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PROSPECTS FOR THE DEVELOPMENT OF CLIMATE FINANCE AMID GLOBAL CHALLENGES

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Prospects for the Development of Climate Finance Amid Global Challenges

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Highlights:

1. Climate change has transformed from an environmental concern into a systemic macroeconomic and financial stability challenge;
2. Achieving climate targets in emerging and developing economies requires approximately \$2.4 trillion annually by 2030, yet current flows remain far below this level, creating intense competition for limited concessional and private capital;
3. Despite contributing only a small share of global emissions, Central Asia faces disproportionate climate risks, particularly through water scarcity, rising temperatures, and agricultural vulnerability;
4. The current climate-finance architecture remains heavily skewed toward mitigation, while adaptation and resilience — critical for vulnerable regions — remain chronically underfunded;
5. Dependence on externally driven, project-based financing creates structural vulnerabilities and limits the long-term sustainability of climate investment in Central Asia;
6. Private-sector engagement remains the missing pillar of climate finance in Uzbekistan despite its dominant role in the national economy;
7. Integrating ESG standards into financial and corporate decision-making is essential to ensure that climate investments generate both environmental and economic resilience;
8. Improving transparency and accessibility of climate data is critical for engaging businesses, policymakers, and society in climate action.

In recent years, climate and environmental risks have firmly established themselves among the key threats to global stability, exerting an increasingly serious impact on economic performance, security, and social development. The 2015 Paris Agreement sets a strategic objective to keep global warming well below 2°C and pursue efforts to limit it to 1.5°C, requiring substantial reductions in greenhouse gas emissions by the mid-century.[1]

According to the World Meteorological Organization, 2025 ranked among the three warmest years on record, while the average global temperature for the period 2023-2025 reached 1.48°C above the pre-industrial level (1850-1900).[2] One key characteristic of physical climate risks is the highly uneven geographical distribution of warming. In 2025, approximately 91% of the planet's territory experienced above-average temperatures, with nearly half of the Earth's surface facing extremely high temperatures compared to the 1991-2020 baseline.[3] Central Asia was among the regions exhibiting particularly pronounced climate anomalies, where record-high temperatures were recorded (Table 1).

These data indicate that the world is approaching a critical threshold, underscoring growing pressure on countries and financial institutions to mobilize resources for adaptation and risk mitigation. Achieving climate targets in emerging markets and developing economies (excluding China) is estimated to require the mobilization of approximately \$2.4 trillion annually by 2030, including around \$1 trillion in external financing.[4]

According to Mckinsey&Company,[5] in 2019, only about 450 billion US dollars flowed annually to these countries, meaning current volumes cover roughly one-fifth of identified needs. Around 60% of this finance went to the energy transition, 30% to agriculture, food and land use, and just 10% to nature, adaptation and resilience – a pattern that mirrors the global under-financing of adaptation and nature-based solutions. This global gap is directly relevant for Central Asia, where countries must compete for scarce concessional and private resources within an already under-supplied climate-finance landscape.

These climate and environmental risks are particularly acute for Central Asia, where rising temperatures, increased frequency of droughts, and greater variability of river flows amplify pressures on agriculture, hydropower generation, public health, and fiscal balances. For countries such as Uzbekistan, this means that climate impacts are no longer a purely environmental issue but a systemic macroeconomic and financial challenge. Against this backdrop, this paper examines the prospects for developing climate finance in Central Asia – with a focus on Uzbekistan – and explores how climate-related financial flows can evolve from a project-based, externally driven model toward a core instrument of macroeconomic stability and sustainable development.

