POLICY PAPER

Multilateral Development Banks' Contribution to the COP28 Energy Consensus

Status Quo, Needs, and Benchmarks

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GERMANWATCH

Abstract

At COP28, UNFCCC member states agreed to triple renewable energy, double energy efficiency, and transition away from fossil fuels in a just and equitable manner (the so-called COP28 energy consensus). This publication analyses the different components of the COP28 energy consensus (plus enabling connected technologies) to provide recommendations for how multilateral development banks (MDBs) can best support the implementation of the consensus. In doing so, it provides – for every component of the package – an overview of the investment needs, the current implementation and investment status including gaps, and the current contribution by the MDBs, before it proceeds to outline the most important focus areas across MDBs to effectively support the COP28 energy consensus. It also points out information and research gaps that need to be closed to further refine the recommendations.

Imprint

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II. List of abbreviations

ADB	Asian Development Bank
AfDB	African Development Bank
AIIB	Asian Infrastructure and Investment Bank
ASEAN	Association of Southeast Asian Nations
CCfD	Carbon Contracts for Difference
CEB	Council of Europe Development Bank
CIF	Climate Investment Funds
CLIMA	Biodiversity and Climate-Linked Mechanism for Ambition
COP	Conference of the Parties
CSP	Concentrated Solar Power
DFIs	Development Finance Institutions
EBRD	European Bank for Reconstruction and Development
EE	Energy Efficiency
EIB	European Investment Bank
EMDEs	Emerging Markets and Developing Economies
ESMAP	Energy Sector Management Assistance Program
ESCO	Energy Service Company
ETS	Emissions Trading Schemes
EVs	Electric Vehicles
FFSR	Fossil Fuel Subsidy Reform
FX EDGE	Foreign-Exchange Exposure Derivative and Guarantee Facility
GDP	Gross Domestic Product
GEM Database	Global Emerging Markets Database
GHG	Greenhouse Gas
HIEs	High-Income Economies
ICE	Internal Combustion Engine
IDB	Inter-American Development Bank Group
IEA	International Energy Agency
ILO	International Labour Organization
IMF	International Monetary Fund
IsDB	Islamic Development Bank

IP	Intellectual Property
IPCC	Intergovernmental Panel on Climate Change
IPG	International Partners Group
IRENA	International Renewable Energy Association
JETP	Just Energy Transition Partnership
KPI	Key Performance Indicator
LAC	Latin America and the Caribbean
LICs	Low-Income Countries
LNG	Liquefied Natural Gas
LPG	Liquid Petroleum Gas
LT-LEDS	Long-Term Low-Emission Development Strategies
LTSs	Long-Term Strategies
MDBs	Multilateral Development Banks
MENA	Middle East and North Africa
MEPS	Minimum Energy Performance Standards
MICs	Middle-Income Countries
MRV	Monitoring, Reporting, and Verification
NCQG	New Collective Quantified Goal
NDB	New Development Bank
NDCs	Nationally Determined Contributions
NZE	Net Zero Emissions by 2050 Scenario
OCI	Oil Change International
PACE	Property Assessed Clean Energy
PAIA	Paris Alignment Implementation Approach
PMI	Partnership for Market Implementation
PV	Photovoltaics
RE	Renewable Energy
R&D	Research and Development
SEA	South-East Asia
SMEs	Small and Medium-sized Enterprises
SOEs	State-Owned Enterprises
SOFIs	State-Owned Financial Institutions
SSA	Sub-Saharan Africa

TA	Technical Assistance
UNFCCC	United Nations Framework on Climate Change
UN SDG	United Nations Sustainable Development Goal
WB	World Bank Group

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1 Executive summary

At COP28 in Dubai, parties agreed to a historic 'beginning of the end' of fossil fuels, calling on countries to contribute to efforts of '[t]ransitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science' (UNFCCC, 2023b, art. 28d). They also decided to contribute to '[t]ripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030' (UNFCCC, 2023a, art. 28a) (the so-called COP28 energy consensus). The commitments related to renewables and energy efficiency translate into 11.2 TW of renewable energy (RE) capacity installed by 2030 (up from 3.9 TW in 2023), and energy efficiency (EE) improvement rates doubling from 2% to 4% every year until 2030. To achieve this target, states committed to work together while at the same time considering their different starting points and national circumstances.

Global investments in energy transition technologies do not nearly suffice to fulfil investment needs for a successful energy transition in line with the 1.5°C target. Multilateral Development Banks (MDBs) are important financiers in their partner countries' energy sectors. While the geopolitical environment in which MDBs operate has become more difficult since the COP28 energy consensus was agreed, posing restrictions on their ability to shift priorities and financing accordingly, they still have a key role in closing the investment gap for the global energy transition.

The paper intends to provide an overview of the most important priority areas and measures that MDBs should cover to advance the COP28 energy consensus. It does so by examining the different components of the COP28 energy consensus (tripling of RE capacity, doubling EE, and transitioning away from fossil fuels in a just and equitable manner) with regards to their global status and current MDB support. It then develops recommendations for future MDB engagement. A dedicated chapter on connected technologies deals with the importance of grids and storage as well as green hydrogen for the COP28 energy consensus.

Financial, technical, and policy contribution

RENEWABLE ENERGY

RECOMMENDATIONS

ADJUSTMENTS TO INTERNAL GOVERNANCE

- **All MDBs should adopt their peers' best practice Key Performance Indicators (KPIs) on clean energy capacity** for cross-border power trade installed; number of legal/regulatory/institutional frameworks improved in the area of RE (if applicable); and number of private sector clients with improved climate corporate governance.

- **All MDBs should adopt sectoral metrics on the decarbonisation of the energy system** and work with countries on sectoral strategies for scaling up RE and decarbonising the energy system.

- In line with the MDBs' Common Approach to Measuring Climate Results, **the New Development Bank (NDB) should follow its peers and adopt an indicator on RE capacity enabled.**

- **MDBs should apply circular economy criteria to all their energy operations** to make their RE (and EE) investments truly sustainable.

FINANCIAL FOCUS

- **MDBs should make efforts to provide more grant-based climate finance to highly indebted Low-Income Countries (LICs)** that urgently need to scale up renewables for energy access. Highly concessional financing should be considered for countries that face decisions between leapfrogging with high upfront costs, or tapping instead into newly discovered national fossil resources, if it is probable that MDB financing can make a difference.

- **MDBs should implement, over the next four years, the recent recommendations of the Green Guarantee Group**, to scale up their guarantee business.

- **MDBs should systematically evaluate their experiences in equity for RE** and prove options for upscaling it in higher-risk contexts.

- **MDBs should strengthen their efforts regarding debt-for-climate swaps** to create fiscal space for highly indebted countries to invest in renewablesand engage with their shareholders to explore options for participating in direct debt relief measures for highly indebted countries.

- Even where renewables have achieved cost parity, renewables are often still less profitable than fossil fuels and thus need public financial support. To provide this support, **MDBs should seek to intensify their work with state-owned financial institutions** to increase overall RE financing.

REGIONAL FOCUS

- **Applicable MDBs should enhance their renewables support for Sub-Saharan Africa (SSA)**, both technically and policy-wise, as well as financially, at affordable rates. At the same time, MDBs also need to engage with the factors limiting the involvement of other investors in the region, such as high-risk perceptions, structural problems supporting these risk perceptions (political and economic instability, infrastructure deficits), and debt burdens (including also MDB debt). This includes enhanced support for governments in adjusting the regulatory environment and building institutional capacity, and contributions towards overarching and individual debt solutions.

- **Relevant MDBs should also provide more support to the Middle East and North Africa (MENA) region for scaling up renewables.** Highlighting stranded asset risk in diagnostics and country dialogues and continuing to set incentives for scaling up renewables can be a way forward in fossil-rich countries. In Syria and Libya, building distributed renewables might be a way to restore and improve energy access in selected areas where circumstances allow for MDB operations.

POLICY FOCUS

- **All MDBs should support partner countries to include clear, quantifiable renewable capacity targets in their Nationally Determined Contributions (NDCs).**

- **MDBs should substantially widen their support for regional energy integration** as a crucial lever for effective renewables expansion.

- **The potential of policy-based lending and related innovative instruments** such as the Biodiversity and Climate-Linked Mechanism for Ambition (CLIMA) approach from the Inter-American Development Bank Group (IDB) and the Program-for-Results Financing from the World Bank (WB) **should be used more extensively** to adjust countries' policy frameworks for the purpose of supporting RE.

- **MDB investment in renewables must be closely aligned with the Sustainable Development Goals (SDGs).** Any incentivising of the private sector needs to come with measures to protect the public interest and ensure equitable approaches. To avoid private monopolies and to ensure equitable access, essential infrastructure such as grids for distribution and transmission should remain under public control or made sure to be well-regulated. Public subsidies and incentives should only be granted to companies that demonstrably address the energy access needs of the most vulnerable and foster local green value chain development.

TECHNICAL FOCUS

- Where energy access in rural areas is low, **MDBs need to increase support for distributed solar, wind, and grid infrastructure, but also provide more technical support** to build investable projects or help identify specific energy needs and options in the first place (which could be understood as grass-roots technical assistance (TA)). For the latter, they should look into options to provide grants and increase cooperation with multilateral climate funds.

TECHNOLOGY FOCUS

- In countries with poorly developed markets for renewables, **MDBs need to support market development for solar and wind via equity and concessional financing** specifically for new renewables companies and green tech start-ups.

- In regions where renewables are becoming the prevalent technology, **MDB support is needed for early-stage technologies** (such as floating solar photovoltaics (PV), Concentrated Solar Power (CSP), and special geothermal technologies) **and innovative renewables technologies** (such as floating offshore wind and marine energy) (for example, via equity and grants for Research and Development (R&D)). Based on its expertise with supporting emerging technologies in Europe, there is potential for the European Investment Bank (EIB) to take on a pioneering role as a supporter of these technologies also in regions outside of Europe.

BACKGROUND AND FINDINGS

State of global RE progress and financing

- *Countries' current energy plans would result in only 7.4 TW of renewable capacity installed globally by 2030, resulting in a shortfall of 34% (3.8 TW) of what is needed for a successful energy transition. To reach the COP28 energy consensus goal, renewable capacity must expand by 16.6% annually until 2030. While solar PV needs to grow only 1.6 times, geothermal needs to grow by more than 32 times, CSP by 90 times, and marine energy by 5,000 times to reach the necessary contribution (IRENA).*
- *Annual investments for solar PV are on track to meet the tripling goal. Yet, technologies such as wind, hydropower, bioenergy, CSP, marine energy, and geothermal remain underfunded on an annual basis. Geothermal energy has the potential to attract private investment from oil and gas companies and utilities, if clear national pathways and regulation push those companies in the right direction. The other technologies are in further need of public support, especially in Emerging Markets and Developing Economies (EMDEs), where private investment in RE is far more limited than in advanced economies.*
- *While the private sector plays an increasingly significant role in RE investment, public finance continues to be essential. Even where renewables have achieved cost parity, renewables are often still less profitable than fossil fuels. State-Owned Enterprises (SOEs) and State-Owned Financial Institutions (SOFIs) play a much more important role for energy financing in developing than in advanced economies.*

Regional needs

- *RE capacity needs to grow the most in the MENA region, followed by SSA and Asia as well as Eurasia (Climate Analytics). Still, projections for Africa do not reflect what would be needed for the region to achieve energy consumption levels similar to OECD countries.*
- *In all EMDE regions, there is a lack of transnational systems essential to balance and trade variable renewable sources across borders.*

MDB RE financing

- *Between 2018 and 2024, MDBs invested USD 138.3 billion in RE.*
- *Of this, 90% were provided as loans, 5% as guarantees, 3% as equity, and 2% as grants; the African Development Bank (AfDB) provided the highest share in grants (10%), the AfDB and the Asian Infrastructure and Development Bank (AIIB) the highest shares in equity (13% each), and the Islamic Development Bank (IsDB) in guarantees (31%). Guarantees remain underutilised and fragmented.*
- *Project financing made up almost 74% of MDB RE financing between 2018 and 2024. Financing via financial intermediaries accounted for 21%, investments in research and studies for 2.5%, policy support for 2.3%, and the share of TA was merely around 0.14% of the total volume of RE investment from 2018 to 2024.*
- *At COP29, MDBs announced that they estimate their climate finance to developing countries will reach USD 120 billion by 2030. Applying the same growth factor to the MDBs' RE financing would mean only reaching about USD 48 billion in RE financing by 2030, far from a tripling of 2022 levels (about USD 72 billion). Yet, a doubling of MDB investments in renewables can already be expected to lead to more than a doubling of MDB-prompted renewables generation, owing to falling costs of renewables and increased momentum of risk-mitigating measures for crowding in private finance.*

MDBs' regional flows for RE

- *The EIB provides by far the largest share of renewable financing: its investments in Western and Central Europe accounted for 40% of all MDB investments in RE in from 2018 to 2024. This shows that there will be a continuing role for MDBs even if renewable markets develop in EMDEs.*
- *Despite its needs, SSA receives the second-lowest per capita investments in renewables by MDBs. Overall, 12% of MDBs' renewables financing to SSA between 2018 and 2024 was disbursed in the form of grants.*

MDB governance

- *All MDBs except the NDB have KPIs on RE in their energy sector strategies or in other strategic documents. Six out of nine MDBs also have a KPI measuring reductions in the carbon intensity of the energy system.*
- *No MDB systematically applies circular economy criteria to all its energy operations*.

MDBs' policy approach

- *In the MDBs' energy sector strategies, regulatory and directive approaches to steer private sector activities seem to receive less emphasis than incentives-based approaches.*
- *The MDBs' partly privatisation-heavy policy reform strategy in the energy sector (e.g. Mission 300) may be able to increase private sector engagement in the RE sector, yet it raises concerns about its ability to deliver affordable and reliable RE, particularly to last-mile communities. Outcomes heavily depend on what is privatised and under what conditions, to avoid transferring financial risks to citizens and governments, undermining public welfare in the process.*

ENERGY EFFICIENCY

RECOMMENDATIONS

MDB GOVERNANCE

- **MDBs should assume a much more active role in Energy Efficiency (EE) support.** Considerations of EE should be an integral part of any MDB project ('energy efficiency first'), whether project financing, development policy financing, or TA, due to its ability to support many other development goals.
- **All MDBs should further elevate and mainstream the topic in their strategic and institutional priorities and adopt KPIs focused on EE in their performance frameworks.**
- **They should report disaggregated data on their EE investments by sector** (buildings, transport, industry) and region to allow for more precise analyses of whether and where MDB investments need scaling up.
- **MDBs should implement requirements that appliances and infrastructure they finance need to adhere to internationally recognised EE certifications.**

REGIONAL FOCUS

- Given projected global energy demand growth, **South-East Asia (SEA) and India should be a focus region of future EE investment by MDBs**.

POLICY FOCUS

- **MDBs should highlight the topic of EE regulation and standard-setting more in their country dialogues, with the aim to start supporting policy reforms for EE in their partner countries.** Potential policy measures to be supported include the setting of national EE targets and the elaboration of respective, cross-sectoral implementation plans; regulation and oversight for large enterprises to conduct energy audits and implement energy management systems; and the regulation of standards for energy-efficient buildings. Also, MDBs can support governments in setting up funding programmes and other financial incentives to facilitate EE investments in buildings or industry (such as investment tax credits, accelerated depreciation for EE equipment, Property Assessed Clean Energy (PACE) programmes, or cash rebates for certified retrofits or appliance upgrades).

SECTORAL FOCUS

- In the transport sector, the building of low-emissions transport infrastructure, policy reform, and the affordability of new, energy-efficient transport modes are the most important challenges in EMDEs. **MDBs should focus their support to EMDE governments on scaling up and electrifying public transport** (on both road and rail). This involves support for building up rail infrastructure (for both passenger and freight transport) and Electric Vehicle (EV) charging infrastructure (including for buses). At the same time, MDBs should support governments in regulatory reforms and enabling measures (including for example phase-out targets for Internal Combustion Engines (ICE) and fiscal support instruments), and in making the new energy-efficient transport modes affordable through long-term financing arrangements and budgetary reforms (such as shifting subsidies from fossil fuels to electrified public transport as a transitional measure). Furthermore, TA should be offered for improving urban planning for walking, cycling, and other forms of low-emissions micromobility. Freight companies should receive MDB support in electrifying freight road transport.

- In the buildings sector, **MDBs should offer support to EMDE governments in crafting support programmes for households to improve EE of heating, cooking, and especially cooling.** In cooperation with national development banks or other financial intermediaries, MDBs should also work to encourage private finance investments in EE of buildings. This is particularly relevant for MDBs operating in Asia, since demand is rising exponentially. Clean cooking programmes are particularly important in Africa. To support behavioural change and awareness, MDBs should support the construction of community demonstration buildings. Moreover, MDBs should support regulatory efforts to implement building codes and standards and internationally recognised EE certification of devices. Importantly, the informal construction sector needs to be included through simplified codes and training. MDBs should also support governments in adjusting urban planning to use waste energy and include measures to adapt city structures to increasing temperatures and water scarcity.

- In the industry sector, **MDBs should scale up their support (both technical and financial) for industrial companies in EMDEs to switch to more energy-efficient equipment and best-available technology, to electrify industrial processes, and to install waste heat recovery systems and digital efficiency solutions.** They should also offer businesses their support for the installation of energy management systems, as well as for training and knowledge exchange on energy management. Given the key role that governments play in enhancing EE in industry, MDBs should scale up their support to governments in EMDEs with rapidly expanding industrial sectors and help them establish a policy and regulatory environment conducive to an energy-efficient industry. This can include the introduction of Minimum Energy Performance Standards (MEPS) for industrial equipment and special electricity prices for industry, but also targeted funding programmes to facilitate electrification and EE of companies. These measures should be accompanied by MDB support for industry development and formalisation. The model of Energy Service Companies (ESCOs) which already exists in a number of countries needs to be further supported by all MDBs in all regions.

COOPERATION OPPORTUNITIES

Given the dispersed nature of EE potential in buildings, transport, and production and the importance of the private sector, **MDBs need to make extensive use of working with national development banks (NDBs), local financial intermediaries (FIs), and other aggregator institutions to support households and Small and Medium-sized Enterprises (SMEs).**

BACKGROUND AND FINDINGS

State of global EE progress and financing

- *Even if the countries achieved all their announced EE pledges and targets, the annual EE improvement rate would still be at only 3%. To double EE by 2030, investments need to grow four to seven times in EMDEs, to about USD 1.9–2.25 trillion per year by 2030. Especially in energy-intensive Middle-Income Countries (MICs), the policy and investment focus needs to shift more towards EE.*
- *The three key sectors for EE improvements are buildings (including household appliances), transport, and industry.*
- *The transport sector has the greatest need for transformative energy efficiency investments. The building of low-emissions transport infrastructure, policy reform, and the affordability of new energy-efficient transport modes are the most important challenges in EMDEs.*
- *The buildings sector in EMDEs has seen and will continue to see a rapid increase in energy demand for cooling as global temperatures rise and economic conditions improve. Plug load appliances make for another large share of energy demand.*
- *The industry sector accounts for approximately 40% of global carbon equivalent emissions and has a fossil fuel share of 65% (2022). Iron and steel, chemicals and petrochemicals, non-metallic minerals such as glass and cement, the textile industry and mining account for the largest share of industrial energy consumption in EMDEs.*

MDB investments in EE

- *MDBs' EE investments are at only 16% of renewables investments, have been falling for two years in a row, and show the lowest levels since 2019. The Asian Infrastructure and Investment Bank (AIIB), AfDB, and IsDB show particularly low investments in EE, each with less than USD 200 million across seven years (2018 to 2024). Yet, a considerable share of MDB EE investments might not be reflected in those figures due to the narrow reporting category used by MDBs.*
- *The transport sector, which has the greatest needs for transformative energy efficiency investments, makes up only 2% of MDBs' energy efficiency investments.*
- *Despite the large projected energy demand growth in Asia, the region receives relatively little MDB support for EE compared to other regions.*
- *MDB investments in EE from 2018 to 2023 consisted of 96% in loans, 0.4% in grants, 2.5% in guarantees, and 1% in equity finance.*
- *From 2018 to 2024, there was only one policy-based operation by an MDB in the field of EE, although public policy measures are important to set incentives and create rules and standards for EE.*
- *Only four out of nine MDBs have KPIs that are directly related to EE (European Bank for Reconstruction and Development (EBRD), AIIB, AfDB, EIB).*

CONNECTED TECHNOLOGIES (GRIDS AND STORAGE, GREEN HYDROGEN)

RECOMMENDATIONS

MDB SUPPORT FOR GRIDS AND STORAGE

Reporting

- **All MDBs should officially endorse the Global Energy Storage and Grids Pledge and in this context start to report on their support for grids and battery storage as of 2027.**

- **MDBs should consider adopting peers' KPIs related to connected technologies, such as indicators related to cross-border electricity trade or electricity storage capacity.**

Support focus

- **MDBs need to increase their support to EMDEs for integrated power capacity planning and grid expansion, as well as for accelerated grid modernisation and digitalisation.** This includes support for better spatial planning and regulatory reforms to assist the rapid deployment of grids and grid-enhancing technologies, including advanced sensors and optimisation tools.

- **MDBs should intensify efforts to support regional energy system integration, as it enhances grid resilience and enables increased uptake and efficient use of variable renewables.** Countries should be offered support in building cross-border transmission lines that link the power grids of different regions or countries, including the technical and financial support for respective coordination and co-financing efforts.

- Regarding storage, **MDBs should focus on de-risking and blending private investments in both utility-scale storage as well as residential and off-grid storage, to help overcome high upfront costs and ensure affordability in EMDEs.** Given the focus on distributed renewables by initiatives such as Mission 300, MDBs should seek to accompany this with broad support for smaller-scale storage options for off-grid facilities.

Regional spotlight

- **MDBs should strengthen their efforts to support underserved countries in South Asia and the MENA region to expand battery storage as part of their decarbonisation pathways.**

MDB SUPPORT FOR GREEN HYDROGEN

- To facilitate the rollout of green hydrogen in heavy industry, shipping, and energy storage, **MDBs can help countries draft national hydrogen strategies, introduce carbon pricing, set up Carbon Contracts for Difference (CCfD), introduce production tax credits, adopt green public procurement rules, and set up public investment programmes in hydrogen transport networks and storage.** They can also provide grants, low-interest loans, and guarantees for the private sector to help improve financial viability and reduce risk for the adoption of green hydrogen.

- Importantly, **MDBs should only support green hydrogen projects that are certain to bring a range of wider development benefits to the country.** This includes improving local access to reliable, affordable, and clean electricity; spurring domestic upstream and/or downstream industrial growth; creating long-term, high-quality local jobs and skills (local value capture); improving or not deteriorating local access to land and water resources; and contributing to the decarbonisation of economic sectors in the country, or to setting up competitive, green industrial bases from the start ('leapfrogging'). MDBs supporting green hydrogen activities should commit to these criteria and evaluate any potential engagements accordingly. Those evaluations should be publicly accessible for independent verification and accountability.

BACKGROUND AND FINDINGS

Global state of progress and investments in grids, storage, and green hydrogen

- *Both grid and storage investments remain heavily concentrated in advanced economies and China.*
- *In most EMDEs, storage often still requires public support to overcome high upfront costs and ensure affordability. A significant upscaling in financing is needed to unlock the full potential of storage solutions.*
- *Global green hydrogen production is forecast to be only about half of what is required by 2030.*

MDB investments

- *There is no systematic reporting on MDB investments in grid infrastructure.*
- *MDB investment in batteries is only a fraction of what they invest in wind and solar.*
- *MDB financial commitments to hydrogen development from 2022 to 2024 totalled USD 7.3 billion. The WB undertook over half of all multilateral finance. India received 60% of the total.*
- *Some MDBs have KPIs related to connected technologies, such as indicators related to cross-border electricity trade (Asian Development Bank (ADB), AIIB) or total electricity storage capacity (AIIB).*

Transitioning away from fossil fuels in a just and equitable manner

GENERAL BACKGROUND AND FINDINGS

- *According to the Net Zero Emissions by 2050 Scenario (NZE) by the International Energy Agency (IEA), coal is to be phased out completely by 2030 in OECD countries and by 2040 in all others. Oil needs to drop by nearly 75% by 2050 compared to 2021 levels, and fossil gas by about 55%. It is clear that a net-zero pathway is not compatible with any new oil and gas fields, coal mines, new unabated coal power plants, or other long-lived fossil infrastructure.*
- *USD 26 trillion must be redirected from coal- and oil-based fossil fuel technologies towards transition solutions. However, 41% of planned energy investments by 2050 remain focused on fossil fuels. Investment in renewables is growing everywhere, but there is no significant reduction of investment in fossil fuels.*
- *The most important measures to transition away from fossil fuels are to set fossil fuel phase-out targets, retire fossil fuel infrastructure, cut fossil fuel subsidies, implement carbon pricing, end ICE vehicle sales, adopt long-term net-zero strategies and just transition measures, diversify fossil-dependent economies, and build green value chains.*

FOSSIL FUEL PHASE-OUT TARGETS

RECOMMENDATIONS

All MDBs should stop financing fossil-related activities. To do so, **they should adopt comprehensive fossil fuel exclusion policies, also extending to downstream oil and gas financing.** Direct or indirect support of the following activities related to fossil gas is fundamentally incompatible with the Paris Agreement and should not be provided by MDBs:

- expansion of fossil gas production, for example exploration or development of new gas fields,
- new infrastructure for further processing or transportation of fossil gas, for example new gas pipelines, Liquefied Natural Gas (LNG) export terminals, and
- activities that increase the demand for fossil gas, for example new gas-fired power plants that are not primarily used to meet peak load and stabilise grid frequency, or gas for cooking and heating when renewables combined with electrification would be an alternative.

Independent external verifications of Paris alignment assessments should regularly be undertaken, in particular of the tests for stranded asset and lock-in risks.

All MDBs should make their complete Paris alignment assessments publicly available for independent verification and accountability purposes.

BACKGROUND AND FINDINGS

Global state of fossil fuel phase-out targets

- *Most countries do not have coal phase-out targets. While 60 have them, 24 of these targets are not compatible with a 1.5°C-aligned pathway. No country has an oil phase-out target and none has an explicit target to reduce the use of gas.*
- *In many developing countries, investing in gas now means missing the opportunity to leapfrog directly to renewables and storage.*

MDB efforts to phase out fossil fuels

- *Most MDBs exclude direct coal financing (an exception is IsDB). Only the EIB excludes investments in all types of fossil energy including downstream oil and gas.*
- *In 2023, MDBs still spent USD 4.9 billion on oil and gas, or fossil efficiency more generally, with the IsDB being the largest investor by far.*
- *Independent verification of MDBs' Paris alignment assessments of projects is difficult since only the IDB and EBRD tend to publish comprehensive annexes with assessment results of state/sovereign projects.*

RETIRING FOSSIL FUEL INFRASTRUCTURE

RECOMMENDATIONS

MDBs should ramp up efforts to help countries phase out fossil fuel infrastructure and replace it with renewables. This should include gas to avoid countries being stuck with stranded assets and liabilities in the 2030s to 2040s.

MDBs should consider adopting a KPI on fossil fuel energy capacity retired/replaced by renewables.

MDBs need to observe a number of criteria to ensure additionality, integrity, and effectiveness of fossil retirement projects: environmental integrity, economic justification and cost-effectiveness, just transition principles, careful financial structures and full transparency, credible replacement of retired capacity with renewables, actual additionality, and Paris alignment. MDBs supporting fossil retirement activities should commit to those criteria and evaluate initiatives accordingly. The results of these evaluations should be publicly accessible for independent verification and accountability purposes.

BACKGROUND AND FINDINGS

- *Overall, 76% of global operating coal capacity does not have a planned closure or phase-out commitment, most of it in East Asia, but also South Asia, SEA, and Eurasia/Russia.*
- *MDBs are beginning to move beyond simply reducing or excluding new fossil fuel investments to actively facilitate the early retirement of existing fossil infrastructure. However, so far, the initiatives are few and limited to coal infrastructure.*

CUTTING FOSSIL FUEL SUBSIDIES

RECOMMENDATIONS

- **All MDBs should include support for fossil fuel subsidy reform in their climate strategies. In particular, regional MDBs should become more active on the topic.**
- As standard, **MDBs should assess different fossil fuel subsidy reform options in their country analyses and highlight their benefits in country dialogues, with the aim to include such reforms in each country strategy and support countries through respective policy-based operations.** Also, MDBs should coordinate and align their country strategies in this regard.
- To ensure that reforms are just, effective, and durable, and that their impacts extend beyond fiscal savings to climate change mitigation, **MDBs should adopt the following key principles and fully implement them by 2030: ensure social protection and equity; strengthen political economy and public buy-in; align reforms with broader development and climate goals; ensure fiscal and price transparency; tailor MDB instruments to country contexts; and align MDB portfolios** (stop fossil fuel expansion and ensure MDB strategies integrate fossil fuel subsidy reform).

BACKGROUND AND FINDINGS

- *Global fossil fuel subsidies amounted to USD 7 trillion in 2022, reflecting a USD 2 trillion increase since 2020. They are expected to rise further to up to USD 8.2 trillion in 2030, mainly due to the growing share of fuel consumption in emerging markets.*
- *EMDEs lead the subsidy burden both in absolute terms (80–85%) and proportionally to their GDP (~10–32%). East Asia and Pacific – mainly EMDEs – accounted for 48% of total global subsidies in 2020.*
- *MDBs have supported fossil fuel subsidy reform in multiple countries, with varying success. The WB (alongside the International Monetary Fund (IMF)) has been most active in this field. Political economy has been a decisive factor for success.*

CARBON PRICING

RECOMMENDATIONS

- **MDBs should jointly assess the extent to which the WB Partnership for Market Implementation (PMI) covers all countries for which a carbon market is feasible, or where additional engagement of regional MDBs is needed and demanded, and in which form.**
- Beyond early TA and policy design support, **MDBs should offer TA in the form of hands-on and long-term implementation support, to ensure effectiveness and sustainability of implementation.**
- Importantly, **MDBs should offer to assist countries in dealing with political economy factors surrounding carbon pricing**, for example in conducting distributional impact assessments, stakeholder engagement processes, and communication strategies.
- **MDBs should also help countries explore options for regional carbon market integration and coordination** (e.g. in SEA or parts of Latin America and the Caribbean (LAC)) to increase efficiency and reduce leakage.
- **When supporting countries in NDC and Long-Term Strategies (LTS) design as well as public investment plans, MDBs should highlight the benefits of embedding carbon pricing mechanisms.**
- **To model good practice, all MDBs should apply a (shadow) carbon price in project appraisals.**

BACKGROUND AND FINDINGS

- *About 28% of global Greenhouse Gas (GHG) emissions are covered by carbon pricing, generating over USD 100 billion in government revenue in 2024. However, about two-thirds of covered emissions were priced below the USD 40–80 per t CO_2 benchmark needed for meaningful climate impact. Current pricing, especially in Africa, is far too limited, with social and political challenges being particularly high in LICs.*
- *There is no overview on how much MDBs invest in supporting design and implementation of carbon pricing instruments in partner countries.*
- *The WB is by far the most active MDB in this field. Its PMI currently assists 35 countries in designing, piloting, and implementing carbon pricing instruments.*

1.5°C-COMPATIBLE LTS

RECOMMENDATIONS

- **MDBs should scale up their support for LTS design and implementation, especially in Africa and LAC.**
- **Shareholders should effectively capitalise respective facilities such as the LTS Program.**
- When supporting countries' LTS design and implementation, **MDBs should observe some key principles to ensure that strategies are both credible and transformational: promote fossil fuel phase-down/phase-out pathways; align with just transition principles; strengthen ownership and institutional capacity for development and implementation; ensure coherence with investment planning; and include measures for transparency and measurability of progress towards fossil transition.**

BACKGROUND AND FINDINGS

- *A total of 78 out of 185 UN member countries have submitted an LTS to the UNFCCC Secretariat, and six EU countries have submitted an LTS to the European Commission.*
- *Chile, Colombia, and Costa Rica have the only three 1.5°C-aligned LTSs globally. All other LTSs lack the critical short- and medium-term (2030–2035) emissions trajectories and sectoral milestones needed for 1.5 °C compliance.*
- *Africa and LAC have particularly low numbers of countries with LTSs, reflecting systemic challenges.*
- *MDBs already support their partner countries in multiple ways in developing and implementing long-term climate strategies. In 2021, the MDBs agreed on a series of principles to guide their support for LTSs of both private and public sector clients.*
- *One of the main vehicles to streamline support is the MDBs' joint LTS Program, which officially started delivery by COP29. However, the programme has struggled to be effective due to funding difficulties hindering it from being able to meaningfully support the development of LTS on a global scale.*

JUST TRANSITION

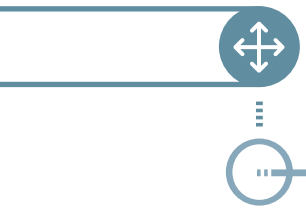
RECOMMENDATIONS

- **MDBs should agree on joint criteria and metrics for tracking just transition support and for evaluating its climate and social impacts until the end of 2025.**
- **They should start jointly reporting on their activities and financing in this regard in 2027,** as part of their reporting under their Paris alignment commitment.
- **Just transition activities should be described more explicitly in the MDB mitigation finance tracking methodology,** which is due to be revised by the end of 2026.
- **The WB should update its Just Transition Taxonomy to include criteria applying to just transitions away from other fossil fuels and a holistic just transition across sectors.**
- In scaling up their just transition support, **MDBs** (jointly with the entire International Partners Group (IPG)) **need to address the manifold criticisms of current Just Energy Transition Partnerships** (JETPs), **especially on inclusivity, justice aspects, and financing terms.**
- **In operationalising their High-Level Just Transition Principles, MDBs should complement them with the following principles: enhance transparency through clear disclosure of financing terms and open tracking of project pipelines and timelines; increase ownership through the consideration of political economy factors and early stakeholder engagements; highlight opportunities for restorative justice; ensure financing terms do not worsen debt burdens; avoid de-risking private finance at the cost of public interest; ensure transitions do not displace communities without proper support, reskilling, or social safety nets; and go beyond project-by-project financing to catalyse systemic change in the energy sector.**

BACKGROUND AND FINDINGS

- *There is currently no universally agreed definition of a just transition, and there are no global numbers on public or private spending on just energy transitions. Yet, the Independent High-Level Expert Group on Climate Finance estimates that around USD 40 billion per year will be required for ensuring a just transition in EMDEs (excluding China).*
- *A successful energy transition will be able to create 9 million jobs globally, while missing out on it will make 80 million people lose their jobs.*
- *While still evolving, JETPs represent a significant step forward in aligning climate finance with social inclusion and development. However, multiple challenges remain, especially related to financing, inclusiveness, and the narrow focus on coal.*

- *In 2021, MDBs released their joint Just Transition High-Level Principles, but operationalisation and coordination remain a challenge.*
- *MDBs have recognised that just transition questions need to be considered from the very beginning of country engagement and are supporting various countries in justice aspects of their energy transitions. They are involved in all JETPs currently under way and there are signs that MDBs will take on an even bigger role in JETPs or similar models.*
- *The WB has developed a Just Transition Taxonomy but it focuses only on coal.*
- *MDBs do not report on the share of just transition financing in their joint climate finance reporting and there is no overview of their investments in this regard.*



ECONOMIC DIVERSIFICATION AND GREEN VALUE CHAINS

RECOMMENDATIONS

The MDBs' starting point of engaging on transitioning away from fossil fuels should be joint strategising with partner countries about how they can economically benefit from the global transition to net zero, so as to offer viable alternatives to fossil fuel-driven development.

In the course of the next two years, **MDBs should develop a joint approach to support countries in green industrialisation and the creation of green value chains.** They should then integrate this approach consistently in well-coordinated country and regional strategies, and make sure it can guide any country engagement on decarbonisation. These approaches and strategies should also be closely tied into any efforts to develop country platforms.

Shifting the balance of value capture towards the Global South needs a willingness of shareholders from industrialised countries to support the transfer of technology and Intellectual Property (IP) rights for the sake of development and decarbonisation in developing countries. **MDBs should use their expertise and contacts to actively advocate for the transfer of essential technology components with their respective shareholders.**

Importantly, **MDBs should engage with their partner countries on two aspects. Firstly, raw materials and green products should not be destined only for export; rather, they should also benefit local populations and markets. Secondly, MDBs need to make sure that mining operations financed (directly or indirectly) by MDBs are managed with strong safeguards.**

Moreover, **MDBs should support critical broader financial architecture reforms** (debt, taxes, financial stability) **that are necessary as systemic enablers of a just and sustainable transition.**

BACKGROUND AND FINDINGS

- *Half of the world's oil and gas is produced by middle-income developing countries. The fiscal crisis following global oil and gas decline will be quite severe for these countries, putting social and economic development progress at risk.*
- *Even more than countries with heavy coal use, heavily gas-dependent countries need concrete and economically attractive alternatives to transition away from gas.*
- *Enhanced support for green industrialisation and the development of local and regional green value chains can help countries either leapfrog to clean industries or decarbonise existing industries, create green jobs, improve livelihoods, and build domestic capacity to meet the rising demand for clean technologies. Strengthening local supply chains and manufacturing could position Africa as a global leader in battery technology.*
- *Pathways to economic diversification and green industrialisation can include leveraging EMDEs' natural assets for green exports, moving up the value chain, accessing green trade and investment opportunities, and greening SMEs so they can participate in sustainable value chains.*
- *It is unclear how much MDBs invest in supporting green industrialisation and green value chains in EMDEs, but they seem to increasingly prioritise the topic.*
- *Support for developing green value chains, combined with regional integration efforts and a willingness of shareholders to facilitate technology transfer and IP rights to EMDEs, is the most powerful strategy for MDBs to help countries transition away from fossil fuels.*

TRANSPARENCY, REPORTING, AND EVALUATION

A lack of data and transparency emerged as an overarching finding.

RECOMMENDATIONS

MDBs should report disaggregated data on their investments in different RE technologies, EE per sector and technology, grids, storage, green hydrogen, just transition, carbon pricing, and LTS to better understand their engagements and be able to track gaps and identify room and priorities for improving engagement.

In order to craft more transformational operations, **MDBs should evaluate climate impact by instrument and include this in their Common Approach to Measuring Climate Results and the respective reporting procedures.**

DEPENDING ON INTERNATIONAL CLIMATE FINANCE COMMITMENTS

Adopting the right approaches and setting the right priorities is one part of the challenge; the other is financial capacity.

On the one hand, while MDBs have gone a long way in crafting and implementing many of the capital adequacy framework reforms suggested by the G20 Independent Review of 2022, several areas still require attention to fully realise their financial potential. These include the clarification of risk appetite frameworks, better reflection of callable capital in capital adequacy frameworks, and the adoption of hybrid capital and other innovative financial instruments to raise additional capital.

On the other hand, the capacity of MDBs to scale and disburse climate finance in ways that support the COP28 energy consensus is directly linked to the fulfilment of the New Collective Quantified Goal (NCQG) and the elaboration of the Baku to Belém roadmap. Current geopolitical factors considerably limit the MDBs' capacity to scale up and intensify their support for the global transition to net zero. This is all the more problematic as MDBs find themselves in a context of overlapping challenges that they are expected to contribute to next to the energy transition, in particular adaptation and resilience, but also nature and biodiversity. Without a credible NCQG and an operational roadmap, MDBs risk being severely underfunded, undermining their ability to deliver on the core pillars of the COP28 energy consensus.

2 Introduction: MDBs' role in international climate and energy finance

Rising energy demand – and rising emissions from the energy sector

The world's demand for energy is projected to rise steadily until 2045 (BP, 2024). At the same time, the energy sector accounts for more than three-quarters of total GHG emissions globally (IEA, 2024h). Current policies are steering the world towards a 2.7°C temperature rise (Climate Analytics, New Climate Institute, and IESR, 2024). This makes the swift implementation of measures for an effective global energy transition a key global priority.

Historic COP28 energy agreement – now facing political headwinds

At COP28 in Dubai, parties agreed to a historic 'beginning of the end' of fossil fuels, calling on countries to contribute to efforts of '[t]ransitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science' (UNFCCC, 2023b, art. 28d). They also decided to contribute to '[t]ripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030' (UNFCCC, 2023a, art. 28a) (the so-called COP28 energy consensus). The commitments related to renewables and EE translate into a total of 11.2 TW of RE capacity installed by 2030 (up from 3.9 TW in 2023), and EE improvement rates doubling from 2% to 4% every year until 2030 (IRENA et al., 2024, p. 33,38). To achieve this target, states committed to work together while at the same time considering their different starting points and national circumstances (COP28, 2023a).

Since COP28, the geopolitical landscape has shifted. The United States' pronounced pivot to fossil fuel development and massive cuts in spending for RE and climate protection, and European donors' shifting of finance from aid budgets to military spending in the face of the ongoing Russian war on Ukraine are reducing flows of funds dedicated to the global transition to net zero. Nevertheless, both international agreements and science unmistakably highlight the need to strengthen international efforts to accomplish the global energy transition towards renewables and away from fossil fuels. And the good thing is that the world has irreversibly set out on this path.

Investments are happening – but very unequally distributed geographically

Significant investments are already happening globally across all energy transition technologies, amounting to USD 1.3 trillion in 2022 (IEA, 2023i). Nevertheless, they do not nearly suffice to fulfil investment needs for a successful energy transition in line with the 1.5°C target. The International Renewable Energy Association (IRENA) estimates that 'yearly investments must more than quadruple to over USD 5 trillion to stay on the 1.5°C pathway' (IRENA, 2023a) and that meeting the UAE Consensus RE and EE goals will require USD 31.5 trillion in cumulative investment in renewables, grids, flexibility measures, EE, and conservation from 2023 to 2030 (IRENA et al., 2024).

Moreover, investments are regionally concentrated, with most clean energy investments since 2021 having occurred in High-Income Economies (HIEs) and China, and low- and lower-middle-income countries accounting for only 7% of the total (Bhattacharya et al., 2023, p. 7). Meanwhile, according to IRENA (see Figure 1), clean energy investment needs until 2050 are highest in East Asia, Northern America, and the rest of Asia (IRENA, 2019).

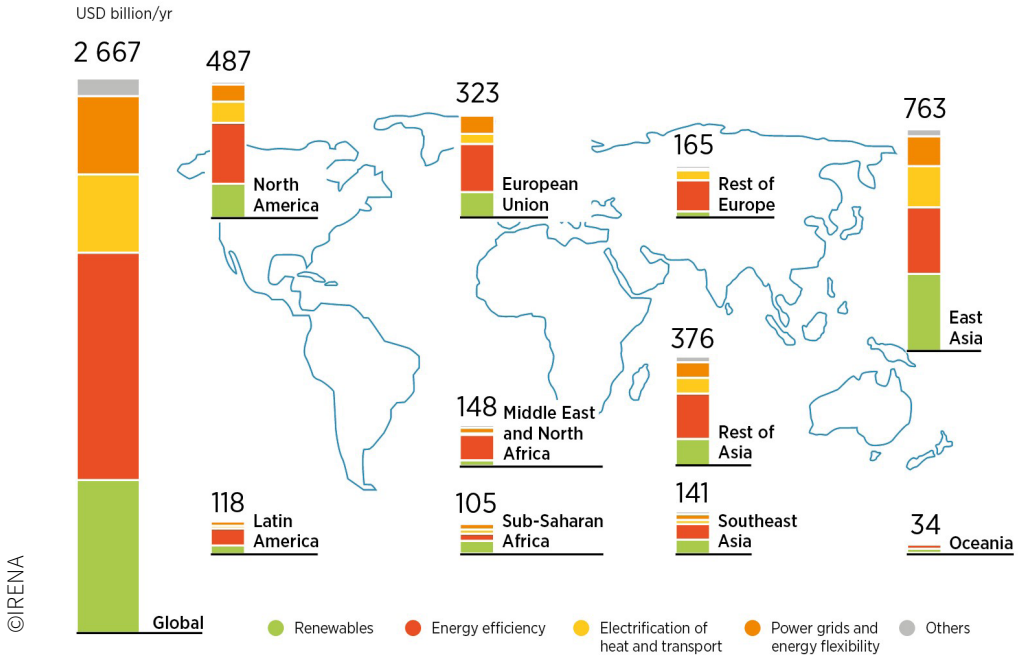


Figure 1: Annual clean energy investment needs for the energy transition by region from 2019 to 2050; Source: IRENA, 2019

MDBs as key players in financing the energy transition

MDBs are important financiers in their partner countries' energy sectors and play a key role in closing the investment gap for the global energy transition.

They have an outstanding ability to leverage financial resources and can also lower the risks perceived by the private sector for investments in developing countries (Mabey et al., 2024; Scull and Moore, 2024). This means that channelling resources via MDBs is one of the most cost-effective ways for shareholders to contribute to the energy consensus, endowing the MDBs with an important role in its delivery. In addition, many MDBs have enormous technical expertise in the energy sector and extensive experience of working with a wide range of countries on their energy transitions.

In 2022 (the reference year of the COP28 energy consensus), MDBs provided USD 26.1 billion of climate finance in the energy sector, which constituted 2% of global investments in clean energy.[1] Making up 40% of all MDB mitigation finance, USD 11.7 billion of energy-related climate finance went to low- and middle-income economies and USD 14.4 billion to HIEs (EIB, 2023).[2] By far the highest amount of MDB clean energy investments went to Central and Western Europe.

By contrast, MDBs keep investing in fossil fuels. Between 2020 and 2022, they invested an annual average of USD 3.2 billion in direct fossil fuel finance, with the WB and EBRD making the largest contributions (Laan et al., 2023). More recent numbers (Figure 40) show the IsDB, WB and EBRD continuing to significantly invest in fossil fuels (OCI, 2024).

1 Own calculation based on the USD 1.3 trillion annual investments in clean energy estimated by IRENA and CPI, 2023.

2 Note that end-use energy efficiency is counted as part of the buildings sector rather than the energy sector, so it is not reflected in these numbers.

