



Task Force 4
Refuelling Growth: Clean Energy
and Green Transitions



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UNLOCKING SUSTAINABLE FINANCE TO ACCELERATE A JUST ENERGY TRANSITION

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Abstract






This report builds on the G20 Bali Sustainable Finance Working Group recommendations on just energy transitions, from the viewpoint of the financial sector. The recommendations on specific areas of G20 leadership, for both financial sector and real economy, are summarised as follows:


- G20 as principal shareholders directs Multilateral Development Banks to respond to the Bridgetown Initiative, a proposal to reform the world of development finance for climate action, by leveraging their resources to substantially increase the volume of climate finance for mitigation and adaptation.
- G20 institutionalises Debt-for-Development Swaps through clean energy investment in African countries undertaking debt restructuring.
- G20 leadership is in a good position to unlock sustainable finance to operationalise just energy transitions by leading in developing procedures for sharing the public-good aspects of Net-Zero Emissions innovations, supporting policy partnerships at regional and national levels to accelerate the sharing of good practices, establishing a high-level committee that develops standardised Monitoring, Reporting and Verification protocols, and considering expanding carbon pricing to cover the global commons.



The Challenge



1



Just energy transitions follow a sustainable and equitable pathway while shifting from a fossil fuel-based energy system to Net Zero Emissions (NZE) achieved by nationally committed targets. As energy affects almost every aspect of human wellbeing, such a transition impacts the achievement of Sustainable Development Goals (SDGs) by disrupting stable jobs, and putting the achievement of social inclusion and poverty eradication programs at risk. About US\$ 4 trillion in annual global renewable energy investments are required until 2030 to reach net-zero emissions by 2050.¹


The global energy crisis since 2022 has forced all countries, especially the developing economies, to increase their reliance on the lowest-cost fossil fuel-based energy. Low-cost financing for energy transition has been advocated through the G20 Energy Transitions Working Group (ETWG) by this year's presidency which requires *inter alia* a roadmap for channelling adequate concessional international finance for deploying critical technologies through collective efforts to sustain energy security through adoption of global best practices for supporting just, affordable, and inclusive energy transitions.



The G20's Role



2



The 2023 G20 SFWG Meeting has prioritised three areas:

- Mobilisation of timely and adequate resources for climate finance
- Enabling finance for the SDGs
- Capacity building of the ecosystem for financing toward sustainable development.


This Policy Brief explores the real economy implications of these targets. It argues that the massive physical shift from fossil fuels to zero-carbon energy supplies requires coordinated ‘whole

of economy’ partnerships between the G20, other OECD countries, and emerging economies as necessary conditions to scale-up climate finance. These incorporate political economy decisions on how to minimise social and economic disruptions affecting the poor, particularly in sub-Saharan African countries, suffering from energy poverty.² Another priority is how to mitigate risks of income disruptions for workers whose jobs are targeted for elimination as coal mines close down. A third priority is how to strengthen governance through energy efficiency optimisation, and deal with stranded energy capital assets retired before

Box 1. India: Massive Physical Shift Required in the Energy Sector

India has proposed a massive energy restructuring in the real economy, which requires mobilisation of finance on an appropriate scale to promote transition towards a greener, more resilient, and inclusive society. Low-cost financing is a necessary condition for achieving these ambitious goals much beyond resource mobilisation capacity at the national level. Proposals include:³

- 500 GW of renewable energy capacity will be installed by 2030 as part of India’s journey to achieve net-zero by 2070.
- India’s National Green Hydrogen Mission seeks to ensure development of green hydrogen production capacity of at least 5 MMT (Million Metric Tonne) per annum with an associated renewable energy capacity addition of about 125 GW, which will reduce fossil fuel imports of over US\$12 billion. The Mission also seeks to create export opportunities for green hydrogen and its derivatives; and decarbonise the industrial, mobility and energy sectors.



the end of their design life. These three ‘how to’ aspects require G20 leadership for reasons elaborated below.