[1] UNFCCC, n.d. The Paris Agreement. United Nations Framework Convention on Climate Change. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement>

[2] World Meteorological Organization (WMO), 2026. WMO confirms 2025 was one of warmest years on record. Available at: <https://wmo.int/news/media-centre/wmo-confirms-2025-was-one-of-warmest-years-record>

[3] World Meteorological Organization (WMO), 2025. 2025 set to be second or third warmest year on record, continuing exceptionally high warming trend. Available at: <https://wmo.int/news/media-centre/2025-set-be-second-or-third-warmest-year-record-continuing-exceptionally-high-warming-trend>

[4] World Economic Forum, 2025. World Economic Forum unveils roadmap to unlock private climate finance in emerging markets and developing economies. Available at: <https://www.weforum.org/press/2025/11/world-economic-forum-unveils-roadmap-to-unlock-private-climate-finance-in-emerging-markets-and-developing-economies/>

[5] McKinsey & Company, 2023. Solving the climate finance equation for developing countries. <https://www.mckinsey.com/capabilities/sustainability/our-insights/solving-the-climate-finance-equation-for-developing-countries>

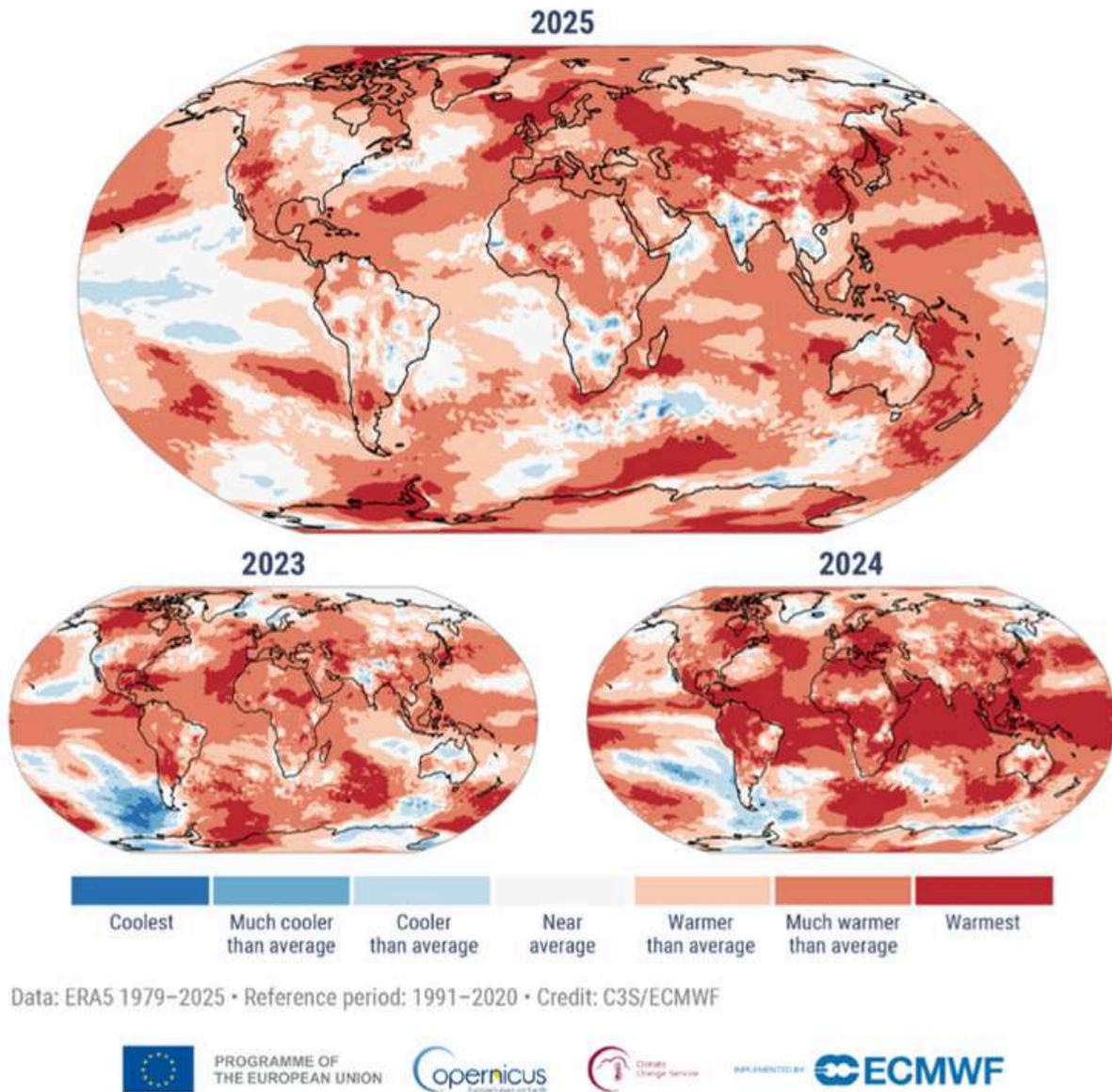


TABLE 1.

