

ISSUE BRIEF

Scaling up private capital for climate investment in emerging markets

JUNE 2025

AMIN MOHSENI-CHERAGHLOU AND FRANK WILLEY

Contributing editors: Ken Berlin and George Frampton

Introduction

The Sixth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC) delivers a stark warning about the challenges of avoiding a two-degree Celsius (°C) increase in global surface temperature from preindustrialization levels and cautions that meeting this target will be very difficult.¹ Meanwhile, a recent European Commission report asserts that the world already passed the 1.5°C mark in 2024, a threshold that was initially thought to be at least a decade away.²

The IPCC report also underscores a critical shortfall in the funding required to meet global climate targets across various sectors and countries. Estimates of the financing gap needed to achieve the Sustainable Development Goals (SDGs) and build climate-resilient infrastructure vary widely, depending on factors such as the time horizon (2030, 2040, or 2050), the focus (traditional infrastructure, SDGs, or the energy transition), and other underlying assumptions and projections about population, economic and energy demand growth, geopolitics and supply chains, the policy and regulatory landscape, and technological innovation. Nonetheless, one consensus is clear: the financing gap is projected to reach tens of trillions of dollars over the next ten to thirty years. This presents a monumental challenge for the global economy in funding the SDGs and building climate-resilient infrastructure.

The International Energy Agency (IEA) estimates that about \$90 billion per year in concessional funding over the next ten years will be necessary to catalyze private investment in clean energy initiatives.³ However, achieving this scale of mobilization requires concessional financing to be highly leveraged.

The Atlantic Council **Global Energy Center** develops and promotes pragmatic and nonpartisan policy solutions designed to advance global energy security, enhance economic opportunity, and accelerate pathways to net-zero emissions.

Hoesung Lee, et al., "Climate Change 2023 Synthesis Report: Summary for Policymakers," Intergovernmental Panel on Climate Change, 2023, https://www.ipcc.ch/report/ar6/syr/downloads/ report/IPCC_AR6_SYR_SPM.pdf.

^{2 &}quot;Copernicus: Summer 2024—Hottest on Record Globally and for Europe," European Commission, September 6, 2024, https://climate.copernicus.eu/copernicus-summer-2024-hottest-recordglobally-and-europe.

³ Stéphanie Bouckaert, et al., "Net Zero by 2050 - A Roadmap for the Global Energy Sector," International Energy Agency, October 2021, https://www.iea.org/reports/net-zero-by-2050.

Governments, international financial institutions (IFIs), and multilateral development banks (MDBs) alone cannot provide this leverage. In the face of various riskspolitical risks, regulatory risks, project financing risks, and exchange rate risks—the private sector's involvement in the global energy transition and the wider SDGs agenda has been minimal in low-income countries and emerging markets and developing economies (EMDEs, excluding China).⁴ Hence, a combination of various de-risking, risk-reduction, transfer, and guarantee mechanisms must be an integral component of any policy effort to attract and mobilize the much-needed private capital in energy transition and broader climate projects. Guarantees are especially important because they are known as effective and efficient mechanisms for mitigating real and perceived risks, thereby enhancing creditworthiness and attracting investment from private actors.

COP30 in Brazil this November presents a critical opportunity to launch major new climate finance strategies to mobilize larger sums of private finance without increasing the indebtedness of EMDEs in the process. There are several financial initiatives under consideration. The Brazilian government is promoting an initiative called the Tropical Forest Forever Facility, which seeks investment from developed countries, sovereign wealth funds, and philanthropies.⁵ The Bridgetown Initiative (3.0), spearheaded by Barbadian Prime Minister Mia Mottley, is an initiative aimed at mobilizing funds for climate investment, addressing debt sustainability, and reforming the international financial system.⁶ The World Bank Group and International Monetary Fund (IMF) will continue working to improve their blended finance practices. There is also Basel III regulatory reform and ongoing consideration about how to operationalize Article 6 under the United Nations Framework Convention on Climate Change.

This report explores this critical issue and provides more detail on the proposed guarantee mechanism, the Emerging Markets Climate Investment Compact (EMCIC). Originated by Ian Callaghan—an adviser to the UK government and co-founder of its Climate Finance Accelerator—and analyzed by Atlantic Council fellows and staff, the EMCIC describes a mechanism to mobilize private investment in global energy transition and climate projects.⁷ Section 2 provides a comprehensive overview of the investment gaps in the renewable energy industry at the global level, as well as in EMDEs, to achieve the global net zero targets. Section 3 provides an overview of the private investment in global and EMDE renewable energy industries, highlighting various risks and obstacles facing the private sector. Section 4 presents a detailed discussion around the EMCIC and various mechanisms aimed at de-risking, transferring risk, and offering other guarantees that could spur private investment in energy transition and climate projects. Section 5 presents case studies on renewable industries in Brazil and South Africa, respectively, and how they could benefit significantly from EMCIC and private-sector investment.⁸ Section 6 concludes the report.

The net-zero investment gap

The 2050 global net zero target is fast approaching. With less than \$2 trillion in annual global investment in clean energy at the moment, the target is far from reach, especially when EMDEs have accounted for only 15 percent (or \$300 billion) of such investments in 2024.⁹ According to the IEA, annual investments need to increase to around \$4.5 trillion by 2030 to achieve net zero by 2050—an increase of nearly \$2.7 trillion per year channeled to current upstream production, grid infrastructure, power supply, emerging technologies, and critical minerals at the same time.¹⁰ The UN Biodiversity Conference (COP16) in Cali and the International Union for Conservation of Nature

⁴ Throughout this issue brief, EMDE references do not include China.

^{5 &}quot;Tropical Forest Forever Facility (TFFF)," Federal Government of Brasil, February 24, 2025, https://globalforestcoalition.org/wp-content/uploads/2025/04/2025-02-24-TFFF-Full-Concept-Note-2.0-Final.pdf.

^{6 &}quot;Bridgetown Initiative on the Reform of the International Development and Climate Finance Architecture," Bridgetown Initiative, September 27, 2024, https://www.bridgetown-initiative.org/bridgetown-initiative-3-0/.

^{7 &}quot;Climate Finance Accelerator," UK Government Department for Energy Security & Net Zero and Department for Business, Energy & Industrial Strategy, last updated May 16, 2024, https://www.gov.uk/government/publications/climate-finance-accelerator/climate-finance-accelerator; lan Callaghan, et al., "Guarantees 2.0: Meeting Climate Finance Needs in the Global South," Atlantic Council, September 18, 2023, https://www.atlanticcouncil.org/in-depth-research-reports/issuebrief/guarantees-2-0-meeting-climate-finance-needs-in-the-global-south/.

⁸ These case studies are part of a series of eight total produced alongside this paper and to be available on the same webpage as the original report.

⁹ Cristen Hemingway Jaynes, "IEA: Clean Energy Investment Must Reach \$4.5 Trillion per Year by 2030 to Limit Warming to 1.5°C," World Economic Forum, September 28, 2023, https://www.weforum.org/stories/2023/09/iea-clean-energy-investment-global-warming/; "World Energy Investment 2024," International Energy Agency, June 2024, https://iea.blob.core.windows.net/assets/60fcd1dd-d112-469b-87de-20d39227df3d/WorldEnergyInvestment2024.pdf.

¹⁰ Araceli Fernández, "Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach," International Energy Agency, September 2023, https://iea.blob. core.windows.net/assets/4d93d947-c78a-47a9-b223-603e6c3fc7d8/NetZeroRoadmap_AGlobalPathwaytoKeepthe1.5CGoalinReach-2023Update.pdf.



Figure 1. Estimated capital expenditure investment gap in developing countries per year, 2023–2030 (trillions of dollars)

Source: "World Investment Report 2023," United Nations Conference on Trade and Development, 2023. https://unctad.org/system/files/official-document/wir2023_en.pdf.

(IUCN) estimate that \$700–860 billion per year is needed for biodiversity and nature-based solutions by 2030, in addition to the \$150 billion already invested.¹¹ Hence, the combined investment gap for energy and nature through 2050 is now estimated to be around \$83 trillion.

The 2023 World Investment Report by the United Nations Conference on Trade and Development (UNCTAD) underscores a massive financial shortfall in EMDEs, estimating an annual gap of between \$3.8 trillion and \$4.3 trillion needed to achieve the SDGs by 2030.¹² This deficit spans essential sectors such as climate-resilient and traditional infrastructure, covering transportation, water and sanitation systems, telecommunications, and sustainable energy solutions. Among these, the energy sector emerges as the most critical, demanding more than half of the required investment—around \$2.2 trillion per year. The sector's key objectives include expanding access to affordable, reliable, and sustainable energy while advancing climate commitments, aligning with the SDGs as illustrated in Figure 1.

