From commitments to bankable projects

Preliminary findings on climate investment in Korean partner countries

Funded by the Ministry of Finance and Economy of the Republic of Korea through KGNDTF and implemented by GGGI

Ministry of Finance and Economy | KGNDTF | GGGI

Delivered in partnership with KDI CID

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서울특별시, 대한민국

Seoul, Republic of Korea

2026

About this brief

This brief presents early findings from a knowledge product prepared by the Global Green Growth Institute (GGGI) and the Korea Development Institute (KDI) Center for International Development (CID).

The study asks why climate finance, now above USD 2 trillion a year, so rarely becomes financed projects in ten of Korea's priority development partners: Colombia, Ethiopia, Indonesia, Lao PDR, Peru, the Philippines, Rwanda, Uganda, Uzbekistan and Viet Nam. It examines three constraints on that conversion: where climate finance goes, what it costs and whether projects are prepared well enough to be financed. It then maps where Korean cooperation instruments act along the project cycle, and what Korea's experience in power, transport and waste suggests about the conditions for investment.

Status of the findings. The research is ongoing. The patterns shown here are descriptive: they show where constraints appear, not which one binds in each country. Sources and definitions are given on each page.

Climate finance is growing and exceeded USD 2 trillion in 2024

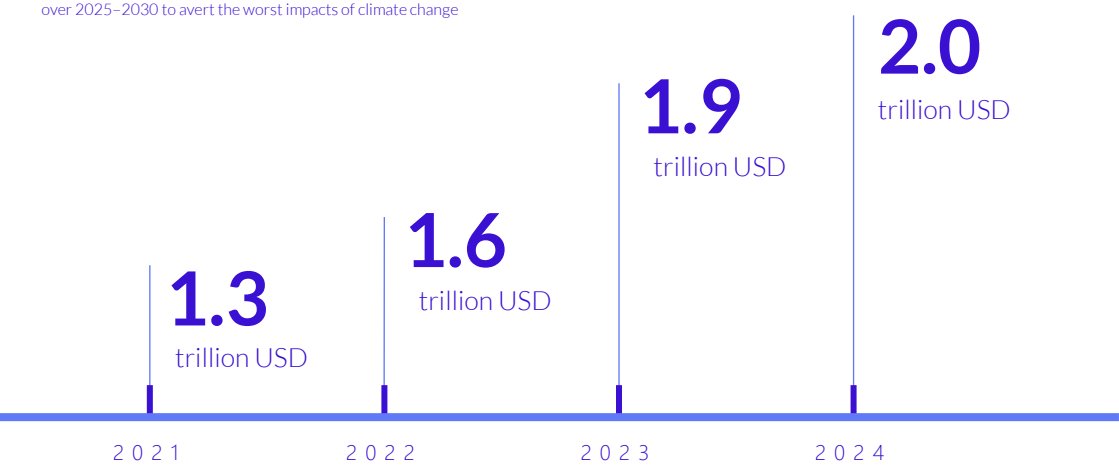
Tracked climate finance reached USD 1.9 trillion in 2023 and exceeded USD 2 trillion in 2024. Despite this growth, most financing continued to originate in the economies where it was invested. In 2023, approximately 80 percent of tracked climate finance was raised and spent domestically.

The share of domestic finance varied substantially across country groups. Advanced economies and China sourced around 90 percent of their climate finance domestically, compared with 55 percent in other emerging and developing economies, 19 percent in small island developing states and less than 7 percent in least developed countries.

These differences indicate that least developed countries and small island developing states depend more heavily on international climate finance. They also show that the predominance of domestic financing at the global level largely reflects conditions in advanced economies and China, rather than a common financing structure across country groups.

ANNUAL VOLUME OF TRACKED CLIMATE FINANCE (USD TRILLION)

An estimated USD 7.8 trillion in annual climate finance is needed over 2025–2030 to avert the worst impacts of climate change

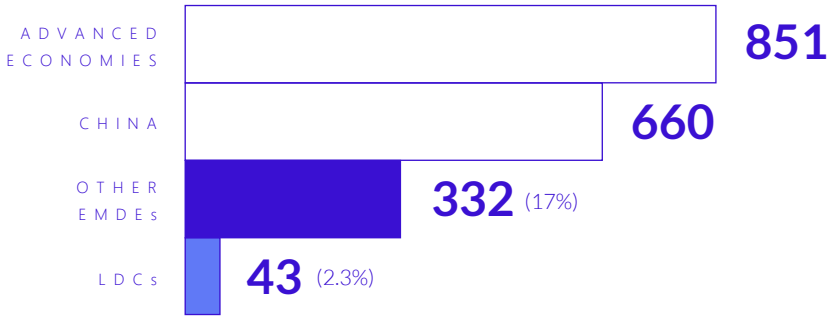


Source: Climate Policy Initiative (2026), Global Landscape of Climate Finance 2026.