The global energy transition: progress and persistent challenges

According to the latest reports of the International Energy Agency, global investment in clean energy reached \$2.2 trillion in 2025 - twice the level of investment in oil, gas, and coal - while renewable sources now account for 30% of global electricity generation.[6] Nevertheless, fossil fuels still supply 70% of global energy demand, underscoring the magnitude of the challenge ahead. Developing countries are playing an increasingly active role in the transition to clean energy. By 2030, two-thirds of new capacity additions are expected to be installed outside advanced economies, reflecting a rapidly evolving global energy landscape.

[6] Williment, C., 2025. IEA report: 2025 clean energy investment to reach US\$2.2tn. Sustainability Magazine. Available at: <https://sustainabilitymag.com/articles/iea-report-2025-clean-energy-investment-to-reach-us-2-2tn>

The year 2025 also marked a period of rising geopolitical tensions and economic difficulties, alongside a weakening of climate commitments by major economies that are actively reshaping global resource geopolitics. The “global race” for critical minerals – essential for the transition to low-carbon technologies and digital infrastructure – has exposed systemic contradictions within the climate transformation process. Efforts to accelerate decarbonization are colliding with the environmental and social risks embedded in resource extraction systems. Large-scale expansion of mining activities leads to water contamination, ecosystem degradation, and reduced access to clean water for local communities, while simultaneously exacerbating social inequality and fueling conflicts. In seeking to secure their own mineral supplies, major economies are relaxing environmental and human rights standards, thereby generating additional geopolitical tensions and highlighting the need to account for the complex environmental, social, and political consequences. According to the Global Atlas of Environmental Justice, more than 900 conflicts related to mineral extraction have been recorded, with approximately 85% involving the use or contamination of rivers, lakes, and groundwater[7].

For climate finance, these dynamics imply that investment decisions in mining and mineral-intensive value chains must increasingly incorporate not only carbon metrics but also water use, local ecosystem impacts, and social conflict risks. Environmental and social factors can translate into higher credit and market risks, stranded assets, and rising risk premia for poorly governed projects. For resource-rich regions like Central Asia, integrating these considerations into project appraisal and eligibility criteria for “green” finance is essential to ensure that low-carbon transitions do not generate new pockets of environmental degradation and financial instability.

Economic growth and environmental degradation: lessons from precedent

Developing economies, amid accelerated economic growth, inevitably face increasing climate and environmental risks. Historical experience shows that rapid economic growth has often been accompanied by environmental degradation – a phenomenon particularly evident in China during its period of intensive industrialization. The relaxation of environmental standards to attract investment typically leads to water pollution and exacerbates social inequality. Cases from Ghana and Peru, where gold and other mineral extraction deprived local populations of access to safe drinking water, demonstrate that poorly regulated mining can undermine ecosystems and create risks to economic and social stability, especially in vulnerable regions.

Although China has been the world's largest annual emitter of carbon dioxide over the past two decades, the United States remains the largest historical emitter of greenhouse gases in total. The policies of the Trump administration across both terms established a consistent course toward withdrawing from international climate commitments. At the same time, the United States has maintained its position as a leading oil producer for seven consecutive years (approximately 22% of global output) and demonstrated unprecedented leadership in diplomacy concerning critical minerals.