For more than two years, intense political efforts have been ongoing to reform the MDBs so they can take on a more prominent role in solving the global crises cascade, including the climate crisis. This development, combined with the urgency of the global energy transition and the broad coalition of UNFCCC parties – including MDB shareholders – behind the COP28 energy consensus, suggests a prominent role for the MDBs in fulfilling the energy consensus. For the MDBs, this means that they will have to ramp up their efforts to support the expansion of RE, EE, fossil fuel phase-out, and just transitions in their partner countries. For their shareholders, it is a call to contribute to this endeavour by steering the banks accordingly and ensuring respective financial contributions. In that vein, the Independent High-Level Expert Group on Climate Finance has argued that 'financing from MDBs needs to triple by 2030' (Bhattacharya et al., 2024, p. 6). This is in line with recommendations by a G20-mandated Independent Expert Group on MDB Reform. If MDBs reformed their operating models towards transformational investments, improved their engagement with the private sector, and lowered the costs of financing, they could triple their sustainable annual lending levels to USD 390 billion by 2030 (USD 300 billion non-concessional, USD 90 billion concessional) (Bhattacharya et al., 2023; IEG, 2023).

It should be acknowledged that some CSOs are concerned about an expansion of the MDBs' role in general. They demand wider transformations, for example, in the institutions' governance structures but also with regards to a more inclusive and civil-society-focused approach to investment, as a precondition to enhanced engagement.[3]

3 Aim, methodology, and structure of the paper

This paper attempts to sketch the role that MDBs can and should play in the realisation of the COP28 energy consensus. It does so by, first, examining the different components of the COP28 energy consensus: tripling of RE capacity, doubling EE, and transitioning away from fossil fuels in a just and equitable manner. Given the importance of grids and storage as well as green hydrogen for the energy transition, these aspects are dealt with in a dedicated chapter on 'connected technologies'. The paper concentrates on nine of the ten major MDBs that are part of the Joint MDB Group, an informal coordination mechanism to work on shared development objectives: the WB,[4] AfDB, ADB, IDB, EBRD, EIB, IsDB, AIIB, and NDB. The Council of Europe Development Bank (CEB) has more recently joined this MDB group, too, but is not included in the analyses in this paper due to its more limited mandate and borrower group as well as relatively small subscribed capital.

For each area of the energy consensus, the paper contextualises investment and financing needs, compares them to current investment and realisation levels, examines the current (financial, technical, policy, and institutional-operational) role and priorities of the MDBs in this area, and provides recommendations for the MDBs' contribution to the COP28 energy consensus going forward. Just as the findings might not be relevant to all MDBs, recommendations will not be equally applicable to all MDBs.

The paper faces two main challenges and limitations.

3 For example, Forus demands that finance must be people-centered, locally led, accountable, and seek to shift power towards democratic engagement (Lucey, 2025). The Banking on Renewables Campaign urges that '[p]ublic investments should stop prioritising private profit in renewable energy investments, and instead prioritise benefit to and empowerment of women, Indigenous peoples and other marginalised groups, youth, farmers, and local businesses' (Recourse et al., no date).

4 This acronym refers to the World Bank Group.

Firstly, the scope of the question makes it difficult to provide detailed analysis and recommendations for each MDB and region on each component of the consensus (it does so only where evident and possible). Instead, it intends to provide an overview of the most important priority areas and measures that MDBs on the whole should cover to advance the COP28 energy consensus. However, just as the overall findings might not be relevant to all MDBs, recommendations will not be equally applicable to all MDBs.

Secondly, limited data availability on different investment flows, such as for EE sub-sectors, just transition, and LTS support (by both MDBs and globally), and a lack of disaggregation make it difficult to draw robust conclusions about the size of funding gaps as well as the specific sub-sectors or regions they exist in.

4 Tripling renewable energy

Without the expansion of renewable energies, an energy transition to achieve the 1.5°C target or even the 2°C target will not be possible. During the past decade, the world has seen an unprecedented exponential increase in the installation of RE. According to the WB's Energy Sector Management Assistance Program (ESMAP), '[g]lobal renewables-based power capacity is growing faster than at any time in the past three decades' (IEA, IRENA, UNSD, World Bank Group, WHO, 2024, p. 65), and the speed of market development in this area has regularly outstripped the experts' (past-oriented) predictions (Bond, Butler-Sloss and Walter, 2024). However, to meet the world's growing demand for clean energy, renewable installation needs to keep growing exponentially. Countries' current energy plans would result in only 7.4 TW of renewable capacity installed by 2030, resulting in a shortfall of 34% (3.8 TW) of what is needed for a successful energy transition (IRENA et al., 2024). As 'costs fall by around 20% for every doubling in deployment and have fallen by up to 80% in a decade' (Bond, Butler-Sloss and Walter, 2024, p. 11), finance for renewables will not need to increase in the same way as capacity addition; however, it still needs to grow, focusing on key areas for the transition.

4.1 Renewable energy installation and investment needs – contextualising the tripling goal

At COP28, UNFCCC parties agreed on a tripling of installed RE capacity by 2030, from the baseline of 2023 levels (COP28, 2023).[5] A look into relevant scientific research shows that there is relative agreement in estimations regarding installation requirements in RE for the period up to 2030. However, full comparison of numbers is difficult due to differences and lack of clarity in the operationalisation of RE and in the baseline figures used. Concerning investment needs, estimations differ slightly more but converge sufficiently to give some orientation. The research converges towards 11 to 11.5 TW of renewable capacity to be installed by 2030, and with USD 1.3 to 1.7 trillion of investments required for this annually. Overall, the IEA estimates that a doubling of investments is required to triple renewables capacity (IEA, 2024n, p. 19).

5 As for the operationalisation of renewable energy, it is to be noted that the COP28 energy consensus text does not define renewable energy sources, which leaves the exact definition open or for countries to decide on. In general, the inclusion of solar power, wind power, and small hydropower among renewable energies is widely undisputed. Geothermal energy, large hydropower, the burning of biomass (e.g. wood), the burning of solid waste to generate energy, and biogas and biofuels are more disputed, due to their potentially harmful climate and environmental effects. This publication draws on a large number of different sources which define renewable energy either diversely or not at all; hence, for practicability purposes, we do not provide a specific definition of renewable energy itself.

Source of information	Installation needs by 2030	Investment needs until 2030 (annual average)	Includes (technology, sector)	Geography
COP28 tripling pledge (2023)	Triple installed RE capacity of 2023 (~11.2 TW by 2030 – up from 3.9 TW in 2023)	(no information)	Installed global RE capacity	Global
IRENA, et al., 2024	11.174 TW in total global renewable power generation capacity	USD 1.5 trillion	Solar PV, wind (onshore/offshore), hydropower (excl. pumped), geothermal, CSP, bioenergy, high-potential marine technologies	Global
Songwe et al. 2022	(no information)	USD 1.3 to 1.7 trillion	Power system[6], transport system[7], transforming industry[8], buildings[9], and green hydrogen capacity[10] (costs associated with EE, early phase-out of fossil fuels, and just transition are not included)	EMDCs other than China
Climate Analytics (Grant et al., 2024)	11.5 TW	USD 1.33 trillion	(explicitly does not include grid and storage infrastructure)	Global

Table 1: Overview of calculations from different sources regarding action required on RE globally until 2030 to stay in line with a 1.5°C scenario

As for regional distribution, capacity needs to grow the most in the MENA region, followed by SSA and Asia as well as Eurasia. Investment needs in RE (including grid and storage) are greatest in the OECD countries and Asia, as is reflected in Table 2.[11]

6 Includes zero carbon generation, transmission and distribution, and storage and backup capacity.

7 Includes low-emission transport infrastructure and fleet electrification/hydrogen.

8 Includes industrial processes, without energy efficiency.

9 Includes electrification, without energy efficiency and GHG abatement.

10 Includes production, transport, and storage.

11 Due to limited data availability, the numbers used here include investments in grid and storage, which overall account for one-third of the listed investment. This share can, however, vary between regions.

	Renewable capacity needed in 2030 (GW)	Capacity additions needed over 2023 to 2030 (GW)	Renewable capacity needed in 2030 (relative to 2022)	Renewable capacity growth from 2014 to 2022	1.5°C-compatible investments needed over 2020 to 2030 (billion USD)	1.5°C-compatible investments needed over 2024 to 2030 (billion USD)	1.5°C-compatible investments needed over 2024 to 2030 (USD) per capita[12]
SSA	300	260	X 6.6	X 1.9	690	630	494 (based on 1.27 bn people)
MENA	500	460	X 11.8	X 1.8	810	710	1,183 (based on 599.7 mio people)
Latin America	730	420	X 2.3	X 1.6	1140	920	1,407 (based on 654.4 mio people)
Eurasia	340	240	X 3.6	X 1.2	600	560	104 (based on 5.4 bn people)
Asia	5350	3850	X 3.6	X 2.7	5900	4500	954 (based on 4.72 bn people)
OECD	4290	2910	X 3.1	X 1.7	6300	4600	3,067 (based on 1.5 bn people)
World	11510	8130	X 3.4	X 2.0	15440	11920	1,499 (based on 7.95 bn people)

Table 2: Regional breakdown of 1.5°C-compatible renewables deployment needs and associated investment requirements; Source: Grant et al., 2024

What is notable in these projections is the relatively low figure on per capita investment needs for SSA. Given that many people in the region still lack energy access and renewables have not been rolled out at a significant scale, this might seem surprising. In fact, Africa is far behind the global average in the rollout of renewables. Climate Analytics note that renewable capacity in SSA needs to 'scale rapidly by a factor of seven (double the global average) due to historic underinvestment and energy access needs' (Grant et al., 2024). This indicates that, while numbers for overall investment needs in the region might not be particularly high, they might be harder to achieve. Given that renewables capacity is still very low, SSA has the highest investment needs in renewables as opposed to investment needs in EE, power grids, energy flexibility, and electrification, compared to other regions (until 2050) (IRENA, 2024a). This might also mean that investment needs will keep rising exponentially after 2030, and as long as barriers to private investment remain high, a lot of it will need to be covered by (debt-sustainable) public finance.

12 Based on 2022 population estimates.

At the same time, most 1.5°C compatible scenarios including renewables projections are based on low current electricity consumption levels for SSA, assuming the persistence of the highly unequal nature of current global energy consumption (Grant et al., 2024, p. 20). For example, by 2030, total electricity demand in the region is estimated to be still only around 1 MWh per person (compatible with achieving universal access to electricity by 2030), whereas it is close to 10 MWh per person in the OECD countries (Grant et al., 2024, p. 20). Hence, projections do not reflect what would be needed for the region to achieve similar levels to OECD countries (Blimpo, 2023). A lack of existing fossil fuel infrastructure that would need to be replaced also leads to lower figures than in other regions.

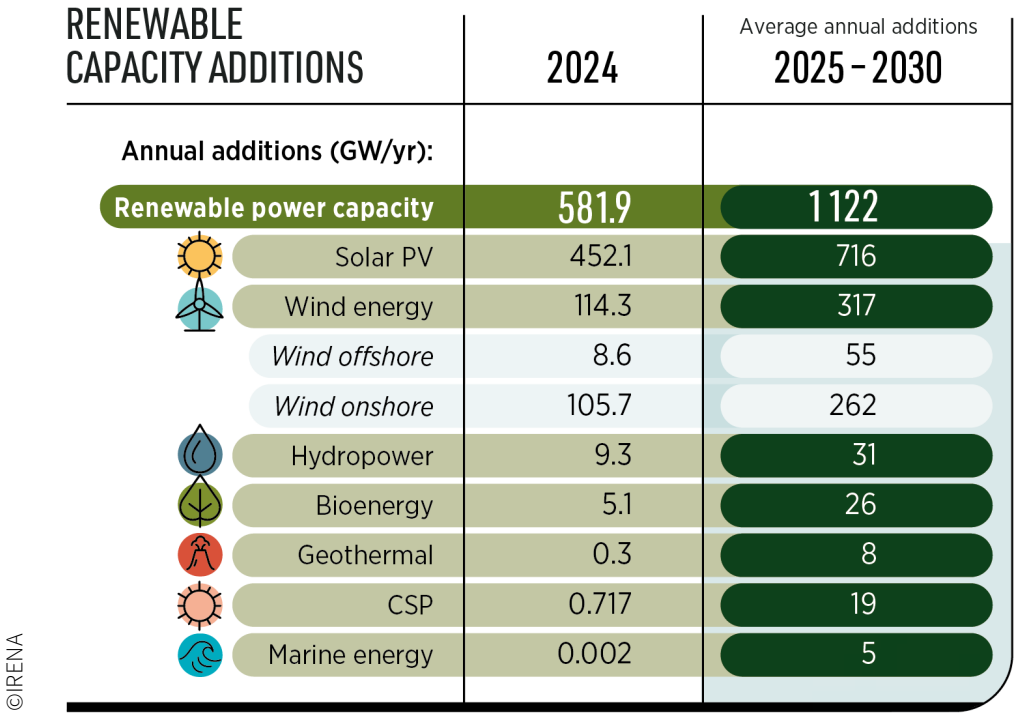


Figure 2: Global renewable capacity additions, per technology, needed for reaching the tripling goal; Source: IRENA, COP30 and GRA, 2025

According to IRENA, different renewable technologies need to grow at different factors to reach the tripling goal. While solar PV needs to grow only 1.6 times, geothermal needs to grow by more than 32 times, CSP by 90 times, and marine energy by 5,000 times to reach the necessary contribution.

4.2 Current renewable energy installation and investments

Investment in renewables has been growing steadily in recent years and achieved new records in 2023. Even in recent times of inflation, high interest rates, and high electricity prices, renewables remained an affordable and secure energy source (Baba et al., 2024). In 2022, 300 GW in renewables were installed globally, making up 83% of new capacity (IRENA, 2023c). In 2023, nearly 510 GW were installed, showing an exponential growth in capacity addition (IEA, 2024c). In 2024, the development slowed down, but with 585

GW of capacity additions, renewables accounted for over 90% of total power expansion globally. To reach the COP28 energy goal, renewable capacity must now expand by 16.6% annually until 2030 (IRENA, 2025a).

As Figure 2 shows, solar PV and wind account for the majority of RE capacity and will need to continue to do so in the future. Much further behind, hydropower and bioenergy come third and fourth, while geothermal, CSP, and particularly marine energy so far contribute only minor shares to overall global RE capacity.

Total new investment in RE amounted to approximately USD 619 billion in 2023 (IRENA et al., 2024) and USD 624 billion in 2024 (IRENA, COP30 and GRA, 2025). The notable difference between the increase in capacity additions and the increase in investment can be largely attributed to the falling costs of RE, which are expected to fall further by 2% to 11% in 2025 (Bloomberg NEF, 2025). Solar PV in particular has become increasingly competitive with fossil-based technology and is attractive for private investors; annual investments for solar PV are on track to meet the tripling goal. Yet, other technologies such as wind, hydropower, bioenergy, CSP, and geothermal remain underfunded on an annual basis.

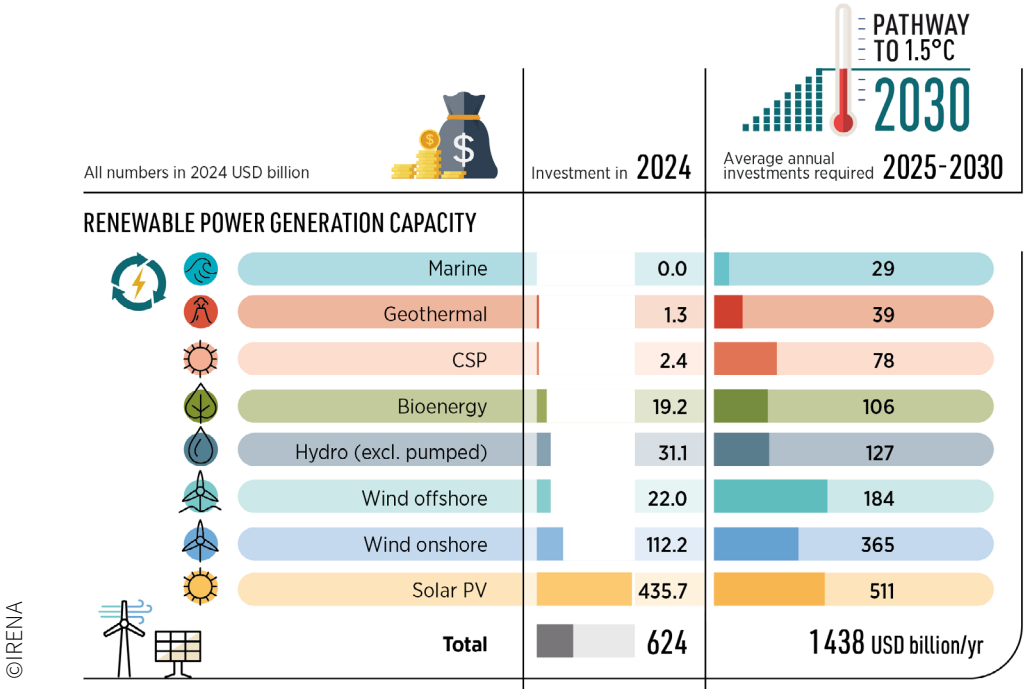


Figure 3: Investment required to triple RE capacity by 2030 compared with 2024 progress; Source: IRENA, COP30 and GRA, 2025

According to IRENA, 'in 2023, investments in offshore wind (USD 30 billion) and hydropower (USD 21 billion) were only 14% of that required […] each year to 2030, while for CSP and geothermal they were just 2% of what is needed. Even the investment in onshore wind stood at only 27% of requirements' (IRENA et al., 2024). Until 2030, USD 1,438 billion of annual investments are required to triple RE capacity by 2030 (see Figure 3). This indicates a role for public finance in directing and accelerating the flow of financing to these technologies.

4.2.1 Unequal geographic distribution of renewable energy installation and investment

Both RE capacity additions and current RE investment are unequally distributed geographically.

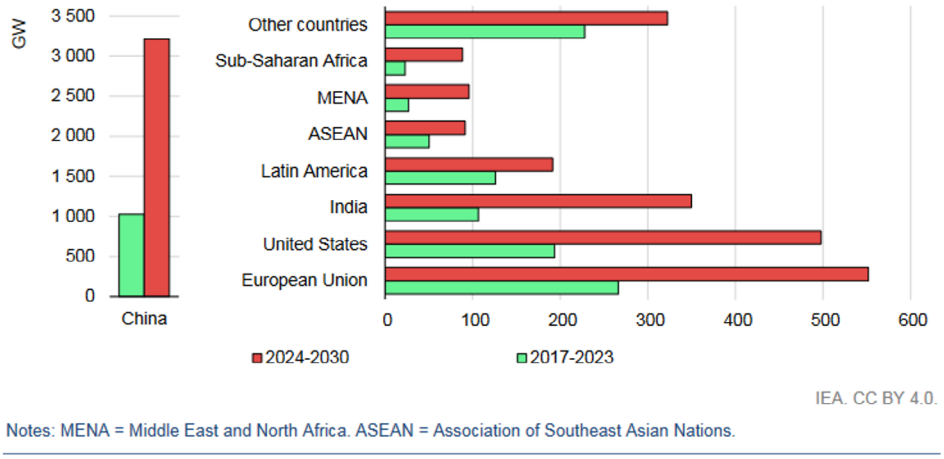


Figure 4: IEA's calculation of past and forecast levels of renewable electricity capacity, by country/region; Source: IEA, 2024c

Under current policies and market conditions, renewable capacity[13] will increase in all regions (IEA's 'main case'), albeit not sufficiently; global renewable capacity is forecast to increase 2.7 times its current level by 2030, falling short of the tripling goal (IEA, 2024j). Besides, capacity growth is very imbalanced between world regions (see Figure 4). G20 countries accounted for 90.3% of new capacity in 2024 (IRENA, 2025a). China's renewable capacity growth is forecast to be about six times that of the EU. SSA, while showing the greatest relative growth, will remain the region with the lowest levels of renewables capacity. That is despite the fact that Africa is home to 60% of the best solar resources globally and has the largest existing access deficits, something which makes a case for increased MDB efforts to support renewable development for energy access in the region (IEA, IRENA, UNSD, World Bank Group, WHO, 2024).

In terms of financial flows, USD 735 billion was invested in renewable power globally in 2023 (IEA, 2024n, p. 59).[14] While EMDEs (excluding China) make up over one-third of global GDP and two-thirds of the global population, they receive only around 15% of clean energy investment (IEA, 2024i). China is rapidly expanding its RE potential, whereas other EMDEs are not able to do the same without international support. RE investment remains lowest in Africa due to limited fiscal space to invest in many countries owing to large debt burdens, high-risk perception, especially by private investors (based on factors such as political instability, regulatory challenges, and infrastructure deficits), and – as a result – overly high costs of capital. It has been highlighted that these risks are often overstated or outdated but cause African countries to face higher costs of capital than others with similar sovereign credit ratings.[15] At the same time, public finance commitments to the region have not always translated into actual flows. Thirteen high-deficit African countries received only a third of the committed amounts between 2013 and 2018, with delays mainly due

13 Renewable electricity capacity is taken as a proxy here since no data is available on capacity addition forecasts per region.

14 Not including USD 416 billion in grids and storage and USD 646 billion in energy efficiency and end-use, as calculated by IEA.

15 BCG. 2024. More Money, Fewer Problems: Closing Africa's Climate Finance Gap. Cited in CPI, 2024

to poor stakeholder coordination, policy and regulatory bottlenecks, limited access to local matching finance, and technical issues related to project design.[16]

Overall, distribution of renewable investments is quite unequal in Africa. Over 50% of energy investment is concentrated in South Africa, Egypt, Nigeria, Côte d'Ivoire, Ethiopia, and Kenya (CPI, 2024, p. 39). This also has to do with differences in African countries' ability to mobilise private finance. For example, 'South Africa and Kenya have more stable financial systems and lower default risks than other countries that are characterized by higher political and economic instability, such as Zimbabwe or Mozambique. Additionally, North African countries like Morocco and Egypt often have stronger credit profiles than many sub-Saharan nations due to more diversified economies and established financial markets' (CPI, 2024, p. 29). What this clearly highlights is a need for additional support in these areas for African countries that are struggling, both technically and policy-wise as well as financially.

Overall, renewables investment in Africa more than doubled from 2022 to 2023. Investment in small-scale solar even tripled during this timeframe, to USD 6.3 billion in 2023, mainly due to investments in South Africa, Nigeria, and Morocco. This shows that the region is quite dynamic, albeit unbalanced (Bloomberg NEF, 2024).

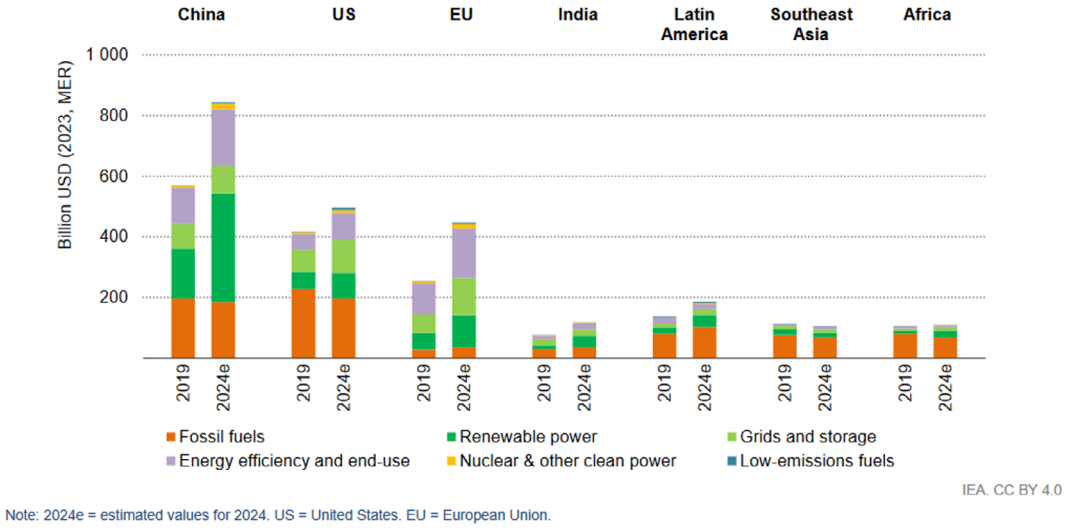


Figure 5: Annual energy investment by selected country and region, 2019 and 2024; Source: IEA, 2024o

Figure 5 also shows that for Latin America, SEA, and Africa, investment in RE remains disproportionately low compared to investment in fossil fuels. The reasons for this differ according to the region in question. LAC, for example, already has a relatively high share of renewables (IEA, 2023h), which is why additions account for less of the total. SEA is still expanding significantly on fossil fuels (although not as much as the US and China) (IEA, 2025b). Africa still has very low levels of renewables overall, with some major projects, such as wind parks in South Africa or large solar projects in Egypt/Niger, having an over-proportional impact on the statistics (IEA, 2022a).

Given that increases in energy demand and, in particular, demand for electricity will be much higher in the Global South than in Europe and North America, effective support for Global South countries to source clean energy will be decisive for climate targets.

16 SEforAll, 2020, cited in IRENA, 2024a, p. 20

4.2.2 Public versus private investments

The biggest share of global investments (around 75%) in RE in the period from 2013 to 2020 was made by the private sector (IRENA, n.d.). However, public investment played an important role in driving these investments, for example through structured RE procurement programmes in the power sector such as feed-in tariffs and auctions supported by credit-enhancement structures (IRENA, 2024b, p. 13).

Overall, international flows of public money to RE have been declining since 2018, both globally and to developing countries, with the main shares of public investments coming from domestic sources with relatively little international collaboration (IRENA and CPI, 2023, p. 21). This declining trend can be attributed to a mix of factors, such as a shift in focus towards using public funds to catalyse private sector financing, which has reduced overall direct public investment in RE, or energy security concerns which have come with a shift in priorities away from renewables. But also, and importantly, market maturation and the increased cost-competitiveness of renewables overall has reduced the need for direct public investment.

Renewables investment can in many places now be undertaken by the private sector, and the role of private finance is expected to grow further. The IEA estimates that for a global net-zero pathway, 'around 60% of the finance for EMDE clean energy investment (outside China) will need to come from the private sector (see Figure 6): this requirement for private sector financing amounts to USD 0.9–1.1 trillion annually by the early 2030s, up from only USD 135 billion today' (IEA, 2023j).

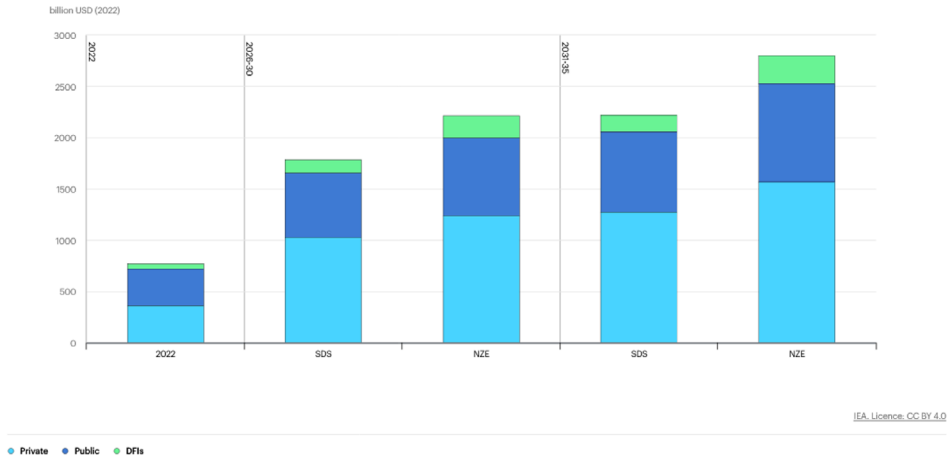


Figure 6: Estimated sources of finance for clean investment in EMDEs in the two main IEA scenarios (SDS = Sustainable Development Scenario; NZE = Net Zero by 2050 Scenario); Source: IEA, 2023c

However, there is still a role for public investments (Songwe, Stern and Bhattacharya, 2022, p. 19). Private finance tends to be directed to RE technologies that are commercially viable and highly competitive; for example, in 2020, 83% of commitments in solar PV came from private finance (IRENA and CPI, 2023, p. 18). In turn, technologies such as geothermal and hydropower still depend more on public finance (IRENA and CPI, 2023, p. 18). In EMDEs in general, private finance is far more limited, including for technologies that are commercially viable in advanced economies.

Moreover, crowding in private finance for climate, just transition and renewables via concessional public finance has turned out to be more difficult and less effective than often assumed by MDBs, far from turning billions into trillions (Alayza et al., 2024; Tucker and O'Manique, 2025).

Another factor is profitability. While fossil fuel companies are able to invest their capital gained from past operations, new renewables producers have to take on debt, which reduces profitability. Hence, even in places where renewables have achieved price parity, private sector financing might not automatically flow to renewables without public support (Christophers, Turner and Horn, 2024).

Geothermal energy, however, has the potential to attract private investment from oil and gas companies and utilities, as up to 80% of the investment required in a geothermal project involves capacity and skills that are common in the oil and gas industry. Besides, such investment can also help them diversify their portfolio to reduce financial risks arising from stranding oil and gas assets (IEA, 2024m). Clear national pathways and regulation serve to push those companies in the right direction.

The share of public and private renewables financing varies significantly according to different regions. While in advanced economies, the share of public financing for clean energy projects is at around 20%, in EMDEs it accounts for around half of the financing (IEA, 2024i, p. 18). Due to perceived financial, political, legal, and economic risks, the private sector is still more hesitant to invest in EMDEs. This is particularly true for SSA; although the region offers USD 193 billion in investment opportunities in renewables energy and transmission by 2031,[17] 'with returns a multiple of those in Europe and the US, private finance plays a much smaller role in the region than globally' (IRENA, 2024b, p. 19). Across the whole of Africa, public investments comprise 58% of overall RE finance, primarily through multilateral Development Finance Institutions (DFIs) (29%), government financing (10%), and multilateral climate funds (2%). Private finance accounts for 42% of the flows, primarily through corporations (19%) and commercial financial institutions (5%) (CPI, 2024, p. 39/40).

On a global level, a look to the types of investors shows the increasing importance of SOFIs in overall RE financing (see Figure 7). Not a commonly used concept outside of IRENA's publications, SOFIs seem to include subnational funds or banks that are not national DFIs; examples are the India Renewable Energy Development Agency, the China-Africa Development Fund, and the Government Savings Bank of Thailand.

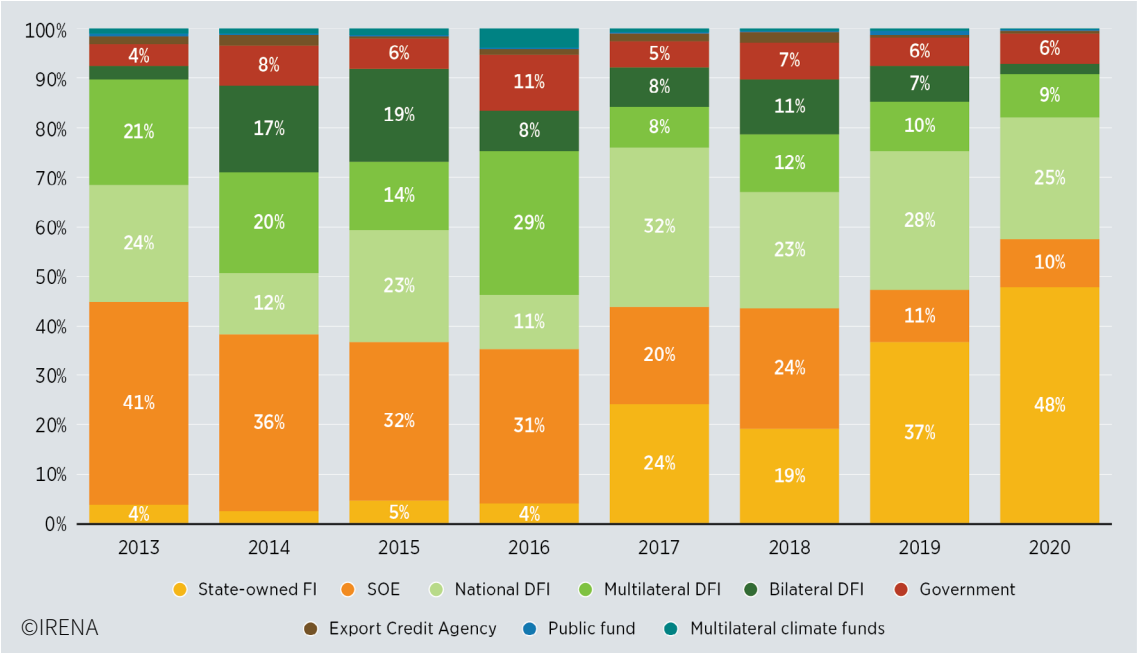


Figure 7: Public investment in RE worldwide by investor type, 2013–2020; Note: DFI = development finance institution, FI = finance institution; SOE = state-owned enterprise; Source: IRENA and CPI, 2023

17 Study by Wood Mackenzie Ltd, cited in Sguazzin, 2024.

What should also be noted is that, compared to advanced economies, SOEs play a much more important role for renewables (as well as fossil fuel) financing in developing economies (see Figure 8).

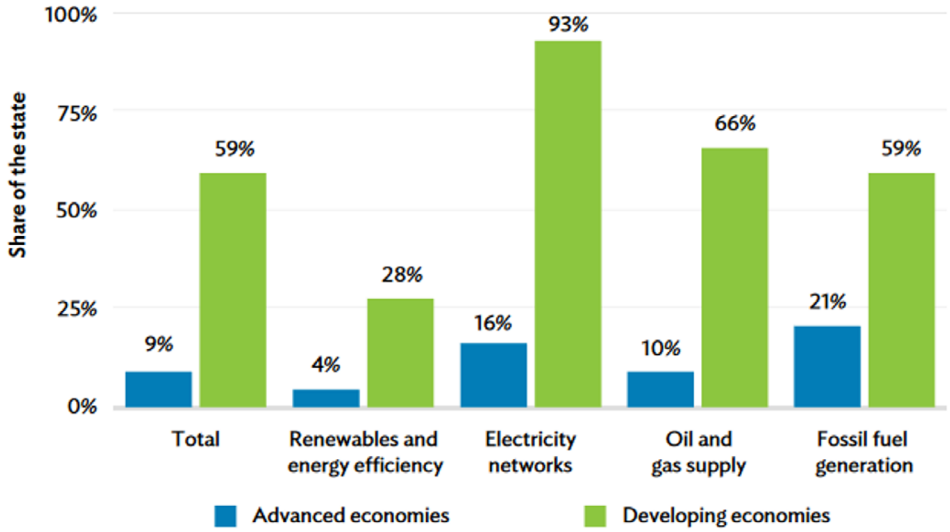


Figure 8: Investments of SOEs by economy type and sector, 2019; Source: Asian Development Bank, 2023; IEA, 2019

This indicates that next to national DFIs, both SOFIs and SOEs are important cooperation partners for MDBs for increasing synergies and effectiveness in the area of RE.

4.3 MDBs' continued role in renewable energy investments

While the private sector plays an increasingly significant role in RE investment, MDBs continue to be essential:

- They can address market failures and barriers by providing risk mitigation and concessional financing to encourage private investment in high-risk, underdeveloped markets.
- They can provide project preparation support to facilitate the development of a pipeline of bankable projects suitable for private off-take.
- They can help create regulatory frameworks that make RE more attractive to private investors, and function as catalysts to leverage private investment in renewables.
- Especially in rural and off-grid areas, where despite de-risking offers the private sector may be unwilling to invest due to low returns on investment or lack of infrastructure, MDBs are needed to finance investments in energy access, jointly with national DFIs.
- MDBs can support the activities of local financial institutions (e.g. through guarantees, credit lines, TA) which in turn can leverage local knowledge and relationships to finance impactful projects.

- MDBs can also finance long-term projects (e.g. complex cross-border projects, long-term industrial decarbonisation efforts, and utility-scale wind or solar in fragile contexts) that the private sector may shy away from due to the long development and payback period.

4.3.1 Overview of MDBs' current renewable energy investments

MDB investments in RE have been rising between 2020 and 2023. 2024 was the first year since 2019 witnessing a slight decline in MDB RE financing. In 2022, the reference year of the COP28 consensus, MDBs invested a total of USD 24.06 billion in RE, which accounts for around 24% of the 98.9 billion[18] that the MDBs (excluding CEB) spent on climate finance that year.

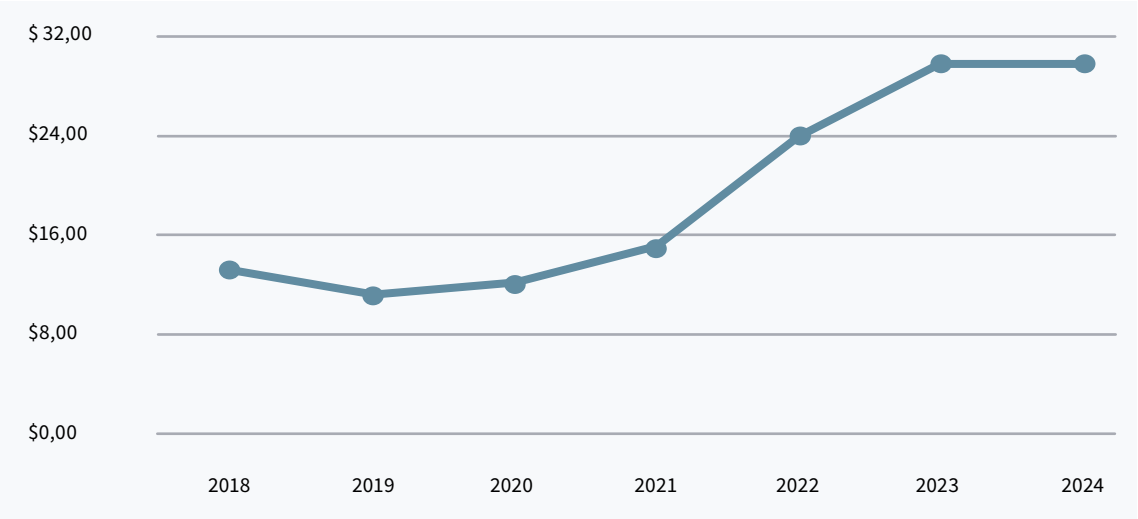


Figure 9: MDB investments in RE, per year, 2018-2024 ; Source: own calculation based on OCI, 2024

Year	Amount
2018	$13,529,554,816.00
2019	$11,428,509,977.00
2020	$12,720,071,324.00
2021	$15,439,737,448.00
2022	$24,059,339,994.00
2023	$30,893,283,015.00
2024	$30,187,698,100.00
Total	**$138,258,194,674.00**

Table 3: MDB investments in RE, in USD, per year, 2018–2024 ; Source: own calculation based on OCI, 2024

From 2018 to 2024, MDBs spent USD 138.3 billion on RE (see Figure 9 and Table 3). 45% of this amount came from the EIB. The second and third largest MDB investors were the WB (26%) and the EBRD (9%) (see

[18] According to the MDBs' annual climate finance report for 2022, they invested USD 99.1 billion in climate in 2022. From this number, we deduced the USD 829 million in climate finance spent by the CEB, given that the CEB is not part of the Public Finance for Energy database.

Figure 10).

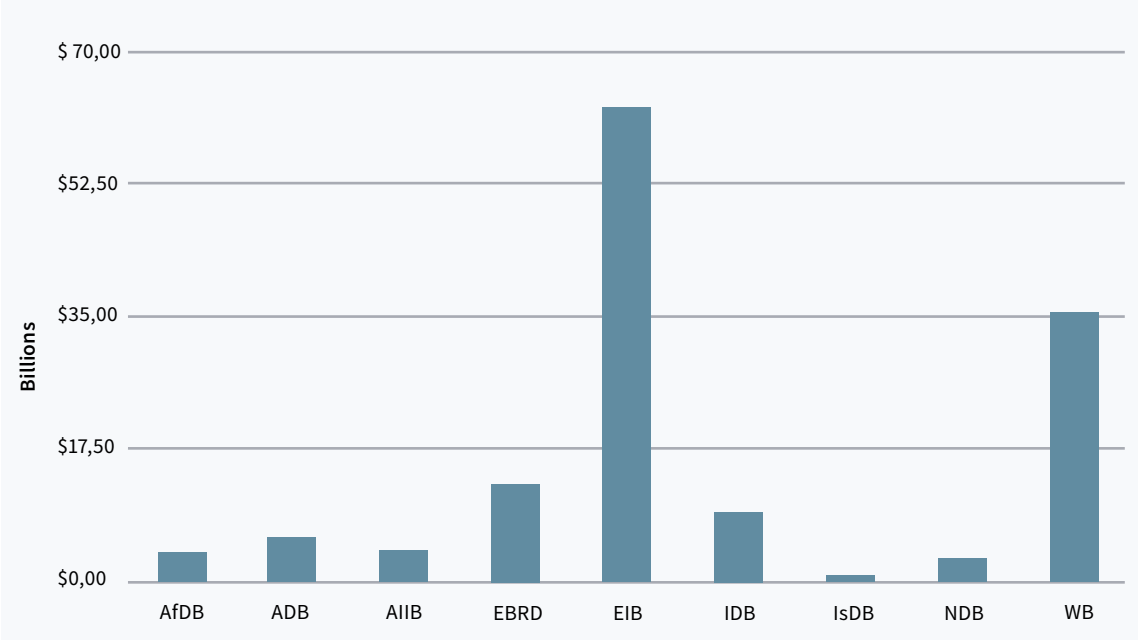


Figure 10: MDB investments in RE from 2018 to 2024, per bank, in USD billion; Source: own calculation based on OCI, 2024[19]

If MDBs were to continue their average annual growth rate from 2018 to 2024 (16.53%), they would reach around USD 77.6 billion of renewables financing by 2030 – more than 3 times the 2022 amount. Given recent stagnation, however, it is unclear whether MDBs will be able to keep up that pace.

In fact, at COP29, the MDBs announced that they estimate their climate finance to developing countries would reach USD 120 billion by 2030, meaning climate finance would have to almost double from 2022 levels (almost USD 61 billion) to 2030. Applying the same growth factor to the MDBs' RE financing of 2022 would mean reaching only about USD 48 billion in RE financing by 2030, far from a tripling of 2022 levels (which would be about USD 72 billion).[20]

At the same time, it is not clear that MDBs would actually have to triple their investments in RE capacity generation to support the COP28 energy consensus in a meaningful way. A doubling of MDB investments in renewables can already be expected to lead to more than a doubling of MDB-prompted renewables generation, due to falling costs of renewables and increased momentum of risk-mitigating measures for crowding in private finance.

By contrast, the case of the EIB shows that there will be a continuing role for MDBs even if renewable prices fall in EMDEs and if markets develop. Supporting policy and regulatory measures, de-risking private investments, filling market gaps for early-stage or emerging technologies, targeting underserved regions, and supporting regional climate and energy goals remains an MDB task, because private

19 The numbers drawn here from OCI on MDB renewables financing differ slightly from the numbers provided by some of the MDBs themselves. This is because, unlike the MDBs, we decided to leave out large hydro as well as biomass and biofuels, but also because OCI disaggregates project financing by activities to the extent that this is possible based on the MDBs' project information, taking the share of clean activities as a proxy for the clean financing share of a project. Besides, OCI also does not include the full policy-based financing amounts since they are difficult to disaggregate. Also, IRENA numbers differ somewhat from OCI numbers. For example, according to IRENA, the MDBs invested USD 9.4 billion in 2020 (or 9% of total public finance)(IRENA, n.d.), while OCI counts investments totalling USD 11.39 billion that year.

20 Neglecting CEB's climate financing here, since it accounted for only 0.08% of total MDB climate financing in 2022.

finance does not always come into the places, technologies, or timeframes that policy and climate goals demand.

While a specific overall benchmark for MDB renewables financing is difficult to set, this paper suggests several areas in which investments need to increase, as well as a number of priorities to set in those areas.

4.3.2 MDBs' renewable energy investments by region

MDBs' investments vary by region. This is partly because, apart from the WB, the MDBs have specific regional focuses and at the same time differing financial capacity.

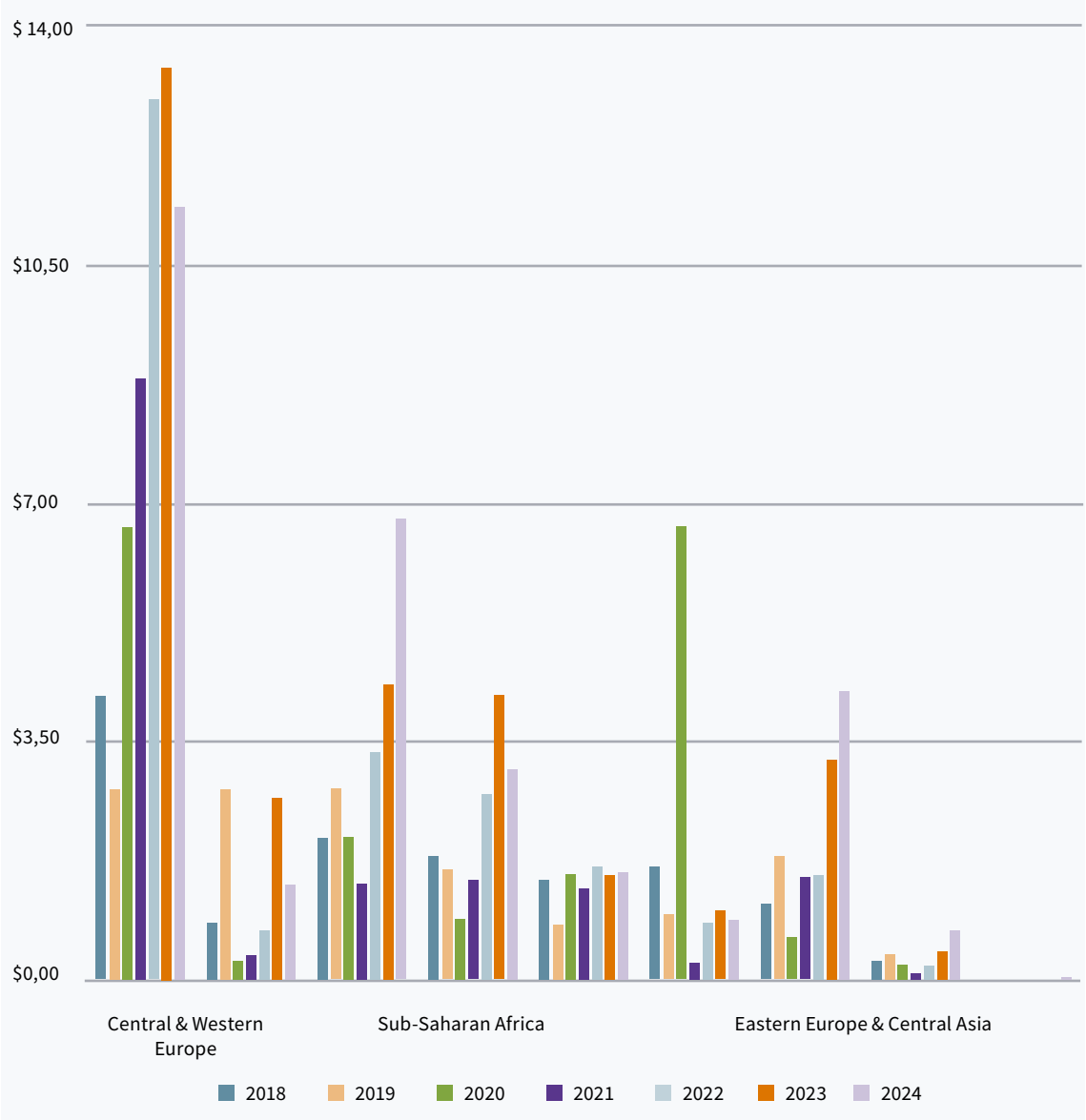


Figure 11: MDB investment in RE, 2018–2024, per region and year; Source: own calculation based on OCI, 2024[21]

The largest amounts of MDB investments targeted at RE go to Central and Western Europe, with an in-

21 The dataset includes countries under 'East Asia & Pacific' that are often also categorized as SEA, such as Vietnam, Indonesia, and the Philippines.

creasing tendency until 2023 (see Figure 11). In 2024, however, only LAC and Eastern Europe & Central Asia recorded a clear increase in MDB RE financing, with finance for all other regions stagnating or declining.

