Board (FSB)* to address and regulate climate-related financial risks, reflecting the growing integration of environmental shocks into global financial oversight.[179]

Together, these efforts mark the emergence of a G20 playbook—refined through COVID-19 and escalating environmental crises—that fuses finance, technology, and humanitarian imperatives into a proactive, systemic approach to global risk governance.

Chapter 6

The G20's future in a multipolar and fragmented order

In the last two decades, the G20 has transformed from a forum primarily concerned with economic policy and crisis management into a central platform for global governance. Since its establishment in 1999 as a meeting of Finance Ministers and Central Bank Governors, the G20 has embodied multilateral cooperation, coordinating international economic policy and emergency responses to crises. Its role expanded dramatically during the 2008 Global Economic and Financial crisis, when it was elevated to a leaders' summit tasked with stabilizing markets and restoring growth.

What began as a mechanism for macroeconomic coordination has since broadened into a forum addressing some of the most complex challenges and potential opportunities of our time: climate change, energy security, digital transformation, and global health. This evolution mirrors shifting global dynamics and the emergence of a multipolar world, where influence is increasingly distributed across diverse regions and economies.

In today's fragmented multilateral order, the G20's relevance depends on its ability to adapt and deliver tangible outcomes. Consensus-based declarations have long been the norm, but the urgency of interconnected crises is driving a shift toward action-oriented delivery.[180] Energy markets illustrate this transition vividly. No longer merely economic concerns, they now sit at the intersection of climate goals, technological innovation, and geopolitical stability. The G20's ability to bridge these domains will define its continued legitimacy.

Image source: Ludovic Marin

Over the past decade, climate and energy have steadily moved to the center of the G20's agenda. This shift is not simply thematic—it reflects the lived realities of its members. For countries such as India and South Africa, energy access and reliability remain pressing challenges; for others, such as South Korea and the United States, decarbonizing power grids and securing energy for data-intensive industries are urgent priorities. These diverse needs underscore the importance of a flexible and inclusive G20 mandate—one that ensures a just and equitable energy transition, and guarantees that no country is left behind.

South Africa's presidency in 2025 marks a pivotal moment in the G20's evolution. As the first African nation to lead the forum, it is championing industrialization, inclusive growth, and just transition principles—priorities that reflect the continent's broader aspirations for economic sovereignty and sustainable development. South Africa has framed the energy transition not only as a climate imperative but as a driver of prosperity, emphasizing local value chains, job creation, and regional interconnectivity.[181] This approach aligns closely with the African Union's newly formalized role within the G20, signalling a more representative and equitable global governance architecture.

One of the defining characteristics of today's multipolar world is uneven development. The global landscape is not one of universal prosperity or decline, but of heterogeneous evolution.

Some regions are advancing rapidly in green innovation and digital infrastructure, while others continue to struggle with basic energy and health access. For the G20 to remain relevant, it must acknowledge this complexity and support differentiated pathways to development. South Africa's call for inclusive frameworks—such as universal energy access and green industrialization—offers a blueprint for how the forum can respond to these diverse realities.

Energy illustrates most clearly the imperative for international cooperation. No country possesses a perfect balance of supply and demand, making cross-border collaboration indispensable. The U.S.–EU energy agreement of 2025, under which American LNG exports help stabilize European markets, underscores the interdependence of global energy systems.[182] Meanwhile, South Korea's push to deliver carbon-free electricity in 15-minute increments demonstrates how innovation must be paired with regulatory foresight and policy coordination.[183] In both cases, the G20 can serve as a governance platform: setting common standards, facilitating finance, and ensuring that access to clean energy technologies is equitable across developed and developing economies alike.

As the century advances, the G20's authority is by no means guaranteed. The emergence of a multipolar world—defined by competing regional blocs and growing skepticism toward multilateralism—casts its continued relevance into sharp relief. Can the group maintain credibility as consensus frays? And will energy emerge as the new binding force, eclipsing macroeconomic policy as the forum's raison d'être? The record of the past decade points to a decisive pivot toward operational initiatives: pooled climate adaptation labs, systemized technology transfer mechanisms, and collective crisis reserves. Much as macroeconomic stability once anchored the G20's identity, energy has become the gravitational center, drawing rival blocs into cooperation around common threats and shared opportunities. The forum's unique position – bridging advanced and emerging economies, and anchoring both technical and political dialogue – remains indispensable, even as alternative platforms proliferate.[184]

South Africa's presidency has underscored that global governance must also be about balance and fairness. As major economies advance their own energy and climate agendas, the G20 has a responsibility to ensure that underrepresented regions—particularly in the Global South—are not sidelined. This includes championing equitable trade in critical minerals, securing fair access to climate finance, and promoting inclusive digital infrastructure. By placing these issues at the heart of its agenda, South Africa is reshaping the G20 mandate to reflect the realities of a multipolar world—where power is dispersed, interests diverge, but shared solutions remain imperative.

The G20's evolution from a finance-focused forum to a multidimensional platform is not simply the product of successive crises; it is evidence of its capacity to adapt. Its presidency-driven model, which allows each host nation

Image source: Wagner Meier/Getty Images

to bring new voices and perspectives to the table, is its greatest strength in an age where challenges are interlinked and responses must be collective.

The next two decades will not see the G20 as omnipotent, nor should they render it irrelevant. Its enduring value lies in its ability to adapt: to shape global discourse, broker shared standards, and mobilize resources for the public good. If the forum can remain responsive to planetary boundaries while advancing both technological innovation and social justice, its role in the decades to come will be indispensable.

Ultimately, it is the G20's lived practice of bridging negotiation with delivery—across energy, climate, finance, and security—that offers not certainty, but a vital measure of hope, ingenuity, and coherence amid the turbulence of global transformation. The G20's mandate has always evolved, and it will continue to do so. Its strength lies in its ability to accommodate the diverse priorities of its members while fostering the spirit of international cooperation. Energy markets, by their very nature, demand cross-border collaboration. Even resource-rich nations must engage globally to balance supply and demand. The G20 provides the space to navigate these complexities, ensuring that governance principles remain fair, inclusive, and forward-looking.

As the world confronts the defining challenges of climate change, energy transition, and digital transformation, the G20 stands as a vital forum for shaping a more equitable and sustainable future.

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