First, the massive physical shift required in every country to substitute fossil fuels with zero-carbon energy supplies requires ‘whole of government’ policies.


‘Whole of economy’ policies for Just Energy Transitions. The 2022 G20 SFWG identified four categories relevant for financing just energy transitions that apply to the real economy as well. The first is policy mainstreaming of economic instruments, such as carbon pricing through Emissions Trading Systems (ETS), Cap and Trade that have been initiated in several countries. By providing an economic value for carbon, this instrument incentivises decarbonisation behaviours among businesses and consumers alike.

The second category consists of the central banks signaling financial markets that building country resilience to climate-related risks is as important a goal as inflation targeting or ensuring financial stability. Many central banks have already begun this

process by institutionalising climate bonds, promoting dedicated green bond portfolios within their foreign exchange reserves, and in some countries prohibiting trade in bonds issued from fossil-fuel dependent regions. Collateral frameworks have also been developed on what assets can be pledged by a financial institution to receive a loan from the central bank.

Third are fiscal policies providing tax incentives for zero-carbon investors, funding for dedicated climate funds, implementing green public sector procurement. Sector-focused grants targeting green affordable housing, electric mobility, circular economy, among others, have also been initiated. The fourth category consists of regulations mandating how to achieve green transitions by specific sectoral decarbonisation actions, creating business and consumer incentives for decarbonisation complemented by a Monitoring, Reporting and Verification (MRV) system that digitally tracks the achievement of pledged climate milestones.

Energy Industry’s Self-interest. Apart from ‘whole of government’ policies, the global energy industry is an important partner for accelerating NZE goals.




They not only have internal financial resources but also the organisational capacity to lead innovations in zero-carbon and carbon removal technologies. Industrial response has been positive. A survey of the world's 300 leading companies in the energy sector confirmed that NZE was the top business priority for more than half the companies.⁴ A large majority (95 percent) of respondents reported NZE as a significant contributor to business growth, and 88 percent named 'energy transition' as one of their top three business priorities. Moreover, 50 percent of surveyed companies focused on defining Scope 1 and 2 emissions targets (direct emissions such as from power generation), while only 17 percent targeted Scope 3 emissions (emissions of downstream business energy usage). However, tackling Scope 3 emissions was not a priority among the surveyed companies, necessitating regulatory oversight and guidance.

Overall, NZE requires system-wide transformations affecting the entire energy value chain. Companies reported that technological innovations were already reshaping the energy transition, notably through cost-competitive

solar and wind energy systems, and will continue benefiting from ongoing research and development on less established solutions, such as on the hydrogen and synthetic fuels, carbon capture, and storage. However, incremental costs of accelerating the transition required bridging finance through public and private equity funding, along with venture capital participation. For power companies, concessional public funding was essential to upgrade power grids through integration with renewable energy supply. For small and medium-size firms, funding energy value chains was available from banks that had decarbonisation targets.

Sustained citizen support of NZE.

Citizens as the ultimate beneficiaries of energy services play a critical role in achieving NZE targets.⁵ Opposition or support for NZE depends on how far local rights and entitlements are safeguarded, or else disrupted, during the decades-long transition. Participatory and inclusive processes are therefore essential before milestones on an NZE pathway are finalised.⁶ For example, citizens in developing countries value NZE less than how basic access, reliability and affordability




of energy, housing, transportation, water and other municipal services are delivered. At the same time, they are aware of the adverse health and quality of life impacts of indoor and outdoor air pollution caused by incomplete combustion of fossil fuels. An exogenous factor influencing consumer attitudes is that energy-intensive household energy appliances are usually based on standards and labeling adopted in OECD countries, and their Scope 3 emissions will follow similar NZE pathways as in OECD countries.

Second, ensuring social equity and minimising income disruptions.