Achieving and maintaining net zero hinges on substantial investment in both traditional and climate-resilient infrastructure, yet EMDEs currently face a staggering \$900-billion funding gap for infrastructure projects alone (figure 1). The most urgent needs are in low-income nations, where nearly 800 million people still lack access to electricity and clean drinking water, while around 1.8 billion people lack even basic sanitation.¹³ Additionally, digital connectivity remains a critical challenge approximately 3.2 billion people worldwide are offline, with broadband access reaching only sixteen out of every hundred individuals. In low-income countries, just 21 percent of the population has internet access on average, and broadband connectivity is nearly nonexistent, serving

^{11 &}quot;UN Biodiversity COP16 Launches Committless Cali Fund and Finalizes Agreement on Biodiversity Finance," Greenpeace International, February 28, 2025, https://www.greenpeace.org/international/press-release/73135/un-biodiversity-cop16-launches-committless-cali-fund-finalises-agreement-biodiversityfinance/; "Funding the Post-2020 Global Biodiversity Framework," International Union for Conservation of Nature, March 2022, https://iucn.org/sites/default/ files/2022-06/policy_brief-funding_the_post-2020_global_biodiversity_framework_mar22.pdf.

¹² James X. Zhan, et al., "World Investment Report 2023: Investing in Sustainable Energy for All," United Nations Conference on Trade and Development, 2023, https://unctad.org/system/files/official-document/wir2023_en.pdf.

¹³ World Bank Group, World Development Indicators, https://databank.worldbank.org/source/world-development-indicators, accessed March 27, 2025.

	Lack access to electricity (% of population)	Lack access to safely managed drinking water services (% of population)	Lack access to safely managed sanitation services (% of population)	Lack access to internet services (% of population)	Lack access to broadband (% of population)
Africa	44	73	73	58	98
East Asia and Pacific	2	25	31	28	71
Europe and Central Asia	0	10	18	14	69
Latin America and Caribbean	1	30	53	24	83
Middle East	4	16	46	21	86
North America	0	2	3	8	62
South Asia	4	58	55	57	98
World	10	26	46	37	83

Figure 2. Access to basic infrastructure percentage of population)

Source: Amin Mohseni-Cheraghlou, "Africa's Economic Renaissance: Reimagining the Continent's Role in Revitalizing the Global Economy," Atlantic Council, October 9, 2023, https://www.atlanticcouncil.org/wp-content/uploads/2023/10/Africas-Economic-Renaissance.pdf.

only one in two hundred people. As highlighted in figure 2, these infrastructure deficits are particularly severe in Africa and South Asia, which together account for roughly 3.5 billion people—nearly 45 percent of the world's population.

Investments in clean energy in low-income and lowermiddle-income economies are of paramount importance. It is true that these economies (which host about half of the world's population) are responsible for only 17 percent of global carbon dioxide (CO₂) emissions and that transitioning to clean energy in these economies will have a small impact on global climate challenges. However, increasing investments in clean energy is critical for many such economies that rely heavily on energy imports. Expanding domestic clean energy capacity can reduce dependence on imported energy, lower import costs, and free up financial resources. These savings can then be redirected toward other essential development priorities, such as improving basic infrastructure, climate adaptation and resilience projects, healthcare, and education.

Private investment in climate mitigation

The recent surge in clean energy funding is largely driven by investments in clean electrification, grid modernization, and energy efficiency improvements, mainly in advanced economies and in China.¹⁴ Looking ahead to the early 2030s, pathways aligned with climate and sustainable development goals will see a more diversified distribution of clean energy investments across EMDEs. More than one-third of total funding is expected to be directed toward expanding low-emission power generation, primarily through renewable energy projects.¹⁵ Another third will focus on improving energy efficiency and decarbonizing key sectors, including advancements in cooling technology and the expansion of electric mobility. Nearly one-quarter of the investment will go toward upgrading electricity grids and developing energy storage systems-critical components for building a resilient and adaptable energy network.

^{14 &}quot;World Energy Investment 2024."

^{15 &}quot;Scaling Up Private Finance for Clean Energy in Emerging and Developing Economies," International Energy Agency, June 2023, https://iea.blob.core.windows. net/assets/a48fd497-d479-4d21-8d76-10619ce0a982/ScalingupPrivateFinanceforCleanEnergyinEmergingandDevelopingEconomies.pdf.

To accelerate the clean energy transition in EMDEs, both public and private investment must expand significantly. Public funding alone cannot meet the demand. Currently, public sources contribute about half of clean energy financing in EMDEs, a stark contrast to their share of less than 20 percent in advanced economies.¹⁶

Green bonds

Green, social, sustainable, and sustainability linked (GSSS) bonds offer a powerful mechanism for mobilizing large-scale private capital, particularly from institutional investors who typically shy away from financing individual projects. Despite the growing prominence of environmental, social, and governance (ESG) investment funds—now exceeding \$2.5 trillion only a small fraction of this capital flows into EMDEs.¹⁷

GSSS bonds present a viable channel to redirect these funds, yet their issuance remains disproportionately concentrated in advanced economies. In 2022, EMDEs issued just \$65 billion in GSSS bonds.¹⁸ Several reforms are necessary to expand this market and attract broader participation. These include establishing rigorous third-party certification and monitoring mechanisms, developing standardized industry guidelines, harmonizing taxonomies across jurisdictions, and implementing cost-effective regulatory frameworks. Additionally, greater flexibility in bond tenors and an increased deployment of risk-mitigating financial instruments-such as guarantees, credit enhancements, and subordinated debt-will help to enhance investor confidence and scale up GSSS bond issuance across EMDEs.

As discussed, EMDEs (excluding China) currently account for about \$300 billion, or just 15 percent, of global clean energy investments.¹⁹ Less than half of this amount (\$135 billion) is sourced from private capital. According to the IEA, approximately 60 percent—or nearly \$10 trillion—of the total clean energy investment needed in EMDEs (excluding China) between 2026 and 2035 must come from private sources.²⁰ This requires private-sector contributions to rise to about \$1 trillion annually by the early 2030s, a dramatic increase from the current \$135 billion.

To unlock this level of private capital, highly leveraged concessional financing will play a pivotal role. Given that mobilizing \$1 trillion with \$90 billion implies a leverage ratio exceeding 11:1-far above the current levels, which remain below one-public institutions must focus on mechanisms that enhance private-sector confidence. This includes deploying concessional funds in ways that reduce investment risks, such as guarantees, blended finance structures, and risk-sharing instruments. Without a major shift in how concessional financing is utilized, scaling up private-sector participation to the required levels will remain a significant challenge. Specifically, concessional financing in the form of development grants and official development assistance (ODA) could provide the funds for a guarantee mechanism that can be leveraged at a much higher ratio. This approach would be more successful in attracting the much-needed private capital.

Risk-mitigating strategies

Over the past decade, the private sector contributed more than 75 percent of global renewable energy investments, favoring regions with lower risks and established markets (such as the European Union and the United States).²¹ In the vital context of climate change, the key challenge is to swiftly mobilize funds for energy transition, including nature-based solutions, in EMDEs, which face difficulties in attracting private investment due to their unfavorable risk-return profiles. MDBs, sovereign lenders, and other financial institutions can help mitigate these risks by using strategies and mechanisms including political

¹⁶ Ibid.

^{17 &}quot;Sustainable Fund Returns Lag Peers' in Second Half of 2024," Morgan Stanley, March 4, 2025, https://www.morganstanley.com/insights/articles/sustainablefunds-performance-second-half-2024.

¹⁸ Ibid.

¹⁹ Tim Gould, et al. "World Energy Investment 2024," International Energy Agency, June 2024, https://www.iea.org/reports/world-energy-investment-2024/ overview-and-key-findings.

²⁰ Ibid.

^{21 &}quot;Global Landscape of Renewable Energy Finance 2023," International Renewable Energy Agency and Climate Policy Initiative, February 2023, https://www.irena. org/-/media/Files/IRENA/Agency/Publication/2023/Feb/IRENA_CPI_Global_RE_finance_2023.pdf.

risk insurance, currency hedging, export credit, and investment guarantees. In EMDEs, guarantees provided by international financial institutions, development finance institutions (DFIs), or governments to address political, policy, regulatory, and currency risks can effectively attract private investment.²² However, these entities have stringent requirements and make decisions slowly, which rarely fits within the timeframes expected by the private sector. Hence, while expanding the availability of these guarantees from public finance institutions is strongly recommended, challenges include these institutions' often inefficient decision-making and operational bureaucracy, the strong influence of geopolitics in their decision-making hierarchy, and the limits on climate-focused investment under their mandate to support all types of development projects.²³ There is a need for additional, more efficient mechanisms with simpler governance structures to meet the growing guarantee demands for investments in global energy transition and net zero projects in EMDEs.