[7] The Global Environmental Justice Atlas (EJAtlas) (n.d.) Environment & Society Portal. Available at: <https://www.environmentandsociety.org/mml/global-environmental-justice-atlas-ejatas>

The share of Central Asian countries and Azerbaijan in global greenhouse gas emissions remains modest, at around 1.5%. Within the region, the largest contributions come from Kazakhstan and Uzbekistan (0.73% and 0.32%, respectively), primarily due to the energy sector.[8]

ESG standards and the allocation of climate finance

From the perspective of climate finance, these facts underscore the need to direct investments toward projects that adhere to ESG standards and integrate human rights and environmental protection. ESG (Environmental, Social, and Governance) criteria constitute a comprehensive set of standards for assessing sustainability, environmental responsibility, social impact, and the quality of corporate governance. International experience shows that compliance with these principles is not only ethically justified but also economically efficient. Companies with higher levels of respect for human rights demonstrate greater resilience and long-term profitability. Strengthening the legal framework, conducting independent environmental and social assessments, protecting the rights of indigenous peoples and local communities, and coordinating at the multilateral level are essential conditions for the effective, equitable, and sustainable allocation of climate finance flows.

In practical terms, integrating ESG standards into climate-finance architecture also requires the deployment of specific financial instruments that embed environmental and social objectives into their structure. Globally, sustainability-linked and thematic (use-of-proceeds) bonds and loans are emerging as key tools: in the first case, coupon or interest rates are tied to meeting entity-level sustainability indicators; in the second, proceeds are earmarked for clearly defined environmental or social projects. International guidance under the Green and Sustainability-Linked Bond Principles, as well as emerging standards for nature-related use-of-proceeds, seeks to ensure that these instruments are backed by credible key performance indicators, robust reporting and independent verification, thereby reducing greenwashing risks and strengthening their development impact.[9] For Central Asian issuers – including sovereigns, state-owned enterprises and large corporates in the energy, water and agricultural sectors – these instruments could become important channels for mobilising international capital while locking ESG criteria into financing terms.

Reassessing physical climate risks and macrofinancial stability

The community of central banks and financial regulators promoting greener financial systems notes that official assessments of physical losses from climate change are generally conservative. They underestimate the consequences of extreme events, the cumulative effects of repeated shocks, and nonlinear processes. In addition, models that fail to capture cascading effects on finance, food security, and social stability often undervalue tail risks – rare but highly destructive events such as large-scale droughts or sudden price shocks.

[8] Eurasian Development Bank (2025) Carbon Pricing Policy Opportunities in Central Asia and Azerbaijan. Eurasian Development Bank. Available at: <https://eabr.org/en/analytcs/special-reports/carbon-pricing-policy-opportunities-in-central-asia-and-azerbaijan/>

[9] World Economic Forum, 2025. Finance Solutions for Nature: pathways to Returns and Outcomes. <https://www.weforum.org/publications/finance-solutions-for-nature-pathways-to-returns-and-outcomes/>

International financial institutions and central banks identify several key channels through which climate risks can affect macro-financial stability: rising credit risk as borrowers in climate-exposed sectors struggle to service loans after extreme events, market risk from the repricing of sovereign and corporate securities exposed to climate shocks, and liquidity risk when disasters trigger sudden demands for cash and collateral. In emerging and developing economies, these dynamics can also translate into higher non-performing loans, increased contingent liabilities related to state-owned enterprises in the energy and water sectors, and greater fiscal pressures from emergency spending and reconstruction. For Central Asian countries, where agriculture, water-intensive industries, and climate-sensitive infrastructure are central to growth, these channels underscore the need to view climate finance as an instrument of financial-stability and debt-management policy, not only environmental policy.

If actual risks exceed those officially accounted for, investments must target not only emission reductions but also the strengthening of macrofinancial resilience and adaptation systems, ensuring that economies are protected from already inevitable and potentially catastrophic climate impacts. Hence, climate finance should not be viewed as “aid” or merely an element of “green policy,” but rather as one of the key pillars of macroeconomic stability.

Climate finance flows to Central Asia: structural vulnerabilities

Climate finance flows to Central Asia are primarily formed through multilateral development banks and international climate funds. Unlike other regions of the world, these flows are predominantly directed toward developing renewable energy capacity, modernizing water management infrastructure, and promoting climate-resilient agriculture. However, the predominance of foreign-currency lending from multilateral development banks creates a structural vulnerability. Climate finance remains project-based, externally oriented, and disproportionate to the scale of both physical and transition climate risks. Globally, over 90% of climate finance is allocated to climate mitigation, while adaptation receives a significantly smaller share. In Uzbekistan, by 2030, funding for mitigation measures is expected to reach approximately \$14.3 billion, compared to around \$4.3 billion for adaptation. [10] While investments in emission reductions are crucial for the country's future economic development and compliance with international commitments, the current allocation of funds insufficiently accounts for the country's vulnerability to climate risks. Consequently, adaptation measures remain underfunded despite their rapid socio-economic impact.