Energy poverty in many developing countries remains a significant impediment to achieving the SDGs by 2030. There are nearly 760 million people still living without electricity in the world,⁷ 75 percent of whom reside in sub-Saharan Africa with 84 percent unserved in rural areas. Lack of electricity access cuts off citizen access to basic amenities and clean cooking options, and excludes communities from digital connectivity. At the same time, lowered price of solar panels has triggered entrepreneurial interest in micro-grid investments (see Box 2).

Box 2. Nigeria: Bridging the Financing Gap for Energy Access

- *Regulations are in place.* The Nigeria Energy Regulatory Commission (NERC) regulations and tariffs promote mini grids that provide operators with acceptable rates of return on investments. With rapidly decreasing prices on solar panels operators' technology of choice is solar power replacing diesel generators. NERC rules have safeguarded financial viability of many local NZE entrepreneurs even when lower cost grid-based electricity services reach their service areas.
- *Zero-carbon electricity contracting solutions validated.* New renewable energy technologies delivered through public-private-community partnerships have demonstrated operational models for accelerating sustainable electricity access through mini-grids, Pico devices and solar home systems (SHS). New business and financing models based on 'pay-as-you-go' (PAYG) are increasing the affordability of access, especially for SHS applications.
- *Financing support for mini-grid expansion remains a challenge.* Sales of SHS are either cash-based or using PAYG business models. Nigerian Central Bank rules do not allow using open mobile money platform, requiring mini-grid operators to partner with mobile phone companies. For example, operator Lumos partnered with MTN, enabling customers to securely pay through mobile phones. These fintech innovations require complementary concessional financing to offset the 50-75% initial mini-grid capital costs.



G20 support for financing a clean energy revolution in least developed countries could unlock sustainable economic growth, improve human health, and enable residents to live more productive lives. This opportunity is seen in improving accessibility of cheap and green electricity in rural Africa.


The Nigeria case shows that NZE electricity services for all is feasible by 2030 because business models for distributed systems that are customer-focused and leverage ongoing technology innovations are available. In addition, apart from dropping prices for solar panels and energy storage, deployment of automated digital dashboards, data analytics using Internet as a Service (IAAS) could revolutionise business practices. Market-based debt and equity financing could be attracted when institutionalised MRV systems mitigate current financiers' perceptions of governance risks.

Just transitions policies also need to recognise the human costs as decarbonisation picks up momentum. The International Labour Organization

estimates that there could be a loss of 6 million gross jobs by 2030 in the energy sector. Countries facing massive job losses during NZE transitions (such as coal miners in China, India, Indonesia and South Africa) require reskilling and upskilling to aspire for emerging employment opportunities through green electricity and other services related to changed energy access paradigms. These solutions need to be worked out locally through stakeholder engagements among workers, employers, governments, communities and civil society. Indonesia's Just Energy Transition Partnership (JETP) is a model that promotes Government-Industry-Community dialogues to build consensus on how to foster a more just, inclusive and people-centred future for all citizens, including how to decommission coal-fired power plants.

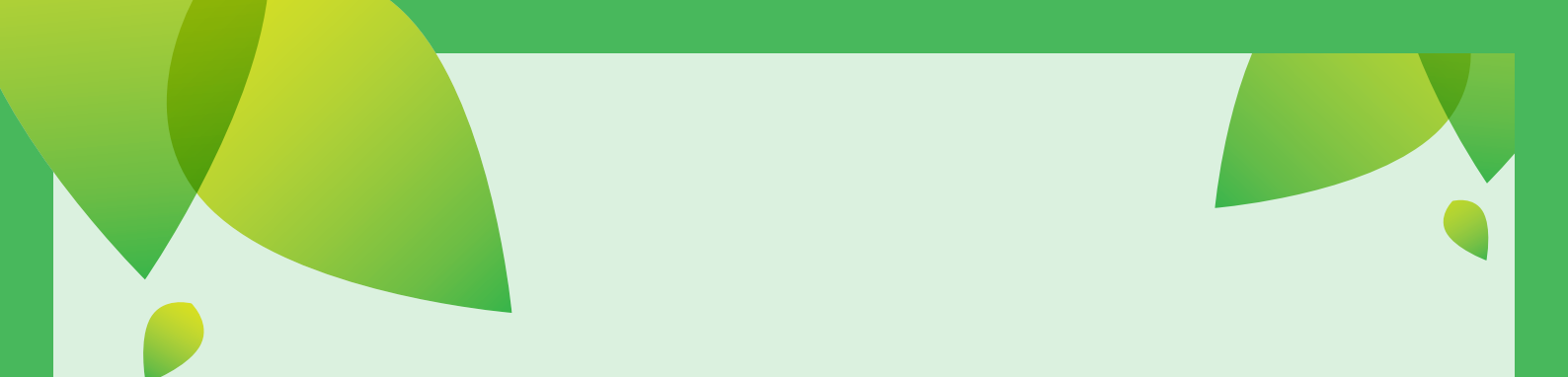
Third, improving energy governance structures.