Guarantees are a highly efficient financial instrument. While MDB loans mobilize an average 25 cents of private investment for every public dollar committed-with MDBs mobilizing 30 cents of private capital per public dollar on average when accounting for all financing instruments— MDB guarantees have an average leverage ratio of 1.5:1, making them six times as effective at mobilizing private capital as loans and thus offering a more efficient use of public funds.²⁴ Other guarantee facilities have far higher leverage ratios. As proof of their efficacy, guarantees mobilized 39 percent of total private finance between 2012 and 2018, increasing private capital contributions from \$8 billion to \$18 billion over that period, despite the fact that they represent a small share of total funding provided.²⁵ The Organisation for Economic Cooperation and Development (OECD) reported that "guarantees have been the most effective tool to mobilize capital in every year for which data is available."²⁶

Existing guarantee programs have been successful in attracting private entities to invest in projects in EMDEs and are diverse in the risks, project types, and geographies that they cover. But they are either too restrictive, overly bureaucratic, or underfunded to scale investment to the levels required. In addition, most guarantee mechanisms support projects in many different sectors that are not necessarily related to climate. A study of fifty-two guarantee offerings from thirty-four financial institutions found 87 percent were climate agnostic.²⁷ A new approach is needed to ensure sufficient funding for climate projects. Examples of guarantees provided by international financial institutions, MDBs, credit enhancement institutions, and other public and private entities are discussed later in the paper. A non-exhaustive list of guarantee providers is available in Appendix II.

The World Bank Group has recently streamlined its guarantee instruments into a unified platform managed by the Multilateral Investment Guarantee Agency (MIGA).²⁸ This platform integrates political risk insurance and credit guarantees offered by MIGA, guarantees against government non-performance and partial credit risk from the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA), and commercial guarantees from the International Finance Corporation (IFC). The consolidation aims to enhance support for infrastructure, renewable energy, and private-sector investments in developing economies.

In fiscal year 2024 (FY2024), the World Bank Group issued approximately \$10.3 billion in new guarantees, with MIGA contributing \$8.2 billion, the IFC \$1.4 billion, and the World Bank nearly \$700 million.²⁹ Looking ahead,

²² See Appendix I for types of guarantees.

^{23 &}quot;Mobilising Institutional Capital for Renewable Energy," International Renewable Energy Agency, 2020, https://www.irena.org/-/media/Files/IRENA/Agency/ Publication/2020/Nov/IRENA_Mobilising_Institutional_Capital_2020.pdf; Martin Muhleisen, "The Bretton Woods Institutions under Geopolitical Fragmentation," Atlantic Council, October 9, 2023, https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/the-bretton-woods-institutions-under-geopoliticalfragmentation/.

²⁴ Carolien van Marwijk Kooji, Jesse Hoffman, and Jeroen Huisman, "Better Guarantees, Better Finance: Mobilizing Capital for Climate through Fit-for-Purpose Guarantees 2023," Blended Finance Taskforce, June 2023, https://www.systemiq.earth/wp-content/uploads/2023/06/Blended-Finance-Taskforce-2023-Better-Guarantees-Better-Finance-1.pdf.

²⁵ Weronika Garbacz, David Vialta, and Lasse Moller, "The Role of Guarantees in Blended Finance," Organization for Economic Co-operation and Development, 2021, https://www.oecd.org/content/dam/oecd/en/publications/reports/2021/06/the-role-of-guarantees-in-blended-finance_cef700a2/730e1498-en.pdf.

²⁶ Ibid.

²⁷ Zeineb Ben Yahmed, et al., "Landscape of Guarantees for Climate Finance in EMDEs," Climate Policy Initiative, February 22, 2024, https://www. climatepolicyinitiative.org/publication/landscape-of-guarantees-for-climate-finance-in-emdes/.

²⁸ World Bank Group Guarantee Platform, World Bank, last accessed June 9, 2025, https://www.miga.org/world-bank-group-guarantee-platform.

^{29 &}quot;World Bank Group Guarantee Platform Goes Live," World Bank Group, July 1, 2024, https://www.worldbank.org/en/news/press-release/2024/07/01/world-bankgroup-guarantee-platform-goes-live.

Figure 3. Risk coverage of fifty-two guarantee instruments by provider type (some instruments fit multiple risk categories).



Source: Ben Yahmed, et al., "Landscape of Guarantees for Climate Finance in EMDEs."

the new platform targets an expansion of guarantee issuances to \$20 billion by 2030. However, while private capital leverage ratios vary across World Bank Group guarantee products—often undisclosed—MIGA reports that its guarantees mobilize an average of \$15 in private investment for every dollar of public capital.³⁰

The platform offers three main types of guarantees, including

- credit guarantees to back loans issued to public or private entities;
- trade finance guarantees supporting trade finance projects involving public-sector participation; and
- political risk insurance protecting private-sector investments and public-private partnerships against non-commercial risks.

By consolidating these instruments, the World Bank Group aims to scale up private-sector participation and increase financial flows into critical development sectors.

The World Bank Group and MDBs are valuable entities for financing projects in low-income countries and in contexts in which political instability, risk of sovereign default, and other uncertainties might otherwise dissuade private investors. However, these entities are conservative by mandate and make great efforts to ensure the deals in which they are involved are ironclad and have additional dispute resolution mechanisms available. This results in a process that seems overly bureaucratic and slow and cannot attract private investors at scale.³¹ Since its establishment in 1988, MIGA has only paid ten claims—an impressive figure, but one that will be unsustainable at the levels of financing required, as discussed earlier.³²

³⁰ Anna Bjerde et al., "New platform leverages power of guarantees to boost private financing," *World Bank Blogs*, July 15, 2024, https://blogs.worldbank.org/en/voices/new-platform-leverages-power-of-guarantees-to-boost-private-financing.

^{31 &}quot;World Bank Project Cycle," World Bank Group, last visited May 29, 2025, https://projects.worldbank.org/en/projects-operations/products-and-services/brief/ projectcycle.

^{32 &}quot;Frequently Asked Questions," World Bank Group, last visited May 29, 2025, https://www.miga.org/frequently-asked-questions.



As emerging markets and developing economies grow, so does their demand for clean energy and the investments required to fund it. Unsplash/Keydson Barcelos.

MDBs and DFIs also offer guarantee products, the vast majority of which cover commercial risks (see figure 3). The European Investment Bank (EIB) provides credit enhancement guarantees to infrastructure projects and partial risk-sharing, supply chain, and trade finance guarantees for loans to small- and medium-sized enterprises or mid-caps.³³ The Asian Development Bank (ADB) provides partial credit guarantees to eligible projects in Asia— though these are not climate specific—and provides partial risk guarantees in case of non-payment due to political events.³⁴ The African Development Bank (AfDB) offers partial credit and partial risk guarantees similar to those of the ADB.³⁵

Yet, while the World Bank Group, MDBs, and DFIs are difficult to replace in countries where the political context requires sovereign involvement or the coordination of parties in complex negotiations—and though they also offer credit-enhancing products that enable private investment—they also suffer from slow processing times and bureaucratic necessities that can drive away investors.

World Bank Group guarantee programs should be expanded to the extent possible. But even if the new platform reaches its target capitalization of \$20 billion and leverages private capital at MIGA's high-leverage ratio of 15:1 (the real cumulative leverage ratio is lower), the sizeable \$300 billion this would generate would still be only one-eighth of the estimated investment required for climate mobilized by the most efficient instrument available—and this funding is not climate exclusive. In FY2024, 44 percent of the World Bank Group's financing went to climate projects "supporting efforts to end

^{33 &}quot;Guarantees," European Investment Bank Group, last visited May 29, 2025, https://www.eib.org/en/products/guarantees/index.

^{34 &}quot;Guarantees," Asian Development Bank, last visited May 29, 2025, https://www.adb.org/what-we-do/private-sector-financing/guarantees.

^{35 &}quot;ADB Guarantees," African Development Bank, last visited May 29, 2025, https://www.afdb.org/en/projects-and-operations/financial-products/africandevelopment-bank/guarantees.

poverty on a livable planet, investing in cleaner energy, more resilient communities, and stronger economies."³⁶ While the World Bank Group has not disclosed the amount of private capital mobilized by the \$10.3 billion it deployed in guarantees in FY2024, even if all instruments had the same allocation, the total World Bank Group climate contributions via guarantees would be \$132 billion, a mere drop in the bucket compared to the need.

The World Bank Group, the IFC, MDBs, and DFIs should seek to increase their guarantee issuances and should also stay open to reevaluating how they account for capital obligations on their balance sheets. Most MDBs account for guarantees in the same way as loans despite the substantial difference in call rates, which locks capital on the balance sheet that could otherwise be deployed and further leveraged.³⁷

However, while expanding issuance and unlocking capital from the balance sheet are positive measures, new and more agile risk-mitigating facilities are also needed to entice private investors in the Global North to invest specifically in climate mitigation or adaptation projects in EMDEs.

