

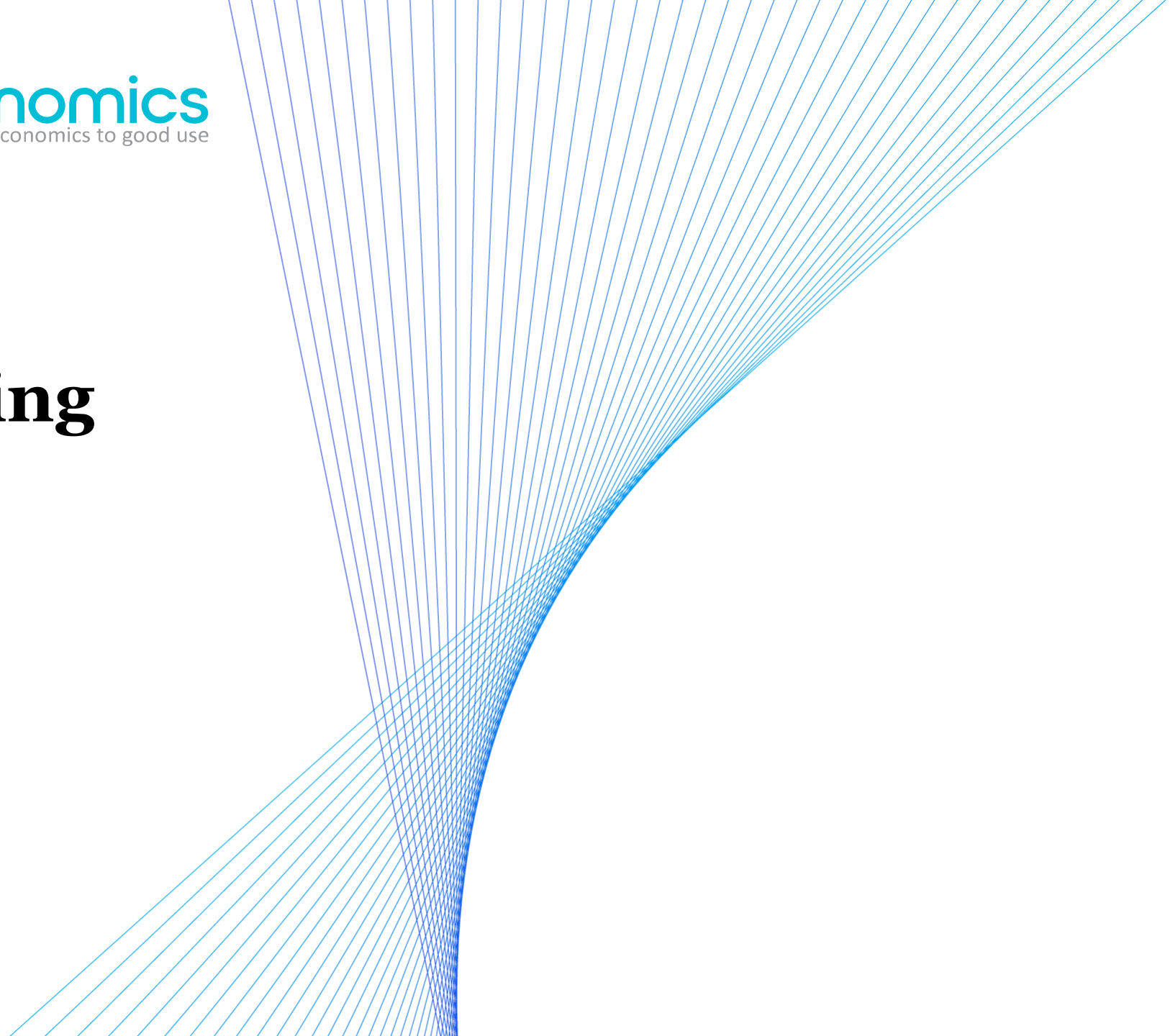
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putting economics to good use

Net Zero Financing Roadmaps

9 March 2023

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Discussion

The Net Zero Financing Roadmaps sought to translate investment needs into a scenario of financial instruments and actor

Efforts to mobilise climate investment have fallen short, despite substantial government policy commitments

While there are numerous estimates of the overall scale of investment needed to achieve climate goals, **previous approaches have not translated big picture investment needs into a clear picture of who could do what**

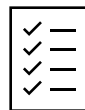
In the leadup to COP26, **this analysis aimed to bridge that gap**



Assess and downscale **amount of capital deployment needed in the energy and AFOLU sectors** to reach net zero emissions, comparing the current state to what is needed by 2050¹



Identify **specific actors and instruments to fulfill financing needs**, matching most appropriate public/private investors and asset classes to specific decarbonization investment opportunities based on their risk-return appetites, to facilitate investment decisions



Address how to overcome barriers to investment and fill financing gaps, identifying specific actions from both private and public actors in order to **support the mobilization of the required investments**