While the transition challenges are complex, energy governance quality varies considerably between countries, and requires recognition while developing NZE pathways. Transmission and distribution (T&D)



losses are an appropriate indicator of energy governance quality, because reducing T&D losses enables more value extracted from the same energy resources. For example, Jiangsu province in China contributed to NZE goals when the State Grid company collaborated with high energy consumers to improve energy efficiency. By 2021, the company had serviced 214 public buildings in 13 cities in Jiangsu province, with an average energy saving rate exceeding 12 percent.


Underlying T&D losses are systemic weaknesses caused by technological, financial and institutional capacity constraints. Systemic failures are further accentuated by incompatible incentives in the public sector. Poorly functioning T&D companies could be required to demonstrate performance improvements as a condition for receiving concessional finance. Instead, a 'level playing field' could encourage competition between mini-grid operators and state-owned T&D operators mediated by Continuous Performance Monitoring and Benchmarking digital dashboards.



Recommendations to the G20



3



G20 leadership is essential to strengthen the interface between the financial sector and real economy to accelerate just energy transitions.


Policy Recommendation 1: G20 as principal shareholders directs Multilateral Development Banks (MDBs) to respond to the Bridgetown declaration by leveraging their resources to substantially increase the volume of climate finance for mitigation and adaptation.

The Bridgetown Initiative⁸ called for actions to provide relief to heavily indebted countries and unlock investments for climate action. MDBs raise cheap finance on capital markets because of their preferential creditor treatment, supported by sovereign guarantees from the government shareholders. In 2022, an Independent Review of MDB's Capital Adequacy Framework recommended a number of actions to the G20 that could enhance MDB's risk appetites while also incorporating a part of their callable capital into enlarged risk adequacy frameworks. The Independent Review

also recommended specific actions for improving effectiveness of both MDBs shareholder governance and of credit rating agencies procedures, both of which could substantially increase their lending headroom.⁹

Policy Recommendation 2: G20 institutionalises Debt-for-Development Swaps through clean energy investment in African countries undertaking debt restructuring.


Africa's debt stocks have grown significantly in the past decade and are now at their highest level in over a decade, with 22 countries either bankrupt or at high risk of debt distress.¹⁰ Previous African debt was owed mostly to official creditors – high-income countries and multilateral lenders like the World Bank and IMF. Today, private bondholders and emerging economies such as China, India and Saudi Arabia constitute a large portion of Africa's debt stocks. The International Debt Statistics Database shows that as of December 2021, more than 40 percent of African debt was owed to private creditors, 23.5 percent to bilateral creditors, and 32.5 percent to multilateral creditors.¹¹



As creditors are more diversified, G20 is now playing a more critical role in facilitating communication and leading a joint effort on improving debt sustainability of distressed countries. Countries under debt burden usually have much less fiscal space for climate investment. Debt-for-climate swaps can help countries deal with both climate and debt problems at the same time.¹² For example, Spain-Uruguay's debt-climate swap in 2005 reduced Uruguayan debt service of US\$10.8 million and led to an investment of US\$30 million to build a wind farm of 2MW. G20 could lead the discussion to explore more options to catalyse energy transition investment in countries of urgent energy access demand while maintaining their debt sustainability. G20 leadership could respond to the Bridgetown Initiative by committing to support energy access for all, by supporting innovative business delivery models that deliver NZE electricity as described above.