Finally, there are several private financial institutions focused specifically on climate investments. These institutions address risks that arise in specific contexts such as offtaker nonpayment, currency volatility, and in broader contexts such as by providing credit enhancements. RELP, a nonprofit organization focusing on renewable deployment that emerged from the group behind the RenovAr Programme, Argentina's successful renewable energy auction program, has proposed the iTrust fund, which would provide guarantees to cover offtaker liquidity risk for renewable energy projects, ensuring that producers would be paid under their power purchase agreement (PPA) and thus lowering a project developer's weighted cost of capital.³⁸ The Green Guarantee Company (GGC), a guarantee provider launched by the Development Guarantee Group, provides hard currency guarantees on bonds, loans, and other qualifying debt instruments for climate mitigation and adaptation projects, particularly in EMDEs.³⁹ The company launched in 2024 with projects to unlock \$1 billion in climate finance with its initial \$100 million in funding, a leverage ratio of 10:1. GGC is targeting a \$500-million capitalization by 2035 to guarantee \$5 billion in projects.⁴⁰ GuarantCo is a UK-based financial institution and part of the Private Infrastructure Development Group (PIDG), which provides credit guarantees to infrastructure investments, primarily in Africa and Asia, similar to the credit enhancement guarantees provided by the World Bank Group and MDBs.⁴¹GuarantCo has enabled \$5.7 billion in private-sector investment. Another entity with a credit enhancing guarantee is InfraCredit, a Nigeria-based guarantee institution that provides credit enhancement for local-currency debt instruments issued by infrastructure projects to improve creditworthiness and expand access to financing in local capital markets.⁴² Though InfraCredit is not climate exclusive, it focuses generally on energy, transportation, and water infrastructure in Nigeria. InfraCredit mobilizes capital from domestic markets and does not focus on international funders.

All of the guarantee providers described are leveraging private capital at high levels and should continue their efforts. However, these guarantee facilities have fiduciary or financial limitations that make them insufficient to finance climate mitigation and adaptation at scale.

Guarantee limitations

- First-loss guarantees on loan transactions are not enough to incentivize hundreds of billions of dollars in loans.
- Traditionally, many guarantees to EMDEs, including guarantees provided by most MDBs and developed world private and public loan guarantee facilities, have required a backup country guarantee. But most EMDEs, even large ones such as South Africa and Brazil, cannot do so because the guarantee is treated

^{36 &}quot;Climate Finance Fiscal Year 2024 Snapshot," World Bank Group, press release, September 19, 2024, https://www.worldbank.org/en/news/pressrelease/2024/09/19/climate-finance-fiscal-year-2024-snapshot.

³⁷ Clemence Landers and Rakan Aboneaaj, "MBD Policy-Based Guarantees: Has Their Time Come?" Center for Global Development, July 2022, https://www. cgdev.org/sites/default/files/MDB-policy-based-guarantees.pdf.

^{38 &}quot;Launching Competitive Tenders and Expanding the PPA Market," RELP, last visited May 29, 2025, https://www.relp.ngo/renovar; "iTrust Enabling Clean Power," RELP, last visited May 29, 2025, https://www.relp.ngo/itrust.

^{39 &}quot;Guarantees for a Greener World," Green Guarantee Company, last visited May 29, 2025, https://greenguarantee.co/.

⁴⁰ Anne Tran, "Launch of Global Guarantee Company to Mobilise Billions in Climate Finance," Green Guarantee Company, February 5, 2024, https:// greenguarantee.co/launch-of-global-guarantee-company-to-mobilise-billions-in-climate-finance/.

^{41 &}quot;Enabling Sustainable Infrastructure in Africa and Asia," GuarantCo, July 15, 2024, https://guarantco.com/.

^{42 &}quot;About Us," InfraCredit, last visited May 29, 2025, https://infracredit.ng/about-us/.

as debt on their balance sheets, which strains the countries' economies. More than one in five EMDEs are paying more to service their existing debt than they are receiving in grants, loans, and other official development assistance, and annual net financial transfers have declined from \$174 billion to \$51 billion between 2014 and 2022.⁴³

 Most loans and equity investments in EMDEs must go through a slow, bureaucratic, expensive approval process with existing international financial institutions, including many redundancies along the way. In many or most projects energy projects today, the lender or investor, the guarantor, and the country providing backup guarantees all perform due diligence and often-overlapping environmental reviews.

There is a clear lack of sufficient risk-mitigating financing capacity focused exclusively on climate investment. While the existing facilities should be scaled up, innovative new structures are needed to address the gaps in the current marketplace of guarantees. Thus, designing a facility that is climate exclusive and that uses innovative financial tools and strategies capable of bridging the investment gap of \$2.2 trillion to \$2.7 trillion in EMDEs is vital in order to sustain development progress and reach net zero goals.

A proposal for scaling up climate finance

The Emerging Market Climate Investment Compact (EMCIC) is a proposed facility that could help close the climate finance gap.⁴⁴ It would provide between \$100 billion and \$500 billion in loan guarantees to climatealigned projects in emerging markets in the Global South. It is designed to address several challenges impeding private investment by simplifying the process of approving guarantees, reducing the time and transaction costs for providing guarantees, removing governments from transactions to the maximum extent possible, and protecting the lenders against risk. It would ideally be operationalized and managed by a highly specialized guarantee agency established by a coalition of countries with advanced economies that are committed to climate action. The EMCIC would receive funding from advanced economy governments, and

perhaps large foundations and sovereign wealth funds, which is necessary to capitalize a facility at this scale. The high leverage potential of guarantees would require countries to contribute only enough cash to the EMCIC facility to cover expected losses. The facility would then distribute between \$10 billion and \$50 billion per year in guarantees to mobilize ten times that amount in private investment into eligible projects. Assuming a loss rate of 10 percent—a conservative estimate—and ten donor countries, each country would need to contribute between \$100 million and \$500 million per year.⁴⁵ Unexpected losses would be covered by a combination of insurance and sovereign developed country and other balance sheet guarantees.

A request for \$100 million to \$500 million per year by ten countries might seem ambitious, but this represents a small fraction of the total \$300 billion per year wealthy countries already promised by 2030 at COP29. Guarantees would also mobilize private capital more efficiently. If developed countries and wealthy investors were to allocate only 2.5 percent of current cumulative annual ODA (i.e., \$5 billion per year) to such a climate guarantee facility instead of to other concessionary channels such as grants, loans, and MDB investments and if a 1:10 leverage ratio were contemplated—this would suffice to guarantee \$50 billion in investment per year as we are proposing in the EMCIC facility.

The compact's objectives

- Catalyze institutional investment and lending for climate mitigation in larger EMDEs during the 2025–2035 period, accelerating the scaling up of mainstream financing.
- Expand the scope of climate finance beyond clean energy to include a broader range of sectors, such as sustainable waste management, transportation, industrial decarbonization, water systems, agriculture, and ecological investments.
- Strengthen human and institutional capacity for green finance within both global financial hubs and national financial ecosystems, fostering expertise and infrastructure for sustainable investment.

⁴³ Sara Harcourt, Jorge Rivera, and David McNair, "Net Finance Flows to Developing Countries Turn Negative in 2023," ONE Data, February 22, 2025, https://data. one.org/analysis/net-finance-flows-to-developing-countries.

⁴⁴ Callaghan, et al., "Guarantees 2.0."

⁴⁵ FOOTNOTE: Latest Global Emerging Markets Risk Database (GEMs) Consortium data for private sector lending in EMDEs shows 3.56% average annual default rate with average recovery of 72.2% (implying a far lower loss rate): Default and Recovery Statistics, Private and Public Lending, 1994-2023, European Investment Bank Global Emerging Markets Risk Database (GEMs), 2024. https://www.gemsriskdatabase.org/

 Facilitate lower-cost financing for entrepreneurs and project developers in the Global South by reducing investment and loan risks through guarantee mechanisms, thereby enabling access to lower interest rates and improved return-cost structures.

The compact's key elements

- It would provide comprehensive guarantees against loss rather than first-loss guarantees.
- It would guarantee loans for energy generation projects, power grid infrastructure, forest credit programs, and other energy transition and naturebased projects that generate revenue.
- It would provide funding, at least initially, to projects in EMDEs that have sustainable debt levels and stable political and social environments. The World Bank Group and other MDBs would continue their work, as they have great expertise in financing projects in highly indebted countries.
- It would not require backup guarantees by the governments of the countries where investments are made.
- It would rely on the prequalified investors' due diligence on projects, with a simplified process undertaken by the facility rather than a rigorous due diligence process like that of the World Bank.

A tool for investors to assess EMDE risks

Accurate and transparent data are essential for private investors to properly assess investment risks in EMDEs. Limited or poor-quality information often inflates risk perceptions, increasing the cost of capital. One key initiative addressing this issue is the Global Emerging Markets Risk Database (GEM) consortium, established in 2009.⁴⁶ This platform aggregates credit data from MDBs and DFIs to provide comprehensive risk assessments. Efforts are under way to expand investor access to this data. Additionally, country-level initiatives aimed at improving data quality and availability will be critical in attracting greater private investment into clean energy markets.