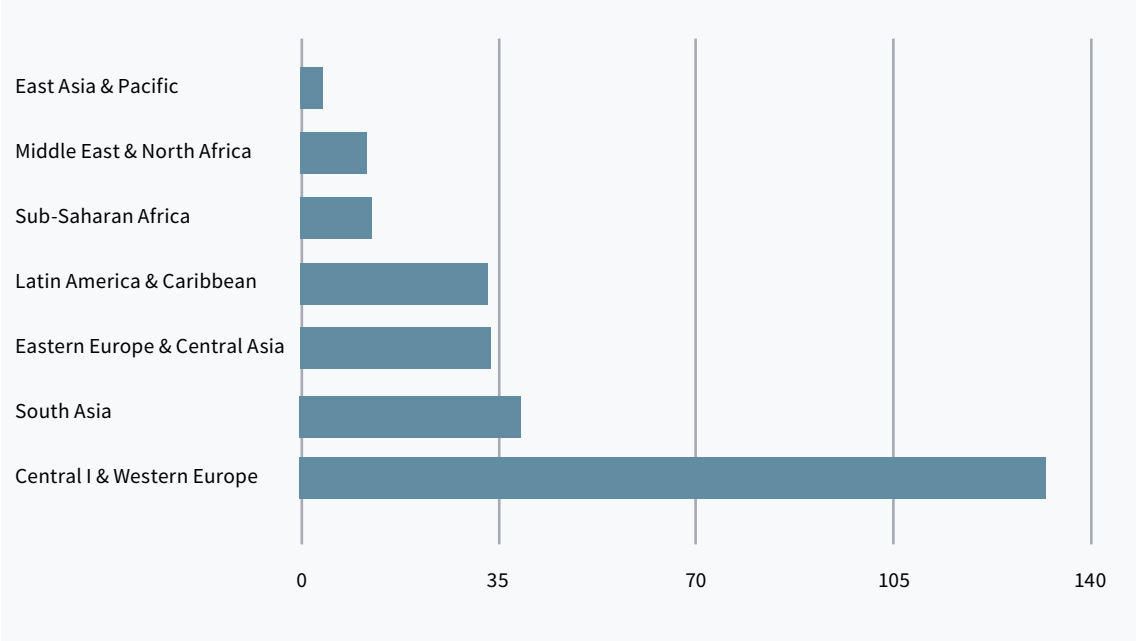


Figure 12: MDB per capita investment in RE, per region, 2018–2024; Source: own calculation based on OCI, 2024; World Bank Group, n.d.[22]

Disaggregation per capita is helpful to better understand the regional distribution of MDB energy financing (see Figure 12). While LAC, South Asia, as well as Eastern Europe and Central Asia receive similar levels of MDB renewables investment, Central and Western Europe receives more than four times the average amount of these regions per capita. The lowest levels of MDB investments per capita go to East Asia, which might be surprising given the high investment needs of the region; potential explanations are the advanced economies of the region and higher reliance on national DFIs such as the China Development Bank, Agricultural Development Bank of China, Japan Bank for International Cooperation, Development Bank of Japan, and Korea Development Bank (although the latter three are still some of the major fossil fuel financiers and are not providing significant shares of renewable financing yet).

The EIB provides by far the largest share of RE financing, and its investments in Western and Central Europe accounted for 40% of all MDB investments in RE between 2018 and 2024. This is mainly due to Europe's heavy reliance on the EIB for funding RE, and the EIB's strategic mandate, which differs considerably from that of other, more 'multilateral', MDBs. Even when the bank invests outside the EU, such as in the context of the EU's Global Gateway Initiative, it supports European economic interests through projects and 'strategic partnerships' that serve EU countries' hydrogen supply, for example in Chile (EIB, 2023a), India (EIB, 2023b), Morocco, and Egypt (De Bassompierre, 2024). At the same time, EIB's significance for RE financing in Western and Central Europe shows that there will be a continuing role for MDBs even if renewable markets develop in EMDEs. De-risking and crowding in private investments, filling market gaps for early-stage or emerging technology or underserved regions, and supporting regional climate and energy goals remains an MDB task. With a respective mandate from its EU shareholders, however, the EIB could put more of its vast resources to use for the effective implementation of the COP28 energy consensus

22 Population data comes from 2023, while investment data is for the total period 2018–2024. Hence, this is not to be taken as completely accurate but can help to identify broad trends.

outside the EU, via its EIB Global arm.

The MENA region receives relatively little per capita investments in RE. The region is rich in fossil fuel resources and many countries have a particularly strong economic reliance on these resources for energy production and export revenues. High fossil fuel revenues make the Gulf states in particular less reliant on MDBs for financing, while at the same time they are seeing some domestic mega investments in renewables. For other countries in the region, domestic fossil resources might lead to a lower immediate incentive to transition away from fossil fuels towards RE. Other countries, such as Syria, Yemen, and Libya, are characterised by political instability and conflicts, which can impact the priorities of MDBs and lead them to prioritise infrastructure investments over renewables, or generally reduce MDB investments due to high risk. Nevertheless, the energy transition and decarbonisation of the MENA region is quite important for achieving the tripling pledge, and MDBs active in the region need to keep pursuing options to support countries. Highlighting stranded asset risk in diagnostics and country dialogues and continuing to set incentives for scaling up renewables (such as what the WB and EIB did with Egypt) might be a way forward in fossil-rich countries. In Syria and Libya, building distributed renewables might be a way to restore and improve energy access in selected destroyed areas where circumstances allow for MDB operations.

Although total MDB investment numbers for SSA seem relatively high, it becomes obvious that they are not from a per capita view, where the region receives the second-lowest amount. This is highly problematic given that Africa needs to roll out renewables at a much higher pace and more broadly than other regions due to existing historic deficits, and that investment needs would be much higher if calculated with a view to achieving equal levels of electricity consumption as other regions. Moreover, many Sub-Saharan countries need high upfront investments in RE; many people are still lacking energy access and renewables need to be built from scratch. At the same time, the private sector is still hesitant to invest in renewables in the region, due to perceived high risks (also promoted by credit rating agencies) and low returns, which is why the region relies heavily on public investment. Domestic sources are limited in their capacity to provide this investment due to shrinking fiscal spaces owing to persistent inflation, high interest rates, and low affordability thresholds (IEA, IRENA, UNSD, World Bank Group, WHO, 2024). MDBs operating in Africa therefore urgently need to scale up their investments in the region, at affordable rates.

When scaling up support, MDB investment in renewables in Africa must be closely aligned with the goals of poverty eradication and increasing energy access. At the same time, MDBs need to take into account the inequitable distribution of (renewable) energy in Africa, as discussed earlier. They need to differentiate between the needs of countries with rapidly evolving markets for renewables and those that still need support to develop such markets in the first place, considering countries' capabilities to mobilise private financial resources. When doing so, it is important to engage with the factors limiting the involvement of other investors in the region, such as high-risk perceptions, structural problems supporting these risk perceptions (e.g. political and economic instability, and infrastructure deficits), and debt burdens (including MDB debt). To better determine how approaches and instruments to scale up renewables need to vary according to the different countries, and where which kind of MDB support is most needed, we need a more differentiated assessment of current and necessary renewables investment on the continent.

4.3.3 MDBs' renewable energy investments by sector

The vast majority of MDB investments flow to wind and solar, while there is much less finance flowing to battery storage,[23] geothermal, green hydrogen, and small hydro (see Figure 13). This is the same across all regions and also holds true for the per capita perspective.

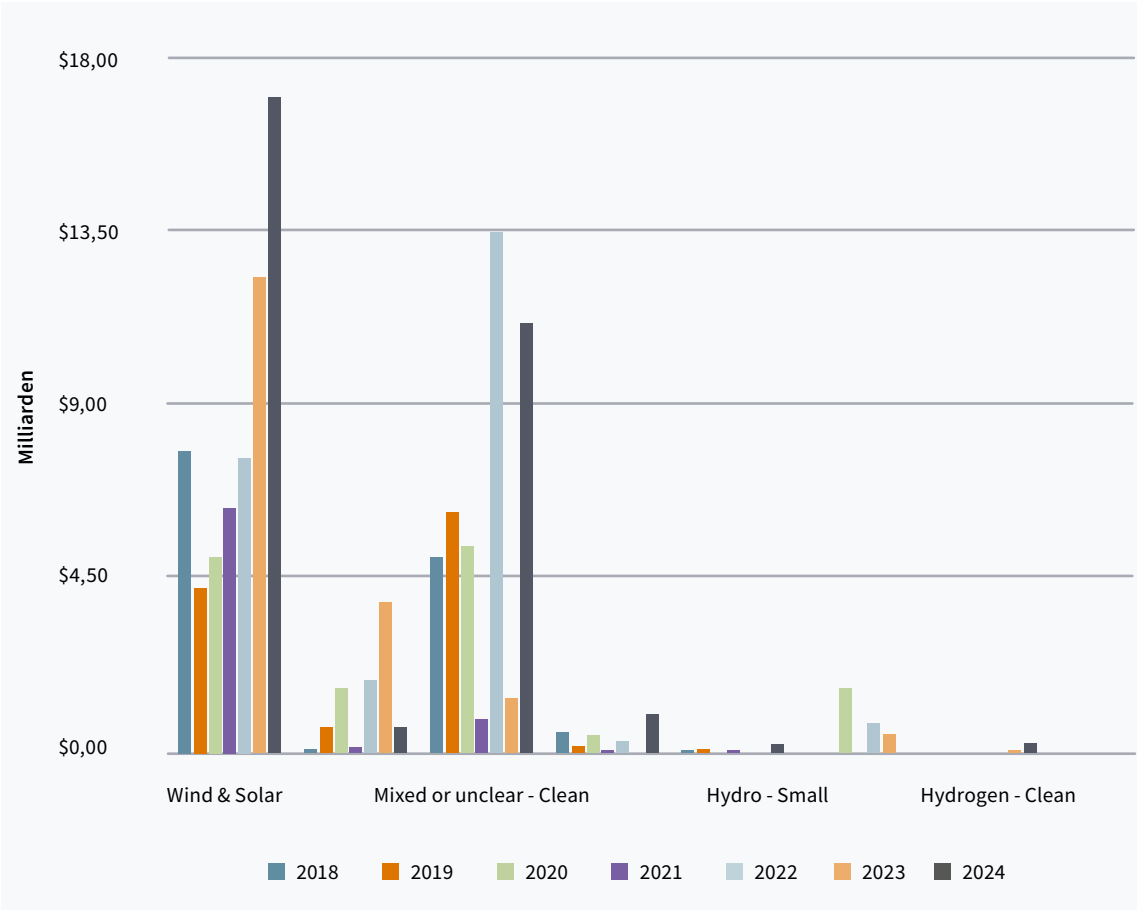


Figure 13: MDB financing for RE, 2018–2024, per sector and year; Source: own calculation based on OCI, 2024[24]

The amount spent by MDBs on wind and solar between 2018 and 2024 is 6.5 times the amount spent on batteries.[25] Apart from solar, all renewable technologies are underfunded, and in particular for marine energy, CSP, and small hydropower, large public investments are needed. Hence, MDBs need to reconsider investment priorities for renewables and evaluate how they can better support other renewable technologies, too.

23 Battery storage will be discussed separately in the section on connected technologies.

24 This figure includes only what has been marked as 'clean' in the database.

25 The data on 'Wind', 'Solar' and 'Wind and Solar' investments used for this calculation excludes the categories 'Mixed or unclear – Clean', 'Renewables – Clean', and 'Climate' (in the graphic summarised under 'Mixed or unclear – Clean') which can be assumed to include a considerable share of wind and solar support, too; thus the share of wind and solar financing can be assumed to still be a lot higher.

4.3.4 MDBs' finance instruments and type of support for renewable energy

When it comes to overall public and private global financing, debt financing remains the primary way to disburse finance for renewables, including in Africa. Of the USD 138.3 billion invested by MDBs between 2018 and 2024 in RE, 90% were provided as loans, 5% as guarantees, 3% as equity, and 2% as grants (see Figure 14).

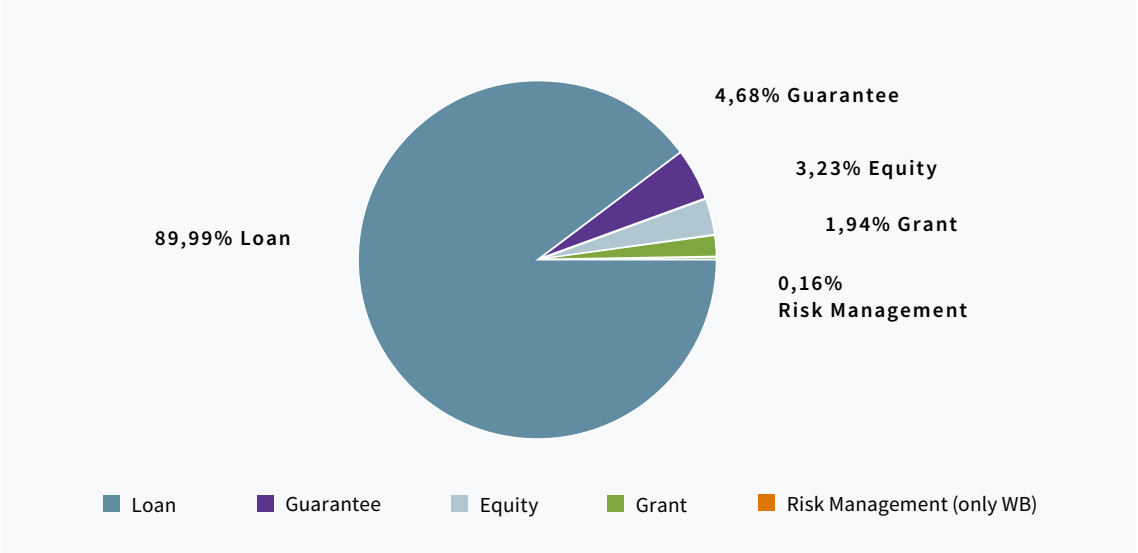


Figure 14: MDB investment in RE, by instrument, 2018–2024; Source: own calculation based on OCI, 2024

However, there are differences between the MDBs as to the shares of different instruments in their portfolios (see Table 4).

	Loans	Guarantees	Equity	Grants	Total
AfDB	73%	5%	13%	10%	$ 3.864.584.660,00
ADB	93%	0%	2%	4%	$ 5.908.070.708,00
AIIB	86%	0%	13%	0%	$ 4.258.166.666,00
EBRD	89%	0%	11%	0%	$ 12.862.281.715,00
EIB	98%	0%	2%	0%	$ 62.450.627.042,00
IDB	90%	5%	2%	2%	$ 9.285.337.776,00
IsDB	68%	31%	0%	0%	$ 860.778.535,00
NDB	100%	0%	0%	0%	$ 3.152.412.368,00
WB	78%	15%	2%	5%	$ 35.615.935.204,00

Table 4: Shares of financing instruments in total MDB renewables financing, 2018–2024; Source: own calculation based on OCI, 2024

Notable are the differences in equity financing between the banks (AfDB and AIIB 13% each, most others zero), the high guarantee share at IsDB (31%) compared to others (ADB, AIIB, EBRD, EIB, and NDB: zero), and the absence of grant financing at AIIB, EBRD, EIB, IsDB, and NDB. Also, regions differ in terms of finance instruments and type of support deployed by MDBs. **While Central and Western Europe receives no grant financing at all, 12% of MDBs' overall renewables financing to SSA between 2018 and 2024 were disbursed in the form of grants**. This reflects MDBs' response to countries' tight fiscal situations and the lack of affordable capital from private markets for urgent renewable investments.

As a tool for crowding-in private finance amid high risk perceptions, guarantees are a way to reduce barriers to private investment in the short to medium term. They also have the advantage of a high leverage factor and of being primarily a non-debt instrument. Some MDBs are currently making efforts to scale up the use of guarantees (e.g. World Bank Group, 2024a), but most MDBs do not offer guarantees, and with a total of 5% of RE financing, guarantees remain underutilised and fragmented. Regulatory barriers, high transaction costs, data gaps, and institutional fragmentation still limit their effectiveness (Green Guarantee Group, 2025). To change this, MDBs should implement, over the next four years, the recent recommendations of the Green Guarantee Group that they are part of. These include: 1) Clarifying the supervisory treatment of guarantees and developing practical methodologies (e.g. for calculating capital relief of complex partial guarantees); 2) Developing local currency risk markets to catalyse investment in local currency (e.g. by scaling currency risk hedges, such as the IDB's FX EDGE, IDB, 2025); 3) Promoting data transparency and knowledge sharing to improve risk pricing (e.g. by expanding the GEM database to include comprehensive guarantee performance data); and 4) Scaling national guarantee institutions and regional platforms to promote pooled guarantee facilities (including a standardisation of underwriting criteria and guidelines across MDBs and other DFIs) (Green Guarantee Group, 2025).

Similarly, equity is still under-utilised as a tool in MDB RE financing. While it ties up more financial resources than guarantees, it is an important way to mitigate high upfront development risks of RE developers — including land acquisition, permitting, grid access, and currency uncertainty – which might deter private investors, and to catalyse follow-on debt financing. The AfDB for example provides early-stage longer-term equity via an aggregator platform in the context of Mission 300 (AfDB, 2025a). Other applicable MDBs with low equity rates (such as the ADB, IDB, IsDB, NDB and WB) should seek to issue more equity for RE in high-risk contexts as part of their private sector operations, for example via partnerships with local or thematic funds, or engaging in aggregator platforms. Systematic evaluations across MDBs on the challenges and success factors of RE equity engagements would be helpful to standardise and coordinate engagement.

Regarding the type of support, **project financing made up almost 74% of MDB financing for renewables between 2018 and 2024. Financing via financial intermediaries accounted for 21%, investments in research and studies for 2.5%, policy support for 2.3%, and the share of TA was merely around 0.14%** of the total volume of RE investment from 2018 to 2024 (see Figure 15).[26]

26 Note that the OCI Public Finance for Energy Database is likely not comprehensive on policy-based operations since, according to OCI, respective reporting by MDBs is not transparent enough.

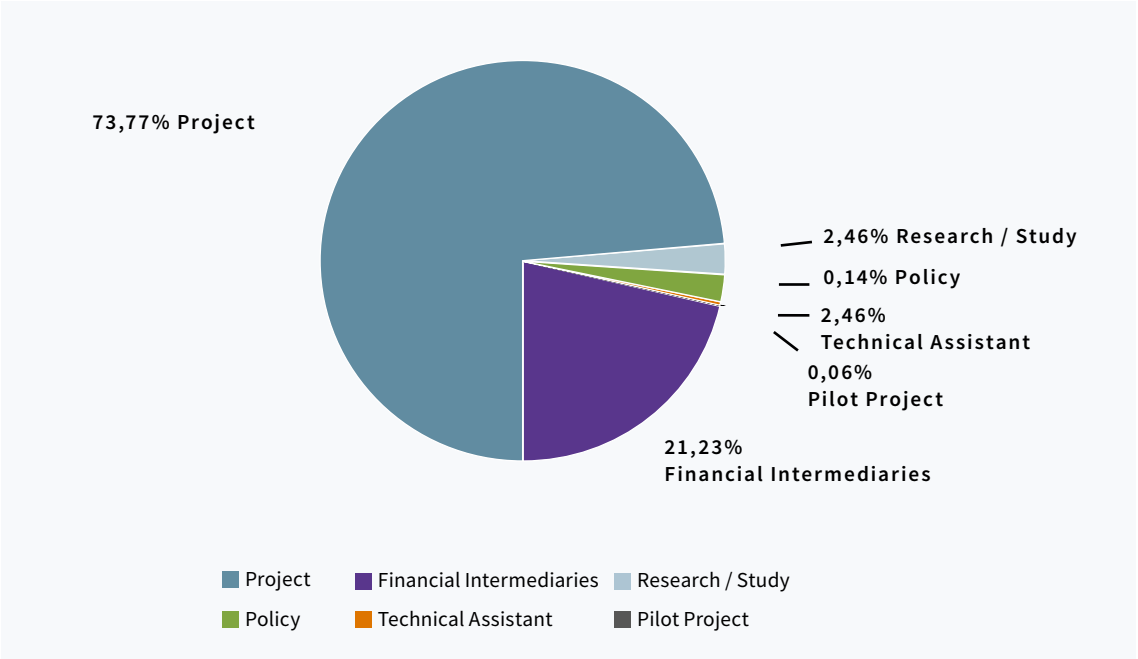


Figure 15: MDB investments in RE, by type of support, 2018–2024; Source: own calculation based on OCI, 2024

A number of MDBs supports their partner countries via policy-based lending operations (currently offered by the WB, IDB, ADB, AfDB, and AIIB), which provide general budget support in exchange for policy reforms implemented by the country for climate-related purposes.[27] However, as shown above, policy support makes up only a marginal part of MDBs' support for RE. Next to policy-based financing, some MDBs use additional instruments to support policy reforms or the streamlining of national decision-making for climate-related activities. The IDB's CLIMA, for example, offers borrowers a 5% discount on the financing cost of a loan if borrowers set ambitious environmental targets (KPI 1), identify proper policies and expenditure to meet these targets (KPI 2), and report on their progress in a timely manner (KPI 3) (IDB, no date). Also, the WB's Program-for-Results Financing can contribute to adjusting countries' policy frameworks if this is relevant for achieving the agreed results. For example, a recent operation in Serbia aims to 'support Serbia in its efforts to pursue an effective Low Carbon Development Strategy and to achieve its Nationally Determined Contribution on reduction of greenhouse-gas emissions' (World Bank Group, 2023d). These programmes are characterised by the fact that countries only receive the financing upon achievement of a specific policy or institution-building result. These are instruments that are used only by specific banks for renewable financing and could be considered by other MDBs as well; more effectively, however, different MDBs would align their strategies and use their instruments in a synergetic way in countries that they jointly operate in.

27 The AIIB has a policy-based financing instrument that is specifically designed to support climate purposes (AIIB, 2024).

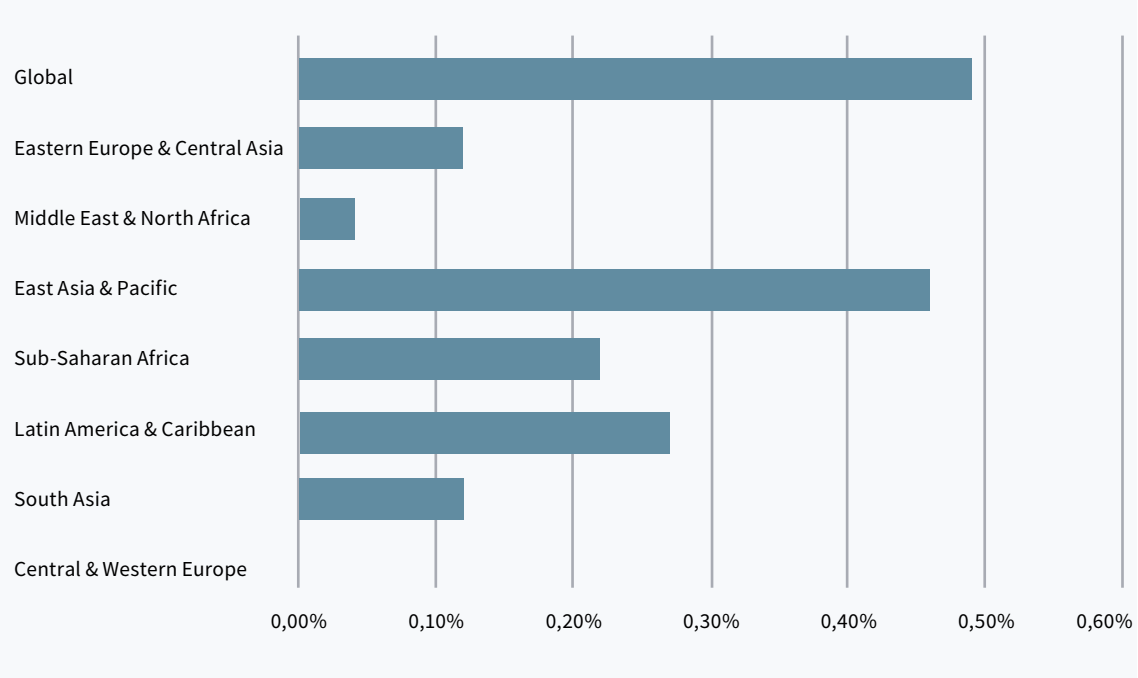


Figure 16: Percent of TA in MDB RE financing, 2018–2024, per world region; Source: own calculation based on OCI, 2024

The share of TA in overall renewables financing is still lower than for policy support. They vary by region, with East Asia and the Pacific receiving the highest share (0.46%) and the MENA region (0.04%) receiving the lowest share (see Figure 16). TA is an important means to be leveraged for facilitating renewables uptake in EMDEs, and these low levels suggest that there is a lot of potential. Options are discussed further on in this chapter.

4.3.5 MDBs' strategic approaches to renewable energy support

The following sections undertake an analysis of MDBs' energy sector strategies to better understand their current foci in RE and to evaluate them with regard to the insights on renewable investment needs presented above. Based on the findings and additional literature, the paper makes suggestions for scaling up investments in RE.

4.3.5.1 KPIs on renewable energies and decarbonisation

In their Common Approach to Measuring Climate Results, the MDBs have jointly agreed to report on their enabled RE capacity as part of the sectoral mitigation results indicators. On a portfolio level, MDBs also include reporting on relative and absolute GHG emissions per year. More indirectly relevant for renewable financing are the metrics on numbers of countries with LTS and countries with NDCs that are included as part of Country Transition Progress Context Indicators. Also relevant are the cross-sectoral metrics on beneficiaries with access to financial products and services via financial intermediaries that support climate mitigation activities, and EE improvements under activities. However, all of these indicators are only a 'flexible menu for MDBs to adopt as appropriate' (World Bank Group, 2024a, p. 11).

When it comes to individual MDBs, all but the NDB have clear KPIs on RE in their energy sector strategies or in other strategic documents. Six out of nine MDBs have a KPI measuring reductions in the carbon intensity of the energy system.

MDB	KPIs related to RE support	KPIs related to decarbonisation
ADB	Additional installed RE capacity Clean energy capacity for cross-border power trade installed and/or improved	GHG emission reduction
AfDB	New renewable power capacity installed (Households connected through off-grid systems)[28]	CO2 emissions as a share of GDP Emissions reduction in energy
AIIB	Installing more renewable generation capacity	Avoiding or reducing GHG emissions
EBRD	RE capacity installed RE – electricity produced Number of legal/regulatory/institutional frameworks improved in the area of RE	CO2e emissions avoided through RE (per unit of GDP, and per capita) Emissions intensity of energy production in CO2/total energy supply
EIB	Electricity generation capacity from RE sources (MW) Electricity produced from RE sources (GWh/year) Average cost of electricity generated with environmental externalities (euros/MWh)	-- (tracks and reports on emissions but has no known target or KPI)
IDB	Electricity generated from renewable sources	GHG emissions avoided
IsDB	RE generated	--
NDB	--	--
WB	GW of RE capacity enabled	Reduction of net GHG emissions

Table 5: KPIs related to support for renewables and decarbonisation, per MDB; Sources: ADB, 2023a; AIIB, 2022; EBRD, 2023; EIB, 2025, 2024, 2024; IADB, 2024; IsDB, 2018; Reyes et al., 2025; Urama and Lonsway, n.d.; World Bank Group, 2024b, 2013, n.d.

In line with their Common Approach to Measuring Climate Results (World Bank Group, 2024a), the NDB should also adopt an indicator on RE capacity enabled, to set a clear incentive for its investments to support the energy transition. Similarly, all MDBs should support partner countries to include clear, quantifiable renewable capacity targets in their NDCs.

28 In most cases powered through renewable energy sources, an increase in such off-grid systems can contribute to renewables expansion.

In terms of adopting best practice, the following should be considered by all MDBs: the metrics of clean energy capacity for cross-border power trade installed; number of legal/regulatory/institutional frameworks improved in the area of RE, including competitive procurement schemes and network integration; and the number of private sector clients with improved climate corporate governance. These indicators support efficient distribution of RE and long-term governance changes that have the potential to shift energy flows beyond the timeframe of MDB lending.

Moreover, it is important that all MDBs adopt sectoral KPIs on the decarbonisation of the energy system for the following reasons: a commitment to decarbonise energy systems is needed to effectively steer investments in RE and EE; in addition to increasing energy access, they should be directed to the areas and sectors that present the best options for decarbonising the energy system. For this purpose, in turn, a sectoral strategy to scale up RE and decarbonise the energy system is very important for each country, as it is the precondition for deploying investments efficiently for generating megawatts of renewables and, at the same time, reducing emissions from the energy system. Where it does not exist or is not consistent, MDBs should support countries in its (further) development, and conduct alternative assessments. So-called lower-emissions energy sources such as gas should not be supported on the grounds of short-or mid-term emissions reductions; in the long term, they bear the risk of preventing countries from transitioning to climate-neutral economies.

MDBs often emphasise that they operate in a demand-driven way, that is, upon request by their client or partner countries. They cannot conduct any intervention within a country, not even a simple study, without that country's formal request and written consent for such activity. This is obviously a good thing, but also an important limiting factor for MDBs in shifting their priorities. However, at the same time, there is considerable room for dialogue on the kinds of investments and support provided and for driving partner countries' demand. Due to their recognised diagnostic and analytical expertise, ability to provide financing at concessional rates, and long-term trustful partnerships with countries, MDBs can exert considerable influence on countries' priorities in partner country dialogues. Their own goals and KPIs are themselves a manifestation of MDBs' confidence in their ability to do so. Adjustments in goals and KPIs always need to come with respective efforts to provide convincing offers to countries.

4.3.5.2 Support for different types of renewable technologies

All MDBs support RE generation from solar and wind in their strategies. Most MDBs also mention geothermal, small hydro, and energy storage, and stress the need to invest in decentralised energy solutions such as off-grid and micro/mini-grid systems.

Distributed RE solutions – such as off-grid solar and mini-grids – play a critical role in ensuring universal access to affordable, reliable, and modern energy services (SDG target 7.1), particularly in underserved and poorer regions (IEA, IRENA, UNSD, World Bank Group, WHO, 2024, p. 20). These decentralised systems typically require smaller investments compared to large transmission projects, yet they can have a disproportionately high impact by providing reliable, clean power to remote communities that are not connected to central grids. According to the WB, off-grid solar is the most cost-effective way to reach 41% of people still living in energy poverty (ESMAP, 2024). Hence, MDBs must continue to prioritise investments in these decentralised solutions to enhance energy resilience, accelerate electrification, and ensure that RE can be efficiently integrated into diverse and geographically dispersed power systems (Laxton, Ali and McGrory, 2024). Wherever possible, decentralised energy systems should be interconnected, modular,

and scalable, and integrate smart technologies to match demand and generation, so as to achieve high-capacity electrification.

Green hydrogen, in turn, is only explicitly supported by ADB, EBRD, EIB, and IDB. CSP only receives support from EIB, EBRD, and WB.[29] And only EIB and IDB mention support for marine/ocean energy in their strategies, with IDB emphasising that this requires strengthening the bank's knowledge base in the area. EIB in particular stresses the importance of supporting innovative and early-stage low-carbon technologies; in doing so, it considers tower CSP, floating solar PV, and certain geothermal technologies (e.g. harvesting energy from subsurface rocks) to be early-stage technologies, while floating offshore wind and ocean energies are deemed innovative RE technologies. This highlights a potential for increasing the EIB's catalytic role as a supporter of such early-stage technologies in regions outside of Europe.

Regardless of the technology supported, energy systems should be designed in a climate-resilient way (i.e. be able to withstand extreme weather events and water scarcity) to ensure long-term benefits of the investment. The joint MDB principles for Paris alignment include an assessment of physical climate risk and the identification of adaptation and resilience measures (AfDB, ADB, AIIB, CEB, EBRD, IDBG, *et al.*, 2023), and MDBs who have fully implemented them need to ensure climate resilience of all investments including in the energy sector.[30]

In addition, energy systems should be designed in a sustainable way, adhering to circular economy principles, such as using recycled or recyclable materials, enabling repairs of components, and reducing waste (including waste of energy). A number of MDBs are promoting these principles (e.g. the EIB, IDB, ADB, EBRD, AfDB, and WB).[31] While none of these MDBs has made circular economy checks mandatory for all projects, some of them are conducting them for specific sectors or sub-sectors (e.g. ADB, 2024a; EBRD, n.d.; EIB, 2023c), with the EIB being the most advanced. However, no MDB seems to systematically apply circular economy criteria to all its energy operations. This would be an important step to make MDB RE investments truly sustainable.

4.3.5.3 Support for improving energy governance and market development

Countries' policy frameworks are the foundation for successful energy transitions. They are needed to create a clear and stable environment for investment and market development, guide infrastructure planning and development, and ensure alignment with a 1.5°C pathway. Many countries need support to identify gaps and reform options for their policy frameworks to scale up RE. Hence, the provision of policy support (in the form of policy dialogues, policy-based financing, or TA) for the transition to RE is part of most MDBs' energy sector strategies.

The MDBs' energy strategies show that the MDBs support different aspects of an 'enabling policy environment' to facilitate countries' renewables rollout. The WB, for example, states that it supports countries in introducing long-term action plans as well as low-carbon power sector planning, fiscal and regulatory reforms, rationalising and targeting subsidies, introducing environmental taxes, and promoting the 'prosumer' model.

29 The AIIB's Energy Sector Strategy states it will 'explore the development of transformative but still high-cost technologies, such as low- or zero-carbon hydrogen production and concentrated solar power' (AIIB, 2022, § 52).

30 Currently, EIB, EBRD, AIIB, IDB, and WB have fully implemented the joint MDB principles on Paris alignment (for an analysis of shortcomings and best practice see Argueta *et al.*, 2024). AfDB still needs to align with building blocks 4 to 6 of the MDBs' joint Paris alignment framework and has set a deadline for end 2025. NDB has not set a firm deadline for Paris alignment yet.

31 See AfDB, ADB, EBRD, EIB, IDBG, WBG, 2024 for a joint report by several MDBs on the topic. Beyond this, MDBs are also promoting circular economy principles through individual projects or programmes they fund.

Many MDBs (most prominently the WB) emphasise reforms that aim to enhance private sector participation in the energy sector (e.g. in the form of bankable infrastructure investments) through incentives. By contrast, regulatory and directive approaches to steer private sector activities (for example, a scheduled ban on fossil fuels for specific use such as heating, or the introduction of carbon pricing) seem to receive less emphasis. Measures instead tend to focus on support schemes for established and emerging technologies (e.g. small-scale and distributed renewable generation sources), competitive price discovery processes and mechanisms, as well as power purchase agreements for the uptake of renewables. Greater private sector participation is also possible through public/private partnerships, transparent auction approaches, private concessions and service contracts, open access to transmission systems and retail competition, regulatory oversight mechanisms of market functioning to promote private sector investment, and other mechanisms increasing competitiveness in energy markets. However, some of these incentives can be costly, and while they may be able to create short-term market responses, they are less likely to promote long-term shifts or lead to the necessary internalisation of the costs of fossil fuels. **It might thus be worth MDBs evaluating whether they can highlight regulatory and directive approaches more prominently in country dialogues as options to deploy jointly with incentives for the private sector.**

On the question of market integration of renewables, the IDB suggests helping countries conduct reforms to level the playing field between fossil fuels and renewables, while at the same time establishing 'criteria justifying continuing support for feed-in-tariffs in early stage marketplaces' (IDB, 2018, p. 67). Where renewables' costs have declined, countries could migrate to competitive acquisition processes. The EIB also sees a continued need to support the market integration process in Europe, in particular where exposure to new sources of risk may impinge upon the terms and conditions available in the commercial banking market for renewable projects.

Some MDBs, such as the IDB, ADB, AIIB, and AfDB, see value in supporting the development of cross-border markets and infrastructure to strengthen regional energy integration. Indeed, cross-border connections and the creation of regional power pools help to balance supply and demand of fluctuating RE, share and bulk-purchase infrastructure, make grids more stable and resilient to shocks, attract larger overall investments, and facilitate cross-border investments. This is a precondition for the broad and effective rollout of renewables. But major challenges remain. Africa, for example, is divided into five major power pools that coordinate regional electricity trade and integration (Liedemann, 2019). The AfDB already supports the East-African Power Pool institution (established in 2005) to strengthen its institutional capacity to establish and manage a grid coordination platform for regional power trade. That said, the central African Power Pool and the West-African Power Pool still need a lot of support; major challenges are infrastructure deficits, regulatory and political barriers such as inconsistent policies and lack of coordination, financial constraints, and conflicts which prevent long-term planning (ECDPM, 2019; Liedemann, 2019). In Latin America, in particular the Andean region and the Caribbean are in need of further regional energy system integration, especially for infrastructure and regulatory harmonisation (IEA, 2023g; OLADE, 2024). Also in Asia, energy system integration is constrained by fragmented grid infrastructure, limited cross-border interconnections, and inconsistent regulatory frameworks that hinder the large-scale deployment and trade of renewables (ASEAN, 2023; IEA, 2024l). Regional cooperation remains uneven due to differing national energy priorities, lack of market harmonisation, and political tensions, all of which slow the development of transnational systems needed to balance and trade variable renewable sources across borders (Cornell, 2020; The Caspian Post, 2024). **Hence, while MDBs have recognised the importance of regional integration, great potential still lies in widening support for regional integration in all regions, as a powerful lever to overcome barriers that limit the expansion of renewables.**

According to the IEA, expanding and modernising Africa's electricity infrastructure requires a radical improvement in the governance and financial health of public utilities. Regulatory reforms are a priority, and should particularly serve to remedy the longstanding under-pricing of electricity (IEA, 2022a). In line with this, a current strategic focus of MDBs operating in the region lies on the reform and institutional strengthening of energy utilities. This includes improving utilities' fiscal sustainability, regulation – including through the adoption of climate governance standards, as well as the adoption of low-carbon transition strategies – and, consequently, their creditworthiness, as well as helping them to better integrate RE sources into grids. This is an important condition for making the energy transition work in EMDEs, which MDBs should continue to support.

At the same time, MDBs also aim to support private investment in energy utilities through risk mitigation instruments but also through the corporatisation of specific utility functions, securitisation, asset recycling, and, ultimately, also privatisation of utilities. An example of this is the WB's approach to policy-based financing, which prioritises privatisation and liberalisation in the energy sector against a backdrop of regulations adjusted to reduce risks for private investors and to promote a private sector-led energy transition. This is also reflected in the recent Mission 300, where the WB and AfDB plan to connect 300 million people to electricity in SSA by 2030. While the privatisation-heavy strategy may be able to increase private sector engagement in the RE sector, it raises concerns about its ability to deliver affordable and reliable RE, particularly to last-mile communities. Its outcomes heavily depend on what is privatised and under what conditions, to avoid transferring financial risks to citizens and governments, undermining public welfare in the process (Ankel-Peters *et al.*, 2025; Brettonwoods Project, 2025).

In supporting the COP28 energy consensus, MDBs need to focus on their development mandate and support SDG 7 (energy access). They should thus concentrate their investments and assistance on regions with the lowest levels of energy access. A well-regulated privatisation of electricity generation may be a good strategy, but essential infrastructure such as grids for distribution and transmission should remain under public control to avoid private monopolies and to ensure equitable access. Further, strong regulatory oversight and fair tax systems are needed to deliver energy access to the people most in need; (local) companies that provide tailored solutions for marginalised communities should be prioritised and supported. Public subsidies and incentives should only be granted to companies that demonstrably address the energy access needs of the most vulnerable (Opfer *et al.*, 2025).

4.3.5.4 Technical support for building pipelines of investable projects

An important insight from many conversations with MDB representatives is that the problem is not always a lack of finance. MDBs often would like to invest more in a specific country or sector but cannot due to the lack of 'bankable projects'. Many developing countries require support to draft investment strategies, decide on the most effective policy reforms, consult stakeholders, develop measures in a socially sustainable way, or design technical and infrastructure measures for the energy transition.

MDBs already support the development of institutional capacity to manage and coordinate public agencies and private actors involved in investment in renewables and EE. They also cooperate on programmes for training people and developing local capacities in the design, policymaking, installation, operation, and management of renewable options. Often, MDB TA is combined with other types of investment such as direct investment or policy-based operations.

However, the demand is huge. It is difficult to compare the amounts going to TA to the amounts spent on other types of financing, since there are no insights available on respective impacts. However, the fact that many EMDE countries receive extremely low levels of TA seems inadequate given these countries' needs for building up technical capacity for the energy transformation. While it is difficult to estimate the impact of these instruments in comparison to project financing, the transformative power of TA should not be underestimated. Hence, there seems to be great potential for applicable MDBs to scale up existing work in this regard, which can meaningfully foster countries' transition to renewable energies.

Even before project development can take place, countries sometimes need support to identify and voice investment needs in the first place, which requires data collection and analysis, and consulting with communities. If MDBs act in a purely demand-driven way, there is a risk that those investment needs that are voiced the loudest by governments receive financial support from MDBs, while poor and voiceless communities in particular remain underserved and neglected, especially in poor countries with weak governance structures and low technical capacity.[32] Hence, there is a case to be made for offering what could be called grass-roots TA specifically tailored for very basic purposes, not only to help such countries come up with investable projects, but to generally overcome capacity limitations for a just energy transition. MDBs should make efforts to help countries identify particularly underserved geographical areas and proactively offer respective technical support for identifying energy investment needs in such areas in a targeted way.

Where TA is required to create capacity to identify investment options and design investable projects in the first place, scaling up might require at least some limited increase in grant financing. MDBs tend to emphasise that they are not-for-profit banks designed to operate in an economically self-sustainable way, meaning issuing mainly non-grant-financing to be paid back including interest. However, TA grants are upfront investments that will pay out in enhanced investment options for other instruments later. Hence, MDBs should consider options to grant more TA to identify renewables investment needs in extremely underserved regions. They should look for options to increase cooperation with multilateral climate funds for that purpose.

To improve TA for basic energy purposes, MDBs will also need to cooperate with other actors: the MDBs themselves have vast technical and policy expertise in the energy sector as well as country experts and in-country contacts to draw on. However, on the subnational level, it is often advisable for MDBs to cooperate with local actors such as national and subnational development banks and local financial intermediaries (which many MDBs do already), as they might have more specific context knowledge (technical as well as social) and better communication channels with local institutions. An additional option is to increase technical cooperation with local civil society, locally lending philanthropy, and specified multilateral agencies like IRENA for the purpose of identifying and concretising local investment needs for RE generation in underserved areas.

4.3.5.5 Other instruments and means to support renewables

Apart from traditional instruments such as project financing, TA, and policy-based financing, MDBs mention some other instruments and approaches to support countries in scaling up renewables in their energy strategies. More recently, increased emphasis has been placed on instruments to encourage private financing in renewables and other climate-related purposes. Most common is the use of blended finance for co-financing or de-risking private investments (e.g. combining loans with grants, concessional loans, or

32 Interview with MDB representative, 2024.

guarantees). Although not explicitly mentioned in energy strategies, MDBs also use de-risking instruments such as political risk insurance, guarantees, first-loss facilities, and risk guarantees for private banks. To support innovative or early-stage technologies in particular, venture debt and equity funds can serve to diffuse technologies to the customers, especially through smaller companies. It needs to be clear that deploying high-risk capital requires significant capital set aside for cases of default. Ongoing discussions between MDBs and their shareholders about making more use of MDBs' callable capital could provide a potential opening for more such investments.

As mentioned above, even in environments where renewables have achieved cost parity, renewables are often still less profitable than fossil fuels, since fossil fuel companies are able to invest their capital gained from past operations, while new renewables producers often have to take on debt. Consequently, there is still a role for MDBs to play even in these places, for example through providing concessional financing and equity specifically for new renewables companies and green tech start-ups, but also in supporting governments in adjusting the regulatory environment and providing support to renewables producers. MDBs also frequently work through financial intermediary institutions (whether via general purpose financing or project-specific finance) to direct financial resources to subsectors requiring smaller-scale financing; for example, they can invest in financing facilities and instruments that, in turn, support RE projects, such as green bonds, equity funds, and special Green Economy Financing Facilities.