Climate investment remains concentrated in major economies

TRACKED CLIMATE FINANCE 2023
BY COUNTRY GROUP
(USD BILLION)

Source: Climate Policy Initiative (2025)



In 2023, advanced economies received USD 851 billion in tracked climate finance, followed by China with USD 660 billion. Other emerging and developing economies received USD 332 billion, while least developed countries received USD 43 billion. Together, advanced economies and China accounted for approximately 79 percent of tracked finance by destination.

International finance represents a smaller component of global flows but is particularly important for developing economies. In 2023, international climate finance to developing economies, including China, totaled USD 196 billion, of which approximately 78 percent came from public sources. This indicates the substantial role of public finance in cross-border climate investment in these economies.

The geographic distribution of finance reflects differences in economic size, investment activity and financing conditions. While these figures do not establish the adequacy of investment relative to country needs, they show that growth in global climate finance does not necessarily imply comparable increases in investment across developing economies.

Higher financing costs constrain investment viability

Financing costs are an important determinant of clean energy investment, particularly for technologies with substantial upfront capital requirements. In 2024, the median cost of capital for utility-scale solar projects reaching final investment decision was 9.4 percent in Indonesia, 9.0 percent in Viet Nam and 8.0 percent in the Philippines, compared with an indicative range of 5.0–6.5 percent in advanced economies.

Because solar and wind projects incur most of their costs before electricity is generated, higher financing costs increase the annualized cost of investment and can reduce their competitiveness, even where technology costs are comparable. Differences in financing conditions therefore affect not only project viability but also the relative attractiveness of clean energy investments across markets.

Financing costs reflect both project characteristics and broader country and market risks, including currency exposure, regulatory uncertainty and the creditworthiness of electricity purchasers. Instruments such as guarantees and concessional finance can help mitigate specific risks, although their effectiveness depends on the underlying investment conditions and project structure.



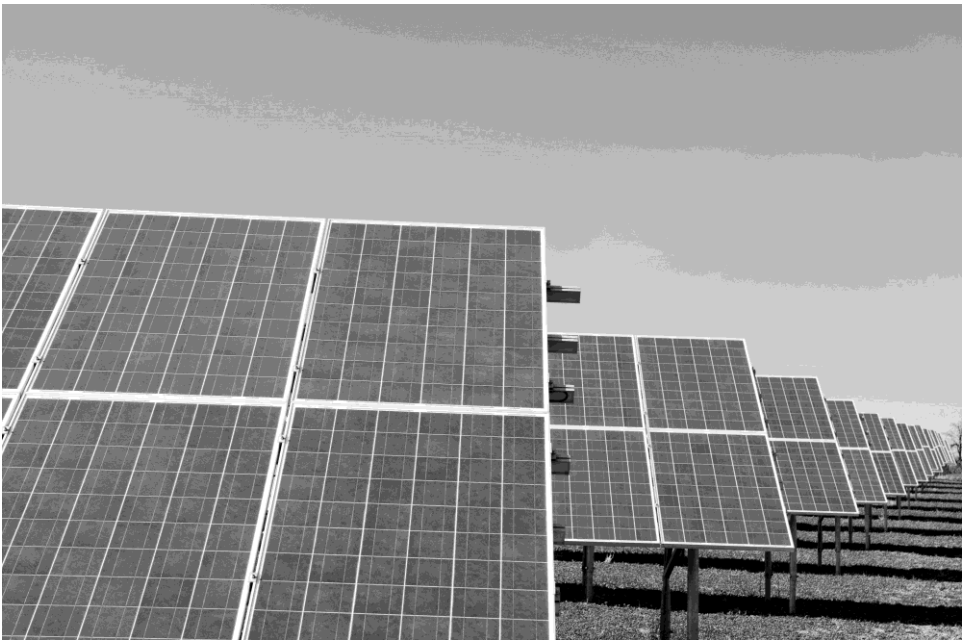
The same solar plant costs more to finance in partner countries

9.4%

Median cost of capital for utility-scale solar projects in Indonesia 2024 (Viet Nam 9.0%, Philippines 8.0%)

5.0-6.5%

Advanced economy benchmark



Climate commitments require project preparation to attract financing

National climate plans identify investment priorities, but financing decisions require projects with defined costs, technical specifications, implementation responsibilities and appropriate financing structures. Project preparation involves feasibility studies, economic and financial appraisal, environmental and social assessments and the allocation of implementation risks.