- It would prequalify an institutional investor after careful review of the investor's record and policies, including its environmental, social, equity, and environmental justice record. The EMCIC would rely on the approved investors and agreed-upon standards and would not become involved in review or approval of individual projects. It would audit the loans and have the power to cancel guarantee provisions if the audit reveals lack of compliance with the standards or other provisions in the guarantee agreement, but would not conduct due diligence itself.
- It would set key performance indicators (KPIs) that are designed to encourage institutional investors to familiarize themselves with evaluating emerging market risks, developing financing strategies for clean energy and nature-based projects in the region, establishing presence in local communities and markets, and ensuring proper stewardship of projects.
- To reduce risk, it would require investors receiving guarantees to present it with a portfolio of projects. It would also require the investors to work with recipient country investors or financial institutions.

The EMCIC facility is a novel approach to guarantee finance designed to rapidly scale private investment in climate projects in EMDEs while requiring those investors to become familiar with those local contexts to lower perceived risks and bring down the cost of capital. Riskmitigating strategies and financial structuring techniques should be used in concert to finance climate investments. The EMCIC would cover a broad range of risks including commercial and political risks in emerging markets but would not cover currency risk.

^{46 &}quot;Global Emerging Markets: Risk Database Consortium," Global Emerging Markets Risk Database, last visited January 31, 2025, https://www.gemsriskdatabase. org/.

Country case studies

This section of the report presents the cases of two EMDEs (Brazil and South Africa) that have ranked among the top forty in the latest (June 2024) edition of Ernst & Young's Renewable Energy Country Attractiveness Index (RECAI). Figure 4 shows the list of the countries and some relevant information.

Brazil

Overview: Brazil's energy landscape

Among EMDEs, the energy landscape of Brazil—the COP30 host country—represents a unique case due to its relatively low dependence on fossil fuels in its overall energy mix compared to other countries. In 2023, less than half of Brazil's energy mix—including energy generation, transportation, and industrial use—was sourced from fossil fuels (oil, natural gas, and coal).⁴⁷ Brazil's successful development of renewables is reflected in the energy sources used for electricity generation. Over the past two decades, renewables generated between 75 percent and 90 percent of all electricity in Brazil, compared to the global average around 25 percent.⁴⁸ The volatility in the share of renewables in Brazil's electricity generation is rooted in the fact that hydropower, which fluctuates with precipitation amounts, represents nearly two-thirds of all renewable electricity generation in the country, or 12 percent of total energy supply.

To further strengthen its renewables portfolio, the country is ramping up solar and wind projects. Solar, both utility scale and distributed, is projected to account for nearly 70 percent of all additional electricity in the coming years, and wind generation is expected to make up 16 percent of the total by the end of 2029.⁴⁹ Given that Brazil has turned into a net exporter of energy in recent years, and that its electricity imports have declined substantially over the past decade, increasing the share of non-hydropower renewables in its electricity generation will help the country export even more clean energy to neighboring countries.

47 "Energy System of Brazil," International Energy Agency, last visited May 29, 2025, https://www.iea.org/countries/brazil/.
48 Ibid.

49 "Brazil Country Commercial Guide: Renewable Energy Infrastructure," International Trade Administration, December 4, 2023, https://www.trade.gov/countrycommercial-guides/brazil-renewable-energy-infrastructure-0.

June 2024 RECAI ranking	Country name	Region	Global share of emissions, 2023	Emission intensity, 2023 (share in global emissions to share in global gross domestic product)
7	India	Asia	7.80 percent	2.08
15	Chile	Latin America	0.23 percent	0.69
20	Brazil	Latin America	2.45 percent	1.16
27	Morocco	Africa	0.20 percent	1.46
33	Mexico	Latin America	1.37 percent	0.81
38	South Africa	Africa	0.99 percent	2.61
39	Vietnam	Asia	1.00 percent	2.44

Figure 4. EMDEs ranked among the top forty of the RECAI rankings, June 2024 edition

Source: "Renewable Energy Country Attractiveness Index (RECAI) Rankings, June 2024 Edition," Ernst & Young, November 14, 2023, https://www.ey.com/en_us/insights/energy-resources/are-the-global-winds-of-change-sending-offshore-in-a-new-direction.

Figures B1-B6: Brazil's energy in numbers



Figure B1. Total energy supply, 2023



Figure B2. Electricity generation sources, 2023

Figure B3. Net energy imports, 2000–2023





Figure B4. Net electricity imports, 2000–2023

Figure B5. Share of modern renewables in final energy consumption (percentage), 2000–2021 (ranked eighth in the world)







Source: "Energy System of Brazil," International Energy Agency, last visited May 29, 2025, https://www.iea.org/countries/brazil/.

Brazil's reliance on hydropower, however, makes its electricity industry highly susceptible to droughts and precipitation fluctuations, which have become more prevalent in recent years amid climate change.⁵⁰ Even as more solar and wind projects come online, hydropower will account for nearly 57 percent of all electricity generated in Brazil.⁵¹ Thus, more needs to be done to reduce the share of hydropower faster.

Another choke point in Brazil's electrification agenda is its grid system, which is failing to keep up with electrification, resulting in the country losing about 16 percent of the power it generates.⁵² Investments in the grid

infrastructure, especially in remote regions with potential for renewable energy development, will be crucial to increase non-hydropower renewables penetration.

Financing the transition: Fostering a stable environment

Brazil has an accommodating policy and market environment that favors the energy transition. Its National Energy Transition Policy (PNTE), National Low-Carbon Hydrogen Policy, National Green Growth Program (PNCV), National Fund on Climate Change Law, Auctions for Renewable Energy, Climate Fund Program, Tax Incentives, and Sovereign Sustainable Bond Framework are among the policy, financing, and market mechanisms that have

⁵⁰ Ana Paula M. A. Cunha, et al., "Extreme Drought Events over Brazil from 2011 to 2019," *Atmosphere* 10, 11 (2019), https://www.mdpi.com/2073-4433/10/11/642#:[^]:text=During%20this%20period%2C%20drought%20events,of%20severe%20and%20moderate%20droughts.

^{51 &}quot;Brazil Country Commercial Guide."

^{52 &}quot;Fostering Effective Energy Transition: 2023 edition," World Economic Forum and Accenture, June 28 2023, https://www.weforum.org/publications/fosteringeffective-energy-transition-2023/in-full/1-introduction-5002ea1cfb/#1-introduction-5002ea1cfb.

promoted a robust energy transition with a 2050 net zero agenda in mind. $^{\rm 53}$

Within this favorable environment, Banco Nacional de Desenvolvimento Econômico e Social (BNDES), or the Brazilian Development Bank, has served a critical role in advancing the country's energy transition. BNDES is leading the way in introducing innovative financial instruments to the Brazilian market, such as blended finance, green bonds, and guarantee-sharing mechanisms. Between 2000 and 2023, BNDES invested approximately \$102 billion in renewable energy projects, including new power generation capacity and transmission lines.⁵⁴ This financial backing has been instrumental in expanding Brazil's renewable energy infrastructure, solidifying BNDES's position as a major player in Brazilian renewable energy financing. Nearly two-thirds of all BNDES's green financing has targeted renewable energy and energy efficiency projects.⁵⁵ BNDES's approach highlights the vital role financial institutions play in minimizing investment risks and uncertainties and increasing access to finance.

By ensuring stable financial conditions, BNDES has attracted significant investments in Brazil's renewable energy sector. The country has emerged as a global leader in renewable energy investment, attracting \$34 billion dollars in 2023, the sixth-highest amount worldwide and the highest among emerging markets (excluding China).⁵⁶ Also in 2023, Brazil commissioned five gigawatts (GW) of onshore wind projects and brought 16 GW of solar capacity online, making it one of the world's largest markets for wind and solar energy. In June 2023, Brazil also became the second country to benefit from the Climate Investment Fund's (CIF) Renewable Energy Integration (REI) program.⁵⁷ Under this initiative, Brazil secured \$70 million in highly concessional financing to accelerate its clean energy transition. Over the next decade, the program aims to double the country's renewable energy capacity, reduce CO₂ equivalent emissions by at least 57 million tons, increase large-scale hydrogen production, and expand access to clean energy for millions of people, reinforcing Brazil's position as a leader in the global green energy shift. Brazil projects that this funding will leverage \$9.1 billion from partners, achieving a remarkable co-financing ratio of 1:130.