Despite all efforts to leverage private capital, MDBs recognise that grant financing or highly concessional financing is still needed. The WB emphasises that especially at the start of their energy transitions, many developing countries need 'affordable financing' to improve sector conditions and attract growing volumes of private capital. Generally, it wants to reserve concessional finance for measures that either have the potential of unfolding transformational dynamics, especially for attracting private financing, or are 'global technology demonstration partnerships' (World Bank Group, 2023c, p. VIII). The AIIB states that 'concessional financing continues to be needed to improve bankability, especially in less developed Members' (AIIB, 2022, p. 10). And the IDB aims to expand partnering with green funds to support renewables and clean fuels at highly concessional rates.

These instruments should continue to be used and enhanced according to the MDBs' experiences gained from their deployment in terms of climate impact. This leads to another important point on instruments.

Importance of measuring impact by instrument and type of support

MDBs are looking for opportunities to craft more transformational operations. Measuring and differentiating climate impacts by instrument would enable better evaluation and priority-setting by MDBs, not just for their financing of RE. If TA for RE generation or supportive policy design could be demonstrated to achieve high impact, for example, then scaling it up could become a way to improve the MDBs' climate impact without having to source huge amounts of new financing for that purpose. Also, systematic evaluation could help clarify where grant financing can be deployed with the highest impact. Hence, MDBs should include measurement by instrument and type of financing in the operationalisation of their Common Approach to Measuring Climate Results and the respective reporting procedures.

Transparent information needed to encourage investment

Another factor for providing private investors with more security, thus encouraging investments, is information. MDBs can share relevant performance data from projects they have previously financed, helping

potential investors assess the risks and opportunities. They can also work to improve the availability and accessibility of data on credit history and probability of default in emerging markets, enabling better risk assessment (Dimond, 2023). This is particularly important for African countries, for which risk perception is particularly high. The WB's collaboration with the Global Emerging Markets Risk Database Consortium on publishing credit risk statistics, which provides insights into the behaviour of loans to emerging market firms over the past three decades, was an important step in the right direction. For example, the database's pooled credit risk data shows that private counterparts in SSA have higher default rates than their global peers, but that these are counterbalanced by higher recovery rates (post-default) (CPI, 2024, p. 24). More encouraging examples include a 2024 IFC report which showed that the high historical default rate of African counterparties stems to a large degree from investments pre-1996 (IFC, 2024). And the WB found that even Moody's Analytics shows that Africa's ten-year cumulative default rate for infrastructure as an asset class was the second lowest globally (1.9% – less than half of Western Europe's 4.6%) (WBG, 2024). However, further efforts and increased work are needed, given the African investment climate. MDBs active in Africa should actively work with credit rating agencies to help them adjust risk evaluation for developing countries based on MDBs' experiences and insights (on default and recovery across time and asset classes), and promote these experiences and insights with the private sector.

The need to address debt

The COVID pandemic and rising inflation and interest rates compounded by existing difficulties in generating domestic revenue have manoeuvred many countries into illiquidity or even to the brink of debt default. Some countries are spending four times as much on debt servicing as they spent a decade ago, and debt stocks are expected to rise by a further 11% across all developing countries through until 2028 (Wainaina, 2024). In Africa specifically, external public and publicly guaranteed debt rose by 240% between 2008 and 2022. Countries including Senegal, Rwanda, Mozambique, and Ethiopia have seen a tenfold rise in external debt.

These countries can hardly afford to take on any more debt to invest in their energy transitions, making a tripling of RE a distant prospect, while the need to transition remains pressing. The WB identifies limited fiscal space for catalytic public investments and consumers' limited ability to afford the cost of transitions as the most important reasons preventing LICs and MICs from mobilising the financing needed for a just power sector transition. It explains that, as a consequence, many countries are 'forced to settle for fossil fuel–based electricity generation, with its much lower (up-front) capital costs and pay-as-you-go fuel expenses'; moreover, many LICs and MICs are 'locked into costly and often poorly targeted public subsidies for energy that may preclude the strategic investments needed for transition of the power sector' (World Bank Group, 2023c, p. 5).

Private sector creditors, MDBs, and China hold most of the African debt. Even highly concessional loans way below market rates can exacerbate debt problems. It is therefore crucial that the MDBs' financial mechanisms to support countries in scaling up renewables are tailored to countries' fiscal and debt situations. All MDBs already integrate debt sustainability analysis into project design as an essential step to protect countries' fiscal health. But this also means that in cases of high risk of worsening existing debt burdens, non-debt instruments, such as equity, grants, debt relief and restructuring, and generous debt-for-climate swaps,[33] need to be a part of the response in order to still support the green transition.

The WB recognises that MDBs can have a role to play in debt swaps (IMF and WB, 2024). However, the specific structure of engagement merits improvement. Instead of just providing credit guarantees (=in-

33 To be effective for both climate and debt alleviation, swaps need to address existing criticisms (see e.g. Debt Justice *et al.*, 2025).

direct involvement), direct MDB contributions and debt releases should also be considered, which is something that shareholders need to discuss and agree to. Currently, MDBs are exempt from the G20 Common Framework for Debt Treatments. Compounding equitable 'haircut' rules (distributing cuts proportionally according to shares held) with leveraging additional shareholder support (e.g. via a Debt Relief Trust Fund, dedicated capital increases, or allocated portions of IDA replenishments), new revenue tools, and structured protections would enable MDBs to deliver meaningful debt relief without endangering their preferred creditor status (Zucker-Marques, Volz and Gallagher, 2023). Importantly, MDB contributions to swaps should not lead to a reduction in the countries' overall envelope as this would reduce countries' options for investing the freed-up money for the energy transition. Besides, swaps need to cover larger sums and become less transaction-heavy to increase their value proposition and become a more attractive instrument. The WB proposes, for example, that to reduce transaction costs, the use of proceeds should be linked to country frameworks (IMF and WB, 2024), which can be a good idea if country frameworks are Paris-aligned. Criticisms that need to be addressed are mismatches between climate-related obligations and resources freed up to fulfil them, as well as flawed design of climate measures, which sometimes are at odds with local knowledge and needs (Debt Justice *et al.*, 2025).

With their experience in donor coordination and country expertise, MDBs can support countries and other donors in setting up debt swaps; in this vein, a global hub for debt swaps for development was suggested by Spain at the Fourth International Conference on Financing for Development, which could be housed at the WB or IMF (Financing for Development 4th International Conference, 2025).

At the same time, effective climate and development financing presupposes that Africa's unsustainable debt levels are directly addressed. Structural reforms must target the root causes of debt dependency, such as unsustainable borrowing practices and unfair trade relationships, ensuring long-term fiscal stability and resilience (Opfer *et al.*, 2025). One measure should be comprehensive audits to identify and cancel illegitimate debt burdens, particularly those tied to corruption or harmful projects; the 'odious debt' concept serves to identify exploitative financial obligations (Opfer *et al.*, 2025). While debt held by MDBs has rarely been ruled as 'odious', respective MDBs should scrutinise their issued debt for relevant aspects, consider relief measures for the affected countries, and improve their safeguards in this respect. Besides, MDBs should also support broader efforts on debt reform, including calls for a UN debt convention to advance systemic progress on addressing the global debt crisis (see e.g. Fresnillo, 2024).

In addition, MDBs should make efforts to provide more grant-based climate finance to highly indebted LICs who urgently need to scale up renewables for energy access. Also relevant for consideration are countries that face decisions between leapfrogging with high upfront costs, or tapping instead into newly discovered national fossil resources, thus embarking on a fossil pathway.

5. Doubling energy efficiency

Increasing EE reduces the amount of energy required to do the same or more activities. It is one of the quickest and most cost-effective ways to reduce emissions, which also frees up limited fiscal resources to be allocated somewhere else. Speeding up EE improvements also plays a crucial role in lowering demand, which is necessary to facilitate the transition away from fossil fuels. EE measures also serve to 'buy time'

for grid expansion, and for the development of market rules, supply chains, and the workforce skills necessary for the transition away from fossil fuels (IEA, 2024d). Furthermore, EE measures are able to reduce the cost for consumers. Hence, UNFCCC members committed to 'put the principle of energy efficiency as the "first fuel" at the core of policymaking, planning, and major investment decisions' (COP28, 2023).

EE improvements can target the production, transmission, distribution (supply-side efficiency), or consumption/end-use side of energy (demand-side efficiency). EE in production can be enhanced through optimising power plants, refining energy conversion processes, improving heat-recovery technologies, or implementing better maintenance practices. Transmission and distribution losses can be avoided through 'smart' grid infrastructure (where efficiency is constantly monitored, optimised, and coordinated), optimisation of transformer performance, use of efficient materials, and measures against energy theft. Improving end-use EE involves multiple energy consumption endpoints, which range from changing lightbulbs to LEDs to modifying production chains to use less energy in the manufacturing sector. Decisive factors for lowering an economy's energy intensity are efficiency, electrification, behavioural change, and digitalisation (IEA, 2022c).

5.1 Energy efficiency improvement and investment needs – contextualising the doubling goal

The EE of an economy is called its energy intensity; it is a measure of how much energy is used to produce a unit of GDP. According to the IEA, 'in 2022 the global economy used energy 2% more efficiently than it did in 2021, a rate of improvement almost four times that of the past two years, and almost double the rate of the past five years' (IEA, 2022b).

The COP28 target on EE follows the IEA's NZE (as updated in October 2023), which stipulates that, to embark on a pathway to global net-zero emissions by mid-century, the world needs to 'double the rate of average global primary energy intensity improvement from the 2022 level just over 2%, to slightly above 4% until 2030.' This entails, for every year until 2030, using energy on average 4% more efficiently than in the previous year (COP28, 2023). As a result, global energy demand will be '10% lower in 2030 than it is today, despite GDP being around 25% higher' (IEA, 2024d). Doubling global EE improvement rates from 2% to 4% could potentially save 7 Gt of CO2 from fuel combustion in 2030 relative to 2022. This would account for nearly half of all cumulative emissions reductions over this period (IEA, 2023d), for half of the reduction in gas demand, and for three-quarters of the reduction in oil demand (IEA, 2024d).

To achieve this, there also needs to be an increase in investment (Jones and Rengelova, 2023; IEA, 2024d). To see annual progress double, the IEA estimates that investments in EE must increase from USD 650 billion per year in 2024 to about USD 1.9 trillion per year by 2030 (IEA, 2024a) (see Figure 17). This means a tripling of annual investments in EE by 2030 (World Bank Group, 2025c).

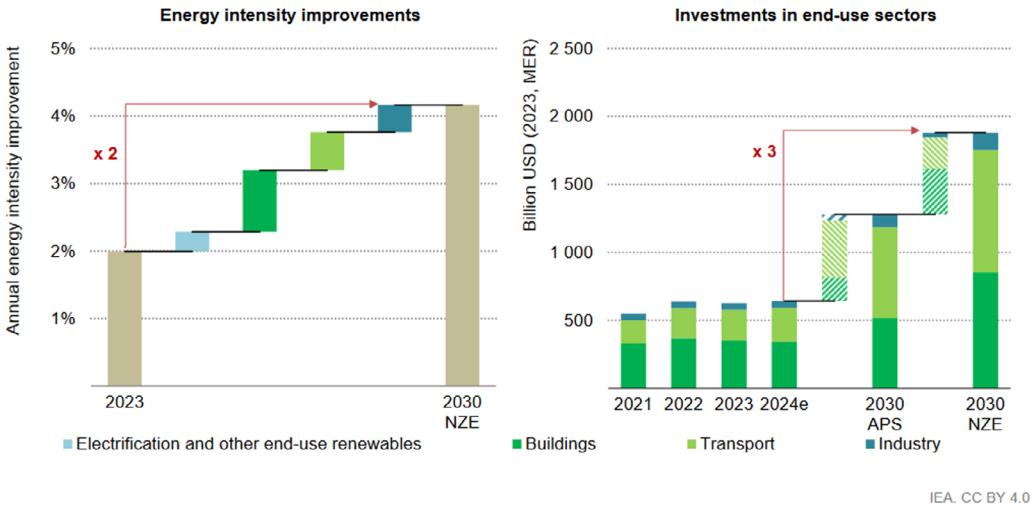


Figure 17: Energy intensity improvements required per sector for the tripling goal, and related investments and investment needs per end-use sectors; Source: IEA, 2024k

IRENA estimates that doubling EE requires annual investments of USD 2.6 trillion each year between 2025 and 2030 (IRENA, COP30 and GRA, 2025) (see Figure 18). This would amount to more than a seven-fold increase in EE investments.

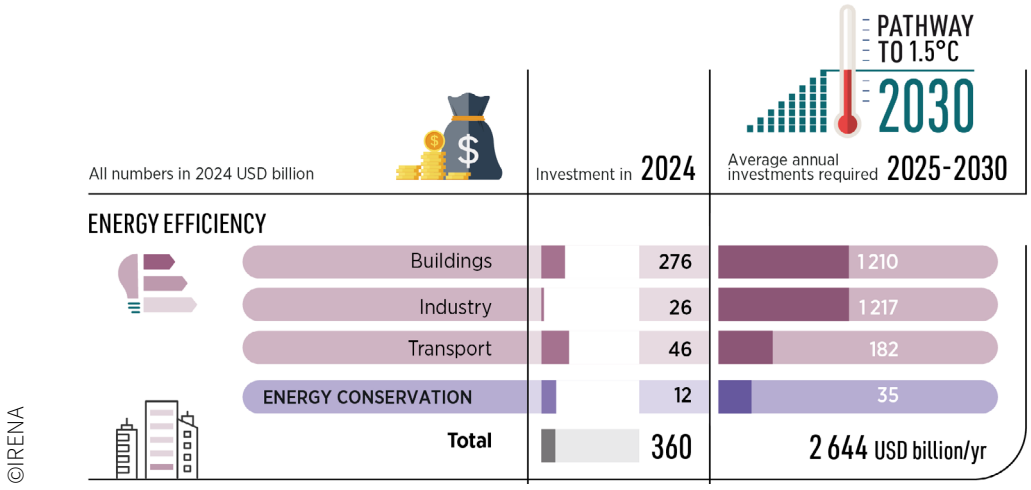


Figure 18: Investment required to double EE by 2030 compared with 2024 progress; Source: IRENA, COP30 and GRA, 2025

Per region, the tripling of investments means that EE investments in advanced economies must almost double by 2030, while in China and other EMDEs, investments need to grow four to seven times, compared to today. Improvements in the buildings sector are crucial given the rapid rate of urbanisation in most developing economies and the need to construct highly efficient zero-carbon-ready buildings (IEA, 2024a). At the same time, funding for industry decarbonisation can be very effective, despite its challenges. Key actions include upgrading facilities to handle more recycled materials; electrification, especially in light industry; and switching to efficient, electric motor-driven systems (IEA, 2024a).

The estimations of necessary investments need to be taken with a caveat. Due to the multiple mechanisms and entry points of EE improvements, and the challenges to measure energy use at all of them, it is challenging to directly link financial investments in EE to the amount of energy saved or the corresponding emissions reductions. Challenges in estimating baseline energy consumption levels, the absence of standardised metrics for EE investments, and the general lack of data on successful implementations have made projecting the demand for EE investments and assessing the current state of EE efforts complex (Lades, Peter Clinch and Kelly, 2021; Kleanthis *et al.*, 2022).

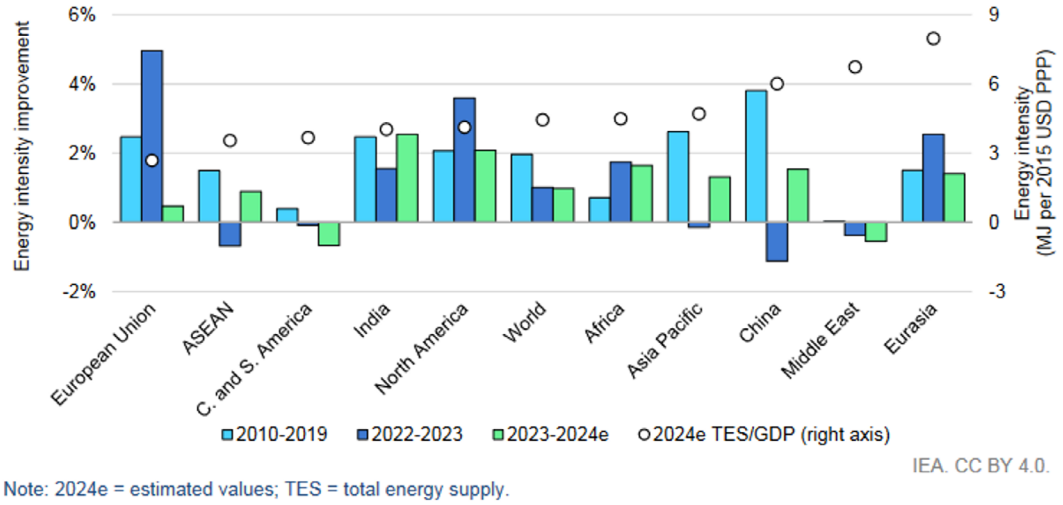
Importantly, it should be noted that the IEA calculations focus exclusively on EE at the demand side, and on only three key energy end-use sectors: buildings (including household appliances), transport, and industry (IEA, 2024b). This is because demand-side EE measures in these sectors are regarded as offering more impactful, cost-effective, and faster ways to reduce energy use, lower emissions, and support sustainable energy transitions than working on the supply side.

A general principle is that one of the main means of improving EE is electrification: electrified technologies can be several times more efficient than those based on fossil fuels.

5.2 Current status and investment levels in energy efficiency

For 2024, the IEA projected only a weak improvement of about 1% in energy intensity. This is the same rate as in 2023, and around half of the average rate over the 2010 to 2019 period – far from the COP28 energy consensus goal. During the global energy crisis 2021 to 2022, some countries accelerated their EE efforts, and global EE investment[34] (including electrification) in buildings, transport, and industry rose by 45% since 2019. It reached an all-time high with USD 660 billion in 2022 (IEA, 2024b). Since then, overall global end-use investment has plateaued, with 'higher inflation and interest rates making it more expensive to implement and finance energy efficiency upgrades' (IEA, 2024a, p. 83). Despite large regional disparities, energy intensity improvements in advanced economies slowed overall, while progress in many emerging and developing economies remained steady or slightly increased (see Figure 19) (IEA, 2024a), but far away from bringing the world near the 4% target. Even if the countries achieved all their announced EE pledges and targets, the annual EE improvement rate would still only be 3% (IEA, 2024q). According to different EE rankings, high-income countries, notably European ones, are still best set in terms of EE. But several MICs, such as Brazil, India, Kenya, Romania, China, Mexico, Poland, and Türkiye, also rank in the upper set of countries (as of 2023), partly also having advanced EE regulatory frameworks (ESMAP, 2023).

34 IEA notes that EE investments are defined as incremental spending on new energy-efficient equipment or as the full cost of refurbishments that reduce energy use (IEA, 2024a).

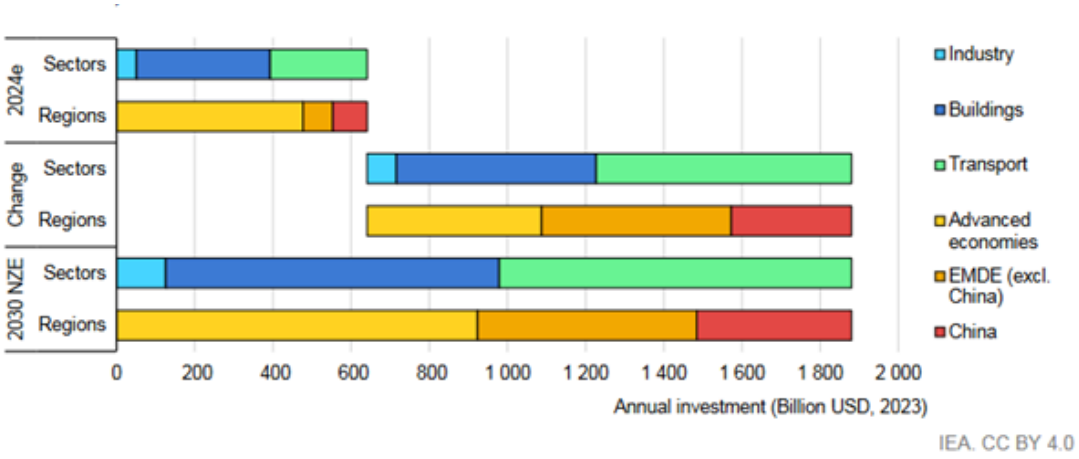


Note: 2024e = estimated values; TES = total energy supply.

Figure 19: Primary energy intensity and annual change, by region, 2010–2024e; Source: IEA, 2024a

In LICs and MICs, the share of EE and end-use decarbonisation in total energy investment remained stagnant between 2019 and 2023, at around USD 10 billion per year, while RE generation surged by 145%. Given the massive energy demand expected in MICs and LICs, the policy and investment focus needs to shift more towards EE to lower the costs and effort for fulfilling the upcoming demand. This is particularly relevant for energy-intensive MICs (World Bank Group, 2025c).

As IEA highlights, EE efficiency investment is highly regionally concentrated, with almost 90% of spending occurring in advanced economies and China (see Figure 20). This needs to change drastically: annual EE investment in EMDEs needs to increase by around seven times (see the orange bar in Figure 20, '2024e' and 'Change'), but also China needs about threefold annual investment (see the red bar in Figure 20, '2024e' and 'Change'). Given that SEA is projected to account for more than 25% of global energy demand growth up to 2035 under current policies (IEA, 2024l), and India for another 25% over the next two decades (2020–2040) (IEA, 2021c), Asia should clearly be a focus region of future EE investment.



Notes: NZE = Net Zero Emissions by 2050 Scenario. An energy efficiency investment is defined as the incremental spending on new energy-efficient equipment or the full cost of refurbishments that reduce energy use. The intention is to capture spending that leads to reduced energy consumption. 2024e = estimated values.

Figure 20: Energy investment in end-use sectors, with projections by IEA on the needs for reaching COP28 energy consensus targets; Source: IEA, 2024m

In terms of sectoral distribution, the current spread of investments across the three key sectors is going in the right direction, with some more emphasis still needed for the transport sector (cf. blue-green bars in Figure 20). Since 2020, the USA, Italy, Germany, Norway, and France, together with China, have directed almost 90% of their total EE investment to electric vehicles and heat pumps, leading to particularly strong efficiency gains in these areas (IEA, 2023d). But the overall investment gap is huge.

Electrification

Scaling up electrification of appliances, machines, and vehicles in EMDEs is critical because it enables substitution of fossil fuels with renewable electricity, which is vital as EMDEs expand their energy demand rapidly. Moreover, electrification supports EE improvements by making better use of primary energy, enabling smarter, more efficient technologies and integrating distributed renewables. The degree of electrification of the three key sectors is dependent on the expansion of the electricity grid (discussed in the next chapter) and has significant impacts on EE. The degree of decarbonisation depends on the availability of RE for electrification.

Yet the current level of electrification in key sectors in EMDEs remains low compared to advanced economies. In transport, EVs account for less than 2% of new vehicle sales in most EMDEs, with many countries still dependent on traditional ICE due to affordability and infrastructure gaps (IEA, 2024f). In buildings, electrification remains limited in EMDEs. While many households rely on biomass, coal, or gas for heating, access to electric cooling appliances like air conditioners or fans is also low, with less than 20% of households using electricity for space cooling. Similarly, electric cooking penetration remains low, with many households still dependent on traditional fuels (IEA, 2023n, 2023d). Also, industry in EMDEs

is still heavily reliant on fossil fuels, with electrification of industrial heat and processes constituting less than 10% of total industrial energy use (IEA, 2023l).

Investment in electrification technologies in EMDEs has increased but remains insufficient. Finding precise numbers on electrification investment in EMDEs is difficult since calculations tend to group it with EE, renewables for end use, or grid expansion (IEA, 2024p). Also, there is no overview of MDB investments in electrification in the three key sectors.

Globally, the share of electricity in energy demand will need to increase by 4% per year to get on track with the NZE (IEA, 2023c) (see Figure 21).

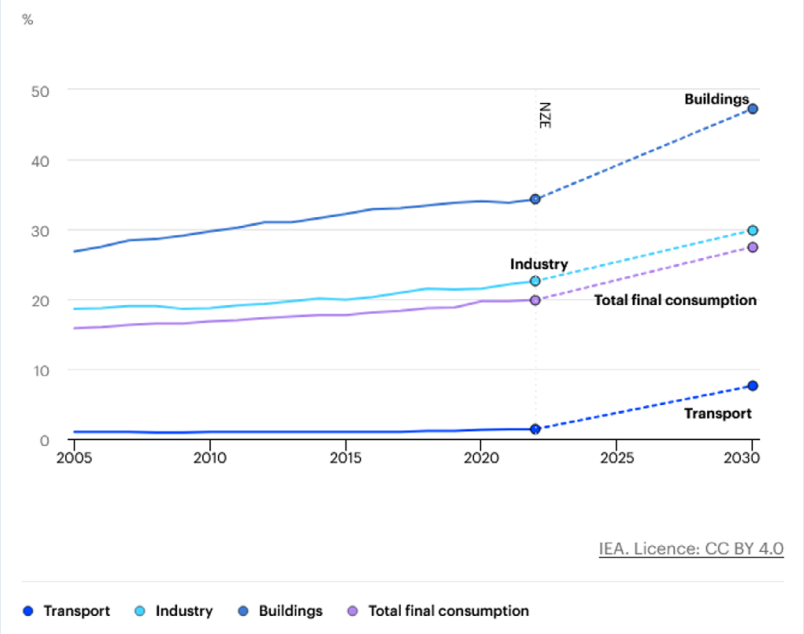


Figure 21: Share of electricity in total final energy consumption in the IEA's NZE; Source: IEA, 2023h

Targeted policies and increased financing are needed for EMDEs to leverage electrification as a powerful driver of sustainable development and climate resilience, bridging the gap with advanced economies while meeting their unique energy needs. The measures mostly overlap with those increasing EE. Importantly, they need to be combined with increased influx of RE into the grid to ensure the increased energy demand in EMDEs does not lead to increased emissions.

Infobox 1: Electrification

5.3 Key sectors for energy efficiency – current status and investment needs

This section examines the three key end-use sectors for enhancing efficiency: transport, buildings, and industry. It outlines the most important EE measures to be undertaken across these sectors and in particular in EMDEs to significantly reduce carbon emissions by 2030.

Unlike in other areas of clean energy investment, the majority of EE investment spending comes directly from households, accounting for more than 70% of total spending in buildings and almost 50% in transport (IEA, 2024b, p. 91) (see Figure 22).

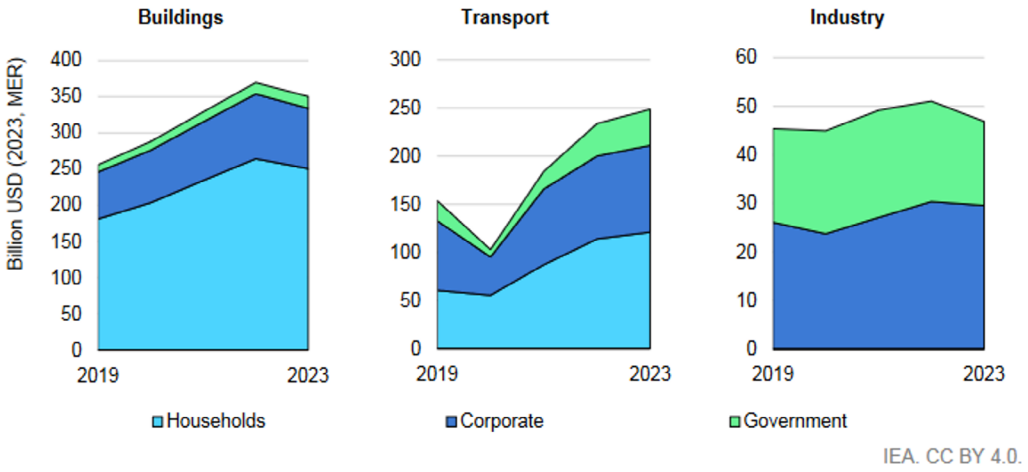


Figure 22: EE investment in the buildings, transport, and industrial sectors, 2019–2023; Source: IEA, 2024p

Overall, the industry sector receives far less investment in EE and electrification than the buildings and transport sectors (see Figure 23), with only a minimal increase since 2019.

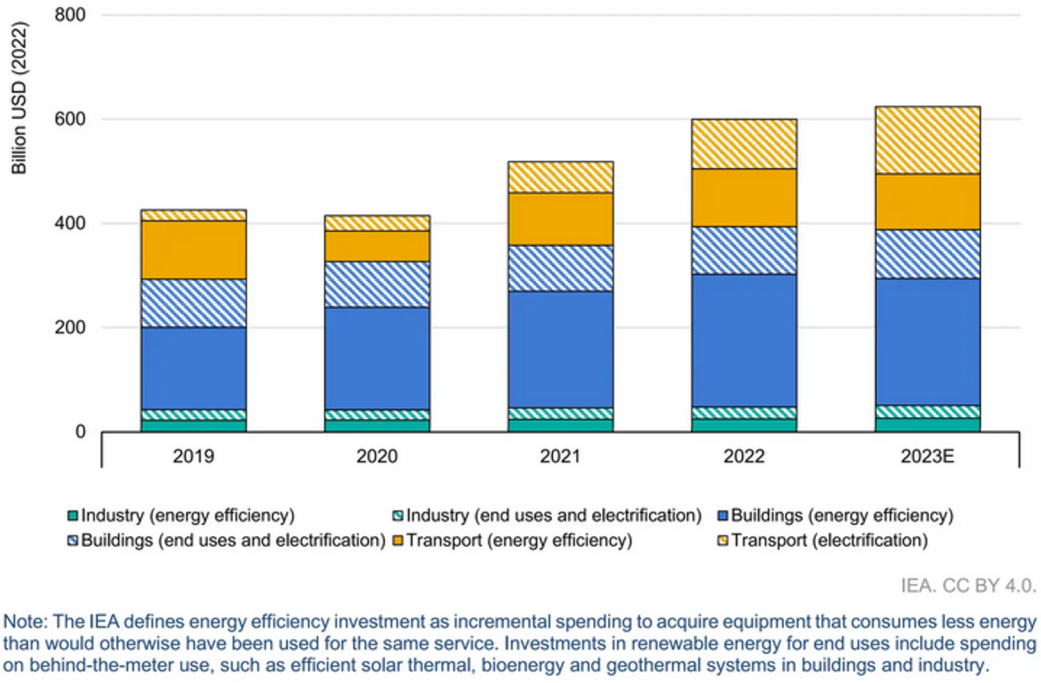


Figure 23: Global investment in EE, electrification, and renewables for end uses, 2019–2023; Source: IEA, 2023m

5.3.1 Transport

One of the sectors with the highest potential to reduce carbon emissions through efficiency improvements is the transport sector. The transport sector is responsible for 21% of global carbon emissions, and for about 30% of global energy use (IRENA, 2025b). It almost exclusively uses derivative products of fossil oil as the primary energy source (about 91%) (Teter and Voswinkel, 2023). Combined passenger and freight

road transport accounts for more than 70% of all the transport sector's emissions (Teter and Voswinkel, 2023; Ritchie and Roser, 2024b). This share does not differ significantly between EMDE and advanced economies, but there are other differences. EMDEs tend to cover a larger share of passenger road transport through (often informal) minibuses and two- to three-wheelers. They also generate less carbon emissions through aviation. Rail in EMDEs is much more heavily reliant on diesel than in advanced economies, but also accounts for lower emissions due to being heavily underutilised (Bianchi Alves, Bou Mjahed and Moody, 2023; International Transport Forum, 2023; IEA, 2024f).

The building of low-emissions transport infrastructure, policy reform, and the affordability of new, energy-efficient transport modes are the most important challenges in EMDEs. The primary strategy to improve EE of the transport sector focuses on electrification and modal shifts (IRENA, 2025b). Key measures are the adoption of EVs, which can also significantly lower emissions (even more so when powered by RE), and increased use of public transport. To accelerate the transition to EVs, several countries have set target dates – mostly by 2035 – to phase out sales and/or imports of internal combustion vehicles (e.g. the EU, China, Japan, South Korea, Thailand, and Cape Verde by 2035, Canada by 2040, with Ethiopia already having stopped non-EV imports as of 2024) (Wappelhorst and Cui, 2020). However, many others have not done so yet, and even in those with set targets, old ICE cars will continue to be used for a long time if not impeded by respective legislation. Scaling up public transport (on both road and rail) improves EE and reduces emissions by carrying more passengers per vehicle, even when using fossil fuels. Electrifying public transport and developing new electrified systems requires significant upfront investment from governments and regions (Teske and Niklas, 2022).

Similarly, freight transport needs to become more energy-efficient. In EMDEs, where many old diesel freight vehicles are responsible for energy inefficiencies, electrifying road freight transport or moving it to rail will be particularly effective, even if rail transport still relies on diesel. Making freight transport more energy-efficient will also mean reforming the maritime shipping sector by scaling up the use of alternative fuels produced with renewable energies and electrifying fleets for shorter distances. Given the high costs and long investment cycles associated with switching fleets and building the necessary infrastructure, this can be viewed as a longer-term target but that needs support from now on.

For the ramp-up of EVs (from 40 million in 2023 to 360 million in 2030) (IRENA *et al.*, 2024), **the world needs USD 1.6 to 2.5 trillion by 2050 (or about USD 95–145 billion by 2030) in investments in charging infrastructure, installation, and maintenance** (BNEF, 2024). The investment need is particularly high in EMDEs, where fleet growth and infrastructure need is expected to rise exponentially. Disaggregated numbers are not available.

This needs to be accompanied by policies encouraging electrification and by the removal of incentives (e.g. subsidies and tax exemptions) for fossil fuel transport. Yet, given that personal mobility and the cost of transported goods need to be affordable, these policies need to include measures to prevent negative impacts on people's livelihoods (UBA, 2024). At the same time, public planning needs to ensure urban planning includes improved public transport and infrastructure for micromobility and active travel. Urban rail and (micro)bus networks need to be integrated in urban development, just as lanes for walking, cycling, and other last-mile solutions (Teter and Voswinkel, 2023). This can be combined with regulatory approaches to reduce the appeal of using private transport in cities (e.g. via taxation, parking fees, or road pricing). More public transport and lower intensity systems also have the benefit of reducing the need for critical minerals and concomitant environmental and human rights risks. Hence, MDBs should take the opportunity to advocate for ambitious policies that simultaneously slash emissions, improve community wellbeing, and reduce pressure on ecosystems (Riofrancos *et al.*, 2023).

For the decarbonisation of aviation, multilateral approaches are key. These entail the development of low-emission fuel supply chains and respective policies, but also the implementation of fiscal instruments to discourage frequent flying, such as ticket levies and aviation fuel taxes.

5.3.2 Buildings (including household appliances)

Buildings account for 30% of global final energy consumption and for 26% of global energy-related emissions, with 8% being direct emissions in buildings and 18% indirect emissions from the production of electricity and heat used in buildings (IEA, 2023b).

The highest energy demand per end use globally comes from space heating, followed by appliances such as refrigerators, washing machines, and computers (jointly around 50% to 60%). Water heating and space cooling make up another 25–35% (IEA, 2023n, 2023d; IPCC, 2023).

However, there are regional differences for energy demand in buildings, especially with regard to the importance of heating, cooling, and cooking. In advanced economies, many of which are located in colder climates, energy consumption for heating makes up a substantial part of energy demand in buildings, but this is less prevalent in EMDEs. Here, in turn, we see a rapid increase in energy demand for cooling as global temperatures rise and economic conditions improve. Since 1990, energy consumption for cooling in personal and industrial spaces has tripled, with demand increasing as temperature records are repeatedly broken. As Figure 24 shows, air-conditioning penetration has been rising particularly rapidly in Asia Pacific. Air conditioning accounts for 3.2% of global GHGs (Ritchie and Roser, 2024a).

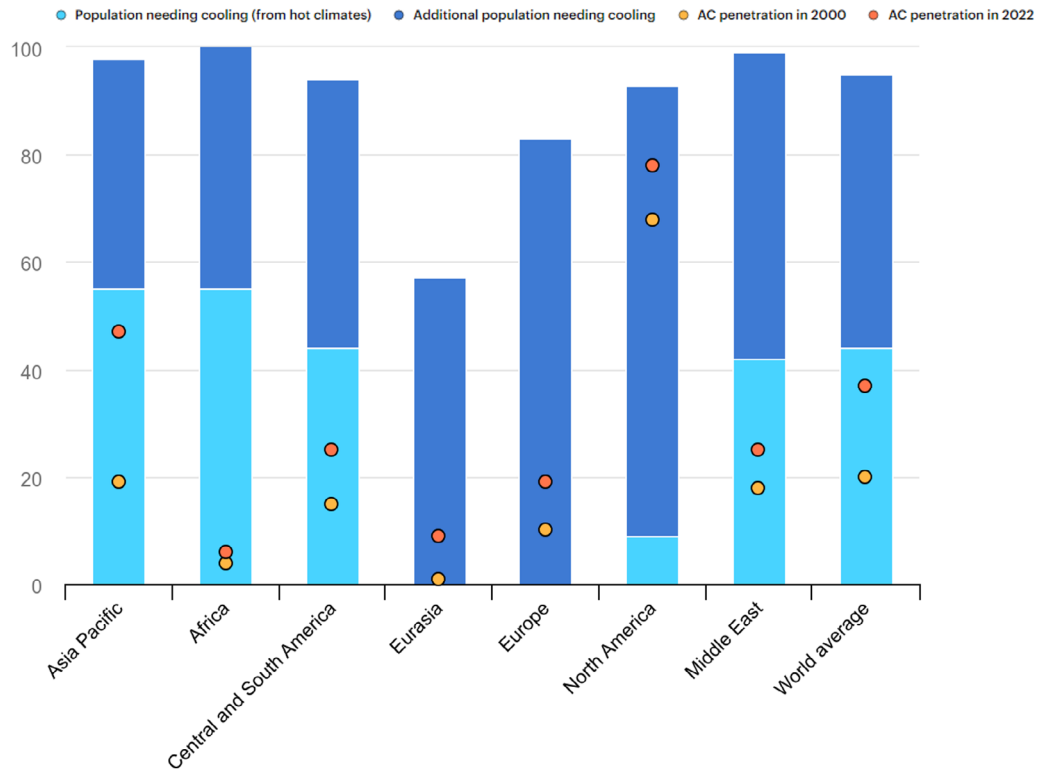


Figure 24: Global cooling demand and the penetration of air conditioning; Source: (IEA, 2018)

The most effective measures to reduce energy consumption from heating, cooling, lighting, and other household appliances in EMDEs are, however, at least partly similar to those in advanced economies. They include the following:

- Firstly, there are options to modify building materials and prefer those with good thermal properties which can also be locally sourced (e.g. adobe, bamboo, compressed earth blocks). This includes improvement of wall and roof insulation. Further measures can include optimisation of orientation and set-up to incorporate shading, maximise cross-ventilation, and reduce heat gain.

- Secondly, this should be compounded with the rollout of MEPS, introducing climate-specific building codes, and supporting the informal construction sector with simplified codes and training.

- A third set of effective measures is about building envelope efficiency, including the improvement of windows and glazing, the sealing of air leaks, and the implementation of cool roofs and reflective paint.

- Fourthly, energy saving options for household appliances are an important element. For light bulbs and other household appliances, standards and labels can be introduced to support the sale of energy-efficient appliances over inefficient ones. Importantly, this should include support for energy-efficient air conditioners and encouragement of the use of low-energy cooling technologies such as ceiling fans, where possible. In EMDEs in particular, support for clean cooking can make a big difference since cooking is often the dominant use of household energy (up to 60% in some cases). Widespread use of biomass, charcoal, kerosene, or liquid petroleum gas (LPG) for cooking leads to significant CO_2 emissions, as well as black carbon and indoor air pollution. The IEA estimates that if 2.2 billion people gain access to clean cooking by 2030, meeting the SDG of providing universal access to clean cooking, this could avoid global GHG emissions of up to 1.5 Gt CO2-eq in 2030, equal to the combined emissions from shipping and aviation today (IEA, 2023a).

- Fifthly, overall urban planning should consider the integration of green spaces and trees for cooling to reduce overall cooling needs. It also needs to integrate the planning for housing, energy, and transport to ensure efficient solutions such as use of waste heat and preservation of cool green spaces.

- Finally, capacity building and behavioural change are important. Builders, masons, architects, and homeowners need to be trained on energy-efficient practices. Community demonstration buildings are an effective way to spread awareness.

In addition, there are also broader development aspects that speak for investing in EE of buildings, for example by reducing indoor air pollution from cooking to gain health benefits. Home efficiency upgrades also boost household resilience to severe weather events by extending the time that buildings maintain safe indoor temperatures without power. In informal settlements, advanced cool roof materials can reduce indoor air temperatures by 5°C to 10°C, which could save lives in a heatwave. These benefits are greatest for low-income households because they are at highest risk of exposure to extreme heat (American Geophysical Union, 2022; Rasmussen and Nanavatty, 2023).

Heat pumps, which are crucial for the energy-efficient decarbonisation of the heating sector, are primarily important in colder climates. Given that this is relevant for only a limited number of EMDEs, the technology is not discussed here.

5.3.3 Industry

The industrial sector has a large impact on emissions, with approximately 40% of the global carbon equivalent emissions being attributed to the sector (OECD, 2023), and it accounting for 37% of global energy use in 2022, with rising tendencies (IEA, 2023f). The industrial sector's energy mix has remained relatively unchanged since 2010, with the share of fossil fuels decreasing from 74% in 2010 to around 65% in 2022, and electricity rising from 19% to 23%, largely owing to changes in light industries (IEA, 2023f).

IEA's NZE foresees significant improvements in EE for the sector, with electricity climbing to nearly 30% of industrial energy use by 2030, leading industrial energy productivity to increase by about 3% per year until 2030, and the sector's total energy use to grow by less than 0.5% per year to 2030 (IEA, 2023f).

Overall, iron and steel, chemicals and petrochemicals, and non-metallic minerals such as glass and cement account for the largest shares of industrial energy consumption. Yet, there are a number of differences between EMDE and advanced economies. Iron and steel, cement, the textile industry, and mining make up higher shares of energy use in EMDE than in advanced economies (IEA, 2023l; IPCC, 2023; IEA, 2024q; World Bank Group, 2025g, 2025f).

Meanwhile, industrial activity is expected to rise in the future, especially in developing countries; as an illustration, India's Ministry of Steel anticipates nearly doubling the nation's steel production between 2024 and 2030 (Gangotra, Dolan and Carlsen, 2024).

The most important measures to improve EE in industrial processes include the following (IEA, 2008; World Bank Group, 2017b; IEA, 2021a, 2021b, 2023f; World Bank Group, 2024h):

- Most importantly, **industrial equipment and processes** need to be modernised. This includes replacing outdated machinery with more energy-efficient models and using best-available technology in production processes. For example, motors of pumps, fans, and compressors can be replaced with smaller and more energy-efficient models and be combined with variable frequency drives that reduce energy consumption by optimising motor speed.

- Secondly, **waste heat recovery** systems should be installed, particularly in industries such as cement, ceramics, and chemicals.

- A third important point is the **electrification of industrial processes**. This is easier for low- and medium-temperature heating applications (which work for example for recycled scrap metals) than for processes requiring extreme temperatures. Where renewable capacity exists, switching to renewable electricity can save even more emissions.

- Fourthly, industries should consider the introduction of **Energy Management Systems** to identify inefficiencies and institutionalise savings. Receiving a certification, for example to the

global standard ISO50001, can also enhance companies' reputation and thus competitiveness. It should always come with training for staff in energy auditing and management.

- A fifth approach is the deployment of **digital efficiency solutions** such as sensors, AI-based monitoring and smart controls, and automation for energy tracking and management.

- This requires **local training** for energy managers, auditors, and plant operators. Local knowledge-sharing platforms of industry efficiency hubs can be helpful here.

- Last but not least, **policy and regulatory support** will be needed to promote such changes. One example is MEPS for industrial equipment, but governments can also use taxes, special electricity prices for industry, and targeted public funding programmes to encourage EE in industry.

Table 6 translates these priorities into key measures for industrial sub-sectors.

Sector	Key EE measures
Cement	Kiln optimisation, alternative fuels, waste heat recovery
Steel	Scrap-based electric arc furnaces, coke dry quenching
Textiles	Efficient dyeing, steam system upgrades
Agro-processing	Efficient boilers, biomass cogeneration
Chemicals	Process heat integration, catalytic optimisation

Table 6: Key efficiency measures for improving EE in industry in EMDEs, per sub-sector

Key challenges in EMDEs include high upfront costs and limited access to credit; lack of awareness of the financial benefits of EE measures and technical expertise; weak enforcement of standards; and informal or fragmented industrial bases.

5.4 MDBs' current activities and investments related to energy efficiency

5.4.1 Overview of MDBs' current energy efficiency support

All MDBs have recognised EE as an important area to invest in. However, compared to RE, it is more difficult for MDBs to find the most effective entry points across the many potential EE action areas. MDB EE investment levels are much lower, at only 16% of REN investments (based on 2024 numbers).

Consideration of EE should be an integral part of any MDB project, whether project financing, development policy financing, or TA. This is because EE improvements can support other development goals by alleviating fiscal and energy scarcity and reducing harmful emissions, and there is a lot of untapped

potential for this in the three key sectors. Moreover, EE support has large potential for job creation: many jobs related to energy efficiency are in construction, manufacturing, wholesale, distribution, or transport. These are difficult to automate, outsource, or offshore, so they stay in local communities and bring economic benefits (ACEEE, 2017; Newcomb *et al.*, 2024).