These activities require upfront expenditure before project viability and financing eligibility are established. Limited resources for early studies, technical capacity constraints and coordination across institutions can delay project development, even where financing may be available. Consequently, investment priorities do not necessarily translate into projects ready for financial appraisal.

Public support can help address preparation constraints by financing feasibility studies, providing technical assistance and strengthening institutional coordination. Its effectiveness depends on project selection, the quality of preparation and the resolution of risks that could prevent projects from obtaining financing





Energy investment priorities differ across partner countries

The ten selected partner countries differ substantially in economic structure, electricity generation and energy mix. These differences influence the type and scale of investment required to meet growing energy demand and climate objectives.

In 2024, electricity generation per person was approximately 79 kWh in Rwanda, 116 kWh in Uganda and 191 kWh in Ethiopia, compared with a global average of 3 790 kWh. In contrast, fossil fuels accounted for approximately 82 percent of electricity generation in Indonesia, 80 percent in the Philippines and 84 percent in Uzbekistan.

These differences illustrate distinct investment priorities. Countries with low electricity generation face the challenge of expanding supply and improving reliability, while more fossil fuel dependent economies must accommodate growing demand while reducing the emissions intensity of generation. Investment selection and financing arrangements therefore need to reflect different energy systems, project requirements and economic conditions.





Korean cooperation supports different stages of climate project development

Korea responds to developing countries' diverse needs through climate-related development cooperation. It committed approximately USD 8.81 billion in official development assistance (ODA) during 2022–2024. Its cooperation programs span policy advice, project preparation and financing, but serve different purposes and follow separate approval processes.

The Knowledge Sharing Program (KSP) and Economic Innovation Partnership Program (EIPP) support policy and project identification. Feasibility studies and preparation facilities help define technical requirements, assess risks and establish financing options.

At the financing stage, Korea International Cooperation Agency (KOICA) grants and Economic Development Cooperation Fund (EDCF) concessional loans can support eligible projects. Other financing instruments may be appropriate depending on the borrower, project revenues and risk profile.

Effective sequencing requires coordination among partner governments, implementing agencies and financiers. Support at one stage does not ensure approval or financing at the next.



Identify priorities and projects

1

KSP • EIPP
Policy and project identification

Prepare and assess feasibility

2

KSP (where applicable) • EIPP
Pre-F/S, F/S
Project preparation support



Structure and appraise financing

3

Risk assessment
Financing eligibility



Seek financing approval

4

KOICA • EDCF
Other appropriate financiers

Implement and operate

5

Implementation agencies • Operators
Capacity building program for O&M

Illustrative project development sequence. Korean programs have separate eligibility and approval requirements; progression between stages does not guarantee financing.

Korea's experience shows why renewable investment requires grid readiness

Expanding renewable generation does not ensure that electricity can be delivered and absorbed by the power system. Grid congestion, transmission development delays and insufficient system flexibility can delay projects, increase curtailment and reduce expected revenues.

Korea has responded through long-term power system planning, grid investment and changes in electricity market arrangements. Jeju Island has served as a testing ground for renewable electricity bidding, real-time and reserve markets, while competitive procurement has been introduced to support investment in energy storage.



Between 2023 and the first half of 2026, Korea selected operators for more than 1 100 MW of energy storage capacity through three rounds of its central contract market. Long-term contracts provide greater revenue certainty for investors, although their effectiveness depends on credible counterparties, procurement capacity and reliable system operation.

Korea's experience illustrates the importance of coordinating renewable generation, grid infrastructure and flexibility resources. The applicability of these measures in partner countries depends on local grid conditions, utility finances, technical standards and institutional capacity.

Korea's experience in electric mobility and organic waste management

Electric buses

Korea combined purchase subsidies, tax incentives and procurement requirements with support for charging infrastructure. In 2018, low-floor electric buses cost approximately KRW 350–450 million, compared with KRW 190 million for diesel buses; combined public subsidies reached KRW 200–290 million per vehicle in 2019, substantially reducing upfront costs. Bus-replacement rules and purchase targets further encouraged fleet electrification, while regulations to secure charging sites and various public–private charging infrastructure operating models supported infrastructure development. Subsidies reduced the initial cost difference, but further efforts are needed to secure suitable charging sites and ensure systematic planning and management of charging infrastructure development and operations. Experience suggests that vehicle purchase incentives should be complemented by appropriate subsidy allocation criteria and demand-based charging infrastructure development.

Organic waste management

Korea introduced waste charges, separate collection requirements and technical standards to support resource recovery. By 2021, its RFID-based food waste fee system covered approximately 6.52 million households across 167 local governments. Experience with biogas facilities nevertheless showed that reliable waste collection, suitable technology and markets for recovered energy are necessary for viable operations.



To find out more about GGGI,
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