Policy Recommendation 3: G20 leadership is well- positioned to operationalise just energy transitions in real economy.

- i. **G20 develops procedures for sharing the public good aspects of NZE innovations.** Current and future NZE innovations by global energy companies and research institutions have a global public good dimension because most receive institutional and financial support from their respective governments. For example, petroleum companies that successfully commercialise synthetic fuels or cost-effective carbon removal processes should be required to share their technologies with the global community without price gouging based on claims of Intellectual Property Rights whenever these innovations have received government support. Transfer of knowledge from global energy producing and distribution firms, research institutions and private foundations taking place outside the official channels should




also be institutionalised through knowledge-sharing protocols, perhaps utilising some successful examples during the COVID-19 pandemic.¹³ More broadly, G20 governments could establish procedures that ensure future NZE knowhow is available on a cost-plus basis to the global community.

- ii. **G20 supports policy partnerships at the regional and national levels to accelerate the sharing of good practices.** Developed countries have largely formulated their plans to transition out of coal and mobilised financial resources as elaborated in the G20 Bali Report. Developing countries, by contrast, are facing extreme pressures of energy demand, rising energy costs, making transitions out of the least cost energy supply option of coal-based power a hugely challenging task. Policy partnership models endorsed by G20 offer financial and technical resources to test country-relevant approaches that can accelerate the pace and scale of NZE transition. G20 partnerships could be based on twin pillars of efficiency in service delivery and equitable energy access for all.

Electricity companies recording significantly above average T&D losses and facing financial bankruptcy should not be supported, while affordable electricity access through distributed generation could be extended concessional finance. As described earlier, supporting the scaling up of distributed generation of renewable energy as contrasted to fossil-fuel based, capital intensive grid-based electricity managed by inefficient state-owned enterprises is feasible today because of the Fourth Industrial Revolution. G20 could support policymakers in developing countries revolutionise energy access through promotion of just energy ecosystems consisting of agile entrepreneurs, fintech, which benefit from declining systems costs mediated by MRV systems that disclose performance on transparent digital formats.

- iii. **G20 establishes a high-level committee that develops standardised Monitoring, Reporting and Verification (MRV) protocols.** Participation by global financial markets in NZE initiatives requires standardised MRV protocols. There are many interpretations of what constitutes




a good MRV system aimed at mitigating invisible greenhouse gases, but MRV of these global ‘public bads’ have yet to be standardised. There is an ever-present governance risk that either inadequate country-level regulatory oversight or arbitrary regulatory decisions cast doubt on the accuracy of how far NZE milestones have actually been achieved. There are also persistent concerns, as described by UNDP, of “double counting of GHG emissions, human right abuses and greenwashing”.¹⁴ G20 could establish a committee to recommend how a global MRV ecosystem could be established, leveraging digital analytics to standardise performance, and thereby provide credible information to capital markets.

iv. G20 considers expanding carbon pricing to cover the global commons. Economists have long advocated for institutionalisation of global carbon markets as a

mechanism to internalise what is currently a global externality, as has been validated for several other environmental problems, such as water and air pollution. Currently, these initiatives have been limited to individual countries or regional bodies like the European Union. Voluntary carbon markets are growing rapidly because of private sector interest in carbon offsets but is still handicapped by the absence of G20 endorsement necessary for standardised MRV protocols.¹⁵ A global, unified carbon market will standardise carbon crediting and trading rules and thereby incentivise GHG emitters to take mitigative actions throughout the world. G20 may consider this aspect to also form a part of the terms of reference of the MRV committee proposed in the previous paragraph.

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