While the MDBs themselves quantify their 2023 investments in buildings, public installations, and end-use EE at USD 17.748 billion (AfDB *et al.*, 2024), OCI tracked USD 3.413 billion in investments in efficiency for fossil, clean, and other types of energy for the same year (OCI, 2024). Neither of these numbers are disaggregated according to the three key sectors. A likely explanation for the difference is, however, that the MDBs include activities that reduce resource consumption more generally (not just of energy) or CO2e emissions, or increase plant-based carbon sinks in buildings, associated grounds, public areas, and installations. This can include, for example, things like efficient water irrigation or tree planting. The OCI dataset, in turn, concentrates solely on activities that reduce the net energy consumption within the energy system itself. At the same time, however, a considerable range of MDB investments in EE is likely not reflected even in their own numbers; this is because a range of investments in sectors other than buildings, public installations, and energy can include EE components or measures that indirectly contribute to EE, which are not reflected in the above-mentioned reporting category. To enable a better understanding of focus areas and gaps, it is important for MDBs to report on their EE investments in a more disaggregated, sector-specific way.

While the COP28 energy consensus does not define EE, it seems reasonable to exclude, from the definition of EE, activities that do not serve the reduction of net energy consumption. Hence, the OCI numbers are considered to be more relevant and will be used in the following sections.

According to the OCI dataset, the MDBs invested a total of USD 21.9 billion in EE measures between 2018 and 2024. The amount invested in the efficiency of clean energy technologies was more than five times the amount invested in the efficiency of fossil fuel technologies (see Figure 25).

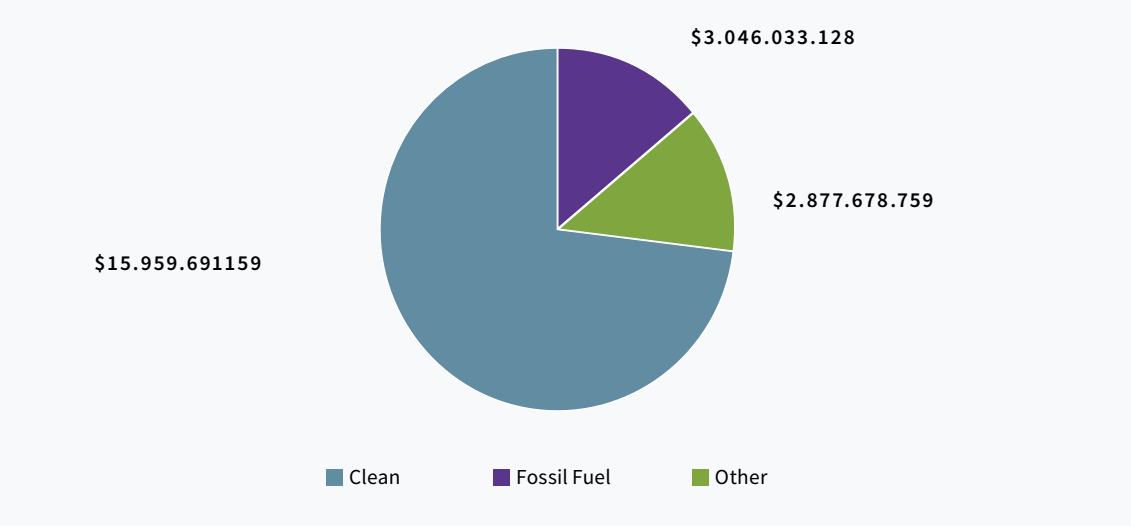


Figure 25: MDB investment in EE, by energy type, 2018–2024; Source: own calculation based on OCI, 2024

Yet the required exponential increase in EE investment is not visible in these numbers. To the contrary, investments have been falling for two years in a row, and 2024 investments show the lowest level since 2019 (see Figure 26).

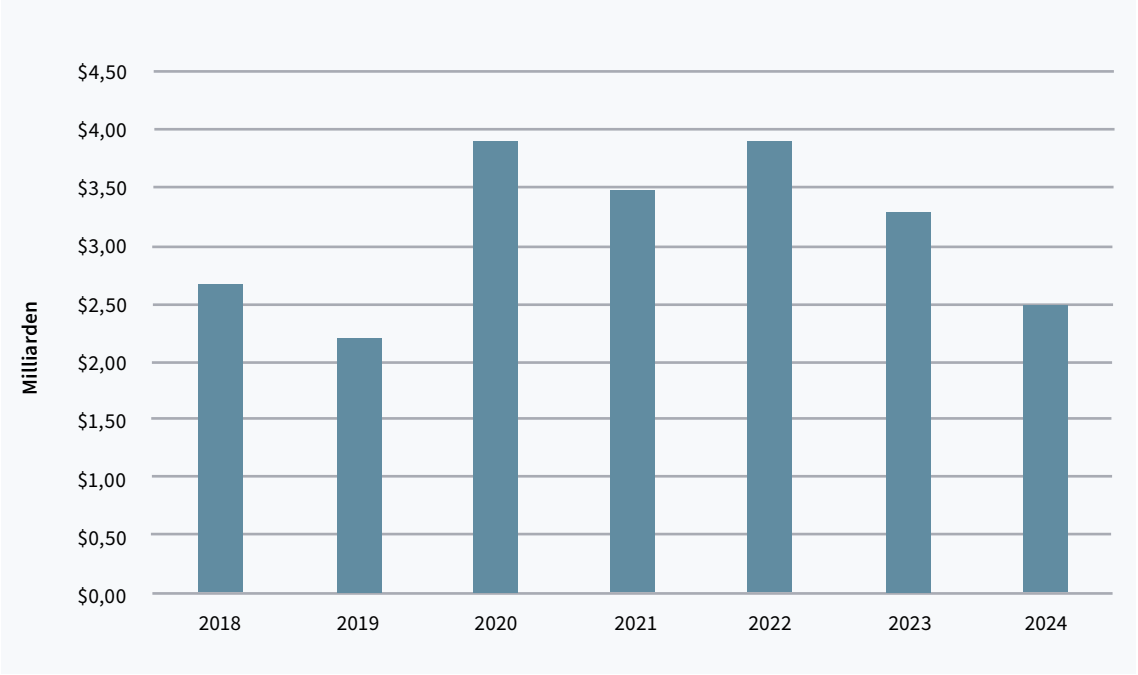


Figure 26: Annual MDB investment in EE, 2018–2024; Source: own calculation based on OCI, 2024

5.4.2 MDBs' energy efficiency investments by region

By far the largest portion of MDB EE investment goes to Europe, with Central and Western Europe receiving 63%, which is more than three times the amount dedicated to LAC, Africa, and Asia together (see Figure 27). Despite the large projected energy demand growth in Asia, the region receives relatively little MDB support compared to other regions. At the same time, the comparatively high share of support for SSA (despite its low share of energy access and consumption) is to be welcomed as it can serve to lay an energy-efficient foundation for the exponential increases in energy demand that are likely to happen in the region after 2030.

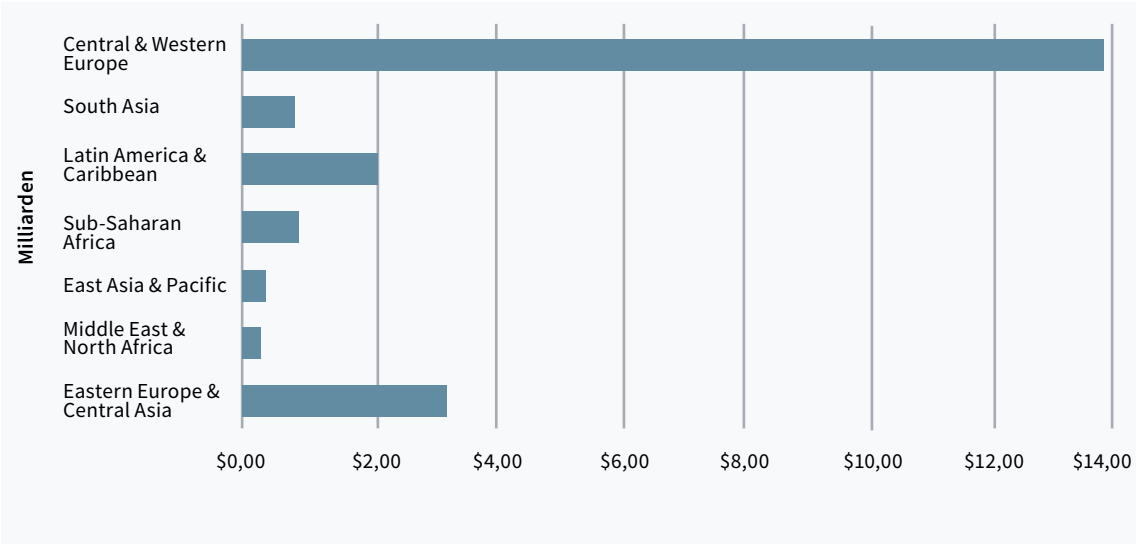


Figure 27: MDB EE investments, 2018–2024, by region; Source: own calculation based on OCI, 2024

Again, the high share of EE financing going to Europe is in part explicable by the large share of 60% that the EIB has in these EE investments, and the fact that it distributes only a very limited share of its funds outside Europe. It should be noted that NDB invests the fourth highest share of MDBs in EE; however, only 2% of it is related to clean energy technologies. The AIIB, AfDB, and IsDB seem to spend the least on EE, each with numbers of less than USD 200 million over seven years (see Figure 28).[35]

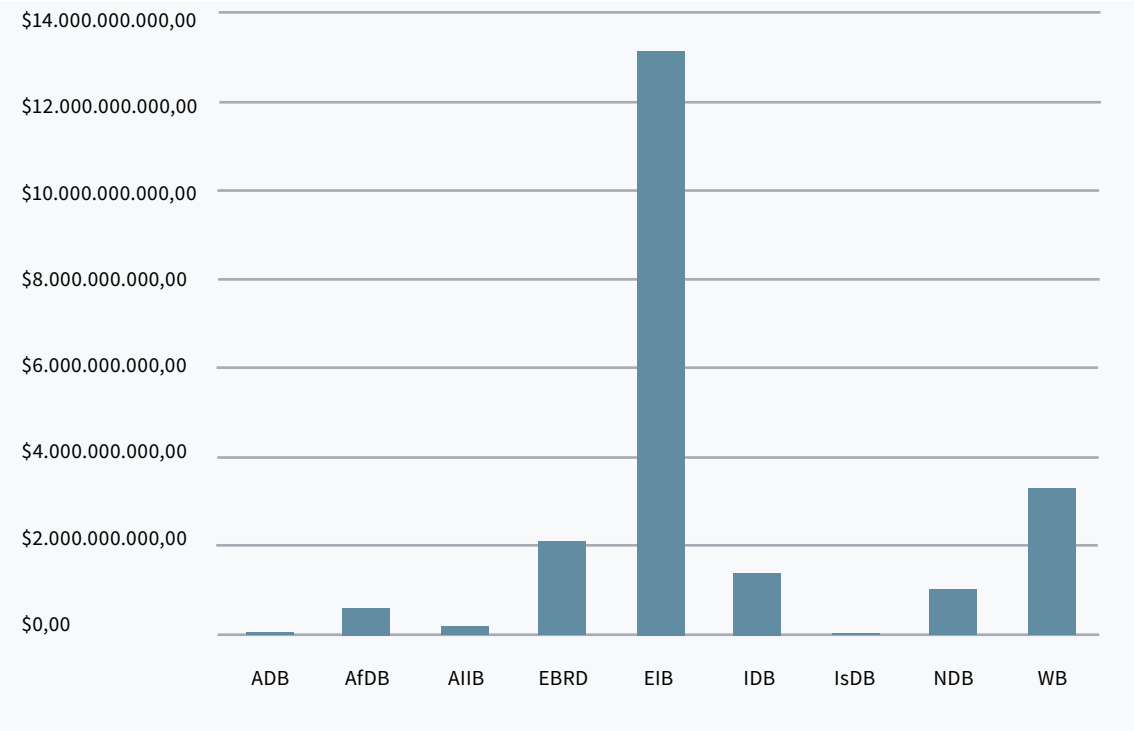


Figure 28: MDB EE investments, per MDB, 2018–2024; Source: own calculation based on OCI, 2024

Irrespective of the reasons, this picture highlights a clear need for scaling up MDB EE investments in EMDEs, especially SEA and India. Given that annual EE investment in EMDEs needs to increase by around seven times until 2030, the MDBs should assume a much more active role in EE support. In particular, the AfDB, AIIB, and IsDB should seek to ramp up their ambitions.

5.4.3 MDBs' energy efficiency investments by sector

No further sector disaggregation of EE investments per sector is available from the MDBs. The OCI Public Finance for Energy database also does not categorise the data into the three key sectors, but rather sorts according to the 'stage' of energy production where efficiency is being improved (OCI, 2024). Also, 37% of MDB EE projects could not be categorised and are marked as 'unclear or mixed'. However, the OCI data provides some insights (see Figure 29).

35 Here the caveat of incomplete data on EE mentioned earlier applies again: a considerable share of MDB EE investments might not be reflected in those figures because they contribute only indirectly to EE, are categorised differently, or happen in sectors other than energy.

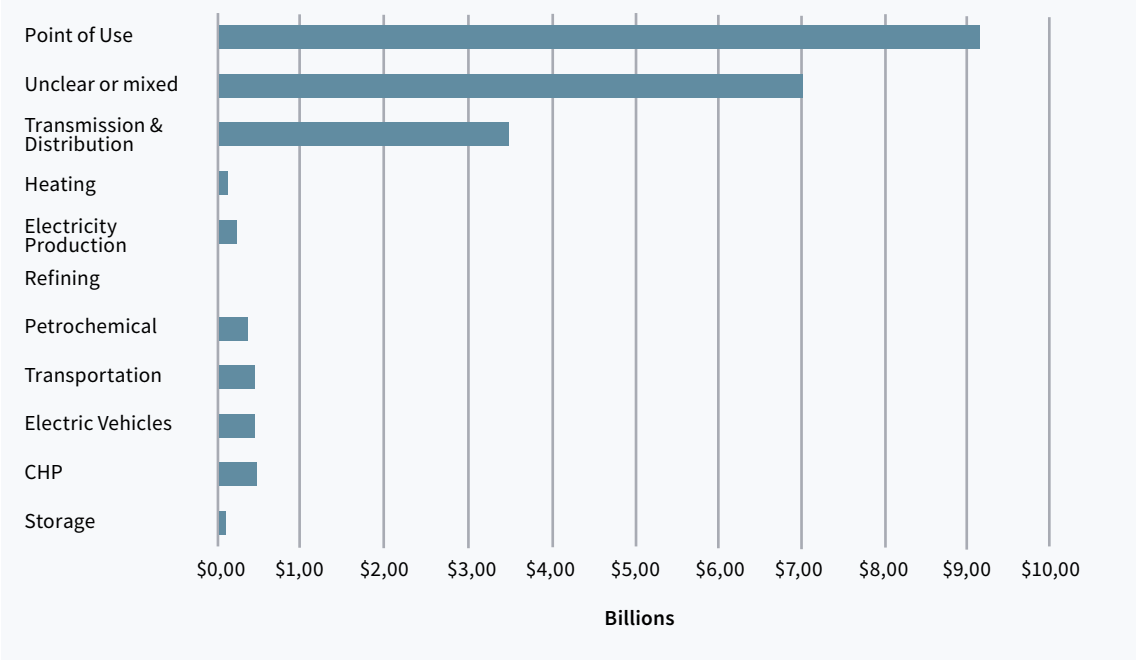


Figure 29: MDBs' EE investments 2018–2024, by stage of energy production; Source: own calculation based on OCI, 2024

Interestingly, 18% of investments are related to supply-side measures, namely the production, storage, transmission, and distribution of energy; these are not particularly emphasised in IEA scenarios, which concentrate more on demand-side measures. 42% of all MDB investments support point-of-use efficiency, i.e. the production of energy closer to the point of use to minimise losses and waste, or also the efficient energy use by devices, machines, or processes at the point where it is consumed (i.e. end-use EE). This can relate to the buildings and the industry sector though the exact shares are unknown: 4% clearly relates to industry (refining and petrochemicals), and 2% to buildings (heating). The transport sector, which has the greatest needs for transformative EE investments, does not seem to be a focus of MDB EE efforts. It makes up only 4% of MDB EE investments (transportation and EVs). SSA, for example, received only USD 7.8 million from all MDBs over the past seven years for EE of transport and for the support of EVs.

Specific conclusions on sector financing for EE are difficult to draw due to the lack of disaggregation of point-of-use investments. Hence, a primary recommendation is that MDBs enhance transparency on their EE investments by reporting them in a disaggregated way as part of their next climate finance reports.

The transport sector definitely merits more MDB attention. MDBs should support EMDE governments in scaling up and electrifying public transport (on both road and rail). This involves support for building up rail infrastructure (for both passenger and freight transport) and EV charging infrastructure. This makes a lot of sense from a development perspective since efficient public transit will also boost access to job opportunities. Freight companies should receive MDB support in electrifying freight road transport. For smaller companies, MDBs can cooperate with national development banks and other local DFIs. At the same time, MDBs should offer governments their support for regulatory reforms (including ICE phase-out targets and fiscal instruments), and in making the new, energy-efficient transport modes affordable through long-term financing arrangements and budgetary reforms (such as shifting subsidies from fossil fuels to electrified public transport as a transitional measure). Furthermore, TA should be offered to cities and communities for improving urban planning for walking, cycling, and other forms of low-emissions micromobility.

In the buildings sector, MDBs need to support EMDE governments on programmes for households to improve EE of heating and especially cooling. They can also work with national development banks or other financial intermediaries to encourage private finance investments in EE of buildings. This is particularly relevant for MDBs operating in Asia, since demand is rising exponentially. Also, clean cooking programmes can make a big difference, especially in Africa. Moreover, regulatory efforts should be supported to implement building codes and standards and certification of devices. Importantly, the informal construction sector needs to be included; simplified codes and training can make a difference here. These efforts should cover both building materials, orientation, and set-up, as well as envelope efficiency. To support behavioural change and awareness, MDBs should support the construction of community demonstration buildings (see Infobox 2). These can also highlight the benefits of such measures in cases of extreme heat events. MDBs should support governments in adjusting urban planning to use waste energy and include measures to adapt city structures to increasing temperatures and water scarcity.

ADB: Green and low-carbon rural housing – research and pilot implementation

In China, the ADB implemented a TA project promoting EE and reducing carbon emissions from rural residential buildings (ADB, 2022b). The project included (i) a pilot renovation of up to 36 selected rural houses to become green and low-carbon, and (ii) evidence-based research on construction planning and technologies. It also involved training for residents in energy management and maintenance of low-carbon buildings, and the creation of guidelines for green and low-carbon rural house planning and implementation.

Infobox 2: ADB: Green and low-carbon rural housing – research and pilot implementation

In the industry sector, MDBs should scale up their support for industrial companies in EMDEs to switch to more energy-efficient equipment and best available technology to electrify industrial processes, and to install waste heat recovery systems and digital efficiency solutions. They should also offer their support for the installation of energy management systems, as well as for training and knowledge exchange on energy management. Especially for smaller industrial businesses, MDBs should cooperate with national development banks and smaller local banks to reach the relevant stakeholders. Given the key role that governments play in enhancing EE in industry, MDBs should support EMDE governments in establishing a policy and regulatory environment conducive to an energy-efficient industry. This can include the introduction of MEPS for industrial equipment, special electricity prices for industry, and also targeted funding programmes to facilitate electrification and EE of companies. This is particularly important in EMDEs with rapidly expanding industrial sectors. Given that the industry sector in EMDEs is partly fragmented and informal, these measures should be accompanied by MDB support for industry development and formalisation. Also, support for the enforcement of EE standards can be helpful.

5.4.4 MDBs' finance instruments and type of support for energy efficiency

In terms of instruments, MDBs rely even more heavily on loans for EE (96%) than for the support of renewables (89%). In total, 2.5% of MDB EE financing was disbursed in guarantees, 1% in equity, and 0.4% in grants between 2018 and 2024 (see Figure 30).

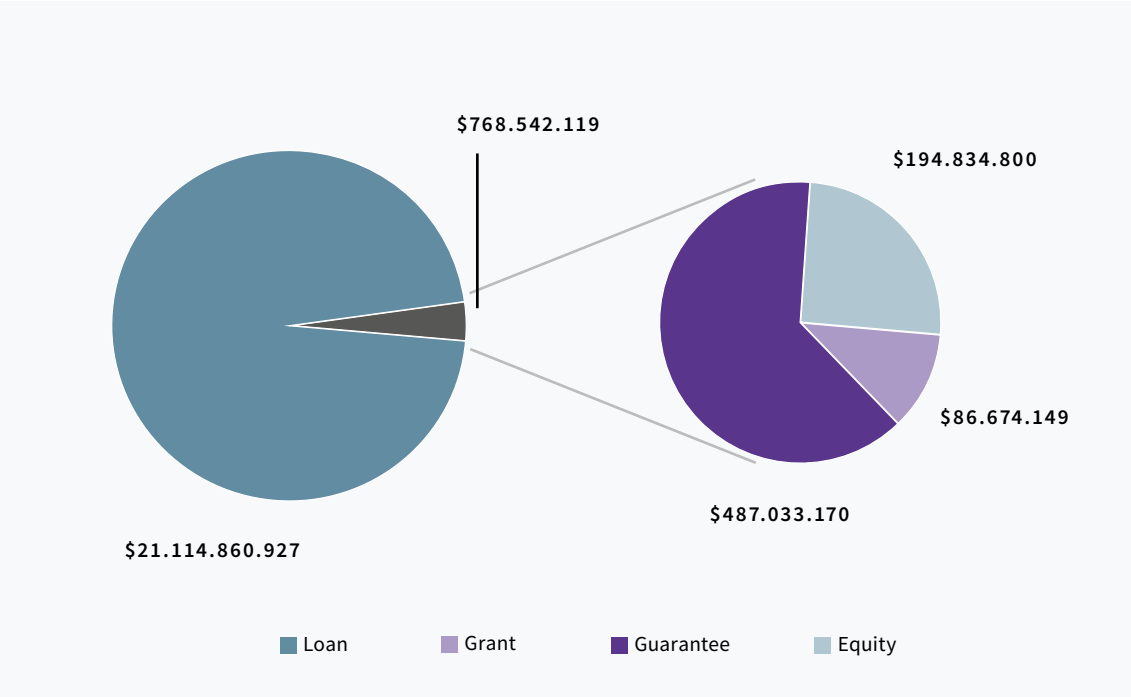


Figure 30: MDB support for EE, per finance instrument, 2018–2024; Source: own calculation based on OCI, 2024

Between 2018 and 2022, none of the grant money was dedicated to EE in SSA. In 2023, however, the AfDB disbursed around USD 59 million in EE grants to the region. Of this, USD 5 million was dedicated to the creation of so-called Africa Super ESCOs in Rwanda, Senegal, and South Africa. This model, which already exists in many other countries, is worth further support in other African countries and by other MDBs. It can improve EE in all three key sectors, by setting incentives and reducing risks for respective businesses and institutions wanting to improve their EE (see Infobox 3).

ESCOs as an innovative financial means to promote EE

An ESCO is a business that provides energy services aimed at reducing energy consumption and improving EE for clients. This includes the design, implementation, and financing of projects. ESCOs can be either private companies or SOEs. State-owned or public ESCOs are typically created or sponsored by governments to lead national EE efforts in countries where the private ESCO market is underdeveloped. Governments can also choose to partner with private ESCOs to implement large-scale EE programmes (e.g. street lighting or EE of public hospitals).

Key features of an ESCO:

- EE projects: They identify opportunities to reduce energy use, such as upgrading lighting, systems for heating, ventilation and air conditioning, insulation, and building automation.
- Performance-based contracting: ESCOs often operate under Energy Performance Contracts, where their compensation is tied to the energy savings achieved. If the project does not save as much energy as promised, the ESCO typically covers the shortfall.
- Financing options: ESCOs may arrange financing for the project, which helps clients implement improvements without upfront capital investment. The energy savings are used to pay back the investment over time.
- Comprehensive approach: They provide a turnkey service – from auditing and design through to implementation, maintenance, and monitoring.

Infobox 3: ESCOs as an innovative financial means to promote EE

The fact that 55% of MDB investments are transactions with private entities reflects the prominent role that private actors play in increasing EE (see Figure 31).

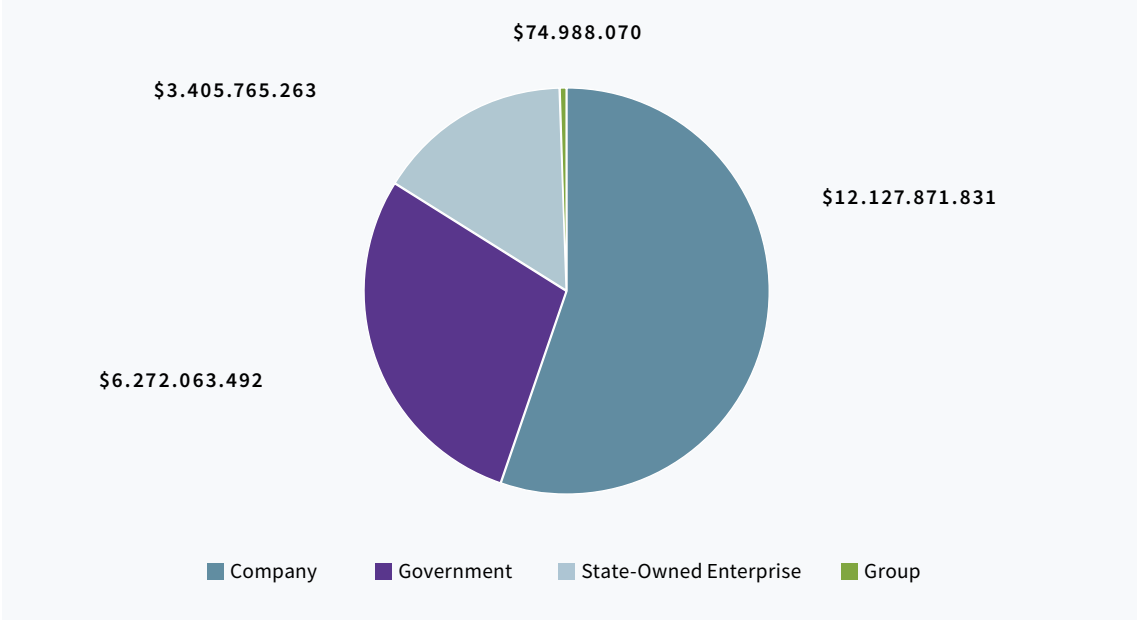


Figure 31: MDB EE investments, 2018–2024, by entity financed; Source: own calculation based on OCI, 2024

The dominant type of MDB support for EE is project financing. The share of financial intermediary financing in MDB EE investment is slightly lower than that in renewables investment (see Figure 32). However, the nature of EE potential is rather dispersed, especially in the buildings but also partly the transport sector; many potentially impactful EE investments often have rather small ticket sizes and are thus not suited for

direct MDB investments. Mass makes the difference here, rather than a few large projects. Hence, if MDBs want to scale up their support for EE in buildings, transport, and production, they need to make more use of working with local financial intermediaries to support households and SMEs in this endeavour. Given the dispersed nature of EE measures, institutions such as ESCOs, financial intermediaries, and funds can also aggregate small-scale projects into large bundles to be financed by MDBs.

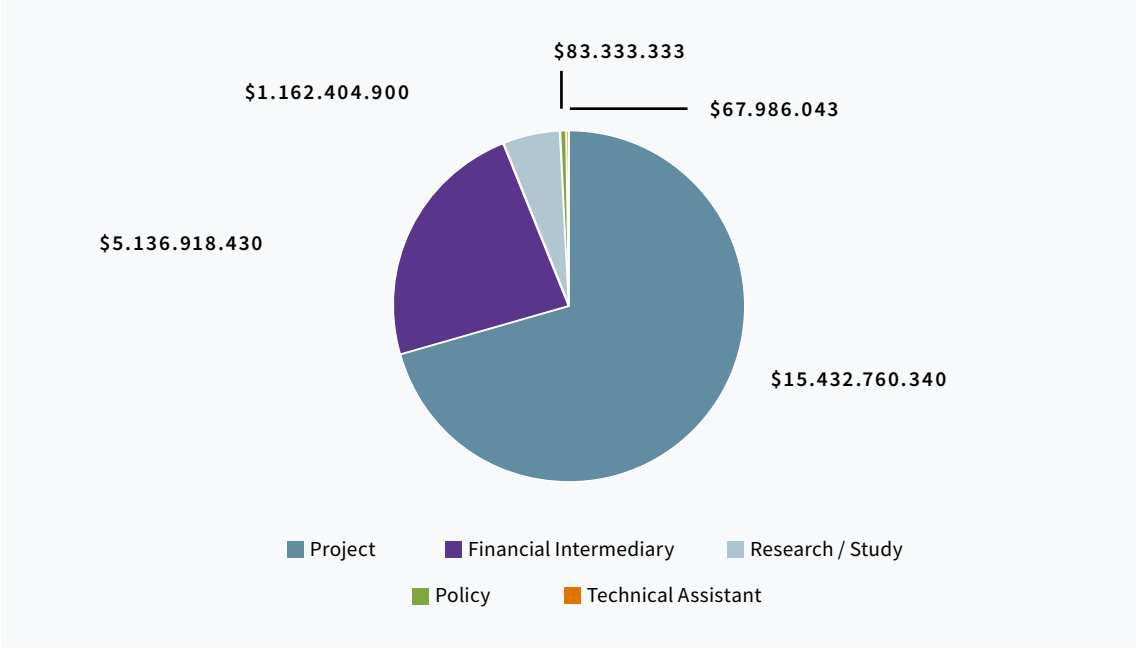


Figure 32: MDB investments in EE, per type of support, 2018–2024; Source: own calculation based on OCI, 2024

Between 2018 and 2024, 70% of MDB EE investment was disbursed in the form of project financing, 24% via financial intermediaries, 5% via research and studies, and 0.3% as TA. There was only one policy-based operation by an MDB in the field of EE,[36] although public policy measures are quite important to set incentives and create rules and standards for EE.[37] As the ADB notes, '[e]nergy efficiency investments, especially on the demand-side, are hindered by weak regulatory frameworks, limited implementation capacity, and fragmentation across infrastructure sectors, which indicates the need for upstream support, innovative business models and a cross-sectoral approach' (AIIB, 2022, p. 11). Accordingly, MDBs should seek to highlight the topic of EE regulation and standard-setting more in their country dialogues, with the aim to start supporting policy reforms for EE in their partner countries. Potential policy measures to be supported include the setting of national EE targets and the elaboration of respective, cross-sectoral implementation plans, regulation and oversight for large enterprises to conduct energy audits and implement energy management systems, and the regulation of standards for energy-efficient buildings. Also, MDBs can support governments in setting up funding programmes and other financial incentives to facilitate EE investments in buildings or industry (such as investment tax credits, accelerated depreciation for EE equipment, PACE programmes,38 or cash rebates for certified retrofits or appliance upgrades).

36 ADB/AIIB: Uzbekistan: Accelerating the Uzbekistan Climate Transition for Green, Inclusive, and Resilient Economic Growth (Subprogram 1) (AIIB and ADB, 2024).

37 While it is possible that there were some policy-based operations in the field of EE during this timeframe, MDB reporting on policy-based operations is not always transparent enough for OCI to track numbers clearly.

38 PACE is a financing mechanism that helps property owners pay for energy efficiency and clean energy upgrades through long-term surcharges on their property tax payments. If the property is sold, the PACE repayment obligation typically stays with the property, not the original owner.

Only 21 out of 296 MDB EE investments between 2018 and 2024 were TA. This extremely low amount raises the question whether the MDBs could do more to technically support the introduction of EE measures in partner countries, particularly by large industry companies. According to the experience of IDB Invest with an EE programme for businesses, money is not always the problem. After evaluating what the most impactful EE measures could be, participating businesses partly decided to undertake the measures themselves rather than using an IDB Invest loan.[39] So, there might be potential to achieve a lot with TA in matters of EE with only little financial input.

In terms of less established instruments, green bonds or sustainability-linked bonds seem an option for securitising EE investments just as they are for renewable investments (IEA, 2024b). Issued by governments, municipalities, corporations, and financial entities, they can attract large-scale financing for public or aggregated private EE projects and lower the cost of capital. MDBs can assist partners in designing and issuing such green bonds, also as an effort to further develop local capital markets.

Moreover, blended finance arrangements can be used by MDBs to combine public and private funds to de-risk EE investments. For example, a grant covering part of the project cost can be combined with a guarantee or first-loss capital to encourage private lenders to participate.

5.4.5 MDBs' strategic approaches to energy efficiency support

A look into the MDBs' energy strategies and other relevant strategic documents show that most banks have recognised the importance of EE for development. However, the majority of them have not yet operationalised this as part of their institutional KPIs. Only four out of ten MDBs have KPIs that are directly related to EE, such as energy intensity of economy (EBRD), primary energy consumption saved (AIIB), share of electricity losses (AfDB), and lower-carbon transport (EIB) (see Table 7).

MDB	KPIs related to EE
ADB	Clean energy capacity for cross-border power trade installed and/or improved Regional or subregional mechanisms created or operationalised to enhance coordination and cooperation among developing members countries in energy
AfDB	Share of electricity losses through transmission, distribution, and collection Share of population with access to clean cooking solutions
AIIB	Primary energy consumption saved Total electricity storage capacity financed Cross-border transmission of electricity
EBRD	Energy intensity of economy
EIB	EE Lower-carbon transport

39 Interview with IDB staff, 13 Dec 2024.

IDB	--
IsDB	--
NDB	--
WB	--

Table 7: MDB KPIs related to EE; Sources: AfDB, 2017; AIIB, 2022; ADB, 2023b; EBRD, 2023; EIB, 2024, 2025

Apart from that, several MDBs have indicators that indirectly speak to EE improvement, such as indicators related to cross-border electricity trade (ADB, AIIB) or total electricity storage capacity (AIIB). Both can contribute significantly to EE since they allow for more efficient use of variable levels of RE with less backup need by fossil-fuelled baseload (AIIB, 2022). Both measures, however, only serve EE improvements if they are actually combined with measures to ramp up RE. This picture clearly indicates room for further elevating the EE topic in MDBs' strategic and institutional priorities. To consistently integrate EE considerations throughout all financing activities, all MDBs should adopt respective KPIs into their performance frameworks.

6. Connected technologies

'Without grids and storage, the tripling of renewables will not succeed' (IEA, 2024d, p. 13). Although grids and storage are not explicitly mentioned in the consensus package, ramping up RE supply and EE according to the COP28 energy consensus will only be possible with simultaneous improvements in connected technologies such as grids and storage as well as green hydrogen. This is because energy storage (including batteries, pumped-storage hydro, and emerging storage technologies), transmission, distribution, and power management systems are essential to ensuring that RE is consistently available, even when solar and wind generation fluctuates or electricity demand surges, and to enable decentralised energy production (IRENA *et al.*, 2024, p. 15). Regional and cross-border grid integration further optimise resource use by allowing countries to share clean energy, reduce costs, and improve energy security. Without these upgrades, fossil fuels will remain the default backup, undermining decarbonisation efforts. Similarly, the global tripling of renewables will not succeed without green hydrogen because it provides a crucial solution for storing variable RE and decarbonising hard-to-electrify sectors like heavy industry and long-haul transport.

The following sections will dive somewhat deeper into two key technologies that are closely connected to increasing EE and renewables: grid and storage updates, and hydrogen.

6.1 Current status and investment levels in connected technologies

6.1.1 Grids and storage – overview

Many countries face a critical bottleneck in their clean energy transition due to insufficient grid and transmission infrastructure. While wind and solar projects are rapidly expanding, outdated or limited power networks partly prevent these renewable sources from being fully utilised; globally, 3,000 GW of wind and solar power are waiting for grid connection as of 2024 (IRENA *et al.*, 2024, p. 15). Key barriers in EMDEs include slow permitting for new grid expansions, and a lack of investment in many (often state-owned) grid companies (IEA, 2024d).

While private finance can take over a large part of renewables and EE financing, there is a 'need for complementary public investments in grid development, storage and backup capacity, which will need to be frontloaded' (Songwe, Stern and Bhattacharya, 2022, p. 19). IEA estimates that to reach the COP28 energy goals, more than 25 million kilometres of electricity grid need to be built or upgraded by 2030, and global energy storage capacity needs to grow to 1,500 GW by 2030 (1,200 GW of it being battery storage) – a nearly 15-fold increase on 2023's level (IEA, 2024d).

Accordingly, USD 571 billion (Climate Analytics) to USD 912 billion (IRENA) of annual investment in grid and storage infrastructure is needed to deliver the 2030 tripling goal agreed at COP28 (Grant *et al.*, 2024) (see Figure 33).

Figure 33: Investments in grids and flexibility required to triple renewable power capacity and double EE by 2030 compared with 2024 progress;[40] Source: IRENA, COP30 and GRA, 2025

According to IEA, spending needs to increase even more in battery storage than in grids (see Figure 34).

40 Grids and flexibility investments include investments in transmission and distribution networks (excluding public EV charging stations), smart meters, pumped hydropower, and battery storage.

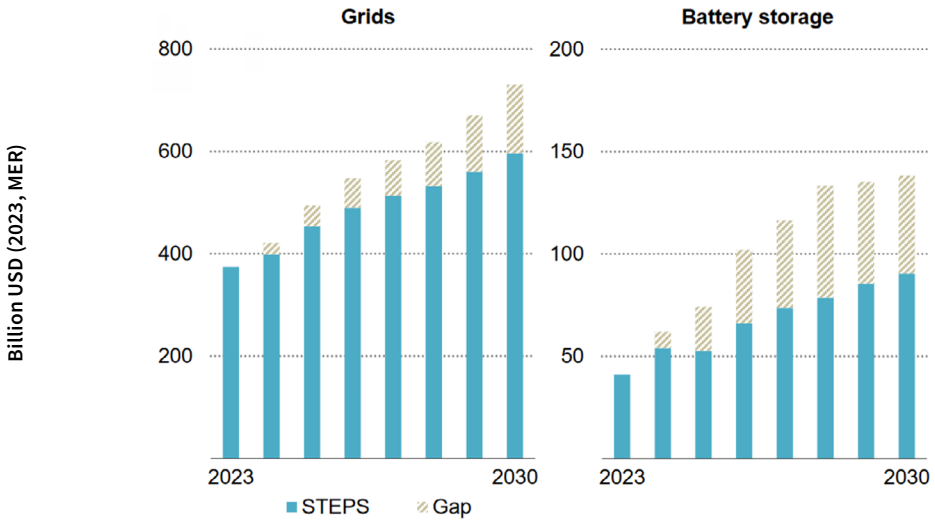


Figure 34: Gap in investment spending to triple installed renewables capacity by 2030; Source: IEA, 2024p

While grid and storage investments are increasing worldwide (see Figure), hitting about USD 400 billion in 2024, they remain heavily concentrated in advanced economies and China. These regions account for 80% of grid spending. Recently, grid investment has increased massively in Latin America, too, notably in Colombia, Chile, and Brazil, where spending doubled in 2023 alone. But everywhere else, 'investment remains worryingly low' (IEA, 2024p, p. 19). For battery storage, investments exceeded around USD 50 billion in 2024, but again, spending is highly concentrated. In 2023, for every dollar invested in battery storage in advanced economies and China, only one cent was invested in other EMDEs (IEA, 2024p, p. 19).

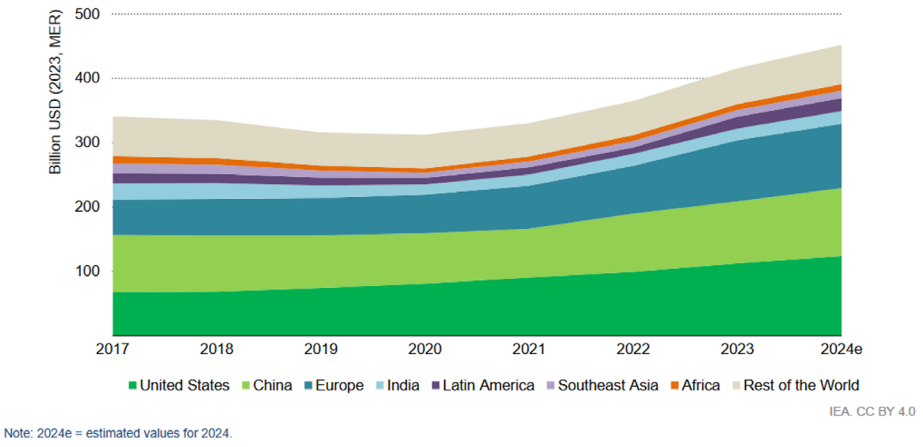


Figure 35: Investment in grids and storage, by region, 2017–2024 (estimates); Source: IEA, 2024o

At COP29, 65 states and a range of non-state actors (including the EBRD as the only MDB) signed a Global Energy Storage and Grids Pledge. They committed to enhancing grid capacity through adding or refurbishing 25 million kilometres of grids by 2030, and through considerably scaling up grid investments. The pledge also included a collective goal of deploying 1,500 GW of energy storage in the power sector globally by 2030, more than six times the level of 2022 (COP29, 2024).

6.1.2 Grids and storage – MDB support

MDBs do not report on the shares of financing for grids and battery storage in their joint climate finance reporting. While OCI tracks MDB investments in energy battery storage, no overview is available on MDB investments in grids, although grid expansion is high on the MDB energy support agenda. Such figures would be helpful to determine whether MDB support is on track to support this important enabling factor for the COP28 energy consensus.

'Mission 300' is currently the most prominent example of MDB engagement in the area of grid expansion (see Infobox 4).

Mission 300

The 'Mission 300' initiative, launched by the WB and AfDB, aims to connect 300 million Africans to electricity by 2030 – half of those currently without power on the continent. The initiative is estimated to cost USD 90 billion, with the WB and AfDB committing up to USD 48 billion. The IsDB and the AIIB have pledged approximately USD 6.15 billion to support the effort. Other funders include the French Development Agency, which committed to providing USD 1.04 billion, and the OPEC Fund for International Development, which made an initial commitment of USD 1 billion.

Half of the targeted new connections are to come about by connecting people to existing national grids, while the other half will be connected to off-grid RE sources, including wind and solar mini-grids. This means massive investments in both centralised and decentralised grid systems.

Since the Mission's inception in April 2024, twelve African countries have developed National Energy Compacts that identify critical reforms, set targets to scale up electricity access and increase the use of RE, and quantify investment needs from both public and private sources.

Problematically, fossil gas investments are mentioned in many of the National Energy Compacts, endangering the effective use of resources for RE and the sustainable nature of the initiative. Mission 300 has been criticised by CSOs for an over-reliance on private capital, a preference for privatised energy systems dominated by fossil fuels, and limited engagement with local communities. One recommendation is that Mission 300 should 'pioneer forms of public and community ownership over energy generation and transmission networks to ensure electricity is a public good rather than a source of private profit pulled out of the continent' (Power Shift Africa, Daley and Lawrie, 2025, p. 5).

Infobox 4: Mission 300; Source: World Bank Group, 2024d; Federal Government of Nigeria, 2025; Miriri, 2025; Power Shift Africa, Daley and Lawrie, 2025; The Big Shift Global, 2025

Given the essential enabling role of grid infrastructure for the COP28 energy consensus, MDBs need to increase their support to EMDEs for integrated power capacity planning and grid expansion, as well as for accelerated grid modernisation and digitalisation. This includes support for better spatial planning and regulatory reforms to support the rapid deployment of grids and grid-enhancing technologies, including advanced sensors and optimisation tools (IRENA *et al*., 2024). Interconnectors – transmission lines that link the power grids of different regions or countries – play a particularly crucial role in enhancing grid resilience. They enhance energy security and reduce the risk of blackouts. Moreover, by facilitating cross-border electricity trade, they have positive fiscal effects, namely increasing competition and thus lowering prices, and optimising the efficient use of infrastructure across regions. Given their partnerships with a wide range of countries in the same region, MDBs are well placed to support the coordination and co-financing efforts needed to support cross-border energy integration.

Energy storage has played an important role for operating reserves, blackout prevention, and load balancing in traditional energy grids. However, with the surge of renewable energy, these functions have become increasingly important. Currently, pumped-storage hydropower is the most widely used storage technology, and further investment is taking place mostly in China. Batteries, in turn, are the most scalable type of grid-scale storage; use of this technology has increased in advanced economies and China in recent years. Both utility-scale storage and residential and off-grid storage are increasingly becoming viable for private investment in regions with mature energy markets and supportive policies. In most EMDEs, however, they often still require public support to overcome high upfront costs and ensure affordability. MDB investments can make a significant difference here.

Despite its importance, investment in battery energy storage by MDBs (excluding extraction as well as storage for EVs and rail) remains relatively low, but has recently increased considerably, from around USD 24 million in 2023 to USD 1.7 billion in 2024. While this is positive, a further significant scale-up in financing is needed to unlock the full potential of storage solutions, ensuring that RE can be efficiently stored and dispatched when needed. Right now, MDB investment in batteries is only a fraction of what they invest in wind and solar. Given that MDBs such as AfDB and WB committed to focus on distributed renewables in their Mission 300, investment in smaller-scale storage options for off-grid facilities needs to increase significantly to be able to provide 300 million Africans with reliable energy access and facilitate the scale-up of renewables.