Unlocking capital: Facilities to mobilize investment

To stay on course for its 2050 net zero target, Brazil must significantly scale up climate financing. It needs to invest about \$1.3 trillion in its low-carbon energy supply between 2024 and 2050, including \$500 billion in renewable energy.⁵⁸ This presents a substantial opportunity for private-sector investment, as public entities and MDBs lack the adequate financial capacity. This is where various guarantee mechanisms are needed to help Brazil mobilize foreign direct investment as well as domestic private investments in its renewables and energy transition sectors, ranging from generation and transmission to distribution and energy efficiency. The EMCIC, in

^{53 &}quot;President Lula launches National Energy Transition Policy, Expected to Bring BRL 2 Trillion in Investment," Government of Brazil, August 27, 2024, https://www.gov.br/planalto/en/latest-news/2024/08/president-launches-national-energy-transition-policy-expected-to-bring-brl-2-trillion-in-investment; Debora Yanasse et al., "Brazilian Congress Passes the Hydrogen Legal Framework Bill," Brazil Energy Journal, 2024, https://www.tauilchequer.com.br/-/media/files/perspectives-events/publications/2024/07/bej-jul-2024-brazilian-congress-passes-the-hydrogen-legal-framework-bill.pdf%3Frev=0959c5089611418dac04844cde5fcfc3; Renata Campetti Amarai, Giovani Bruno Tomasoni, and Alexandre Salomão Jabra, "Brazil: Federal Government Launches Green Growth National Program," Global Compliance News, November 28, 2021, https://www.globalcompliancenews.com/2021/11/28/brazil-federal-government-launches-green-growth-national-program-15112021; "Case Study: Brazil's National Plan on Climate Change and Law," Low Carbon Growth Roadmap for Asia and the Pacific, last visited January 31, 2025, https://www.unescap.org/sites/default/files/5.%20CS-Brazil-National-Plan-on-climate-change-and-law.pdf; "Fostering Effective Energy Transition 2023," World Economic Forum, June 28, 2023, https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Social_and_Environmental_Responsibility/climate_fund_program.html; "Tax Incentives for Renewable Energy in Latin America," PricewaterhouseCoopers, November 2020, https://legalytributarioenlinea.co.pwc. com/TLSTimes/boletines/Tax-Incentives-for-Renewable-Energy-LATAM-30-10.pdf; "Brazil Sovereign Sustainable Bond: Financing a Greener, More Inclusive, and Equitable Economy," World Bank Group, February 8, 2024, https://www.worldbank.org/en/news/feature/2024/02/08/brazil-sovereign-sustainable-bond-financing-a-greener-more-inclusive-and-equitable-economy.

^{54 &}quot;Development Banks and Energy Planning: Attracting Private Investment for the Energy Transition; the Brazilian Case," International Renewable Energy Agency, October 2024, https://www.irena.org/Publications/2024/Sep/Development-banks-and-energy-planning-Attracting-private-investment-for-the-energy-transition-Brazil.

⁵⁵ Falilou Fall, Priscilla Fialho, and Tony Huang, "Scaling-Up Infrastructure Investment to Strengthen Sustainable Development in Brazil," Organisation for Economic Co-operation and Development, 2024, https://www.oecd.org/en/publications/scaling-up-infrastructure-investment-to-strengthen-sustainable-development-in-brazil_47d65b26-en.html.

^{56 &}quot;Brazil Has a \$1.3 Trillion Opportunity in Low-Carbon Energy Supply Investments, According to BloombergNEF," BloombergNEF, September 18, 2024, https:// about.bnef.com/blog/brazil-has-a-1-3-trillion-opportunity-in-low-carbon-energy-supply-investments-according-to-bloombergnef.

^{57 &}quot;Renewable Energy Integration in Brazil," Renewable Energy Integration, January 12, 2024, https://www.cif.org/news/renewable-energy-integration-brazil.

^{58 &}quot;Brazil Has a \$1.3 Trillion Opportunity in Low-Carbon Energy Supply Investments, According to BloombergNEF."

particular, has the potential to attract significant levels of private investment.

Brazil has plenty going its way that makes it a top candidate to be part of the EMCIC's proposed guarantee portfolio: its twentieth position in the RECAI ranking; its low regulatory risk (given its highly favorable policy toward the energy transition and the active role of BNDES on this front); its relatively low political, economic, and climate risks; and its relatively easy access to large green energy export markets in Latin America.

To be sure, the EMCIC alone cannot address the financing needs of Brazil; this requires other programs such as REI and other concessional financing and guarantee instruments from international donors and MDBs. The country might also receive help from the BNDES Guarantee Fund for Energy Efficiency Credit (FGEnergia), which is designed to support micro-, small-, and mediumsized enterprises (MSMEs) in obtaining financing for implementing energy efficiency initiatives.⁵⁹ Through this program, Brazil's National Electricity Conservation Program (Procel) will allocate 30 million Brazilian real (\$5.2 million) to support credit guarantees administered by FGEnergia.⁶⁰ These guarantees aim to mobilize privatesector funding for energy efficiency projects valued between 200 hundred million Brazilian real and 250 million Brazilian real (\$35 million to \$40 million). In total, these investments will go a long way in advancing Brazil's growth in renewables and reinforcing its already strong regional and global energy transition leadership.

South Africa

Overview: South Africa's energy landscape

South Africa is among the top five coal users in the world.⁶¹ It is also the fifth-largest producer and exporter of coal, with massive reserves estimated at 53 billion tons, or two hundred years of supply at current production levels.⁶² It is thus no surprise that coal contributes to 71 percent of the country's total energy supply and 84 percent of its electricity production. This high usage of coal means that, among EMDEs, South Africa is a top polluter for the size of its economy.

Despite its coal-dominant energy mix, South Africa has pledged to reach net-zero emissions by 2050 and has high potential for renewable energy development. Typical daily solar radiation across South Africa ranges from 4.5–6.5 kilowatts per minute (kWh/m).⁶³ South Africa is also estimated to have the potential to develop as much as 6,700 GW of wind energy.⁶⁴ The country has started tapping these resources, and 30 GW of wind energy projects are in development.⁶⁵

The lack of sufficient transmission, however, is a barrier to widescale wind and solar penetration. South Africa already experiences rolling blackouts as a result of poor policy decisions and Eskom's refusals to sign powerpurchase agreements (PPAs) for renewable projects in 2015.⁶⁶ Although, twenty-seven PPAs were eventually signed in April 2018 under the pressure from the government on Eskom, the damage was already done.⁶⁷ By 2023, outages were occurring for up to eleven hours nearly every day, and progress addressing these issues is slow. In the most recent round of the public Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), grid capacity limitations resulted

61 "Coal in South Africa," Eskom, August 2021, https://www.eskom.co.za/wp-content/uploads/2021/08/CO-0007-Coal-in-SA-Rev-16.pdf.

64 Ibid.

^{59 &}quot;Energy Efficiency Guarantee Fund—FGEnergia," International Energy Agency, July 10, 2024, https://www.iea.org/policies/14050-energy-efficiency-guaranteefund-fgenergia.

⁶⁰ Ibid.

⁶² Ibid.

⁶³ Ifeanyi Michael Smarte Anekwe, Stephen Okiemute Akpasi, and Luke Gaza, "Renewable Energy Investments in South Africa: Potentials and Challenges for a Sustainable Transition—a Review, SAGE Journals, April 13, 2024, https://journals.sagepub.com/doi/10.1177/00368504241237347#fig1-00368504241237347.

⁶⁵ Lameez Omarjee, "SA Can Add 30gw of Wind Energy in 10 Years, but Grid Challenges Will Be Our Undoing—Expert," news24, June 19, 2023, https://www. news24.com/fin24/climate_future/energy/sa-can-add-30gw-of-wind-energy-in-10-years-but-grid-challenges-will-be-our-undoing-expert-20230619.

⁶⁶ Mark Swilling, "South Africa's Electricity Crisis: A Series of Failures Over 30 Years Have Left a Dim Legacy," *Conversation*, April 18, 2024, https://theconversation. com/south-africas-electricity-crisis-a-series-of-failures-over-30-years-have-left-a-dim-legacy-227936.

⁶⁷ Richard Help, "Eskom Finally Signs 27 Controversial PPAs," Tamarindo, April 9, 2018, https://tamarindo.global/insight/analysis/eskom-finally-signs-27controversial-ppas/; Hilton Trollip, "Transforming South Africa's Public Power Purchase Agreement (PPA) Process through Transparency," Energy for Growth Hub, December 2023, https://energyforgrowth.org/wp-content/uploads/2023/12/Final-draft-Transforming-South-Africas-Public-Power-Purchase-Agreement-PPA-Process-through-Transparency.pdf.

Figures S1-S6: South Africa's energy in numbers



Figure S1. Total energy supply, 2022



Figure S3. Net energy imports, 2000–2022



Figure S2. Electricity generation sources, 20232



Figure S4. Net electricity imports, 2000–2022

Figure S5. Share of modern renewables in final energy consumption (percentage), 2000–2021 (ranked 110th in the world)





Figure S6. Renewables share of electricity generation (percentage), 2000–2022 (ranked 118th in the world)

Source: "Energy System of South Africa," International Energy Agency, last visited May 29, 2025, https://www.iea.org/countries/south-africa.

in only 1 GW being awarded to independent power producers (IPPs) out of a total available 4.2 GW.⁶⁸ Hence, in addition to serious investments in renewable power generation, decarbonizing South Africa's economy also calls for massive investments in the country's transmission and distribution network.