Underutilized potential of the private sector in Uzbekistan

Despite substantial efforts to combat climate change – primarily financed through international resources and government support – the broader potential of the country's private sector remains underutilized both in resource mobilization and in the implementation of climate actions. The contribution of small businesses to Uzbekistan's GDP in 2025 amounted to UZS 923.5 trillion, equivalent to 52.2% of GDP.

[10] World Bank (2024) Uzbekistan Climate Adaptation and Resilience Assessment. Washington, DC: World Bank. Available at: https://documents1.worldbank.org/curated/en/099062724091034716/pdf/P1771081c619b30dd1a3041e470410c0239.pdf?_gl=1*1q40h*_gcl_au*OTQ3NDA3MjYwLjE3MjM3NDY0ODQ.

However, despite this significant role, the sector is only marginally involved in implementing climate and environmental initiatives and practically does not integrate climate considerations into its business models and strategic planning. Consequently, private-sector participation is not systemic, which limits the scalability, resilience, and long-term effectiveness of climate mitigation measures. Without deeper integration of the private sector, climate initiatives risk remaining dependent on external financing sources and vulnerable to changes in international capital flows.

According to regional reports by the international auditing firm PwC, Uzbek companies are less informed about ESG aspects compared to their counterparts in Kazakhstan, Azerbaijan, and Mongolia (Table 2). Most respondents in Uzbekistan acknowledge that the main obstacles to implementing ESG initiatives are a lack of knowledge and competencies. Moreover, approximately 42% of companies in Uzbekistan have taken no organizational measures to reduce climate risks, with potentially higher figures among small and medium-sized enterprises (SMEs).[11]



TABLE 2.

[11] OECD (2023) Insights on the Business Climate in Uzbekistan. Paris: OECD Publishing. Available at: <https://eu-cai.org/wp-content/uploads/2023/05/BCA-UZB-EN.pdf>

International experience suggests that scaling private-sector participation in climate action requires a combination of external and domestic measures. On the external side, reforms of multilateral development banks and development finance institutions, alongside expanded use of blended-finance instruments with higher leverage ratios (such as guarantees, insurance and subordinated capital), can significantly increase the volume of private investment mobilised per unit of concessional finance. On the domestic side, key levers include improving the investment climate and regulatory predictability, deepening local financial markets and risk-assessment capabilities, phasing out environmentally harmful subsidies, and strengthening tax collection to create additional fiscal space for climate-related spending. For Uzbekistan, operationalising these levers would mean pairing ongoing fiscal and regulatory reforms with targeted efforts to develop green financial products in the banking sector, build analytical capacity for project appraisal, and gradually reorient part of the fiscal space gained from subsidy reform into climate and environmental programmes.

In addition, around one-third of companies in Uzbekistan believe that their operations are already exposed to increasing ESG risks. More than 50% of respondents indicated that climate change could physically affect company assets, disrupt supply chains, or significantly impact profits due to transition risks.[12]

It is also worth noting that, in practice, environmental requirements are primarily applied to large industrial enterprises, while SMEs largely remain outside the climate and environmental agenda. Furthermore, government environmental inspections tend to focus on high-emission companies, as authorities lack sufficient resources to monitor a large number of smaller entities. This highlights the low level of environmental awareness in the business community in the region. The private sector as a whole lacks sustainable incentives to integrate climate and environmental considerations into its operations. Ignoring climate aspects in decision-making leaves the private sector largely reactive rather than proactive. As a result, climate investments do not scale organically, innovation and efficiency gains remain localized, and the economy lacks endogenous dynamics in climate finance.