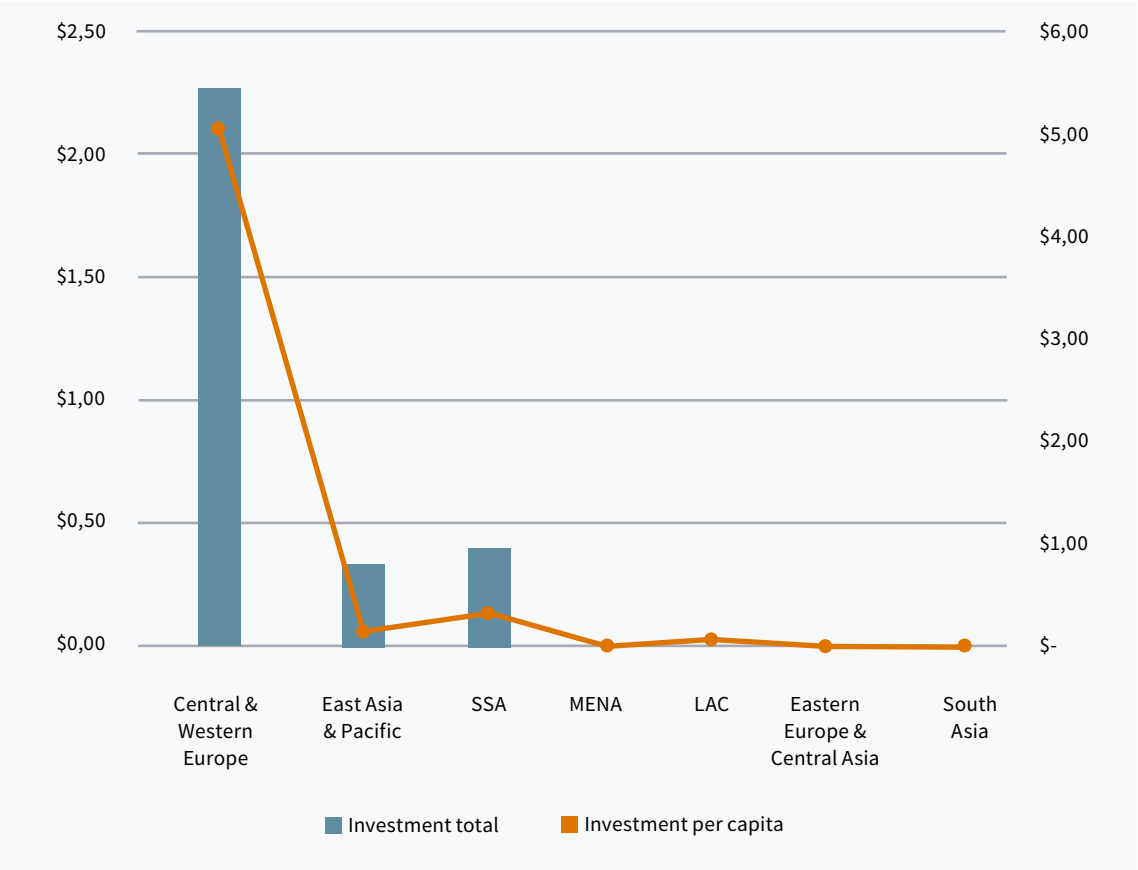


Figure 36 : MDB investments in battery storage, 2018–2024, per region, in total and per capita; Source: own calculation based on OCI, 2024[41]

What is noticeable is that Europe receives the largest total and per capita amounts of MDB investments in battery storage. Positively, SSA receives the second-largest MDB investment. This is likely reflective of the increase in off-grid systems in the region. However, when looking at it from a per capita view, it is only a tiny fraction of what goes to Europe (see Figure 36).

Worryingly, the MENA region and South Asia have so far secured only quite few MDB investments in battery energy storage.[42] While this has started to change,[43] MDBs should strengthen their efforts to support countries in these regions to expand battery storage as part of their decarbonisation pathways.

More generally, all MDBs should officially endorse the Global Energy Storage and Grids Pledge and in this context start to report on their support for grids and battery storage as of 2027.

6.1.3 Green hydrogen – overview

Green hydrogen is hydrogen gas that is produced using RE sources, such as wind, solar, or hydropower, through a process called electrolysis. Unlike other forms of hydrogen, green hydrogen can be considered aligned with the Paris Agreement (NewClimate Institute, 2023) and is therefore the only form of hydrogen that should be considered as an element to reach the COP28 energy consensus goals. While its produc-

41 The OCI database is likely not comprehensive here. There might be projects including battery storage components which are not reflected here because they were reported under other categories. Yet, the figures can still indicate broad trends.

42 This is based on the OCI Public Finance for Energy database. Again, there might be projects pre-2024 including battery storage components which are not reflected here because they were reported under other categories.

43 See, for example, recent EBRD projects in Egypt (2025), Türkiye (2024), and Uzbekistan (2024), and WB projects in India (2025).

tion is energy intense and still very expensive, it is currently the only option to (nearly) fully decarbonise the energy system and parts of industry. It can play a potentially important role in decarbonising thermal energy use in hard-to-abate sectors, decarbonising transport fuel for certain areas, storing and transporting RE, and replacing fossil-based inputs in industrial processes (non-energy use) (NewClimate Institute, 2023).

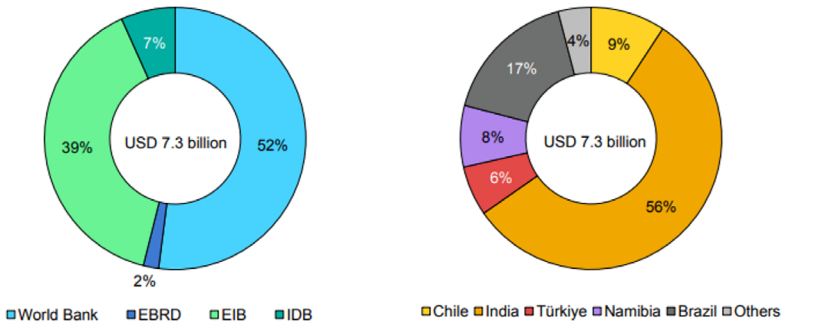
Global demand for hydrogen has been growing, reaching 97 Mt in 2023, and is projected to rise in the coming years. But the demand is mainly driven by the classical and long-established use of hydrogen in oil refineries and industrial processes, whereas the adoption of green hydrogen in new applications necessary for the clean energy transition – heavy industry, long-distance transport, and energy storage – accounts for less than 1% of global demand (IEA, 2024g). If announced green hydrogen projects materialise, production in 2030 would meet only 55% of what is required in the IEA's NZE (IEA, 2023e).

The cost to produce green hydrogen today is still up to six times higher than that for unabated fossil fuel-based hydrogen production. In 2023, about USD 3.5 billion was invested in low-emissions hydrogen (including green hydrogen, but also hydrogen produced with nuclear and carbon capture). Of this, 80% was allocated to the building of electrolysis facilities.

There are no disaggregated projections for EMDE versus advanced economies, neither for investment or capacity needs.

6.1.4 Green hydrogen – MDB support

According to IEA, MDB financial commitments to hydrogen development from 2022 to 2024 totalled USD 7.3 billion and were made by the WB, EBRD, EIB, and IDB (Hareesh Kumar, Outlaw and Fekete, 2024; IEA, 2024g) (see Figure 37). The WB undertook over half of all multilateral finance for hydrogen during this timeframe, with India being the recipient of nearly 60% of the total. Yet it is unclear whether this is only green hydrogen or also includes other forms of hydrogen.



Notes: EBRD = European Bank for Reconstruction and Development; EIB = European Investment Bank; IDB = Inter-American Development Bank. IEA analysis based on the publicly available information until 9 September 2024.

Figure 37: Funds committed to hydrogen by MDBs, by bank and by recipient country, 2022–2024; Source: IEA, 2024g

The numbers from the OCI Public Finance for Energy Database differ substantively (see Table 8). They include MDB funding for green hydrogen, fuel cells, and in some cases also batteries if connected to hydrogen projects. However, OCI finds only USD 1.59 billion for the entire period from 2018 to 2023, although IEA states that MDBs had committed USD 4.8 billion to hydrogen in 2023 alone. Disaggregated and joint reporting from MDBs would help better understand their engagements in this area.

Region	Investment
Central & Western Europe	$ 1,360,711,580
East Asia & Pacific	$ 100,000,000
SSA	$ -
MENA	$ 80,000,000
LAC	$ 222,221,454
Eastern Europe & Central Asia	$ 55,400,000
South Asia	$ -
TOTAL	**$ 1,818,333,034**

Table 8: MDB investments in green hydrogen, fuel cells, and batteries (if connected to green hydrogen projects), 2018–2024; Source: own calculation based on OCI, 2024

In any case, the MDBs play a relatively important role in supporting green hydrogen globally. While the MDBs account for less than 5% of global renewables investment, and for around 0.5% of EE investments, they account for between 8% and 24% of green hydrogen investments (depending on whether one uses the IEA or OCI numbers on MDBs).

According to IEA, achieving net-zero emissions would mean that global annual investment in 'low-emissions fuels' increases tenfold, to about USD 200 billion in 2030 from just under USD 20 billion today.[44] Continued and increased public investment as well as supportive policy measures are critical to enabling the necessary green hydrogen development globally, as it serves as a catalyst for the still early-stage, high-cost technology. States can drive the rollout of green hydrogen by combining financial support, clear policy frameworks, regulatory certainty, infrastructure investment, and coordinated demand creation. These are all measures where MDBs can support countries. For example, they can help countries draft national hydrogen strategies, introduce carbon pricing, set up CCfD, introduce production tax credits, adopt green public procurement rules, and set up public investment programmes in hydrogen transport networks and storage. While these measures will already serve to increase investor security and create demand, MDBs can also provide grants, low-interest loans, and guarantees for the private sector to help improve financial viability and reduce risk for the adoption of green hydrogen in heavy industry, shipping, and energy storage.

However, it is questionable whether MDBs should use their limited resources to support expensive green hydrogen development, instead of prioritising investments more closely related to the fulfilment of basic development needs. Given that MDBs act upon the development priorities of their partner countries (if in line with the Paris Agreement), and that interest in green hydrogen is rising in EMDEs (UNIDO and HINICO,

44 However, this includes not just low-emissions hydrogen but also bioenergy and carbon capture usage and storage, meaning that the current share of MDB financing might be even larger.

2024), green hydrogen investment will likely remain on the MDBs' agenda. In light of this, MDBs should focus on those green hydrogen projects that bring the greatest possible development benefit to the country. The criteria compiled by the NewClimate Institute can help MDBs evaluate to what extent a green hydrogen project is able to secure positive impacts on SDGs and avoid negative ones and, consequently, whether it is worth being financed (see Infobox 5).[45]

Criteria for MDBs for green hydrogen projects

MDB-supported green hydrogen projects should

- improve local access to reliable, affordable, and clean electricity;
- spur domestic upstream and/or downstream industrial growth;
- create long-term, high-quality local jobs and skills (local value capture);
- improve local access to land and water resources or at least not restrict it without free, prior, informed consent and fair compensation;
- and contribute to the decarbonisation of economic sectors in the country, or to setting up competitive, green industrial bases from the start ('leapfrogging').

Infobox 5: Criteria for MDBs for green hydrogen projects; Source: Hareesh Kumar, Outlaw and Fekete, 2024 with own amendments

MDBs supporting green hydrogen activities should commit to these criteria and evaluate any potential engagements accordingly. Those evaluations should be publicly accessible for independent verification and accountability.

7. Transitioning away from fossil fuels in a just manner

7.1 Fossil fuel phase-out and investment needs – contextualising the goal of 'transitioning away'

Unlike the tripling and doubling goals, the target of '[t]ransitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science' (UNFCCC, 2023b, art. 28d) does not come with a quantification and a clear timeline of what needs to happen until 2030. Yet, the mentioned science is clear.

According to the IEA NZE, coal is to be phased out completely by 2030 in OECD countries and by 2040 in all others. Oil needs to drop by nearly 75% by 2050 compared to 2021 levels, and fossil gas by about 55%. In particular, it is clear that a net-zero pathway is not compatible with any new oil and gas fields, coal mines or new unabated coal power plants, or other long-lived fossil infrastructure that would

45 For a more comprehensive overview of criteria, see Hareesh Kumar *et al.*, 2024.

lock in emissions (IEA, 2024e). Instead, already existing fossil fuel infrastructure, if used to its full potential, would exceed the carbon budget for 1.5°C including overshoot.

Coal phase-out in particular represents the most immediate opportunity to achieve a rapid power sector decarbonisation and cut global carbon emissions. Accordingly, the COP28 energy consensus also includes a commitment to '[a]ccelerating efforts towards the phase-down of unabated coal power' (UNFCCC, 2023a, §28b). However, this transition poses financial risks, particularly for LICs and MICs, which currently hold 89% of the coal power capacity that must be retired or repurposed before the end of its technical lifetime. Without intervention, this puts an estimated USD 1 trillion in capital costs at risk by 2040, all the more as 60% of the existing fleet are relatively young. The WB estimates that managing the social impacts of closing coal power plants and mines in EMDEs will cost around USD 50 billion a year between 2024 and 2040 (World Bank Group, 2023c). But also fossil gas power must transition to renewables, as the COP28 energy consensus recognises (UNFCCC, 2023a, §28d).

Importantly, an implementation of the commitment to transition away from fossil fuels requires governments to show political will and **set clear phase-out targets**. In addition, a series of other measures need to be taken to enable the phase-out. **Cutting fossil fuel subsidies** and **implementing carbon pricing** are two such measures, reinforcing each other when used together, by aligning price signals with climate and development objectives. Fossil fuel subsidies lower the cost of consuming or producing coal, oil, and gas – effectively incentivising emissions and undermining climate goals. Having recognised the elimination of such subsidies as an important lever for the energy transition, UNFCCC members have, in the COP28 energy consensus, agreed to '[phase] out inefficient fossil fuel subsidies that do not address energy poverty or just transitions, as soon as possible' (UNFCCC, 2023b, art. 28h). Similarly, the implementation of carbon pricing can play a significant role in disincentivising fossil generation. By putting a cost on carbon emissions, it makes fossil fuel-based energy more expensive and improves the competitiveness of cleaner alternatives.

Another important regulatory measure is the **ending of ICE vehicle sales** (as already discussed earlier). It needs to be combined with concomitant measures such as ramping up electrified public transport, building EV charging networks, and shifting behaviour towards shared and public transport.

Ideally, all these measures will be consistently combined in a national **long-term low-emission development strategy (LT-LEDS)** that is aligned with 1.5°C and respective global climate commitments. Strategies should include specific decarbonisation targets, a roadmap for fossil fuel phase-out, and clear guidance to structure policy, investment, and infrastructure decisions. The strategies should be combined with provisions and systems to monitor, report, and verify emissions transparently and rigorously. Finally, strategies should also ensure a coordinated, credible, and just shift to clean energy.

The latter requires specific attention as an enabling condition for the success of fossil fuel phase-out, and is included in the COP28 energy consensus. A **just transition** means ensuring that the shift away from fossil fuels is equitable and inclusive, particularly for workers, communities, and economies that have historically depended on fossil fuel industries. In EMDEs where energy access, employment, and economic stability are closely tied to fossil fuels, a just transition is critical to minimising social and economic disruption. It involves investing in skills development, creating green jobs, supporting affected communities, and ensuring access to clean, affordable energy, all in an inclusive manner involving the participation of affected communities. Without a just transition, resistance from vulnerable groups could undermine climate goals and slow down the fossil fuel phase-out, making it essential for both the effectiveness and fairness of the global energy transition.

A just transition, in turn, entails alternatives to fossil fuel-driven development. For EMDEs, especially those heavily dependent on fossil fuel exports or imports, **diversifying their economies and building green value chains** are crucial for a successful transition away from fossil fuels. Diversification reduces vulnerability to volatile fossil fuel markets and declining global demand for hydrocarbons, helping stabilise national revenues and employment, thus enhancing economic resilience. Developing green value chains – such as RE manufacturing, sustainable agriculture, and circular economy industries – creates new, sustainable economic opportunities aligned with climate goals.

These intertwined elements – phase-out targets, 1.5°C-aligned LTSs, fossil fuel subsidy reform and carbon pricing, stopping ICE vehicle sales, just transition measures, and support for economic diversification – form the intricate links in a chain of measures to minimise dependence on fossil fuels and support transitioning away.

In terms of **finance**, at least USD 26 trillion must be redirected from coal- and oil-based fossil fuel technologies towards transition solutions over the period to 2050 (IRENA, 2023c). By 2030, approximately USD 1 trillion of planned annual fossil fuel investments (oil, coal, and gas) must instead flow into transition technologies and infrastructure to keep global climate goals within reach (Songwe *et al.*, 2022, p. 24).

7.2 Current status and investment in transitioning away from fossil fuels – and respective MDB activities

7.2.1 Continued fossil fuel investments

Despite the global push for RE, fossil fuel investments continue to dominate. Alarmingly, 41% of planned global energy investments by 2050 remain focused on fossil fuels (Songwe, Stern and Bhattacharya, 2022, p. 24; IRENA, 2023a).

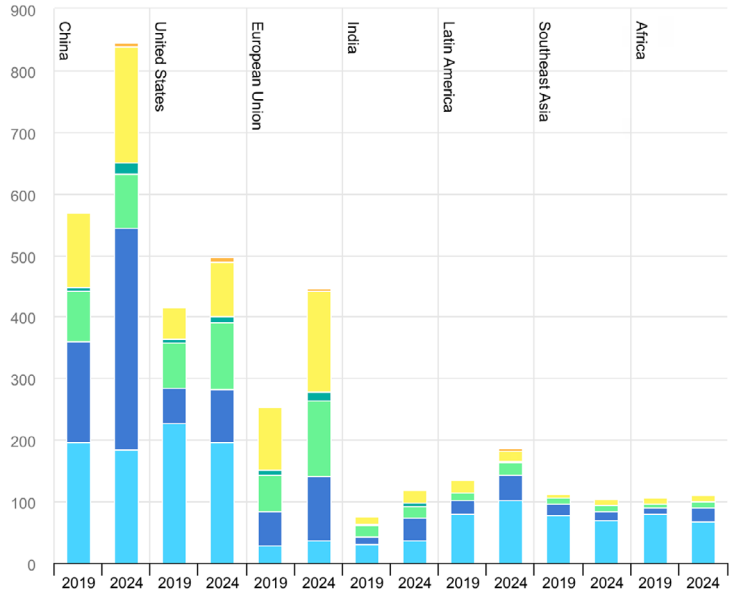


Figure 38: Annual investment in clean energy and fossil fuels by selected country and region, 2019 and 2024; Source: IEA, 2024p

In 2023, USD 735 billion was invested in renewable power,[46] but fossil fuel investments reached USD 1.09 trillion. Most of the fossil fuel investment during the past five years (2019-2023) went to upstream exploration and production, with other significant shares to midstream infrastructure and downstream infrastructure such as refineries and power plants. Also, direct government support such as subsidies, tax breaks, consumption support, and infrastructure funding played an important role in fossil fuel spending. As is shown in Figure 38, investment in renewables is growing everywhere, but there is no significant reduction of investment in fossil fuels. Progress made by the US is likely to be reversed. This disparity underscores the urgent need for a more decisive shift away from fossil fuels (IEA, 2024p).

7.2.1.1 MDBs' fossil fuel financing and exclusion

A precondition for effectively supporting countries in transitioning away from fossil fuels is that the MDBs themselves do not finance fossil fuels in their partner countries, whether upstream, midstream, or downstream. This precondition is, however, not being fulfilled by all MDBs (see Figure 39), endangering both their exemplary role, their own Paris alignment commitments, as well as the outcomes of their efforts to finance countries' transformations.

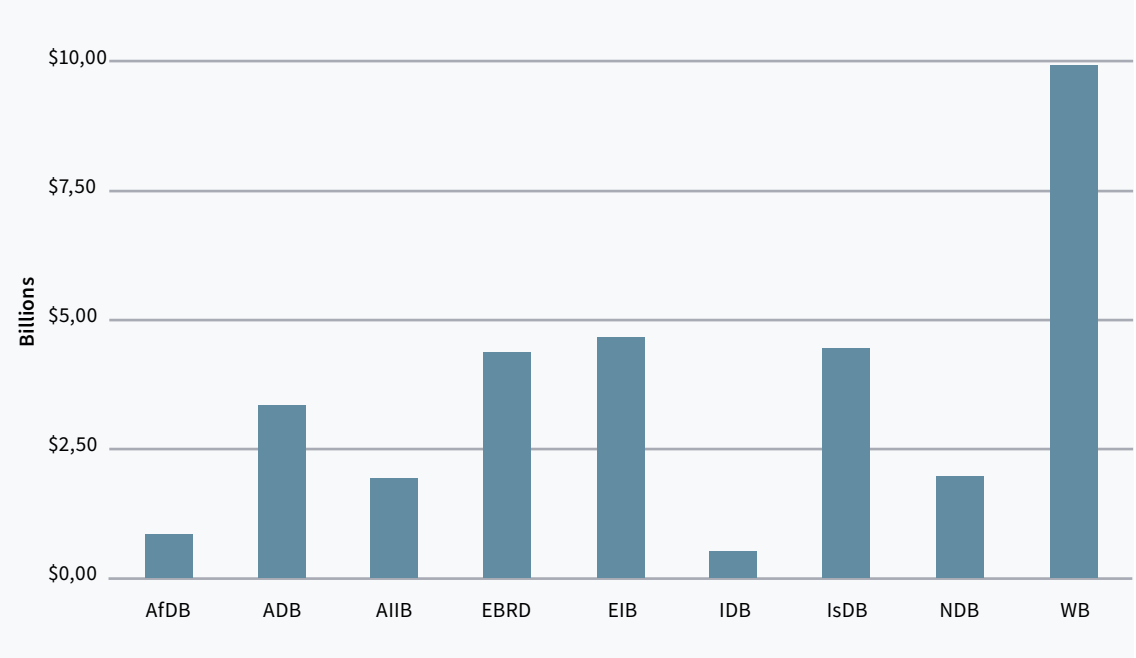


Figure 39: MDBs' fossil fuel financing, per bank, 2018-2024; Source: own calculation based on OCI, 2024

Over the past five years, MDBs invested almost eight times more in clean energy than in fossil fuels. However, while MDB fossil fuel investments show a declining tendency over the past five years, and MDB clean energy investments show an increasing tendency, both developments are not linear, with fossil fuel investments increasing in 2021 and 2023, and clean energy investments declining in 2024 (see Figure 40).

46 Not including USD 416 billion in grids and storage and USD 646 billion in energy efficiency and end-use, as calculated by IEA.

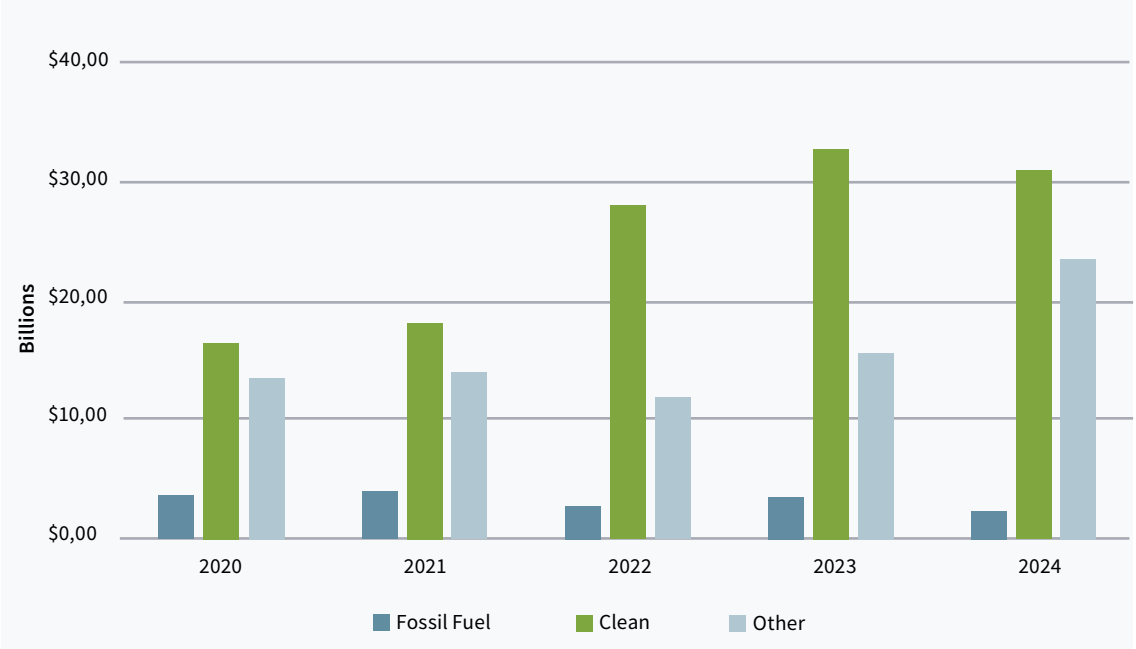


Figure 40: MDBs' energy financing, per energy type, 2020-2024; Source: own calculation based on OCI, 2024[47]

2020 was the first year when MDBs did not undertake any direct investments in coal. However, from 2021 to 2024, MDBs still invested an average of USD 3.1 billion per year in fossil fuel projects, the WB being the largest provider with USD 1.1 billion a year on average. Despite an overall decline in fossil fuel financing from 2023 to 2024, some MDBs have recently shown an increase in finance for fossil fuel energy, creating uncertainty about their future course (see Figure 41).

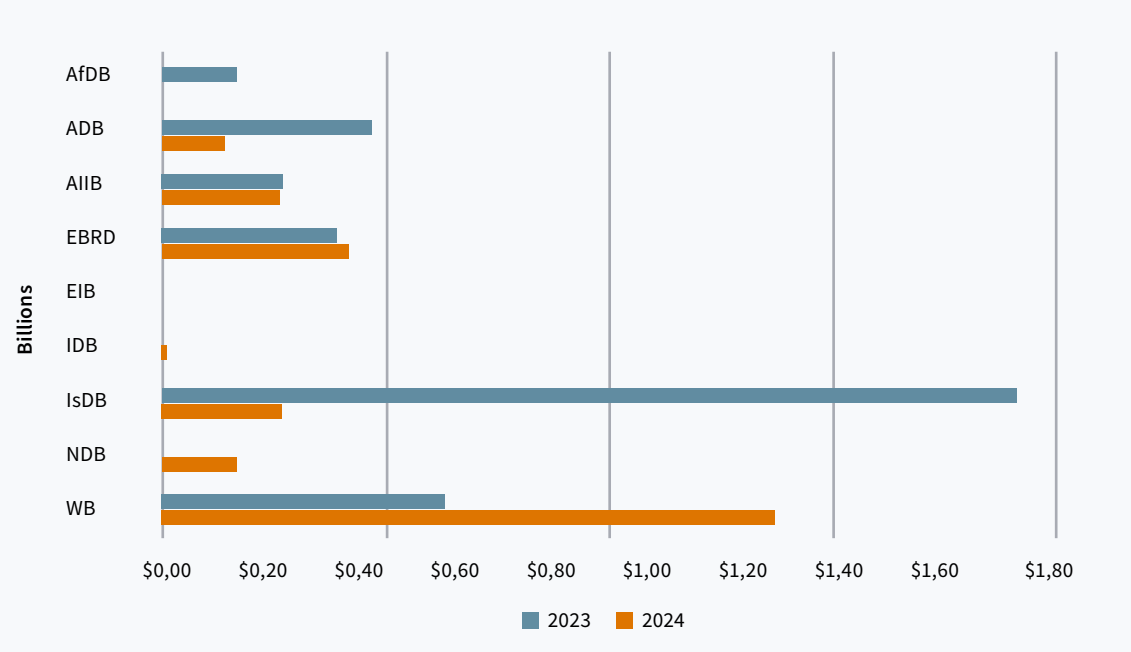


Figure 41: MDB fossil fuel investments, per bank, per year, in USD billions, 2023–2024; Source: own calculation based on OCI, 2024

47 According to OCI, the category 'Other' includes "projects where (a) the energy source(s) are unclear or unidentified, as with many transmission and distribution projects as well as (b) non-fossil energy sources that typically have significant impacts on the environment and human populations. This includes large hydropower, biofuels, biomass, nuclear power, and incineration. If a project includes multiple energy sources, we split it into multiple transactions whenever possible. Otherwise, it is also classified as 'Other.' More than 70% of the finance in this category is for transmission and distribution projects and other projects where the associated energy sources are unclear. This also includes energy efficiency projects where the mix of fossil fuels involved is unknown" (OCI, 2024).

Next to this, MDBs also indirectly invest in fossil fuels, for example via financial intermediaries, policy-based lending, trade financing, and TA (OCI and FOE, 2024), which is even more difficult to track. For example, Urgewald reported that in 2022 the WB provided an estimated USD 3.7 billion in trade finance that likely funded oil and gas developments (Mainhardt, 2023). Recourse highlighted the risk of WB, AIIB and ADB financing going to captive coal (Recourse, Trend Asia and Inclusive Development International, 2024).

It would be important for MDBs to clearly and quickly stop fossil fuel investments through adopting respective policies as soon as possible, and do all they can to support finance for RE, EE, and a just transition. Most MDBs have policies excluding investments in certain types of fossil fuels (for more details see Reyes *et al.*, 2025). Most MDBs exclude coal financing; a notable exception is IsDB.[48] However, only the EIB excludes investments in all types of fossil energy including downstream oil and gas (see Figure 41), while ADB and EBRD exclude at least upstream oil and gas (Reyes *et al.*, 2025). MDB financial support for fossil fuels runs counter to countries' commitment to transitioning away from fossil fuels and to achieving net zero by 2050. Hence, all MDBs should adopt comprehensive fossil fuel exclusion policies extending also to downstream oil and gas financing. They could do so by joining the Clean Energy Transition Partnership initiative, which only the EIB has done so far (Clean Energy Transition Partnership, no date).

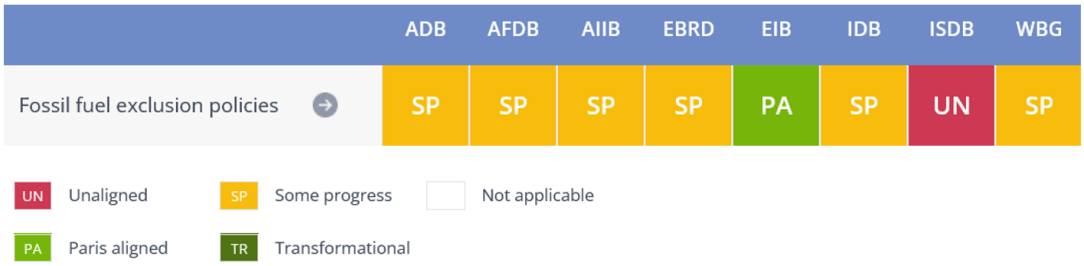


Figure 42: Status of fossil fuel exclusion policies at MDBs; Source: Reyes et al., 2025

While MDBs often justify fossil fuel investments as necessary for energy access and economic development – especially in LICs and MICs – this rationale increasingly conflicts with the urgent need to combat climate change. In many developing countries, investing in gas now means missing the opportunity to leapfrog directly to renewables and storage; this should under no circumstance be financed with MDB money.

The MDBs' joint methodological principles on Paris alignment include a test on whether the project is unviable, taking into account stranded asset/transition risks in the national/sectoral context. They also assess whether the project prevents opportunities to transition to Paris-aligned activities or whether it supports misaligned activities in a specific country/sectoral context. If applied with scientific rigour and integrity, only a fraction of downstream fossil fuel investments could be considered Paris-aligned; this is because most fossil infrastructure is long-lived and hence incompatible with a timely energy transition since it will either turn into stranded assets or lock in emissions (Fekete, 2022). This is also valid for fossil gas, which some MDBs treat as an unproblematic transition fuel.

48 Despite their exclusions, ADB and WB were found to continue indirect financing of coal (see Recourse, 2024; Roasa, 2024).

In particular, direct or indirect support of the following activities related to fossil gas is fundamentally incompatible with the Paris Agreement and should not be provided by MDBs:

- expansion of fossil gas production, for example exploration or development of new gas fields;
- new infrastructure for further processing or transportation of fossil gas, for example new gas pipelines or LNG export terminals; and
- activities that increase the demand for fossil gas, for example new gas-fired power plants that are not primarily used to meet peak load and stabilise grid frequency, or gas for cooking and heating when renewables combined with electrification would be an alternative (Fekete, 2022).

MDBs need to exclude these types of gas financing by adopting effective exclusion policies or revising their policies accordingly.

The volumes of continued support for fossil fuel projects suggest that MDBs have not consistently applied climate assessments ambitiously enough, spending money on fossil fuels that could have been redirected to clean energy initiatives. To ensure integrity, ambition and scientific rigour, independent verifications of Paris alignment tests should regularly be undertaken, in particular of the tests for stranded assets and lock-in risks. This also requires that MDBs make their complete Paris alignment assessments publicly available. Currently, only the IDB and EBRD tend to publish comprehensive annexes with assessment results of sovereign projects (Gebel, Grimm and Dietz, 2024).

The longer MDBs delay a full shift towards renewables, the higher the costs humanity will face due to climate-related impacts. Instead, they should seek to accelerate the global transition to a low-carbon future, aligning their operations with both climate goals and sustainable development priorities (Prasetiyo, 2023b; Sausmikat, 2024). MDBs should reallocate their funding to prioritise RE and EE, and actively help countries transition away from fossil fuels, while ensuring that their financing frameworks make this transition both technically feasible and financially accessible.

7.2.2 Fossil fuel phase-out targets and retirement of fossil infrastructure

Only 12% of global coal power operating capacity (265 GW) has a planned closure or phase-out commitment that is in line with Paris Agreement goals. Another 19% of global operating capacity (411 GW) has a planned closure or coal phase-out commitment that is not in line with Paris climate goals. And 69% of global operating capacity (1,516 GW) does not have any planned closure or phase-out commitment (Global Energy Monitor, 2025a).

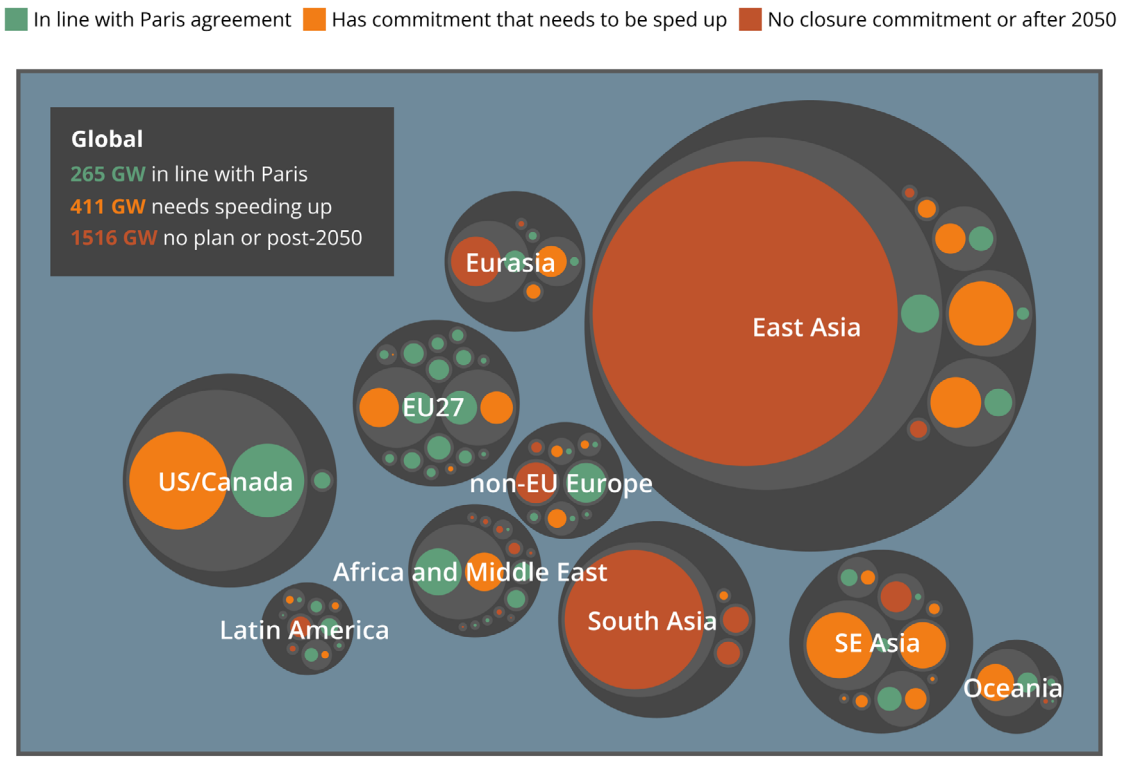


Figure 43: Paris compatibility of coal phase-out plans, by region; Source: Global Energy Monitor, 2025a

As is evident from Figure 43, the greatest hindrances to global coal phase-out currently lie in East Asia (China: 1,175 GW without closure plan), South Asia (India: 245 GW without closure plan), and Eurasia (Russia: 31 GW without closure plan). But also the US/Canada, Japan, South Korea, Viet Nam, and Indonesia have major capacities with inadequate phase-out targets. At the same time, global coal capacity keeps rising, up 259 GW since 2015, and new coal capacity is being developed, most of it in China and, to a lesser extent, India (Global Energy Monitor *et al.*, 2025). On a positive note, Latin America currently has 0 GW in planned coal expansion (Global Energy Monitor, 2025b).

On a country level, the Powering Past Coal Alliance counts 60 members that committed to phasing out coal or are already coal-free (Powering Past Coal Alliance, 2025). Some of these countries have already stopped using coal for electricity (including Belgium, Austria, Sweden, Portugal, UK, Norway, and Ireland), have never used coal (Costa Rica, Iceland, Estonia, and Lithuania), or have negligible coal usage (Luxembourg, Latvia, Slovakia, Switzerland, plus many Small Island Developing States and some tropical countries). The remaining 24 countries have coal phase-out targets which are not compatible with a 1.5°C-aligned pathway (Climate Analytics, NewClimate Institute, and IESR, 2023).

While phasing out coal and replacing it with RE comes with great economic and social challenges for many countries, it also bears significant benefits. The transition from coal to RE would amount to the equivalent of USD 78 trillion in net 'social benefits' until the end of the century, such as people facing less damage, health problems and other harm from climate change (Adrian, Bolton and Kleinnijenhuis, 2022).

Worryingly, no country has an oil phase-out target and none has an explicit target to reduce the use of gas. Some countries have targets to stop gas use for specific purposes, such as boilers (Netherlands: 2026; EU: 2029 – sales), heating (Denmark: 2035), or electricity generation (UK: 2030–2035; South Korea: 2035). On the one hand, the emphasis on reducing coal use is to be welcomed since coal is the most carbon-in-

tense fossil fuel. On the other hand, the extremely limited progress on concrete targets to phase out or at least sharply reduce other fossil fuels is highly alarming.

7.2.2.1MDB support for retiring fossil infrastructure

Despite the importance of this measure for keeping 1.5°C in reach, helping countries transition away from fossil fuels has not been an explicit priority of any MDB until recently. No MDB has a KPI on 'Fossil fuel energy capacity retired/replaced by renewables (MW)' or similar.

However, some MDBs have, over recent years, started to support countries in retiring fossil infrastructure, particularly coal-fired power plants. While no MDB currently tracks this through formal KPIs and the MDBs' joint climate finance report does not include respective figures (an option MDBs should think about going forward), a range of financial and technical mechanisms are being deployed to accelerate the phase-out of high-emitting assets as part of broader just energy transition strategies.

The ADB has launched the Energy Transition Mechanism to help countries like Indonesia, the Philippines, and Vietnam retire coal assets earlier than planned. Through this mechanism, ADB mobilises blended finance – including private capital from partners such as BlackRock – to buy out coal plants, decommission them, and replace their generation capacity with clean energy (ADB, 2024b).[49] The WB has also stepped into this space. In South Africa, it supported the early retirement of the Komati coal power station through a USD 497 million loan package under the Eskom Just Energy Transition Project. This approach combines coal decommissioning with RE investments, social protection for affected workers, and local economic diversification efforts (WB, 2023).[50] The Climate Investment Funds (CIF), through their Accelerating Coal Transition programme, are implementing initiatives in countries such as North Macedonia, South Africa, and Indonesia, in partnership with the EBRD and WB. The programme provides concessional finance and grants for coal plant retirement, mine reclamation, RE replacement, and worker retraining. In Chile, IDB Invest jointly with CIF piloted a financing mechanism that incentivises early coal plant retirement by combining concessional and market-rate financing. The project used the carbon emissions avoided by retiring coal early to lower the financing costs of replacement RE projects. This made renewables competitive while phasing out coal, aligning climate and financial goals and attracting private capital (Carrillo, Meirovich and Cubillos, 2023; Frohlich and Gómes, 2024).

Together, these efforts represent a significant shift: MDBs are beginning to move beyond simply reducing or excluding new fossil fuel investments to actively facilitating the early retirement of existing fossil infrastructure. However, so far, the initiatives are few and mainly focused on coal infrastructure. The EBRD's support for the decommissioning of about 5 GW of oil- and gas-fuelled power generation capacity in Egypt is a notable exception (Reuters, 2022). MDBs should ramp up efforts to help countries phase out fossil infrastructure and replace it with renewables.

This also applies to gas infrastructure. From a climate perspective, existing gas infrastructure alone – if operated through its lifespan – would consume a large share of the remaining global carbon budget. From a financial perspective, gas plants are (just as coal plants) capital-intensive and often underwritten by long-term public guarantees or power purchase agreements. MDB support could help unwind these financial lock-ins and avoid governments being stuck with stranded liabilities in the 2030s–2040s. Finally, MDBs have often helped finance or de-risk gas projects (e.g. LNG terminals and pipelines). If they

49 For criticism see, e.g., Fair Finance Japan, 2023; Sausmikat, 2024.

50 For criticism see, e.g., Bretton Woods Project, 2024; Fünfgeld and Wischermann, 2024; Vanheukelom, 2023

helped build the lock-in, they arguably share a responsibility to help dismantle it. However, it is important that such efforts do not become a bailout scheme for fossil producers while saddling public budgets with debt. In this vein, the NGO Forum on ADB warns that a recent proposal to expand the Energy Transition Mechanism to cover oil and gas could be problematic (350.org Asia, 2025).

Importantly, based on a range of criticisms of current initiatives, MDBs need to observe a number of criteria to ensure additionality, integrity, and effectiveness of fossil retirement projects (see Infobox 6). MDBs supporting fossil retirement activities should commit to those criteria and evaluate respective initiatives accordingly. The results of these evaluations should be publicly accessible.

Criteria for additional, effective, and Paris-aligned fossil retirement support by MDBs

1. Clear government commitment and roadmap

- Strong political commitment to phase out fossil fuels at government level
- Clear roadmap including a timeline for transitioning away from fossil fuels, to mitigate any risk of backing out on decommissioning projects
- Credible plan to replace retired coal capacity with RE and/or storage.
- Pathway for low-emission and climate-resilient development enshrined in official country strategies

2. Environmental and climate integrity:

- Real emissions reductions: the retirement of fossil fuel assets must result in actual, additional, and permanent GHG emissions reductions.
- Avoiding rebound effects: there should be safeguards to prevent replacement by other fossil fuel sources (e.g. gas plants replacing coal, or increased coal capacity elsewhere on the grid).
- Clear decommissioning timeline: binding, time-bound commitments to retire and dismantle fossil fuel infrastructure are essential.

3. Economic justification and cost-effectiveness

- Value for money: MDBs must assess whether early retirement delivers greater climate and developmental value per dollar than other decarbonisation investments (e.g. investing in RE, storage, or industrial EE) – if some of these investments can be financed by private investors, MDBs could potentially bring added value through financing early retirement of fossil fuel assets).

- Avoid overpayment: MDBs should not overpay for fossil assets or compensate owners for losses they would incur anyway due to market trends.
- Market-based pricing: asset valuations should reflect declining value of fossil fuels in the face of net-zero targets and renewable competitiveness.

4. Just transition principles

- Support for workers and communities: transition plans must include meaningful social protection, reskilling, and employment alternatives for workers and affected communities.
- Stakeholder engagement: robust consultation processes with communities, labour unions, and civil society must be in place.
- Local development benefits: projects should deliver tangible social and economic benefits beyond emissions reductions.

5. Financial structure and transparency

- No subsidy to polluters: structures must avoid moral hazard or the perception that MDBs are bailing out fossil asset owners.
- Blended finance with risk-sharing: MDBs can use concessional finance to crowd in private capital, but risk-sharing must be carefully structured to not waste public money.
- Full transparency: deal terms, ownership details, and expected environmental outcomes must be disclosed to avoid greenwashing.

6. System readiness

Infobox 6: Criteria for additional, effective, and Paris-aligned fossil retirement support by MDBs; Sources: Isaad, 2021a, 2021b; NGO Forum on ADB, 2021; Fair Finance SEA, 2023b, 2023a; Global Forest Coalition, 2023; Sausmikat, 2024

7.2.3 Fossil fuel subsidies

Already in its fifth assessment report (2014), the Intergovernmental Panel on Climate Change (IPCC) highlighted that eliminating fossil fuel subsidies could reduce global CO_2 emissions by up to 10% by 2050. The 2021 Glasgow Climate Pact (COP26) explicitly urged parties to accelerate efforts towards the phase-out of inefficient fossil fuel subsidies, leaving unclear what 'inefficient' was supposed to mean in that context. The final text of CMA 5/COP28 reiterated the need for phasing out inefficient fossil fuel subsidies and clarified that these are subsidies 'that do not address energy poverty or just transitions' (UNFCCC, 2023b). One could add that fossil fuel subsidies are inefficient in terms of poverty reduction if they can be replaced with more targeted social support measures, which is usually the case.

According to the IMF, global fossil fuel subsidies amounted to USD 7 trillion or 7.1% of GDP in 2022, reflecting a USD 2 trillion increase since 2020.[51] This increase was mainly due to government support in the face of surging energy prices. In contrast to what UNFCCC member states decided, however, subsidies are expected to rise further, after a short decline, to up to USD 8.2 trillion in 2030, mainly due to a growing share of fuel consumption in emerging markets (where price gaps are generally larger). In 2022, 18% of global fossil fuel subsidies reflected undercharging for supply costs (= explicit subsidies) and 82% reflected undercharging for environmental costs (60%, mainly for local air pollution costs and climate damage) and forgone consumption taxes (= implicit subsidies) (IMF, 2023a). In fact, fossil fuel prices rarely reflect the true cost of these fuels due to the lack of environmental taxation.

EMDEs lead the subsidy burden both in absolute terms (80–85%) and proportionally to their GDP (~10–32%). East Asia and Pacific – mainly EMDEs – accounted for 48% of total global subsidies in 2020. Advanced economies tend to rely more on implicit subsidies and crisis-response transfers, but these are much smaller overall (IMF, 2023a). This highlights the need to support EMDEs in reducing fossil fuel subsidies, as it can be a powerful lever for accelerating the global transition to clean energy.