Financing the transition: A focus on the grid

For South Africa to achieve its net-zero target by 2050, the energy sector needs \$320 billion in investments and the installation of at least 190 GW of renewables. This translates to the deployment of 6–7 GW of renewable energy every year until 2050. For this to be feasible, South Africa must expand its power grid to support largescale renewable energy capacity nationwide and meet the demands of an increasingly electrified economy. At present, the grid can accommodate only about 30 GW of renewable energy—far below the 190 GW required by 2050. Without grid upgrades, the deployment of renewable energy cannot progress at the necessary pace. An estimated \$12.5 billion is required to upgrade the national grid. Hence, there is an incredible need for private investment in South Africa's renewable generation and transmission infrastructure.

The good news is that recent regulatory developments such as the 2019 South African National Renewable Energy Master Plan (SAREM), 2019 Integrated Resource Plan, 2022 Energy Action Plan, 2024 Electricity Regulation Act (ERA), and Transmission Development Plan 2025– 2034 (TDP) have created an enabling environment for the involvement of private investment in the country's energy sector, with 105 new power plants registered by the National Energy Regulator of South Africa (NERSA) in early

⁶⁸ Alecia Pienaar, "Eskom Publishes Generation Connection Capacity Assessment (2025)," Cliffe Dekker Hofmeyr, November 8, 2023, https://www. cliffedekkerhofmeyr.com/news/publications/2023/Sectors/Energy/projects-and-energy-alert-8-november-eskom-publishes-generation-connection-capacityassessment-2025.

ISSUE BRIEF



South Africa has favorable renewable energy policies and low regulatory risks, making it a good candidate for scaling up private investments. Unsplash/Marlin Clark.

2024.⁶⁹ Wind farms in South Africa have attracted more than \$4.7 billion in investment, including a \$1.3-billion project, the largest of its kind in the country.⁷⁰ In short, South Africa is known for having incredible renewable potential and being one of the best economies with IPPs not just on the continent, but globally. Furthermore, in the 2023–2024 budget, the National Treasury banned Eskom from funding any new generation projects, meaning all new capacity must be privately funded. Therefore, there is a significant thirst for private funding, coupled with new regulations designed to spur and support such funding.

Unlocking capital: How to bridge the funding gap

South Africa, ranked thirty-eighth in the RECAI index, stands out for its low regulatory risks due to highly favorable renewable energy policies, relatively low political risk, and easy access to large green energy export markets in Sub-Saharan Africa, as well as NERSA's active role in this domain and the Johannesburg Stock Exchange's green bonds.⁷¹

These factors make South Africa an excellent candidate for guarantee mechanisms—including the EMCIC, in particular, given its potential for attracting private investment on a large scale In addition to EMCIC, the following two programs could help bridge the investment gap.

^{69 &}quot;Energy Action Plan: One Year Progress Report," Republic of South Africa, August 2023, https://www.stateofthenation.gov.za/assets/downloads/Update_on_ energy_action_plan_AUG23.pdf; Davin Olen, "The Electricity Regulation Act in South Africa," Dentons, October 24, 2024, https://www.dentons.com/en/insights/ articles/2024/october/24/the-electricity-regulation-act-in-south-africa; "South Africa Approves Its Integrated Resource Plan (IRP) until 2030," Enerdata, October 21, 2019, https://www.enerdata.net/publications/daily-energy-news/south-africa-approves-its-integrated-resource-plan-irp-until-2030.html.

⁷⁰ Seth Thorne, "South Africa's Big Power Play Is Paying Off," BusinessTech, November 3, 2024, https://businesstech.co.za/news/energy/798217/south-africas-bigpower-play-is-paying-off.

^{71 &}quot;Johannesburg Stock Exchange Launches Green Bond Segment to Fund Low Carbon Projects," Johannesburg Stock Exchange, October 25, 2017, https://www. african-markets.com/en/stock-markets/jse/johannesburg-stock-exchange-launches-green-bond-segment-to-fund-low-carbon-projects.

Energy Bounce-Back Loan Guarantee Scheme The South African government, in partnership with the South African Reserve Bank, has introduced a loan guarantee scheme to support rooftop photovoltaic solar investments by SMEs and households. Under this program, the government provides a guarantee covering the initial 20 percent of losses, while financial institutions bear the risk for the remaining losses.

African Development Bank Loan Guarantee Program In collaboration with the UK Foreign, Commonwealth, & Development Office (FCDO), the African Development Bank has launched a \$1-billion guarantee program. This initiative aims to enhance the bank's lending capacity to support South Africa's 2021 Just Energy Transition Partnership (JETP), fostering a sustainable and inclusive energy future.⁷²

In sum, the right pieces—including regulations, policies, and renewable resources—are in place to use guarantee mechanisms for financing the advancement of South Africa's energy transition.

Conclusion

Now is the critical moment for private capital mobilization in climate projects, as geopolitical instability, escalating climate disasters, and economic pressures converge to demand urgent action. With many EMDE governments facing fiscal constraints, and with debt distress and public funding proving insufficient, private investment must fill the financing gap to drive the green transition. Geopolitically, energy security concerns and shifting trade dynamics and export controls underscore the need for resilient, sustainable infrastructure. Climate-wise, the increasing frequency of extreme weather events highlights the cost of inaction, making climate-resilient investments both a necessity and an opportunity. Economically, high inflation and tightening monetary conditions create uncertainty, but they also emphasize the importance of de-risking investments to attract private capital. The EMCIC could play a central role in this by mitigating perceived risks, improving creditworthiness, and unlocking large-scale funding for climate projects, ensuring that capital flows where it can make the most climate impact in emerging economies.

Scaling up private capital at the required pace demands a significantly larger pipeline of clean energy projects that align with investors' risk and return expectations. However, in many major EMDEs, the cost of capital for large-scale renewable energy projects remains two to three times higher than in advanced economies or China.⁷³ This disparity stems from real and perceived risks at the country, sector, and project levels. Lowering these risks and reducing financing costs will require innovative and more effective public-private collaboration; EMCIC is an example of such collaboration.

With COP30 on the horizon, the authors of this report and their broader Financing and Achieving Cost Competitive Climate Solutions" (FACCCS) team—which includes Ken Berlin, George Frampton, Artyom Sitnikov, and lan Callaghan—have been enabling dialogue around the EMCIC and the expanded use of guarantees with the Brazilian government and members of the COP30 presidency team. The FACCCS team is also conducting outreach to countries initially identified as suitable for EMCIC guarantee support, including Brazil, Chile, India, Indonesia, Mexico, Morocco, South Africa, and Vietnam. The team will continue to convene stakeholders to discuss the concept, with the goal of announcing a pilot project at COP30.

This year is a critical one for the climate finance community, and the years ahead could present an opportunity to implement the findings of copious reports on the need for financial innovations to scale climate investment, especially from the private sector, in EMDEs and the efficacy of guarantees in doing so.

^{72 &}quot;Achieving a Just Energy Transition," Presidential Climate Commission, last visited May 29, 2025, https://www.climatecommission.org.za/just-energy-transition.

^{73 &}quot;Global Financial Stability Report, Chapter 3: Financial Sector Policies to Unlock Private Climate Finance in Emerging Market and Developing Economies," International Monetary Fund, October 2023, https://www.imf.org/en/Publications/GFSR/Issues/2023/10/10/global-financial-stability-report-october-2023.

About the authors

Amin Mohseni-Cheraghlou is a senior lecturer of economics at the American University in Washington, DC, and was a macroeconomist with the Atlantic Council GeoEconomics Center (2021-2024). During his threeyear tenure at the Atlantic Council, he developed and led GeoEconomics Center's flagship Bretton Woods 2.0 Project and frequently contributed to the center's analytical outputs on various issues related to the global economy and international finance.

Previously, he served as a senior advisor at the International Monetary Fund's Office of Executive Directors and was a research economist and consultant in different departments of the World Bank between 2007 and 2020. Most notably, he was part of the core team at the World Bank working on several rounds and updates of Bank Regulation and Supervision Survey, Global Financial Development Report, and leading the development of Global Financial Development Database.

Mohseni-Cheraghlou's areas of expertise are development macroeconomics, GeoEconomics, energy economics, and international financial and trade relations with a focus on emerging markets, the United States, China, and the Middle East North Africa region.

He holds a PhD in economics, an MA in international development, and a BS in electrical engineering.

Frank Willey is a program assistant at the Atlantic Council Global Energy Center. He works primarily on the Financing and Achieving Cost-Competitive Climate Solutions project. His research interests include climate finance, clean-energy competitiveness, industrial decarbonization, transmission infrastructure, and regulatory policy.

Prior to joining the Atlantic Council, Willey served as a research associate for Stanford University's Center for International Security and Cooperation under Siegfried S. Hecker, preparing materials for the book Hinge Points: An Inside Look at North Korea's Nuclear Program. Willey has worked at several energy companies including a natural gas and power merchant, midstream project developer, and solar investment startup. He was also an intern for the Global Energy Center in the fall of 2020.