Priority areas for improving climate finance mobilization

Based on the points outlined above, several priority areas should be prioritized to improve the effectiveness of finance mobilization. Firstly, strengthening institutional capacity and enhancing professional expertise. The region needs to establish specialized national and regional teams responsible for the preparation and support of climate finance projects. Experience shows that having permanent experts who can work with various funds significantly increases the chances of successful grant approval. To achieve this, it is advisable to provide training for government and municipal officials, as well as representatives of research institutes and the private sector, on standards for preparing investment-ready proposals and financial management. Regional joint projects spanning multiple countries may be particularly attractive to international donors.

[12] World Bank & Ministry of Economic Development and Poverty Reduction of the Republic of Uzbekistan (2022) Towards a Greener Economy in Uzbekistan: <https://openknowledge.worldbank.org/entities/publication/7046a76c-f533-5846-83e4-7dde22f2ad03>

Global assessments of nature and climate finance emphasise that project-preparation support and pipeline development are among the main bottlenecks for scaling investment. [13] Dedicated national and regional platforms that help standardise data, structure transactions and prepare investment-ready projects are therefore critical complements to training programmes for officials, researchers and private-sector actors.

Secondly, optimizing national procedures and the regulatory framework. To accelerate access to international funds, it is important to simplify bureaucratic procedures, align national regulations with fund requirements, and improve digital infrastructure. Establishing transparent monitoring and reporting systems will enhance donor confidence and enable more effective project management. In parallel, aligning national taxonomies, disclosure rules and reporting requirements with emerging international standards on climate- and nature-related risks can reduce transaction costs for investors and facilitate the use of instruments such as green bonds, sustainability-linked loans and environmental-credit schemes.

Thirdly, expanding the role of the domestic private sector and promoting “green” practices. Given the currently limited involvement of the private sector in public-private partnerships in renewable energy and blended-financing “green” projects, countries in the region should actively increase business participation – not only in financing climate initiatives but also in integrating environmental standards and sustainable development principles into everyday practices.

Fourthly, introducing “green” support mechanisms through the tourism sector. Considering that the current hotel tax does not include mechanisms to support environmental initiatives or offset carbon footprints, and remains below the level of similar levies in other countries, it is advisable to consider the introduction of a new levy for international tourists, with voluntary payment options for citizens of Central Asian countries and Afghanistan. The levy could be designated as the “Green Step” and directed toward the creation of a “Carbon Offset Fund.” The choice of name aims to give tourists a sense of personal contribution and encourage voluntary payment, perceived as a contribution to sustainable development rather than an additional financial burden. Given that tourists from developed countries (EU, China, etc.) demonstrate high environmental responsibility, this initiative appears timely and poses minimal risk of reducing tourist flows. Implementing this measure would simultaneously generate financial resources for climate initiatives and enhance the country's image as a sustainable and environmentally responsible tourist destination.

Similar ecological fiscal instruments are increasingly discussed in the global debate on nature finance as a means to correct the underpricing of ecosystem services and channel resources into conservation and restoration. The proposed “Green Step” levy would thus align Uzbekistan and Central Asia with broader efforts under the Kunming–Montreal Global Biodiversity Framework to mobilise additional domestic and international finance for biodiversity, while also enhancing the region's positioning as a sustainable tourism destination.

[13] World Economic Forum, 2025. Finance Solutions for Nature: pathways to Returns and Outcomes. <https://www.weforum.org/publications/finance-solutions-for-nature-pathways-to-returns-and-outcomes/>

Fifthly, improving transparency and developing climate information infrastructure. In Central Asia, research and reports on climate and environmental issues are either limited or, when available, presented in an overly technical and institutionally focused language, which is difficult for the public, businesses, and regional authorities to understand. Therefore, it is advisable to revise approaches to producing and disseminating expert materials and analytical assessments in the field of climate and environment.

This should involve translating analytical and scientific materials into accessible formats for non-specialist audiences while preserving their substantive rigor and depth, preparing concise decision-oriented analytical briefs that directly inform policy formulation and implementation, motivating expert and consulting organizations to provide clear public interpretations of climate-related data and risk assessments, and systematically leveraging national media and digital platforms to shape a practical, comprehensible climate agenda and strengthen public awareness of climate risks and sustainable development pathways.



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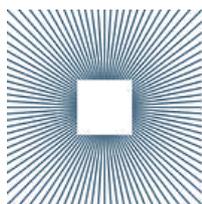
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