Countries might shy away from such reforms as they can be politically sensitive and socially risky. However, if done well, they can have not just positive climate impacts, but also positive socioeconomic effects: most fossil fuel subsidy programmes fail to target the people who need them most, with 40% of the benefits from energy subsidies being received by the richest 20%; reforms can shift support from the wealthy to poorer people via targeted transfers, lifeline tariffs, or public service investments. Furthermore, fossil fuel subsidy reform can lower fuel prices for the end user by encouraging competition on fuel prices (Potdevin and Wu, 2024). Moreover, removing fossil fuel subsidies reduces pollution and GHG emissions, which disproportionately harm poor communities. According to WB estimates, Fossil Fuel Subsidy Reform (FFSR) globally could reduce CO_2 emissions by 10–12% and save over 500,000 premature deaths per year from air pollution (Hoy *et al.*, 2023), also leading to lower public health costs. Last but not least, reallocating savings from FFSR can boost investments in infrastructure, healthcare, education, and targeted welfare programmes.(Hoy *et al.*, 2023; Potdevin and Wu, 2024).

Importantly, potential 'losers' of the reforms need to be identified beforehand; in an inclusive process and with enough time, mechanisms need to be worked out to compensate disadvantages in an environmentally friendly and socially just manner.

7.2.3.1 MDB support for fossil fuel subsidy reform

MDBs have supported FFSR in multiple countries, with the rationale being either fiscal savings or energy transitions or both. Their support has taken a variety of forms, including policy-based lending, TA, and capacity building. The WB, for example, has an Energy Subsidy Reform Facility which, since 2013, offers policy diagnostics, poverty and social impact assessments, global knowledge sharing, and communication strategy support (World Bank Group, 2020; ESMAP, 2022). In the case of policy-based operations or programmatic loans, MDBs tie disbursement to reforms like subsidy removal or energy price liberalisation. Examples are Indonesia (2000s–2010s; WB and ADB) (Lontoh, Vis-Dunbar and Wooders, 2012; Ihsan *et al.*, 2024), Egypt (2014–2019; WB/IMF) (Khan and Milbert, 2014; Breisinger *et al.*, 2018; World Bank Group, 2020), and Jordan (2012 onward; WB/IMF) (Jellema, Atamanov and Serajuddin, 2015). In 2024, the WB's Transformative Carbon Asset Facility rewarded Uzbekistan with a USD 7.5 million grant for successfully cutting 500,000 tonnes of carbon emissions, among other things by phasing out energy subsidies (Ibragimov and Panajyan, 2024). The FFSR in Egypt (see Infobox 7) serves as an example for how the WB,

51 More recent global figures are not available.

IMF, and AfDB worked together to successfully support Egypt in reducing fossil fuel subsidies. However, the climate impact was limited (mainly improved EE) and the reform had negative impacts on citizens' welfare; this highlights some important aspects to be considered if FFSR support by MDBs is to be truly effective for transitioning away from fossil fuels.

Fossil fuel subsidy reform in Egypt (2014–2019) – fiscal success but limited climate and development impact

MDBs/funds involved: WB, IMF, AfDB

Context:

By 2013, fossil fuel subsidies in Egypt consumed over 6% of GDP, distorting energy prices, crowding out social spending, and encouraging waste. Electricity blackouts and fuel shortages were frequent.

MDB support mechanism:

- WB: USD 3 billion in Development Policy Finance (2015–2017), technical support on social protection, and subsidy tracking.
- IMF: USD 12 billion Extended Fund Facility (2016–2019) included energy price reforms as core conditionality.
- AfDB: additional budget support and policy assistance.

Reforms undertaken:

- Fuel price increases: gradual hikes in gasoline, diesel, LPG, and electricity prices (up to 300% over five years).
- Electricity tariff reform: reduction in state subsidy to electric utilities and restructured tariff system.

- Social safety nets:
    - Takaful and Karama cash transfer programmes scaled up to reach ~10 million beneficiaries.
    - expansion of food subsidies and school meals for low-income families.
- Public communication: government emphasised need for reform and reinvestment in health, education, and transport.

Outcomes:

- Fossil fuel subsidy spending fell from 6% to under 1% of GDP.
- Energy consumption efficiency improved, especially among industry and transport.
- Egypt's credit rating and investment climate improved.
- Protests were minimal[52]

52 This fact mustbe taken with great caution since The Egyptian state severely restricts civil society's opportunities to protest.

Key lessons:

Success factor	Why it worked
Phased implementation	Allowed time for adjustment and avoided public shocks
Targeted social protection	Shielded poor households from negative impacts
Strong political will	Presidential backing enabled continuity
MDB policy coherence	Coordination between WB, IMF, and AfDB
Clear public communication	Framed as national interest; used savings for visible gains

Limitations on climate and development impact:

Limitation	Effect
No carbon pricing	Emissions reductions driven by price increases, not explicit carbon policy
Lack of green reinvestment	Savings were largely used for macro-stability and social transfers – not clean energy
Continued fossil investment	Egypt ramped up gas exploration and exports during the same period
Limited modal shift	Urban transport and renewables did not scale fast enough to shift behaviour

Social spending hardly increased The real income of most Egyptian families decreased.

Infobox 7: Case example: Fossil fuel subsidy reform in Egypt, 2014–2019, WB and IMF ; Sources: World Bank Group, 2015, 2017a; IMF, 2016, 2017; Egyptian Initiative for Personal Rights, 2020

Nigeria figures as a mostly negative case. In 2012 – urged on by the WB and IMF, both of which had long advocated subsidy reform – the government abruptly removed its gasoline subsidy, doubling fuel prices overnight without accompanying technical guidance, social safety nets, or stakeholder engagement. The dramatic price hike sparked nationwide strikes and forced a partial reinstatement of the subsidy, underscoring that MDB-endorsed reforms can fail without careful sequencing, transparent communication, and protection for vulnerable populations (IMF, 2012; Moyo and Songwe, 2012; SCOOP, 2012; The Guardian, 2012; Otieno, Atela and Ojebod, 2022).

As an explicit follow-up to its COP28 commitment to help redirect energy and agricultural subsidies, the WB provided several countries with options for repurposing subsidies and awarded grants to six pilot initiatives to realign fertiliser support and soil health programmes (Bangladesh, Ghana, Indonesia, Mozambique, Malawi, and Tanzania) (World Bank Group, 2024f). In 2025, the WB also approved a USD 115 million package for Senegal, strengthening fiscal reforms, public financial management, and domestic resource mobilisation. This includes reforms to rationalise energy pricing and subsidy frameworks, supported by a TA component (Djigo, 2025). Also Pakistan recently (in 2025) submitted a roadmap jointly de-

veloped with the WB and IMF to phase out blanket electricity and gas subsidies by 2027. Instead, support will be redirected to eligible households under a social programme (Ghumman, 2025).

The concentration of fossil fuel subsidies in EMDEs highlights the need for ongoing reform support by MDBs. Given that the WB and IMF have been most active in this field, regional MDBs should become more engaged; they should include support for FFSR in their climate strategies. As standard, MDBs should assess different FFSR options in their country analyses and highlight their benefits in country dialogues, with the aim to include such reforms in each country strategy and support countries through respective policy-based operations. Importantly, MDBs should always evaluate options to shift public money from fossil fuels to well-targeted demand-side subsidies for clean energy; this is essential to both correct distortions that reduce renewables' profitability and to ensure affordability and equity in the energy transition. Also, MDBs should coordinate and align their country strategies in this regard.

To ensure that reforms are just, effective, and durable, and that their impacts extend beyond fiscal savings to climate change mitigation, MDBs should observe several important key principles based on lessons learned from previous reform efforts, such as the above-mentioned Egypt and Nigeria cases. MDBs should adopt those key principles and fully implement them by 2030 (see Infobox 8).

Key principles for MDBs to observe when supporting fossil fuel subsidy reform in partner countries

1. Put people first: ensure social protection and equity

What to observe	Why it matters
Targeted compensation and demand-side subsidies (e.g. cash transfers, energy vouchers, social tariffs)	Subsidy removal can disproportionately affect low-income households unless mitigated
Social impact assessments	Helps tailor compensation mechanisms
Sequencing with safety nets; ensure social protection systems are ready before prices go up	Avoids negative social impacts and backlash
Gender and inclusion focus	Women and marginalised groups often bear the greatest burden of energy price hikes

2. Strengthen political economy and public buy-in

What to observe	Why it matters
Stakeholder engagement (civil society, unions, local leaders)	Builds legitimacy and avoids backlash
Clear and transparent communication strategy	Builds trust
Support from top-level political leadership	Reforms often fail without sustained political will
Avoid 'shock therapy' reforms	Sudden, unprepared price hikes can trigger unrest (e.g. Ecuador, Nigeria). Gradual approaches are more sustainable

3. Align with broader development and climate goals

What to observe	Why it matters
Channel savings into development priorities	Spending for clean energy, health, education, or resilience builds support for reforms
Link FFSR to NDCs	Subsidy reform should reinforce climate goals, not just cut deficits
Promote alternatives to fossil use (expand access to clean energy and public transport)	Enables households and businesses to shift away from fossil fuels

4. Ensure fiscal and price transparency

What to observe	Why it matters
Track and disclose subsidy levels (explicit and implicit)	Important for support from both political levels and society; important for redirecting spending to other development priorities
Publish price formulas and adjustment mechanisms	Transparency builds trust and reduces political manipulation of energy pricing
Include fossil subsidies in fiscal frameworks	Helps governments prioritise spending and track savings from reforms

5. Tailor MDB instruments to country context

What to observe	Why it matters
Use development policy operations strategically, link loan tranches to measurable reform milestones	Provides a clear pathway with strong incentives
Combine policy lending with technical assistance	Policy reform without implementation support is likely to fail
Support reform champions and coordination inside government	Helps bring relevant political actors on board
Be sensitive to macroeconomic timing (no push for price increases during inflationary spikes or elections)	Otherwise reform success is put at risk by social protests or political backdrop

6. Walk the talk: align MDB portfolios

What to observe	Why it matters
Stop financing fossil fuel expansion	MDBs lose credibility if they back gas plants while urging countries to cut fossil subsidies
Support clean energy scale-up alongside FFSR	Countries need alternatives to fossil fuel energy
Ensure MDB strategies (e.g. country partnership frameworks) explicitly integrate FFSR	Mainstreaming and long-term planning are important success factors

Infobox 8: Key principles for MDBs to observe when supporting fossil fuel subsidy reform in partner countries; Sources: Rentschler, 2018; World Bank Group, 2020; Saddiki and Chaouti, 2022; World Bank Group, 2023a; Damania et al., 2023; Euronews Green, 2023; HRW, 2023; IMF, 2023a; George, 2024; Youbi et al., no date

7.2.4 Carbon pricing

Carbon pricing can be very impactful for the transition away from fossil fuels, but it is not just a climate policy. It can support development in EMDEs by generating public revenue for health, education, and clean infrastructure, while also reducing air pollution and fossil fuel dependence. When well designed, it promotes green investment, job creation in green industries, and innovation in clean technologies, and enables governments to replace inefficient fossil fuel subsidies with more targeted social protection. Revenue recycling can help protect vulnerable populations and ensure a just transition. Carbon pricing can be supported jointly with measures to strengthen fiscal governance and broader tax reform.

Compliance carbon pricing instruments consist mainly of carbon taxes and Emissions Trading Schemes (ETS), or hybrid systems. As of mid-2025, about 28% of global GHG emissions are covered by carbon pricing, implemented through approximately 80 pricing instruments: 43 carbon taxes and 35 ETS (Cayol and Monar, 2025; ICAP, 2025; World Bank Group, 2025d, 2025e, 2025a). These mechanisms generated over USD 100 billion in government revenue in 2024, with about two-thirds of covered emissions priced below the USD 40–80/t CO_2 benchmark needed for meaningful climate impact (Cayol and Monar, 2025). While coverage has improved – up from about 24% in 2023 – price levels remain far too low, and only around 6% of emissions are priced in line with the High-Level Commission on Carbon Prices' USD 50–100/t CO_2 benchmark (L., 2024; World Bank Group, 2024b; Cayol and Monar, 2025). The steady expansion of ETSs in emerging economies (e.g. China, Brazil, India, Türkiye, Vietnam, and Colombia) and increasing revenues reflect momentum, but current pricing especially in Africa is far too limited (Abnett, 2025; ICAP, 2025). South Africa is one positive example (see Infobox 9).

South Africa's carbon tax

South Africa was the first African country to have adopted a carbon tax policy. The carbon tax was implemented in June 2019 as an important policy lever for the country's mitigation strategy. The tax follows the polluter-pays-principle and is imposed on fuel inputs based on emission factors and procedures in line with the standards published by the IPCC. The tax covers about 90% of the country's total GHG emissions, with agriculture, forestry, land use, and waste excluded.

In addition to the carbon tax, there are other policy instruments that influence carbon pricing in South Africa, namely environment-related taxes at both the national and the local government level. These include transport fuels, vehicle taxation, aviation taxes, product taxes, electricity, water supply, and wastewater. Revenue from the national-level tax instruments has accounted for about 1.7% of South African GDP on average in recent years.

However, large government transfers to the carbon-intensive energy sector significantly reduce the effective price of carbon in South Africa, and generous tax-free thresholds and allowances contribute to a low effective carbon tax rate. Also, raising the carbon tax rate to envisaged levels alone will not be enough for South Africa to meet its emission targets.

Infobox 9: South Africa's carbon tax; Source: IMF, 2023b

Many EMDEs are hesitant to adopt carbon pricing mechanisms due to fear of increasing energy prices and inflation. This would burden poor households and small businesses and risk losing competitiveness in trade and industry. Carbon pricing is indeed a politically sensitive topic in EMDEs; it can trigger protests or backlash and is perceived by many as externally imposed by developed countries or donors. To scale carbon pricing globally, it is crucial that international finance, technology transfer, and political dialogue function together to support tailored, just approaches for developing countries.

Which carbon pricing instrument (carbon tax or ETS) is most suitable for a country depends on different factors. ETS can work well in a country with considerable emissions, a sizeable and diversified economy with enough emitters to support trading, with a government that can manage market design and public communication, and that has enough institutional capacity to monitor, verify, and enforce emissions caps. For countries where this is not the case, carbon taxes, fuel levies, or regulatory measures might be better options.

7.2.4.1 MDB support for carbon pricing

Given their technical expertise, financing capacity, and long-term trusted partnerships, MDBs are well positioned to help countries design and implement carbon pricing instruments that deliver both climate and development benefits. MDBs have supported such efforts in countries usually as part of broader climate policy and fiscal reform agendas. However, there is no overview on how much MDB money was invested to support design and implementation of carbon pricing instruments in partner countries.

The WB is by far the most active MDB in this field; it has a dedicated programme for capacity building and analysis on carbon pricing, launched in 2021 and titled Partnership for Market Implementation, which assists countries in designing, piloting, and implementing carbon pricing instruments.[53] PMI is envisaged as a ten-year programme with a capitalisation target of USD 250 million, and is currently rolling out support for more than 35 countries (PMI, 2025).

Going forward, MDBs should jointly assess the extent to which the WB programme covers all countries for which a carbon market is feasible, or where additional engagement of regional MDBs is needed and demanded, and in which form.

In terms of concrete support offers, MDBs should continue providing TA to build countries' technical capacity in setting up Monitoring, Reporting, and Verification (MRV) systems, GHG inventories and baselines, registry platforms to track allowances and credits, methodologies for setting emissions caps, and frameworks for allowance allocation (IMF, 2021; World Bank Group, 2023e). Moreover, they should help governments draft enabling legislation for ETS or carbon tax laws and support regulatory design, including penalties, oversight mechanisms, and market governance bodies, but also accompanying social protection measures for vulnerable segments of the population (OECD *et al.*, 2024). This is what the WB is already doing in its PMI programme, but MDBs should also offer TA beyond early TA and policy design stages, in the form of hands-on and long-term implementation support, to ensure effectiveness and sustainability of implementation.

Given the importance of political economy factors for the success of carbon pricing, MDBs should also offer to assist countries in conducting distributional impact assessments, stakeholder engagement proces-

53 Before that, the WB had another dedicated programme called Partnership for Market Readiness.

ses, and communication strategies. Moreover, MDBs should help countries explore options for regional carbon market integration and coordination (e.g. in Association of Southeast Asian Nations (ASEAN) or parts of LAC) to increase efficiency and reduce leakage. Importantly, when supporting countries in NDC and LTS design or in the drafting of other climate and transition strategies as well as public investment plans, MDBs should highlight the benefits of embedding carbon pricing mechanisms (Larsen and Laxton, 2024a). To model good practice, all MDBs should apply a (shadow) carbon price in project appraisal.[54]

7.2.5 1.5°C-compatible LTSs

LTSs are essential for transitioning away from fossil fuels. Ideally, they provide a clear, forward-looking roadmap that aligns national development with net-zero goals, helping governments plan structural shifts, attract sustainable investment, and avoid carbon lock-in. Currently, 78 out of 185 UN member countries have submitted an LTS to the UNFCCC Secretariat (UNFCCC, 2025), and six EU countries have submitted an LTS to the European Commission (Smith, Vaughan and Forster, 2025). A 2023 UNFCCC synthesis report found that 'Parties that communicated LT-LEDS [Long-Term Low-Emission Development Strategies] together account for 87 per cent of global GDP, 68 per cent of the global population and around 77 per cent of total energy consumption in 2019, including some 91 per cent of coal consumption, some 77 per cent of natural gas consumption and some 71 per cent of oil consumption' (UNFCCC, 2023a).

Europe and Central Asia (~60%) as well as Asia and Pacific (~34%) have the highest shares of countries with an LTS. Shares are much lower in Africa, where only 9 out of 54 countries have an LTS (~17%), reflecting capacity and resource gaps. LTSs in LAC (~12%) are few but increasing rapidly.

A 2023 UNFCCC synthesis report found that while all LT-LEDS communicated a long-term mitigation goal, the goals 'vary and are often described differently […]. A total of 93 per cent of LT-LEDS indicated a quantifiable long-term mitigation goal and 7 per cent described policies and actions without a quantifiable long-term goal. The communicated time frames of quantifiable long-term mitigation goals vary, including 2035, 2040, 2045, 2050, 2060 and 2065. The most widely communicated timeframe was 2050, indicated in 82 per cent of LT-LEDS' (UNFCCC, 2023a, p. 16). Chile, Colombia, and Costa Rica have the only 1.5°C-aligned LTSs globally. All other LTSs lack the critical short- and medium-term (2030–2035) emissions trajectories and sectoral milestones needed for 1.5°C compliance (Climate Analytics, 2022, 2023, 2025; UNDP, 2023).

The low number of LTSs in Africa and LAC reflects systemic challenges. These include capacity constraints, lack of baseline data and technical expertise, financial barriers, lack of regional coordination, and pressing socioeconomic needs as well as short political cycles preventing long-term planning. Given that LTSs (other than NDCs) are voluntary, they are sometimes regarded as not that urgent.

7.2.5.1 MDB support for LTSs

MDBs already support their partner countries in multiple ways in developing and implementing long-term climate strategies. They are well placed for this, since they (or many of them) have the technical capacity in climate modelling, complex data analyses, sectoral decarbonisation pathways, energy systems analysis, and policy design, which countries need for developing robust, evidence-based LTSs. Moreover, they can use their convening power to bring together multiple government agencies, development part-

54 The EBRD, WB, and especially EIB are good practice models here (Reyes *et al.*, 2025).

ners, and private sector actors. This helps align policies, finance, and implementation mechanisms across sectors and stakeholders, and also helps MDBs themselves in developing country strategies and operations that are aligned with both the countries' priorities and the Paris Agreement (Bendahou, Pauthier and Cochran, 2022). In addition, MDBs serve as hubs for global climate knowledge, best practices, and innovation. Moreover, they connect countries to international expertise, peer learning platforms, and multi-donor initiatives like the MDBs' Long-Term Strategies Program, which officially started delivery by COP29 and is housed in the WB's Climate Support Facility (AfDB, ADB, AIIB, CEB, EBRD, EIB, *et al.*, 2023; ADB, 2024d; World Bank Group, 2024c). However, the programme has struggled to become effective due to funding difficulties, and, with its budget of USD 25 million as of 22 November 2024, it is still far from being able to meaningfully support the development of LTSs on a global scale.

In 2021, the MDBs agreed on a series of principles to guide their support for LTSs for both private and public sector clients (see Infobox 10). The document also includes some details on how to interpret and operationalise the principles. However, the adoption of these principles is voluntary, and there is no formal reporting process by MDBs on their implementation.

MDB principles for LTS support

1. Lay out a long-term vision for a decarbonised, climate-resilient future, with clear steps in the near and medium term to enable its achievement.
2. Link climate goals with the SDG to maximise socioeconomic benefits and support a just transition.
3. Set ambitious climate targets consistent with the long-term goals of the Paris Agreement, with clear steps to achieving them, including near- and medium-term milestones.
4. Integrate the adaptation and climate resilience goals of the Paris Agreement.
5. Cover key sectors and systems to capture their impact, interlinkages, and interdependencies under a range of plausible futures.
6. Ensure country ownership by facilitating the integration of long-term objectives into development planning and budgeting all across the government.
7. Develop an inclusive and transparent stakeholder engagement process, including on approaches to a just transition.
8. Ensure that there is appropriate institutional capacity to implement, monitor, and update the LTS.

Infobox 10: MDB principles for LTS support (2021)[55]; Source: AfDB et al., 2021

55 More detailed descriptions of the different principles are included in the original MDB document.

Different MDBs put different weight on LTS support. The ADB, for example, has a focus area to 'support all DMCs through finance, technical assistance, policy dialogue, and knowledge sharing to increase the ambition of their national energy plans, NDCs, and long-term climate strategies' (ADB, 2023b, p. 26). Other examples include WB technical support to the government of Laos for its LT-LEDS, including modelling, stakeholder engagement, and drafting of policy pathways to net zero by 2050 (The Center for Climate Strategies, 2024). In 2021, the EBRD provided technical cooperation support to help the Government of Uzbekistan develop its national LT-LEDS, including modelling, sectoral pathways, and alignment with its Paris Agreement commitments (EBRD, 2021). Via its TA for the Program for Public Policies for Sustainable and Resilient Growth in Argentina, the IDB supports Argentina's implementation of its NDC and the design of its LTS toward 2050. It involves stakeholder engagement, sector pathway assessment (e.g. energy, transport, agriculture), and policy roadmap development (IDB, 2022b). The IDB has also provided TA to the development of the only three 1.5°C-aligned LTSs (in Chile, Colombia, and Costa Rica).

However, given that many EMDEs still lack an LTS, and that many LTSs lack specificity in terms of implementation pathways, fossil fuel phase-out timelines, sectoral targets, and financing strategies, there is a need for MDBs to scale up this kind of support, especially in Africa and LAC (Bendahou, Pauthier and Cochran, 2022). Shareholders should better capitalise suitable facilities such as the LTS Program to enable MDBs to support countries effectively (CSF, 2025).

To ensure that LTSs are both credible and transformational, MDBs should observe some key principles (see Infobox 11).

Key principles for MDB support to countries' LTS design and implementation

1. Promote fossil fuel phase-down/phase-out pathways

MDBs should encourage countries to include clear, time-bound plans to reduce and phase out coal, oil, and gas – especially unabated fossil fuels – in line with science-based pathways (e.g. the IPCC's 1.5°C scenario). This includes:

- prioritising support for sectoral pathways that eliminate fossil fuel dependency in power, transport, and buildings;
- supporting countries to include concrete emissions trajectories or sector-specific milestones in the crucial 2030–2035 window, which are required for alignment with the 1.5°C target; and
- avoiding support for 'low-ambition' pathways that lock in fossil gas or coal under the guise of transition.

2. Align with just transition principles

MDBs must ensure LTSs reflect the social and economic implications of phasing out fossil fuels. That includes:

- supporting the inclusion of just transition frameworks, worker reskilling, and regional diversification plans; and
- facilitating stakeholder participation – especially from vulnerable communities, youths, and labour unions – in strategy design.

3. Strengthen institutional capacity and ownership

Many LICs and MICs lack the institutional bandwidth to develop complex, cross-sectoral LTSs. MDBs should:

- support national planning bodies with training, data systems, and modelling tools; and
- help countries establish inter-ministerial climate governance that integrates LTSs with financing and energy planning.

4. Ensure coherence with investment planning

MDBs should help align LTSs with:

- medium-term investment plans, public budgets, and energy transition investment pipelines; and
- project preparation facilities that enable countries to finance LTS implementation, including climate finance mobilisation.

5. Prioritise transparency and measurability

LTSs should include clear benchmarks, indicators, and monitoring frameworks so progress towards fossil fuel transition can be tracked. MDBs should support:

- development of MRV systems tied to fossil fuel reduction pathways; and
- making data on emissions, energy mix, and infrastructure plans publicly accessible.

Infobox 11: Key principles for MDB support to countries' LTS design and implementation; Sources: ADB, 2023b; Climate Action Tracker, 2023; ILO, 2015, 2015; IPCC, 2023; Recourse, 2025; UNFCCC, 2025; World Bank Group, 2024h, 2024g; IEA, 2023a

7.2.6 Just transition

When transitioning away from fossil fuels, mitigating the social and economic effects of a shrinking fossil fuel industry is critical – just as it is to ensure harnessing broad economic and social benefits from the shift to renewables. Fossil energy technologies are still economically profitable and, hence, continue to support many livelihoods. Not only do fossil fuel companies in certain economies directly employ a considerable portion of the workforce, which in turn supports a large number of family members, but they are also critical to social stability. The economy involving fossil fuel companies, whether privately or publicly owned, is tightly connected to funding instruments that support social welfare in many countries. These companies often generate substantial revenue, which, through taxes and other financial channels, contributes to the often fragile social support systems of these nations. The dual role of these companies – as major employers and significant contributors to public finances – makes transitioning away from fossil fuel dependency a very complex challenge (Hansen, 2022).

In addition to the finance required to scale up renewables, a just transition thus requires additional resources and strategies such as targeted support for affected workers and communities, retraining

programmes, investments to create new employment opportunities in sustainable industries, and also reforms to social welfare systems (Potdevin and Wu, 2024; Skovgaard *et al.*, 2024).

The total financial need for a just transition is difficult to calculate. There is currently no universally agreed definition of a just transition, and there are no global numbers on public or private spending on just energy transitions. But the Independent High-Level Expert Group on Climate Finance estimates that of the annual USD 2.4 trillion required for climate action in EMDEs (not including China), around USD 40 billion per year will be required annually for ensuring a just transition (Bhattacharya *et al.*, 2024).[56] OCI's estimates are much higher, at around USD 420 billion annually for fair fossil fuel phase-out for workers and communities between 2023 and 2030 (Tucker and O'Manique, 2025).

The International Labour Organization (ILO) estimates that 6 million jobs will be lost by 2030 because of the energy transition, mainly in the fossil fuel sector. However, more than 15 million jobs will be created through the energy transition by 2030. To put the numbers into perspective, 80 million full-time jobs are expected to be lost due to climate change, as they depend on stable weather and a healthy ecosystem (ILO, 2022). So, in sum, a successful energy transition will be able to create 9 million jobs, while missing out on it will make 80 million people lose their jobs.

The just transition is embedded in the Paris Agreement's preamble, which declares that signatories should follow 'the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities' (UNFCCC, 2015). The COP28 energy consensus emphasised that the transitioning away from fossil fuels in energy systems should happen 'in a just, orderly and equitable manner' (UNFCCC, 2023b, art. 28d), notably without narrowing the term down to the sphere of work and jobs only.

Many EMDEs are starting to incorporate just transition principles into national climate and energy plans, recognising the need to protect workers and communities reliant on fossil fuel industries. However, there are significant challenges. Many EMDEs face significant funding shortfalls for just transition investments, with insufficient concessional finance and limited access to international capital markets. Limited technical, policy, and governance capacity hampers integrated planning that combines climate goals with social equity. In particular, countries heavily reliant on fossil fuel exports or coal mining often face difficult trade-offs between economic stability and climate ambitions. Also, ensuring social inclusion and meaningful participation of affected workers, indigenous groups, and vulnerable populations in just transition planning remains a challenge. Finally, balancing clean transition with immediate energy access needs complicates decision-making (IEA, 2021e; IRENA, 2024a).

Over the past few years, JETPs have emerged as a pioneering model to support fossil fuel-dependent EMDEs in their shift towards cleaner energy systems while addressing social equity. Sparked by the launch of the first major JETP for South Africa at COP26 in 2021 (with around USD 8.5 billion committed to decarbonising the country's energy system), these partnerships bring together EMDE governments, MDBs, donor countries (the IPG), and private investors to mobilise billions in finance, TA, and policy support (European Commission, 2021).

Since then, similar JETPs have been established or are in development for other countries, reflecting a growing international commitment to coordinate climate ambition with economic diversification and worker protections (ADB, 2023a). The Indonesian JETP, initiated at the G20 Summit in November 2022,

56 This is in addition to USD 1.6 trillion for clean energy transition, USD 0.25 trillion for adaptation and resilience, USD 0.25 trillion for loss and damage, and USD 0.3 trillion for natural capital and sustainable agriculture (Bhattacharya *et al.*, 2024) .

mobilised USD 20 billion to support the transition away from coal by 2050 and advance peak emissions by 2030. The Vietnamese JETP, signed with the IPG in 2022, is backed by an initial USD 15.5 billion in public and private finance intended to support Vietnam's transition away from coal towards RE, with ambitions to bring forward its emissions peak to 2030. Senegal launched its JETP in 2023, backed currently by USD 2.7 billion to increase the country's share of renewables in electricity capacity to 40% by 2030. Other nations like India and the Philippines are negotiating similar deals, typically targeting investments ranging from several billion to tens of billions, often focused on renewables, grid upgrades, phase-out plans, job transition measures, and social protections (ILO, 2015). While still evolving, JETPs represent a significant step forward in aligning climate finance with social inclusion and development.

However, challenges remain. For example, critics argue that JETPs risk falling short in delivering equitable outcomes due to their reliance on complex financial instruments and conditionalities that may delay urgent action (Hauber, 2023). The partnerships often focus heavily on coal phase-out without adequately addressing broader fossil fuel dependencies, such as oil and gas (Thielges, 2023). They also lack meaningful participation from affected workers and communities (Fünfgeld and Wischermann, 2024). Moreover, financing is in most cases insufficient to provide true incentives for a whole-of-economy energy transition (Prasetiyo, 2023a).

In the South African example, the funding for actual just transition aspects was USD 50 million, less than 1% of the total scheduled funding (Obuekwe and Matsuo, 2023). Moreover, JETPs also have a significant amount of loan components, which raises fears of pushing countries into more debt (Recourse, 2025). In addition, concerns have been raised about the transparency of funding commitments and whether JETPs sufficiently prioritise just transition principles over economic and geopolitical interests (Adarve Zuluaga and Shortall, 2025). These critiques highlight the need for greater accountability, inclusivity, accelerated timelines, and a considerable increase in financial resources to ensure JETPs fulfil their promise as a just and effective pathway away from fossil fuels.

7.2.6.1 MDB support for a just transition

The energy transition is not just a technical task; it is also a social, economic, and governance challenge. MDBs are particularly well placed to support countries in this endeavour. MDBs can provide concessional finance, TA, and risk mitigation tools to help countries invest in green infrastructure, retrain workers, and support communities dependent on fossil fuel industries. Moreover, MDBs are uniquely positioned to coordinate among stakeholders – governments, private investors, civil society, and labour groups – to design inclusive transition plans. Without MDB support, many EMDEs may lack the resources or capacity to implement a just transition, risking increased inequality, social unrest, and delayed climate action.

Compared to mitigation and adaptation, the just transition has come relatively late onto the MDBs' agenda, being first treated in a somewhat reactionary manner – mainly in terms of mitigating social and economic risks being brought about by mitigation actions. Now, however, MDBs have recognised that just transition questions need to be considered from the very beginning of country engagement, particularly in terms of economic opportunities presented by the transition. This is important to convince countries of climate measures and the transition in the first place.[57]

57 Interview with MDB representative, 3 February 2025.

MDBs' strategic priorities regarding the just transition

Different MDBs recognise the importance of a just transition in their energy sector strategies or other strategic documents. The ADB, for example, stresses just transition as an important element in its energy sector directional guide but does not include any KPI on its achievement (ADB, 2023b). Similarly, the AIIB's Energy Sector Strategy aims to 'accelerate the just transition towards secure, sustainable, and low-carbon energy access for all' (AIIB, 2022, p. 12) and to 'mitigate the adverse social impacts of energy transition' (AIIB, 2022, p. 13); however, this aim is not reflected in the Results Monitoring Framework. The EBRD, in turn, has an inclusive and just energy transition as one of seven critical action areas in its Energy Sector Strategy 2024–2028 (EBRD, 2023), and it is the only MDB that uses quantified transition impact indicators systematically across projects (EBRD, no date a).

A just transition does not play a role in AfDB's, IDB's, WB's, NDB's, and IsDB's energy sector strategies. The AfDB has, however, an African Just Transition Initiative with CIF (AfDB, 2022), and in 2023, it received a USD 1 billion guarantee from the UK to back renewable investments and grid infrastructure under South Africa's JETP (AfDB, 2023). Through its Jobs for Youth in Africa Strategy, the AfDB aims to equip 50 million young Africans with the skills needed for the green economy by 2025. In partnership with the ILO, a just transition job marker system is being developed to help translate climate investments into employment opportunities (AfDB, 2025b). The IDB developed a regional Just Transition Toolkit for LAC, offering guidance on planning, equity, workforce transformation, and inclusive stakeholder engagement (IDB, 2023). In 2022, it approved a USD 800,000 regional TA project supporting countries in translating climate goals into investment pathways, improving transparency, and strengthening strategic planning for just transitions (IDB, 2022a). The WB's approach to a just transition is outlined in its Just Transition for All Initiative, which aims to help national, regional, and local authorities worldwide develop roadmaps for just transitions (World Bank Group, 2025b), in its Just Transition Taxonomy (Hussain, Perks and Sylvester, 2024), and in its Scaling Up to Phase Down approach (World Bank Group, 2023c).

As part of their Paris alignment commitment, every MDB needs to align its financing with just transition criteria. In 2021, MDBs put out their joint Just Transition High-Level Principles (see Infobox 12), which are intended to guide and harmonise the banks' approaches.

MDB Just Transition High-Level Principles:

1. Integrate climate and socioeconomic goals

MDBs aim to support climate objectives while promoting socioeconomic outcomes. This approach helps accelerate progress towards the Paris Agreement goals and the SDGs, such as clean energy (SDG 7), gender equality (SDG 5), decent work (SDG 8), reduced inequalities (SDG 10), and climate action (SDG 13).

2. Shift from GHG-intensive activities

MDBs focus on helping countries transition from GHG-intensive economic activities. This involves financing, policy engagement, technical advice, and knowledge sharing, aligned with country priorities like NDCs and long-term climate strategies.

3. Leverage existing policies and finance mobilisation

MDBs aim to build on current policies, mobilise public and private finance, and enhance coordination with stakeholders. This supports long-term structural economic transformation through co-financing, strategic planning, and collaborative policy approaches.

4. Mitigate negative socioeconomic impacts

MDB support seeks to reduce the adverse socioeconomic effects of transitioning to a net-zero economy. It focuses on protecting affected workers and communities while creating opportunities for sustainable, inclusive, and resilient livelihoods.

5. Transparent and inclusive processes

MDBs emphasise inclusive, transparent, and accountable planning and implementation. This includes engaging all relevant stakeholders, especially affected communities, to ensure gender equality and social inclusion in just transition efforts.

Infobox 12: Summary of MDB Just Transition High-Level Principles (2021)[58]

However, operationalisation and coordination remain a challenge. Each MDB operationalises the principles within its own mandate and context, which has led to quite different approaches. The joint MDB just transition working group has served to share approaches and experiences, but so far, MDBs have not reached a conclusion on how to proceed further. Challenges include answering questions of how to identify a credible transition intent, how to characterise distributive impacts and opportunities, and how to articulate and report on the contribution of interventions and the mobilisation of positive aspects.

Challenges in defining and tracking just transition financing

Just transition investments can be classified as climate finance if they contribute to mitigation or adaptation. According to the MDBs' joint mitigation finance tracking methodology, just transition activities can be counted as climate finance if they support closure of fossil fuel plants or other activities involving fossil fuel extraction, processing, or transport. This explicitly includes support to workers or communities affected by such closure. Also, cross-sectoral policy actions or technical support that 'aim to lead to climate change mitigation actions' are eligible, a formulation that is wide open for interpretation and can encompass many just transition activities, given their significance as a political enabler of the climate transition (World Bank Group, 2023b). However, these categorisations are insufficient to enable any meaningful reporting by MDBs on their support for just transitions. Accordingly, the MDBs do not report on the shares of just transition financing in their joint climate finance reporting and there is no overview of their investments in this regard.

At COP29, the MDBs presented an initial approach on how to integrate their support for a just transition in their work on developing outcome indicators for climate results and in their thinking about impact and quality of finance. They plan to assess countries' transition progress according to their NDCs, LTSs, just transition plans, and the progress on the included actions. On an operations level, they aim for indicators

58 See AfDB *et al.*, 2019 for the full version.

on country and client transition support 'that track MDB just transition support and engage wider social considerations, such as social development, gender, conflict and migration, health, and economic inclusion' (World Bank Group, 2024a, p. 8). However, this is still a work in progress, the indicators have not come out yet, and implementation of the common metrics is voluntary.

Across the MDBs, the WB seems most advanced in developing specific criteria for tracking just transition support. Its Just Transition Taxonomy outlines definitions of activities that would be eligible for just transition finance, assuming that more definitional clarity would also help channel sustainable finance towards those relevant activities, and help investors credibly report on how their investments finance a just transition (Hussain, Perks and Sylvester, 2024). A shortcoming is that the WB's taxonomy focuses only on coal; while many of the 27 activities described could be adapted to apply to other fossil transitions, they also need to be complemented with further activities in this regard.

The WB should update its Just Transition Taxonomy to include criteria applying to just transitions away from other fossil fuels. MDBs should agree on joint criteria and metrics for tracking just transition support and for evaluating its climate and social impacts until the end of the year 2025. They should start to jointly report on their activities and financing in this regard in 2027, as part of their reporting on their Paris alignment commitment. Just transition activities should also be described more explicitly in the revised MDB mitigation finance tracking methodology which is to come out by the end of 2026. These measures would help create transparency and accountability around just transition financing, and emphasise its significance as a decisive enabler of the climate transition.

MDB just transition support – projects and principles

Notwithstanding the lack of clarity regarding the definition of a just transition, MDBs are supporting various countries in justice aspects of their energy transitions, for example Bosnia and Herzegovina (WB), Poland (WB), and North Macedonia (EBRD, WB, EIB, CEB). The ADB set up a Just Transition Support Platform in 2022 which provides TA to build countries' capacity to 'strategically plan, implement, and finance just transition, to manage any negative impacts, and increase benefits from the transition to net zero' (ADB, 2022a). Also, EBRD and Bloomberg Philanthropies have been in partnership since 2023 to explore advancing coal phase-out and capital mobilisation for the clean energy transition across the Western Balkans and the Southern and Eastern Mediterranean regions. In addition, MDBs are also involved in all JETPs currently under way (South Africa: WB, AfDB; Indonesia: ADB, EIB, WB; Vietnam: ADB, EIB; Senegal: EIB, AfDB), playing an important role in disbursing finance and coordinating stakeholders.

There are signs that MDBs will take on an even stronger role in JETPs or similar models, as pivotal actors to mobilise, provide, and coordinate financial resources. At past COPs and annual meetings, they have reiterated their commitment to support climate-related country platforms for coordinating development strategies and financing (WB, 2024a) – similar to JETPs but not limited to energy concerns. The shift to a country platform model[59] provides an opportunity to move to a broader understanding of countries' just transitions, encompassing a vision of a whole-of-economy transition that delivers benefits fairly and inclusively.[60] Moreover, it should also include shifting from the current high-level 'deal-first' structure to a more methodical, institutionally anchored process, potentially coordinated by an MDB. This would also alleviate the heavy political burden this model has placed on the IPG (The Rockefeller Foundation, 2024; Jain and Bustami, 2025). If MDBs are to take on a more important role in the future, it is all the more

59 For an extensive description and discussion of the concept of country platforms, see Sabogal and Ahlgren, 2024.

60 The EBRD was one of the first MDBs to go in that direction, with its economic transition concept encompassing an economy that is competitive, well governed, green, inclusive, resilient, and integrated (EBRD, no date c).

important that they address existing criticisms of their current engagements. For example, Steadman *et al.* note that the MDBs' High-Level Principles recognise the importance of both procedural and distributive justice, and speak to the importance of social inclusion, but lack attention to the dimension of restorative justice; to remedy this, they should explicitly acknowledge pre-existing inequalities and actively seek opportunities to repair past harms (Steadman *et al.*, 2024). If MDBs scale up their just transition support or get to take more of a lead in JETPs or country platforms, they also need to pay more attention to questions of political economy, as energy transitions will unavoidably create winners and losers; for example, fossil fuel incumbents may lose market share, while consumers may face short-term price shifts. A participatory process helps surface these trade-offs early, manage expectations, and find acceptable compromises, but they might take a considerable amount of time. Also, many of the more general criticisms mentioned earlier with regards to JETPs – overcomplexity of financing structures and consecutive delays, risk of aggravating debt problems, lack of accountability and inclusivity, and equity concerns – are equally relevant for MDBs to address as they may conflict with their development mandate. Hence, MDBs should observe a number of principles in order to ensure justice in partner countries' energy transitions and amend their just transition principles accordingly (see Infobox 13).

Core principles MDBs should observe in their just transition support

1. Country ownership and alignment with national plans

- MDBs should support national strategies, not impose external agendas.
- JETP financing must be integrated with domestic climate, energy, and development plans, such as NDCs, LTSs, and power sector reform roadmaps.
- MDBs must base their actions on an assessment of the political economy of transition; in other words, they must get an understanding of how the energy sector creates and distributes economic rents, identify proponents and opponents of change, and consider how their interventions can strengthen and disempower different groups.

2. Transparency and accountability

- MDB-supported JETPs should ensure:
    - clear disclosure of financing terms (grants vs loans);
    - open tracking of project pipelines and timelines; and
    - public access to decision-making processes.
- Develop metrics to monitor just transition outcomes:
    - MDBs should support national institutions to monitor just transition outcomes and integrate social equity metrics into project evaluations.
    - MDBs should monitor their own projects' impact on a just transition.
    - Companies should disclose impacts on workers and communities.

3. Consider all dimensions of justice

- Pay attention to aspects of distributive, procedural, and restorative justice.

4. Inclusive participation and social dialogue

- Engage civil society, labour unions, local communities, and marginalised groups in all phases: planning, implementation, and evaluation.
- Ensure affected workers and communities are consulted and their concerns integrated.

5. Fair financing terms

- MDBs should prioritise concessional finance, especially for low-income and highly in-debted countries.
- Avoid over-reliance on loans that could worsen debt burdens.
- Seek to de-risk private finance, but not at the cost of public interest.

6. Strong social and environmental safeguards

- Uphold human rights, environmental protection, and labour standards.
- Ensure transitions away from fossil fuels do not displace communities without proper support, reskilling, or social safety nets.

7. Phasing down fossil fuels and scaling up clean alternatives

- Support clear timelines and financing for early coal plant retirement and moratoria on new fossil infrastructure.
- Accelerate deployment of renewables, storage, grid modernisation, and energy access solutions.

8. Gender equity and just labour transition

- Address gender-specific impacts of energy transitions.
- Support reskilling, job creation, and decent work for fossil fuel workers, including the development of a skilled renewables and EE workforce.

9. Long-term systemic impact

- Go beyond project-by-project finance: help reform policy, regulation, and markets to catalyse systemic change in the energy sector.
- Support national capacity building, institutional reform, and innovation.

Infobox 13: Core principles MDBs should observe in their just transition support; Sources: Cooper, 2019; IEA, 2021d, 2025a; IRENA, 2023b, 2024a; Cassel et al., 2024; Dell'Amico et al., 2024, 2024; Steadman et al., 2024; The Rockefeller Foundation, 2024; Díaz et al., 2025; Jain and Bustami, 2025; Macquarie and Tyson, 2025a, 2025b; Re-course, 2025

7.2.7 Economic diversification and the creation of green value chains

All of the previously mentioned projects and partnerships concentrate mainly on coal phase-out and coal regions; much less attention has so far been paid to the just transition in the oil and gas sector. If coal transition is difficult, gas transition is even more difficult, mainly because fossil gas has a wider application

across economic activities and is still a profitable business. However, with the view to a future of global warming and declining gas demand, it is clear that this will change.

As Saha *et al.* note, **half of the world's oil and gas is produced by middle-income developing countries which are economically dependent on the highly volatile prices of oil and gas but have fewer resources than rich countries to deal with the global transition away from fossil fuels** (Saha *et al.*, 2023). Some countries are still embarking on a fossil pathway (e.g. Senegal, Suriname, Uganda, and Namibia). **The fiscal crisis following global oil and gas decline will be quite severe for these countries, putting social and economic development progress at risk.**

As Figure 43 shows, for a number of EMDEs, oil and gas revenue accounts for a considerably large portion of overall government revenue.