Willey holds a bachelor's degree from Stanford University in international relations, specializing in international security and environment, energy, and natural resources. He speaks French and Spanish.

Acknowledgments

The Atlantic Council would like to thank the Fletcher Foundation for supporting its work on this project. The authors would like to thank Annika Harrington, Natalia Storz, and Molly Moran for their research assistance.

This issue brief was written in accordance with the Atlantic Council policy on intellectual independence. The authors are solely responsible for its analysis and recommendations. The Atlantic Council and its donors do not determine, nor do they necessarily endorse or advocate for, any of this issue brief's conclusions.

Appendix I. Types of guarantees

Type of guarantee	Description
Principal guarantee	Ensures the return of the initial investment amount, regardless of market performance.
Capital protection guarantee	Protects a specified percentage of the invested capital (e.g., 80–100 percent) while allowing participation in potential gains.
Return guarantee	Guarantees a minimum return on the investment, such as a fixed interest rate or yield.
Performance guarantee	Ensures a certain level of performance or return based on the underlying asset or portfolio.
Credit guarantee	Protects the investor from losses due to the issuer's default, such as in bond investments.
Liquidity guarantee	Ensures the ability to sell or redeem an investment at a predetermined price or within a specific time frame.
Currency risk guarantee	Protects against losses due to unfavorable exchange rate fluctuations in international investments.
Deposit guarantee	Ensures the safety of deposits in banks or financial institutions up to a certain limit, typically provided by a national deposit insurance program.
Inflation-linked guarantee	Protects the real value of an investment by adjusting returns based on inflation rates.
Sovereign guarantee	A government-backed guarantee, often used in infrastructure or large-scale public-private investments.
Third-party guarantee	A guarantee provided by a third party (e.g., a bank or financial institution) to back the investment's performance or repayment.
Insurance-backed guarantee	Investment guarantees supported by insurance policies, such as annuities or life insurance products.

Appendix II. List of guarantee providers (non-exhaustive)

Global

- Climate Investor One (CIO)
- Export-Import Bank of the United States (EXIM)
- Entrepreneurial Development Bank (FMO) Nasira program
- Global Agriculture and Food Security Program (GAFSP)
- Global Infrastructure Facility (GIF)
- Green Climate Fund (GCF)
- GuarantCo
- Habitat for Humanity's MicroBuild Fund
- International Development Association (IDA)
- International Finance Corporation (IFC)
- International Fund for Agricultural Development (IFAD)
- International Bank for Reconstruction and Development (IBRD)
- Multilateral Investment Guarantee Agency (MIGA)
- Private Infrastructure Development Group (PIDG)
- The Green Guarantee Company (GGC)
- United Nations Development Programme (UNDP) SDG Impact Guarantees
- Climate Investment Platform (CIP)
- United Nations Capital Development Fund (UNCDF) BRIDGE Financing Facility

Africa

- Africa GreenCo
- African Guarantee Fund (AGF)
- Alliance for a Green Revolution in Africa (AGRA)
- Industrial Development Corporation of South Africa (IDC)
- InfraCredit Financial Guarantee
- Le Fonds de Garantie des Investissements Prioritaires (FONGIP)
- EDFI MSME Platform (Sub-Saharan Africa and the EU)

Asia

- Asian Development Bank (ADB)
- Asian Infrastructure Investment Bank (AIIB)
- China Export & Credit Insurance Corporation (Sinosure)
- Japan Bank for International Cooperation (JBIC)
- Korea Credit Guarantee Fund (KODIT)
- Philippine Guarantee Corporation
- PT Indonesia Infrastructure Guarantee Fund (IIGF)
- Thai Credit Guarantee Corporation (TCG)

Australia

- Export Finance Australia (EFA)
- Caribbean
- Credit Risk Abatement Facility (CRAF)

Europe

- COSME Loan Guarantee Facility
- European Fund for Strategic Investments (EFSI)
- European Investment Bank (EIB)
- European Investment Fund (EIF)
- France's Bpifrance Loan Guarantees
- KfW Bank
- UK Export Finance (UKEF)
- Nordic Investment Bank (NIB)

India

- Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)
- Energy Sector Management Assistance Program (ESMAP)
- PMAY (Pradhan Mantri Awas Yojana)
- Indian Renewable Energy Development Agency (IREDA)

Middle East

- Arab Monetary Fund (AMF)
- Saudi Industrial Development Fund (SIDF)

North America

- Export Development Canada (EDC)
- Mexican Trust Funds for Rural Development (FIRA)
- Nacional Financiera (NAFIN)

South America

- Brazilian Development Bank (BNDES)
- Chile's Guarantee Fund for Small Entrepreneurs (FOGAPE)

Atlantic Council

Board of Directors

CHAIRMAN

*John F.W. Rogers

EXECUTIVE

CHAIRMAN EMERITUS *James L. Jones

PRESIDENT AND CEO *Frederick Kempe

EXECUTIVE VICE CHAIRS

*Adrienne Arsht *Stephen J. Hadley

VICE CHAIRS

*Robert J. Abernethy *Alexander V. Mirtchev

TREASURER

*George Lund

DIRECTORS

Stephen Achilles Elliot Ackerman *Gina F. Adams Timothy D. Adams *Michael Andersson Alain Beijani Colleen Bell Sarah E. Beshar *Karan Bhatia Stephen Biegun Linden P. Blue Brad Bondi John Bonsell Philip M. Breedlove David L. Caplan Samantha A. Carl-Yoder *Teresa Carlson *James E. Cartwright John E. Chapoton Ahmed Charai Melanie Chen Michael Chertoff George Chopivsky Wesley K. Clark *Helima Croft Ankit N. Desai *Lawrence Di Rita *Paula J. Dobriansky Joseph F. Dunford, Jr. **Richard Edelman** Stuart E. Eizenstat Tara Engel Mark T. Esper Christopher W.K. Fetzer *Michael Fisch Alan H. Fleischmann Jendayi E. Frazer

*Meg Gentle Thomas H. Glocer Iohn B. Goodman Sherri W. Goodman Marcel Grisnigt Jarosław Grzesiak Murathan Günal Michael V. Hayden **Robin Hayes** Tim Holt *Karl V. Hopkins Kay Bailey Hutchison Ian Ihnatowycz Deborah Lee James *Joia M. Johnson *Safi Kalo Karen Karniol-Tambour *Andre Kelleners John E. Klein Ratko Knežević C. Jeffrey Knittel Joseph Konzelmann Keith J. Krach Franklin D. Kramer Laura Lane Almar Latour Yann Le Pallec Diane Leopold Jan M. Lodal Douglas Lute Jane Holl Lute William J. Lynn Mark Machin Marco Margheri Michael Margolis Chris Marlin William Marron Roger R. Martella Jr. Judith A. Miller Dariusz Mioduski *Richard Morningstar Georgette Mosbacher Majida Mourad Mary Claire Murphy Julia Nesheiwat Edward J. Newberry Franco Nuschese Joseph S. Nye *Ahmet M. Ören Ana I. Palacio *Kostas Pantazopoulos David H. Petraeus Elizabeth Frost Pierson *Lisa Pollina Daniel B. Poneman Robert Portman *Dina H. Powell **McCormick**

Michael Punke Ashraf Qazi Laura J. Richardson Thomas J. Ridge Garv Rieschel Charles O. Rossotti Harry Sachinis C. Michael Scaparrotti Ivan A. Schlager Rajiv Shah Wendy R. Sherman Gregg Sherrill Jeff Shockey Kris Singh Varun Sivaram Walter Slocombe Christopher Smith Clifford M. Sobel Michael S. Steele Richard J.A. Steele Mary Streett Nader Tavakoli *Gil Tenzer *Frances F. Townsend Melanne Verveer Tyson Voelkel Kemba Walden Michael F. Walsh *Peter Weinberg Ronald Weiser *Al Williams Ben Wilson Maciej Witucki Neal S. Wolin Tod D. Wolters *Jenny Wood Alan Yang **Guang Yang** Mary C. Yates Dov S. Zakheim

HONORARY DIRECTORS

James A. Baker, III Robert M. Gates James N. Mattis Michael G. Mullen Leon E. Panetta William J. Perry Condoleezza Rice Horst Teltschik William H. Webster



The Atlantic Council is a nonpartisan organization that promotes constructive US leadership and engagement in international affairs based on the central role of the Atlantic community in meeting today's global challenges.

This issue brief is written and published in accordance with the Atlantic Council Policy on Intellectual Independence. The author is solely responsible for its analysis and recommendations. The Atlantic Council and its donors do not determine, nor do they necessarily endorse or advocate for, any of this report's conclusions.

© 2025 The Atlantic Council of the United States. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without permission in writing from the Atlantic Council, except in the case of brief quotations in news articles, critical articles, or reviews. Please direct inquiries to:

Atlantic Council 1400 L Street NW, 11th Floor Washington, DC 20005

(202) 463 7226 www.AtlanticCouncil.org