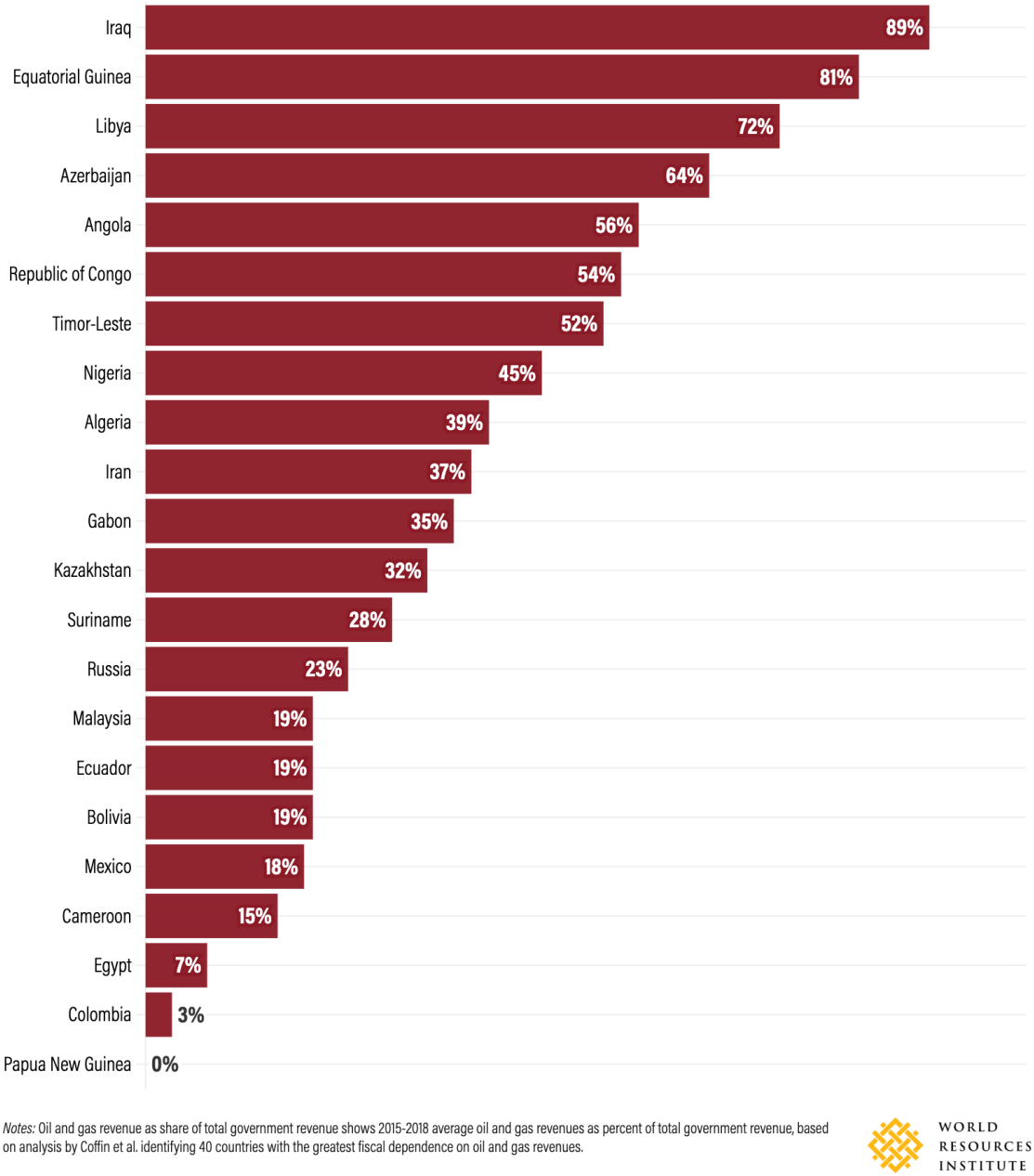


Figure 44: Oil and gas revenue as share of total government revenue (2015–2018 average); Source: Saha et al., 2023 based on Coffin et al. 2021, World Bank, n.d.a

As previously discussed, countries with heavy coal use need concrete and economically attractive alternatives to transition away from coal. But this is even more important for heavily gas-dependent countries that still perceive fossil gas as economically profitable and where not just the local economy but also public services and public sector employment are often heavily dependent on oil and gas revenue. As transition dynamics vary significantly across different fossil fuel industries, a macroeconomic perspective is crucial in shaping effective just transition strategies for considerations of mitigation measures but also, very importantly, for developing alternative economic pathways for the countries in question. While coal transitions are often centred on domestic energy shifts, oil and gas industries are more export-oriented, necessitating distinct approaches that address factors such as national debt, economic diversification, and social safety nets for workers and communities reliant on fossil fuel revenue.

In addition, there are countries that find themselves at a crossroads between entering gas production or leapfrogging towards a clean economy. For example, Senegal, Mozambique, Tanzania, Argentina, Pakistan, and Bangladesh are currently investing in gas fields discovered in recent years. Namibia, Uganda, Guyana, and Suriname are developing new oil fields. The directional decisions of these and similar countries depend on the existence of realistic and promising alternatives to fossil fuel development.

7.2.7.1 Development prospects based on green value chains

Enhanced support for green industrialisation and the development of local and regional green value chains can help countries either leapfrog to clean industries or decarbonise existing industries, create green jobs, improve livelihoods, and build domestic capacity to meet the rising demand for clean technologies. Combined with regional integration efforts, this can help build regional supply hubs for clean energy equipment, spur economic development, avoid stranded assets, and reduce dependence on imports of infrastructure and technology produced in advanced economies.

IRENA and others (The African Climate Foundation, 2022; Acheampong, 2024) stress the opportunities arising particularly for Africa from a green value chains approach.

> *'[T]he energy transition could play a pivotal role in the much wider diversification and transformation of African economies. Anchored by renewable energy deployment, the development of green industries with strong local value chains would be a major departure from current economic structures in which Africa principally exports commodities while the value-added is captured elsewhere in the world'*
> (IRENA and AfDB, 2022, p. 5).

RE could also help boost intra-African trade in clean energy technologies, services, and electricity, benefiting from the African continental free trade area and the recent launch of the African Single Electricity Market (IRENA and AfDB, 2022, p. 5). Some specifically stress opportunities to build an African battery value chain, based on the fact that the continent holds 'at least one-fifth of the world's reserves in a dozen minerals that are critical for the energy transition, including the lithium used for electric vehicle batteries and grid-scale storage'. Using this to produce battery storage could 'stimulate the growth of a strategic new industrial sector in Africa. Strengthening local supply chains and manufacturing could position Africa as a global leader in battery technology, adding value to its raw materials through battery component production for global markets' (Karkare and Medinilla, 2023; Carballo, 2024). The continent could see the creation of millions of green jobs, along expanded and resilient global value chains (Mohamed, 2024). The UN Economic Commission for Africa suggests that for African countries to 'carve a decent portion of the future global market for renewable energy', they should adopt an integrated approach to human capital development, expand R&D in RE, seek strategic research and industrial alliances, support distributed

or decentralised energy systems and microgrids, and develop national and regional RE roadmaps (UNECA, 2023). However, to do so, Africa needs more international support (Mohamed, 2024). MDBs operating in the region can play a key role in this regard.

7.2.7.2 Pathways to economic diversification and green industrialisation

Fossil-dependent countries need realistic and clear prospects for economic diversification and green industrialisation. EMDEs can participate in and benefit from green value chains by positioning themselves as suppliers of sustainable raw materials, green technologies, and low-carbon products, while also capturing value through skills, jobs, and innovation. Depending on a country's position and existing connections in the global economy, on ecological and human resources, on its geographical location and the regional economic setting, different pathways towards a more sustainable economic model should be considered:

- Countries can **move up the value chain** while greening their industries: instead of exporting raw materials, EMDEs can invest in sustainable local processing, manufacturing, and assembly of green technologies (e.g. solar panels, electric two-wheelers). Industrial policy, foreign direct investment, and technology transfer can support the emergence of local green tech hubs which can pioneer economic transformation in this regard (Altenburg and Assmann, 2017; IEA, 2023j).

Example: India – localised manufacturing of electric two-wheelers

- Under India's FAME (Faster Adoption and Manufacturing of Electric Vehicles) and Production-Linked Incentive schemes, domestic firms like Ola Electric and Ather Energy have scaled up local manufacturing and assembly of electric scooters and associated components such as batteries and motors (Kay, 2024; Oriel, 2024). Ola Electric's Futurefactory in Tamil Nadu and upcoming gigafactory for lithium-ion cell production represent important moves towards vertical integration and technology transfer, reducing both import dependency and carbon footprints (Shetty, 2022). Ather Energy sources about 90% of its components from a growing network of Indian suppliers, bolstering a stronger local supply chain (Asha *et al.*, 2025). These strategies have helped India become a global hub for EV two-wheelers, generating green jobs, fostering innovation, and anchoring sustainable industrial transformation.

Infobox 14: India – localised manufacturing of electric two-wheelers

- Countries can access **green trade and investment opportunities**: meeting certain environmental and social standards can enable EMDEs to access green public procurement markets and climate-aligned foreign investment, and to obtain trade preferences (e.g. EU Carbon Border Adjustment Mechanism compliance) (WTO, 2023; UNECA, 2024).

Example: Kenya's floriculture and Ethiopian coffee – accessing green trade through compliance

- Kenya's floriculture industry has proactively strengthened compliance with stringent EU phytosanitary and sustainability standards securing continued duty-free access and solid standing in the EU market under the Kenya–EU Economic Partnership Agreement (Kolongo, 2024).[61] Meanwhile, Ethiopian coffee producers have scaled organic and Rainforest Alliance certifications across hundreds of thousands of hectares, enabling access to premium EU speciality markets and preferential trade regimes (CBI, 2021; Delegation of the European Union to Ethiopia, 2025). These compliance and certification efforts attract climate-aligned foreign investment and qualify exports under EU deforestation regulation frameworks and potential Carbon Border Adjustment Mechanism compliance routes. As a result, both countries access green trade corridors while promoting sustainable agricultural practices and decent rural livelihoods.

Infobox 15: Kenya's floriculture and Ethiopian coffee – accessing green trade through compliance

- Countries can leverage their **natural assets for green exports**: EMDEs can supply critical minerals (e.g. lithium, cobalt) that are needed for the global clean energy transition. The development of such activities should be accompanied by strong environmental and labour safeguards. Also, the expansion into sustainable agriculture, forestry, and bio-based materials (e.g. bamboo, jute, organic cotton) can anchor regenerative rural value chains for export (IEA, 2021f; World Bank, 2022). Importantly, exporting industries should also benefit local populations and serve local development and industrialisation so as not to repeat colonial extractivist economic models between EMDE and industrialised countries.

Example: Zambia – critical minerals and regenerative exports with safeguards

- Zambia, a leading producer of copper and cobalt, is increasingly positioning its mineral exports as essential inputs for the global clean energy transition, while also recognising the urgent need for environmental protection and labour rights in mining operations. Efforts by government and unions aim to enforce strong occupational health and safety standards and ensure decent work in critical minerals extraction; however, unions noted that environmental, social, and governance standards were being neglected by some multinational corporations to the detriment of communities and the environment, which highlights the importance of further enforcing safeguard compliance (IndustriALL, 2025). Currently, Zambia is expanding its exports in organic cotton – through certification systems supporting 1,500+ smallholder farmers – and scaling up climate-smart agriculture and sustainable forestry projects backed by forest carbon finance initiatives and agroforestry partnerships with the EU and WB (Amanzi, 2023; Enterprise Zambia Challenge Fund, no date). These strategies aim to leverage natural assets into green export value chains, anchoring both critical mineral and bio-based products to environmental and social resilience.

Infobox 16: Example: Zambia – critical minerals and regenerative exports with safeguards

61 The report also highlights the challenges of adapting to EU regulations.

- **SMEs can green their business and participate in sustainable value chains.** Examples are businesses in the areas of sustainable textiles and crafts, in the circular economy (repair and reuse activities), and in micro and mini RE services such as private solar PV installation. This can also create decent work for women, including in the informal sector (IEA, 2023j).

Example: Solar Sister – women's micro-renewable enterprises in Nigeria

- Solar Sister empowers local women – many operating in the informal economy – to become RE micro-entrepreneurs selling solar lanterns and clean cookstoves in off-grid communities. Participants receive starter 'business in a bag' kits, technical training, and mentorship, enabling them to build small green businesses and earn decent incomes (Mwangi, 2025). This model both greens women's livelihoods and contributes to sustainable energy value chains, while improving community health, education, and gender equality through clean lighting and reduced kerosene smoke (Igwe, 2024). Many entrepreneurs even set up village savings and loan associations to jointly invest in energy products and expand their business, which illustrates the dimension of women's social and economic empowerment (Solar Sister, no date).

Infobox 17: Example: Solar Sister – women's micro-renewable enterprises in Nigeria

7.2.7.3 MDB support for fossil-free economic pathways and green value chains

If MDBs are to succeed in convincing gas-dependent EMDEs to transition out of a currently profitable model, it is clear that they must have attractive alternatives to offer for a structural economic transformation in line with net zero.

Rose-Innes examined the impact of the collapse of oil demand on three large African countries and notes that Bretton Woods institutions have failed to trigger industrialisation and diversification in Africa over the past 80 years. This stresses the importance for MDBs to improve on such efforts and 'avoid a failure to foresee the timing, extent, and severity of this crisis that will have profound global implications by the mid-century' (Rose-Innes, 2024). According to their own statement, MDBs have now recognised that considerations of a just transition need to be the starting point of engaging with countries on transitioning away from fossil fuels. They should take it one step further: the starting point of engaging on transitioning away from fossil fuels should actually be joint strategising with partner countries about how they can economically benefit from the global transition to net zero so as to offer viable alternatives to fossil fuel-driven development.

While it is unclear how much exactly MDBs invest in supporting green industrialisation and green value chains in EMDEs, it seems they are increasingly prioritising green industrialisation and the development of green value chains in EMDEs, although it is still an emerging priority area. The WB, through its Resilient and Inclusive Supply-chain Enhancement programme, helps mineral-rich countries build refining and manufacturing capabilities domestically, aiming to move beyond raw material extraction (WB, 2024b). The IDB supports regional value chains in solar, wind, battery, and critical minerals sectors across LAC. It offers TA to align industrial policy, regulatory frameworks, and skill-building efforts (IDBG, 2022). The AfDB wants to foster 'industrialisation that supports the clean energy supply chains', enhance energy security,

and diversify economies (AfDB, 2024, p. 24). According to the bank, this includes exporting green hydrogen and derivatives such as ammonia, as well as 'transition minerals', but, and importantly, also using them for domestic industrial development. In Europe and Central Asia, the EBRD has integrated green value chain development into its Green Economy Transition strategy, channelling substantial finance into clean infrastructure and energy-efficient industrial transformation (EBRD, 2025). The AIIB positions green infrastructure as central to enabling competitive and climate-resilient global value chains in Asia. It underscores the importance of sustainable ports, logistics, and energy systems as entry points for EMDEs to participate more deeply in net-zero-aligned global trade (AIIB, 2021). Jointly, the MDBs recently published a report on resource-efficient, circular value chains that support green manufacturing and sustainable livelihoods (ADB, 2024a).

Across these institutions, there is a growing convergence around the need to support countries in developing comprehensive green industrial strategies, backed by blended finance, regulatory reforms, and international cooperation. However, the initiatives and projects are scattered, and the foci and approaches are diverse and partial, often covering only specific sectors. In view of the great importance that the topic actually has for supporting countries in transitioning away from fossil fuels, MDBs should develop a joint approach to support countries in green industrialisation and the creation of green value chains in the next two years. They should then integrate this approach consistently in well-coordinated country strategies, and make sure to have it guide any country engagement on decarbonisation. These approaches and strategies should also be closely tied into any efforts to develop country platforms.

Infobox 18 outlines what MDBs can do to support countries in creating and participating in green value chains.

What MDBs can do to support EMDEs in building equitable green value chains and industrialisation

1. Finance green industrial development that adds local value

- Provide concessional and blended finance for local processing and manufacturing in critical minerals and sustainable agriculture, and for green industrial infrastructure and technology (e.g. solar, EV components).
- Support the development of green special economic zones that prioritise local employment, environmental safeguards, and community benefit-sharing.
- Condition financing on strong environmental and labour standards, ensuring development does not simply reproduce North–South resource extraction.

2. Strengthen green industrial policy and institutional capacity

- Support governments in designing credible and far-sighted green industrial policies that prioritise domestic value capture, clean production, and just transition strategies.
- Help design supportive labour market policies to proactively prepare and mobilise the workforce for green value chains.
- Provide or fund TA for environmental and social safeguards, supply chain traceability, and compliance with climate-aligned trade standards (e.g. EU Carbon Border Adjustment Mechanism, anti-deforestation regulations).

- Encourage local stakeholder engagement, including labour unions, women's groups, and indigenous communities, in green industrial planning.

3. De-risk private investment that builds domestic capabilities

- Use first-loss capital, credit guarantees, and political risk insurance to crowd in private investment into local green enterprises, not just multinational-led operations.
- Prioritise support for domestic green SMEs, and for joint ventures that increase local ownership and technology transfer.
- Require local procurement, employment, and training quotas in green private sector operations to ensure meaningful national participation in green sectors.

4. Finance R&D and facilitate technology transfer that empowers local innovation

- Finance regional R&D hubs and innovation clusters focused on green tech (e.g. agro-ecology, solar cells, green hydrogen, circular economy) with strong public/private/academic collaboration.
- Promote South–South cooperation and licensing models that avoid technological dependence on the Global North.
- Ensure open access to green technology platforms and build local IP and technical skills.
- Cooperate with shareholders from industrialised countries to facilitate sharing of essential green technology.

5. Promote inclusive green job creation and just transitions

- Ensure projects include social safeguards, decent work standards, and gender equity targets.
- Link green industrial projects to skills training, social protection, and transition support for workers affected by fossil fuel phase-outs or resource dependency.
- Fund programmes that formalise and upscale green informal sector activities, such as recycling, repair, and community-based RE.

6. Support regional green value chains with equity principles

- Invest in regional infrastructure and harmonised standards that support intra-regional trade in green goods and services (e.g. solar panels, EVs, sustainable textiles).
- Ensure regional value chains prioritise local beneficiation of raw materials, avoiding extractive North-bound export patterns.
- Support regional institutions to embed climate and equity standards into trade rules and investment protocols.

Infobox 18: What MDBs can do to support EMDEs in building equitable green value chains and industrialisation; Source: IRENA and AfDB, 2022, p. 5; Sekaringtias et al., 2022; UN, 2022; Clubb, 2023; Dimond, 2023; Saxena et al., 2023; WB et al., 2023; Jena and Shrimali, 2024; Mundy, 2025

Three aspects should be highlighted in particular:

Many EMDEs are currently exploring ways to exploit and profit from their critical mineral resources. Yet, the mining of critical minerals in EMDEs carries significant risks, including environmental degradation, water pollution, biodiversity loss, and the potential for exploitative labour practices and weak local value addition. In this regard, **there are two aspects that MDBs should engage on with countries. Firstly, raw materials and green products should not be destined only for export; rather, they should also benefit local populations and markets, to avoid a continuation or repetition of colonial extractivist relations between EMDE and industrialised countries. Secondly, MDBs need to make sure that mining operations financed (directly or indirectly) are managed with strong safeguards.** For green hydrogen production, for example, this means that MDBs should prioritise hydrogen engagements with high local value addition. This involves supporting comprehensive national hydrogen strategies and setting high eligibility standards for projects, such as alignment with SDGs, environmental and social safeguards, support for local capacity building and technology transfer, and establishing mechanisms for monitoring and accountability to ensure local benefits in the long term (Hareesh Kumar, Outlaw and Fekete, 2024).

Shifting the balance of value capture towards the South also needs a willingness of shareholders from industrialised countries to support the transfer of technology and IP rights for the sake of development and decarbonisation in developing countries. In its sixth assessment report, the IPCC stresses the importance of technology transfer several times, noting that '[t]he adoption of low-emission technologies lags in most developing countries, particularly least developed ones, due in part to limited finance, technology development and transfer, and capacity' (IPCC, 2023). An issues note by the BRICS Contact Group on Climate Change and Sustainable Development builds upon this, suggesting that '[i]ntellectual property remains a largely untapped instrument for climate efforts', and that new models of cooperation should be tested that 'facilitate exchanges between innovators, lower licensing costs, simplify procedures and match inventions with local needs and investors'. Drawing on lessons from the COVID-19 pandemic responses could 'offer valuable insights into structuring partnerships between governments, academia, and the private sector to create innovation ecosystems that foster collaborative transfer and assimilation of technology that supports climate mitigation and adaptation' (BRICS, 2025, p. 3). **Given the MDBs' central position between shareholders and client countries, they should use their expertise and contacts to actively advocate for the transfer of essential technology components with their respective shareholders.**

Thirdly, MDBs should support critical broader financial architecture reforms that are necessary as systemic enablers of a just and sustainable transition. These include efforts for enhanced debt sustainability (e.g., a UN debt convention), international tax fairness (e.g., a shipping levy, wealth taxes, a financial transaction tax, kerosene taxes, taxes on windfall profits of fossil fuel companies, fossil fuel levies), and global financial stability (e.g. better climate mainstreaming in IMF surveillance and advice, expanded Special Drawing Rights rechannelling). These reforms are needed to generate predictable, equitable, and substantial public revenues to fund clean energy investments, support displaced workers, and protect vulnerable communities in fossil fuel–dependent economies. Without them, many EMDEs will remain constrained by debt, fiscal limitations, and unequal access to global finance, undermining their ability to implement socially inclusive and Paris-aligned energy transitions.

8. Conclusion: MDBs' contribution to the COP28 energy consensus – recommendations

This conclusion summarises the recommendations developed across the publication. Due to the overarching nature of the approach, the recommendations summarised here will not be equally applicable to all MDBs. They are intended as an overview of the most important priorities that the MDB 'ecosystem' should focus on to effectively support the implementation of the COP28 energy consensus.

8.1 Tripling RE

While the private sector plays an increasingly significant role in RE investment, MDBs continue to be essential. Even where renewables have achieved cost parity, they are often still less profitable than fossil fuels. MDBs can help by providing concessional financing and equity specifically for new renewables companies and green tech start-ups, but also by supporting governments in adjusting the regulatory environment and providing support to renewables producers.

In terms of **regional priorities**, enhanced MDB support for renewables is most needed in Africa. Global RE investment is lowest in SSA, which is also projected to remain the region with the lowest levels of renewables capacity, the lowest levels of electricity consumption, and the largest energy access deficits in the foreseeable future. SSA also receives the third-lowest per capita investments in renewables by MDBs. In view of this, MDBs active in the region urgently need to scale up their efforts to support renewable development in the region, both technically and policy-wise as well as financially, at affordable rates; at the same time, they need to support countries in leapfrogging to clean development. The MENA region, too, needs more MDB support for scaling up renewables.

MDB investment in renewables, especially in Africa, must be closely aligned with the goals of poverty eradication and increasing energy access. Any incentivising of the private sector needs to come with measures to protect the public interest and ensure equitable approaches. In countries with poorly developed markets for renewables, MDBs need to support market development via equity and engage with the factors limiting the involvement of other investors in the region, such as high-risk perceptions, structural problems supporting these risk perceptions (political and economic instability, infrastructure deficits), and debt burdens (including MDB debt). For long-term changes, MDBs should also support broader financial architecture reform efforts to address structural issues. Where energy access in rural areas is low, proactive TA offers from MDBs are needed to help identify specific energy needs and options, help build investable projects, and support distributed solar, wind, and grid infrastructure.

Given that in all EMDE regions, there is a lack of transnational systems essential to balance and trade variable renewable sources across borders, MDBs are called to widen their support for regional energy integration, and to include this as a strategic priority in their energy sector strategies.

In regions where renewables are becoming the prevalent technology, MDB support is needed for early and emerging **technologies**, such as CSP, geothermal and marine energy (for example, via equity and grants for R&D). Based on its expertise with supporting emerging technologies in Europe, the EIB could

take over the role of pioneering such support for selected EMDEs. In many places, however, MDB support is also still needed for (onshore and offshore) wind and small hydro, since these technologies are also still underfunded in most places.

In terms of **instruments**, scaling up MDBs' TA from extremely low levels (SSA/MENA: 0.22%/0.04% of MDB renewables financing) and offering more TA in the form of grants is essential to help African countries in particular overcome capacity limitations for a just energy transition.

Importantly, the potential of policy-based lending (currently 2.3% of REN financing) and related innovative instruments such as IDB CLIMA and Programme for Results should be used more extensively to adjust countries' policy frameworks for the purpose of supporting RE. The deepening of regional energy integration should become a target of MDB policy support. In their negotiations on policy support, MDBs should advise countries to keep the balance between incentives for the private sector on the one hand, and regulatory and directive approaches on the other hand, as both are needed to ensure the efficient use of public resources in the public interest.

Grants in the area of renewables should be prioritised for energy access in highly indebted LICs with low access rates. Highly concessional financing should be considered for countries that face decisions between leapfrogging with high upfront costs, or tapping instead into newly discovered national fossil resources, if it is probable that the MDB financing can make a difference.

MDBs should strengthen their efforts regarding debt-for-climate swaps to create fiscal space for highly indebted countries to invest in renewables. They should support countries and other donors in setting up debt swaps (e.g. via a global hub for debt swaps for development), making swaps less transaction-heavy, and increasing their value proposition. MDBs should also engage with their shareholders to explore options for participating in direct debt relief measures for highly indebted countries which need to invest in renewables. Compounding equitable 'haircut' rules (distributing cuts proportionally according to shares held) with leveraging additional shareholder support (e.g. via a Debt Relief Trust Fund, dedicated capital increases, or allocated portions of IDA replenishments), new revenue tools, and structured protections can enable MDBs to deliver meaningful debt relief without endangering the MDBs' preferred creditor status. Criticisms that need to be addressed are mismatches between climate-related obligations and re-sources freed up to fulfil them, as well as flawed design of climate measures.

In terms of their **operational approach**, MDBs should seek to **enhance cooperation** with the following partners to join forces for renewables support.

Firstly, they need to align their strategies among themselves and use their instruments, contacts, and expertise in a synergetic way in countries that they jointly operate in. This could be facilitated through continued engagement in the joint development of country platforms together with partner countries, while jointly learning from the lessons of previous platform approaches.

On the subnational level, cooperation with national and subnational development banks, other SOFIs, and local financial intermediaries should be expanded to make use of these actors' specific context knowledge, ability to reach specific clients, and communication channels with local institutions. Additionally, they can increase exchange of expertise and technical cooperation with local civil society, locally lending philanthropy, and specified multilateral agencies like IRENA for the purpose of identifying and concretising local investment needs for RE generation in underserved areas.

Given the importance of SOEs for renewable expansion in developing countries, MDBs need to scale up their engagement to help countries make those institutions fit for purpose.

Furthermore, MDBs should actively work with credit rating agencies to help them adjust their risk evaluation for developing countries based on MDBs' experiences and insights, and promote these experiences and insights with the private sector.

There are also important options to strengthen **internal incentives** for strengthening renewables engagement at the MDBs. In line with the MDBs' Common Approach to Measuring Climate Results, the NDB should also adopt an indicator on RE capacity enabled, to set a clear incentive for its investments to support the energy transition. Similarly, all MDBs should support partner countries to include clear, quantifiable renewable capacity targets in their NDCs. Furthermore, all MDBs should adopt metrics on: clean energy capacity for cross-border power trade installed; number of legal/regulatory/institutional frameworks improved in the area of RE, including competitive procurement schemes and network integration; and number of private sector clients with improved climate corporate governance. These indicators support efficient distribution of RE and long-term governance changes that have the potential to shift energy flows beyond the timeframe of MDB lending. Moreover, all MDBs adopt sectoral KPIs on the decarbonisation of the energy system and work with countries on sectoral strategies for scaling up RE and decarbonising the energy system. In order to craft more transformational operations, MDBs should evaluate climate impact by instrument and include this in their Common Approach to Measuring Climate Results and the respective reporting procedures.

8.2 Doubling EE

To double EE by 2030, investments need to grow four to seven times in EMDEs. Especially in energy-intensive MICs, the policy and investment focus needs to shift more towards EE.

MDB EE investments are at only 16% of REN investments and show the lowest levels since 2019. Given that annual EE investment in EMDEs needs to increase significantly by 2030, MDBs should take a much more active role in EE support. Given projected energy demand growth, SEA and India should be focus areas of increased EE support from MDBs.

In particular, IDB, AIIB, AfDB, and IsDB should move the topic up on their agendas. Considerations of EE should be an integral part of any MDB project due to its ability to support many other development goals. Disaggregated reporting by MDBs on their EE investments by sector (buildings, transport, industry) is necessary to better understand whether and where MDB investments need scaling up.

In the **transport sector**, the building of low-emissions transport infrastructure, policy reform, and the affordability of new, energy-efficient transport modes are the most important challenges in EMDEs. MDBs should focus their support to EMDE governments on scaling up and electrifying public transport (on both road and rail). This involves support for building up rail infrastructure (for both passenger and freight transport) and EV charging infrastructure. At the same time, MDBs should support governments in regulatory reforms and enabling measures (including ICE phase-out targets and fiscal s upport instruments), and in making the new, energy-efficient transport modes affordable through long-term financing arrangements and budgetary reforms (such as shifting subsidies from fossil fuels to electrified public transport as a transitional measure). Furthermore, TA should be offered for improving urban planning for walking,

cycling, and other forms of low-emissions micromobility. Freight companies should receive MDB support in electrifying freight road transport.

In the **buildings sector**, MDBs need to support EMDE governments in crafting support programmes for households to improve EE of heating, cooking, and especially cooling. In cooperation with national development banks or other financial intermediaries, MDBs should also work to encourage private finance investments in EE of buildings. This is particularly relevant for MDBs operating in Asia, since demand is rising exponentially. Clean cooking programmes are particularly important in Africa. To support behavioural change and awareness, MDBs should support the construction of community demonstration buildings.

Moreover, MDBs should support regulatory efforts to implement building codes and standards and EE certification of devices. Importantly, the informal construction sector needs to be included through simplified codes and training. MDBs should also support governments in adjusting urban planning to use waste energy and include measures to adapt city structures to increasing temperatures and water scarcity.

In the **industry sector**, MDBs should scale up their support (both technical and financial) for industrial companies in EMDEs to switch to more energy-efficient equipment and BAT, to electrify industrial processes, and to install waste heat recovery systems and digital efficiency solutions. They should also offer businesses their support for the installation of energy management systems, as well as for training and knowledge exchange on energy management. Especially for smaller industrial businesses, MDBs should cooperate with national development banks and smaller local banks to reach the relevant stakeholders.

Given the key role that governments play in enhancing EE in industry, MDBs should scale up their support to governments in EMDEs with rapidly expanding industrial sectors and help them establish a policy and regulatory environment conducive to an energy-efficient industry. This can include the introduction of MEPS for industrial equipment, special electricity prices for industry, and also targeted funding programmes to facilitate electrification and EE of companies. These measures should be accompanied by MDB support for industry development and formalisation.

The model of ESCOs, which already exists in a number of countries, is worth further support by all MDBs in all regions.

In terms of **instruments**, policy-based financing has been clearly neglected by MDBs as an instrument to support EE, despite the importance of policy measures for encouraging this. MDBs should highlight the topic of EE regulation and standard-setting more in their country dialogues, with the aim to start supporting policy reforms for EE in their partner countries. Potential policy measures to be supported include the setting of national EE targets and the elaboration of respective, cross-sectoral implementation plans, regulation and oversight for large enterprises to conduct energy audits and implement energy management systems, and the regulation of standards for energy-efficient buildings. Also, MDBs can support governments in setting up funding programmes and other financial incentives to facilitate EE investments in buildings or industry (such as investment tax credits, accelerated depreciation for EE equipment, PACE programmes, or cash rebates for certified retrofits or appliance upgrades).

Given the dispersed nature of EE potential in buildings, transport, and production and the importance of the private sector, MDBs need to make more use of working with local financial intermediaries and other aggregator institutions to support households and SMEs generally.

Besides, there is potential to improve the **MDBs' incentive structure** regarding EE support. All MDBs should further elevate and mainstream the topic in their strategic and institutional priorities and adopt KPIs focused on EE in their performance frameworks.

8.3 Supporting connected technologies

All MDBs should officially endorse the Global Energy Storage and Grids Pledge and in this context start to report on their support for grids and battery storage as of 2027. The latter is important to evaluate whether MDB support is on track to assist this important enabling factor for the COP28 energy package.

The following grid-related recommendations are based on insights into the global state of grids and general investment needs. MDBs need to provide support to EMDEs for integrated power capacity planning and **grid expansion**, as well as for accelerated grid modernisation and digitalisation. This includes support for better spatial planning and regulatory reforms to support the rapid deployment of grids and grid-enhancing technologies, including advanced sensors and optimisation tools.

Another important support focus for MDBs is **regional energy system integration**, as it enhances grid resilience and enables increased uptake and efficient use of variable renewables. MDBs should strengthen their support to countries in building cross-border transmission lines that link the power grids of different regions or countries, including the technical and financial support for respective coordination and co-financing efforts.

Regarding **storage**, MDBs should focus on de-risking and blending private investments in both utility-scale storage as well as residential and off-grid storage, to help overcome high upfront costs and ensure affordability in EMDEs. Given the focus on distributed renewables by initiatives such as Mission 300, MDBs should seek to accompany this with broad support for smaller-scale storage options for off-grid facilities.

Moreover, MDBs should analyse whether countries in the MENA region and South Asia (regions which have so far not been able to secure any MDB investments in battery energy storage) have a need to expand battery storage as part of their decarbonisation pathways. If needed, MDBs should offer their technical and financial support.

To facilitate the rollout of **green hydrogen** in heavy industry, shipping, and energy storage, MDBs can help countries draft national hydrogen strategies, introduce carbon pricing, set up CCfD, introduce production tax credits, adopt green public procurement rules, and set up public investment programmes in hydrogen transport networks and storage. They can also provide grants, low-interest loans, and guarantees for the private sector to help improve financial viability and reduce risk for the adoption of green hydrogen.

Importantly, MDBs should only support green hydrogen projects that are certain to bring a range of wider development benefits to the country. This includes improving local access to reliable, affordable, and clean electricity; spurring domestic upstream and/or downstream industrial growth; creating long-term, high-quality local jobs and skills (local value capture); improving or not deteriorating local access to land and water resources; and contributing to the decarbonisation of economic sectors in the country, or to setting up competitive, green industrial bases from the start ('leapfrogging'). MDBs supporting green hydrogen activities should make sure to commit to these criteria and evaluate any potential engagements accordingly. Those evaluations should be publicly accessible for independent verification and accountability.

8.4 Transitioning away from fossil fuels

To support EMDEs in transitioning away from fossil fuels, MDBs can take a number of approaches.

Stop fossil fuel financing

All MDBs should stop the financing of fossil-related activities. To do so, they should adopt comprehensive fossil fuel exclusion policies extending to downstream oil and gas financing, for example by joining the Clean Energy Transition Partnership initiative. Direct or indirect support of the following activities related to fossil gas is fundamentally incompatible with the Paris Agreement and should not be provided by MDBs:

- Expansion of fossil gas production, for example exploration or development of new gas fields.
- New infrastructure for further processing or transportation of fossil gas, for example new gas pipelines or LNG export terminals.
- Activities that increase the demand for fossil gas, for example new gas-fired power plants that are not primarily used to meet peak load and stabilise grid frequency, or gas for cooking and heating when renewables combined with electrification would be an alternative.

Independent external verifications of Paris alignment assessments should regularly be undertaken, in particular of the tests for stranded asset and lock-in risks. This also requires that MDBs make their complete Paris alignment assessments publicly available for independent verification and accountability purposes.

Support the retiring of fossil infrastructure

MDBs should ramp up efforts to help countries phase out fossil infrastructure and replace it with renewables. This should include gas to avoid countries being stuck with stranded assets and liabilities in the 2030s to 2040s.

MDBs need to observe a number of criteria to ensure additionality, integrity, and effectiveness of fossil retirement projects: environmental integrity, economic justification and cost-effectiveness, just transition principles, careful financial structures and full transparency, credible replacement of retired capacity with renewables, and actual additionality and Paris alignment (see Infobox 5 for full details). MDBs supporting fossil retirement activities should commit to those criteria and make sure to evaluate initiatives accordingly. The results of these evaluations should be publicly accessible for independent verification and accountability purposes.

MDBs should consider adopting a KPI on 'Fossil fuel energy capacity retired/replaced by renewables (MW)'.

Help reduce fossil fuel subsidies

All MDBs should include support for FFSR in their climate strategies (IRENA *et al.*, 2024). Regional MDBs in particular should become more active on the topic. As standard, MDBs should assess different FFSR options in their country analyses and highlight their benefits in country dialogues, with the aim to include such reforms in each country strategy and support countries through respective policy-based operations. Also, MDBs should coordinate and align their country strategies in this regard.

To ensure that reforms are just, effective, and durable, and that their impacts extend beyond fiscal savings to climate change mitigation, MDBs should adopt the following key principles and fully implement them by 2030 (for full details see Infobox 8): ensure social protection and equity; strengthen political economy and public buy-in; align reforms with broader development and climate goals; ensure fiscal and price transparency; tailor MDB instruments to country context; and align MDB portfolios (e.g. stop fossil fuel expansion and ensure MDB strategies integrate FFSR).

Support carbon pricing

MDBs should continue providing TA to countries for building technical capacity in setting up carbon pricing mechanisms (e.g. MRV systems, GHG inventories and baselines, registry platforms to track allowances and credits, methodologies for setting emissions caps, and frameworks for allowance allocation) (WB *et al.*, 2023; IMF, no date). Moreover, they should help governments draft enabling legislation for ETS or carbon tax laws and support regulatory design, including penalties, oversight mechanisms, and market governance bodies, but also accompanying social protection measures for vulnerable segments of the population (IMF *et al.*, 2024). Beyond early TA and policy design support, MDBs should offer TA in the form of hands-on and long-term implementation support to ensure effectiveness and sustainability of implementation.

MDBs should also offer to assist countries in dealing with political economy factors surrounding carbon pricing, for example in conducting distributional impact assessments, stakeholder engagement processes, and communication strategies. Moreover, MDBs should help countries explore options for regional carbon market integration and coordination (e.g. in ASEAN or parts of LAC) to increase efficiency and reduce leakage. Importantly, when supporting countries in NDC and LTS design as well as public investment plans, MDBs should highlight the benefits of embedding carbon pricing mechanisms (Larsen and Laxton, 2024b). To model good practice, all MDBs should make sure to apply a (shadow) carbon price in project appraisals.

Help adopt 1.5°C-compatible LTSs

MDBs should scale up their support for LTS design and implementation, especially in Africa and LAC. Shareholders should make sure to capitalise respective facilities such as the LTS Program, which has long struggled to become effective due to funding problems and is still not well capitalised.

When supporting countries' LTS design and implementation, MDBs should observe some key principles to ensure that strategies are both credible and transformational: promote fossil fuel phase-down/phase-out pathways; align with just transition principles; strengthen ownership and institutional capacity for implementation; ensure coherence with investment planning; and include measures for transparency and measurability of progress towards fossil transition.

Just transition support

MDBs should agree on joint criteria and metrics for tracking just transition support and for evaluating its climate and social impacts until the end of 2025. They should start to jointly report on their activities and financing in this regard in 2027, as part of their reporting under their Paris alignment commitment. Just transition activities should be described more explicitly in the MDB mitigation finance tracking methodology which is due to be revised by the end of 2026. The WB should update its Just Transition Taxonomy to include criteria applying to just transitions away from other fossil fuels.

In scaling up their just transition support, MDBs need to address the manifold criticisms of current JETPs, especially on inclusivity, justice aspects, and financing terms. In operationalising their High-Level Just Transition Principles, MDBs should complement them with the following principles (for full details see Infobox 13): enhance transparency through clear disclosure of financing terms and open tracking of project pipelines and timelines; increase ownership through the consideration of political economy factors and early stakeholder engagements; highlight opportunities for restorative justice; ensure financing terms do not worsen debt burdens; avoid de-risking private finance at the cost of public interest; ensure transitions do not displace communities without proper support, reskilling, or social safety nets; and go beyond project-by-project financing to catalyse systemic change in the energy sector.

Support economic diversification and the creation of green value chains

Support for developing green value chains, combined with regional integration efforts and a willingness of shareholders to facilitate technology transfer and IP rights to EMDEs, is the most powerful strategy to help countries transition away from fossil fuels.

The starting point for MDBs engaging in transitioning away from fossil fuels should be joint strategising with partner countries about how they can economically benefit from the global transition to net zero so as to offer viable alternatives to fossil fuel-driven development.

In the course of the next two years, MDBs should develop a joint approach to support countries in green industrialisation and the creation of green value chains. They should then integrate this approach consistently in well-coordinated country strategies, and make sure to have it guide any country engagement on decarbonisation. These approaches and strategies should also be closely tied into any efforts to develop country platforms.

Shifting the balance of value capture towards the South needs a willingness of shareholders from industrialised countries to support the transfer of technology and IP rights for the sake of development and decarbonisation in developing countries. MDBs should use their expertise and contacts to actively advocate for the transfer of essential technology components with their respective shareholders.

Importantly, MDBs should engage with their partner countries on two aspects. Firstly, raw materials and green products should not be destined only for export; rather, they should also benefit local populations and markets. Secondly, MDBs need to make sure that mining operations financed (directly or indirectly) by MDBs are managed with strong safeguards.

8.5 Dependence on ambitious international climate finance commitments

Adopting the right approaches and setting the right priorities is one part of the challenge; the other is financial capacity.

Many recommendations will be dependent on political will and likeliness of shareholders to contribute financially or in terms of providing the MDBs with a mandate.

On the one hand, while MDBs have gone a long way in crafting and implementing many of the capital adequacy framework reforms suggested by the G20 Independent Review of 2022, several areas still require attention to fully realise their financial potential. For example, more than half of MDBs still need to clarify their risk appetite frameworks to become systemwide and dynamic approaches to risk tolerance. There is also still lots of room to better reflect callable capital in capital adequacy frameworks. And only a few MDBs have issued hybrid capital instruments and other financial innovations to raise additional capital (Lee and Matthews, 2024). Lastly, more efforts are required to harmonize operational standards (e.g. environmental and social safeguards) across MDBs to disburse financing more efficiently and reduce transaction costs for borrowers (Charkabarti, Bains and Prizzon, 2024).

On the other hand, the capacity of MDBs to scale and disburse climate finance in ways that support the COP28 energy consensus is directly linked to the fulfilment of the NCQG and the elaboration of the Baku to Belém roadmap.[62] Unfortunately, current geopolitical factors are reducing rather than increasing the amounts coming from these sources. Since Donald Trump's return to the US presidency in 2025, the geopolitical environment for scaling up climate finance through MDBs has deteriorated sharply. The US has halted key contributions to international climate funds and is blocking MDB reforms that would expand climate mandates or unlock concessional finance. At the same time, European countries are reallocating budgets away from development and climate commitments to increase defence spending, in response to Trump's distancing from NATO and pausing of aid to Ukraine in the midst of the Russian war on Ukraine. This double blow from the US and Europe is fragmenting donor support and stalling progress on critical capital and policy reforms at MDBs, which is all the more problematic as MDBs find themselves in a context of overlapping challenges. Next to the global energy transition, they are expected to contribute in particular to adaptation and resilience, but also to nature and biodiversity. Meanwhile, in view of reduced resources and weakened leadership at MDBs, frustration and mistrust is growing among developing countries. But the upcoming COP30 can also be 'a forum to mobilize developing and developed countries to confront the climate crises, especially with the US playing a reduced role, and address systemic barriers nationally and globally to deliver on climate and development goals' (Titelman, Uy and Bhattacharya, 2025), including through broader financial architecture reforms.

The NCQG has set a clear, predictable target for public and mobilised finance. If donor countries comply in providing substantial, concessional resources as part of the NCQG, this can unlock the finances that MDBs need to finance large-scale RE, EE, and just transition programmes, and help build green value chains in developing countries.

The Baku to Belém roadmap is expected to outline how financial flows – both public and private – will be aligned with national energy transition plans and just transition needs. A well-designed roadmap will clarify MDB roles in project preparation, de-risking, and institutional support, enabling them to act more strategically and equitably. Without a credible NCQG and an operational roadmap, MDBs risk being underfunded, overly cautious, or misaligned with country-driven priorities, undermining their ability to deliver on the core pillars of the COP28 energy package.

Shareholders committed to protecting peoples' livelihoods and our planet through climate action need to apply leadership and courage to pursue ambitious climate finance goals and demonstrate their willingness to fulfil their fair share and follow through on their commitments.

62 See Moore *et al.*, 2025 for a long-term vision for scaling up climate finance to developing countries, outlined by E3G.

VI Literature

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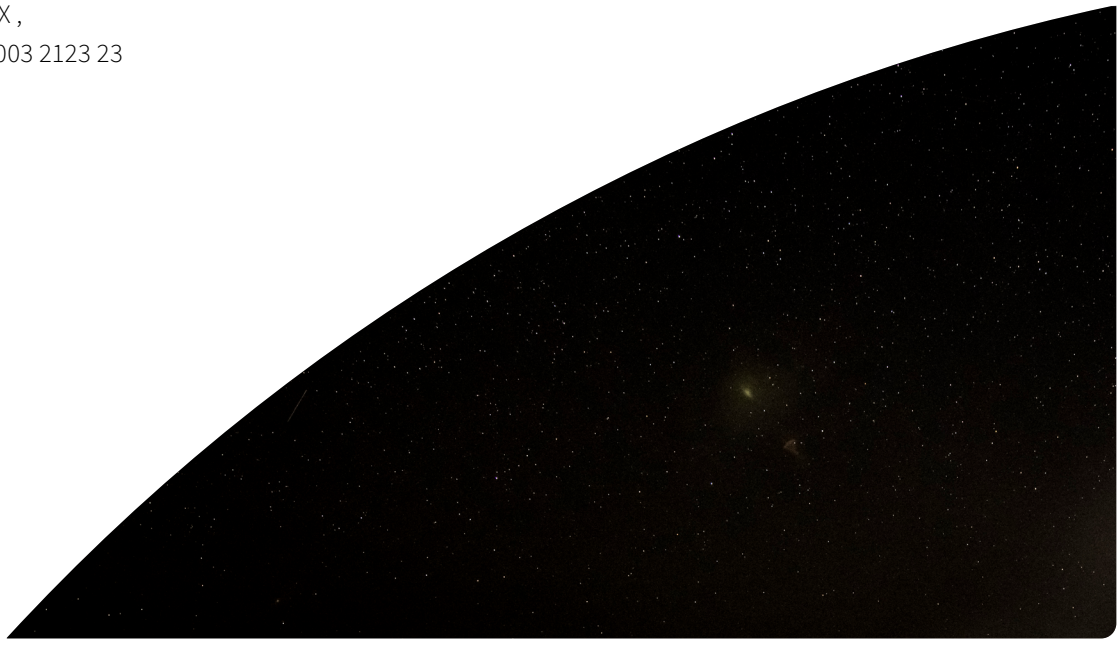

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