1. IEA Net Zero by 2050 investment data + bespoke downscaling, Food and Land Use Alliance NBS data

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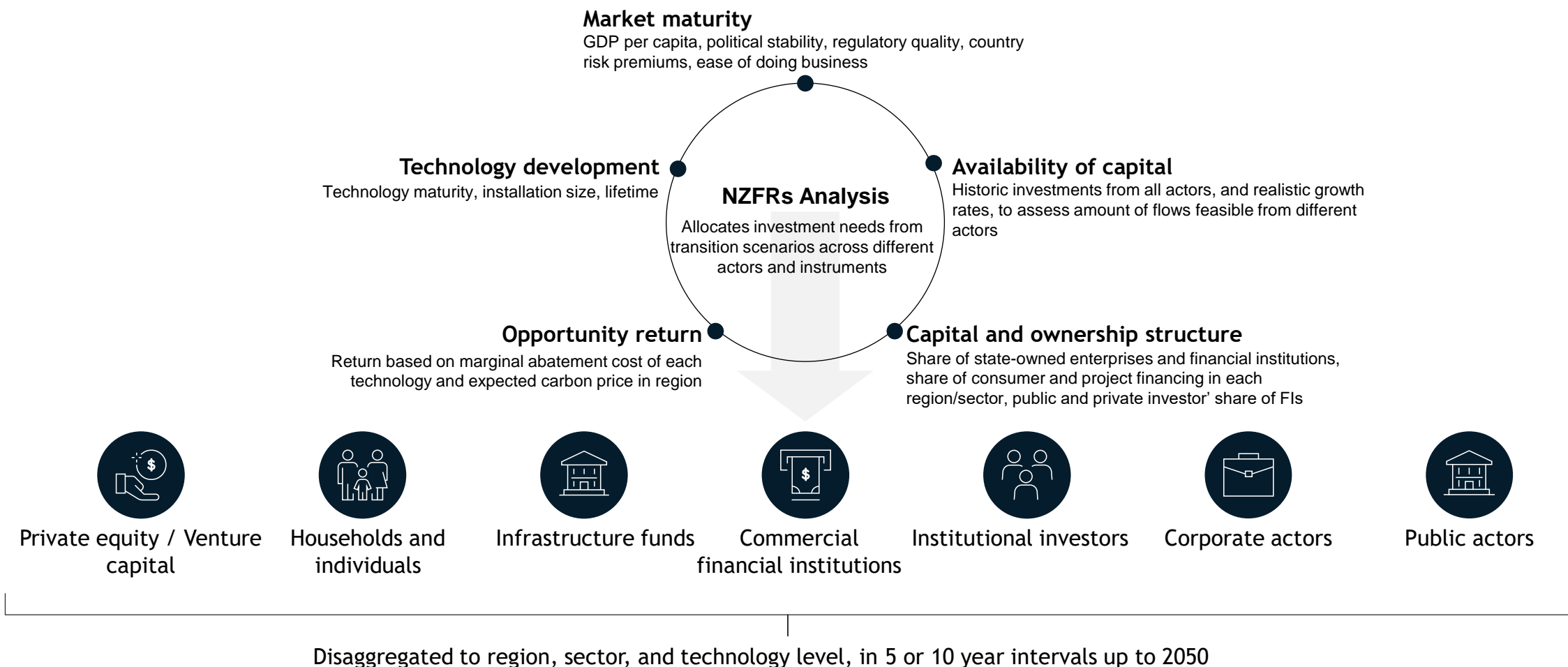
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The analysis sought to match investment needs at the region x sector level to the instrument and actor mix that could deliver this

The Net Zero Financing Roadmaps identify actors that could provide the direct capital investment needed across decarbonization opportunities to achieve net zero by 2050, and also identify the investible universe for crucial secondary and intermediary investment actors



GFANZ's Net Zero Financing Roadmaps online dashboard highlights net zero investment opportunities for financial actors

Accessible at <http://gfanzero.com/netzerofinancing>



Investment needs allocated to financing actors and instruments under the IEA's 1.5C scenario

900+ investment opportunities across sectors, regions, and sub-regions that can be **interactively explored**



17 granular roadmaps providing insight into prioritized **technology-region** opportunities and **analysis on financing instruments and required policy support**

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Private finance could drive 70% of the USD 2.6 trillion in investment needed every year to 2025

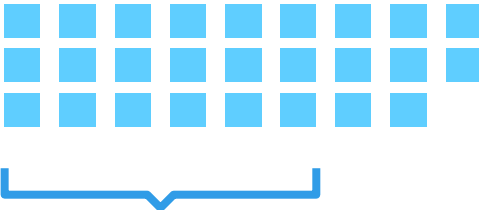
Recent annual investment
2016-2020

\$900 billion



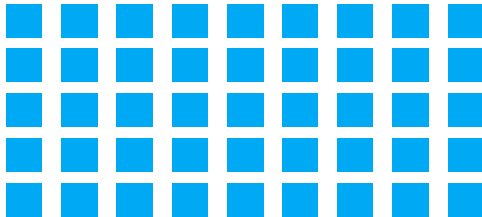
Annual investment needed now
2021-2025

\$2,600 billion



Average annual investment
beyond 2025
2026-2050

\$4,500 billion



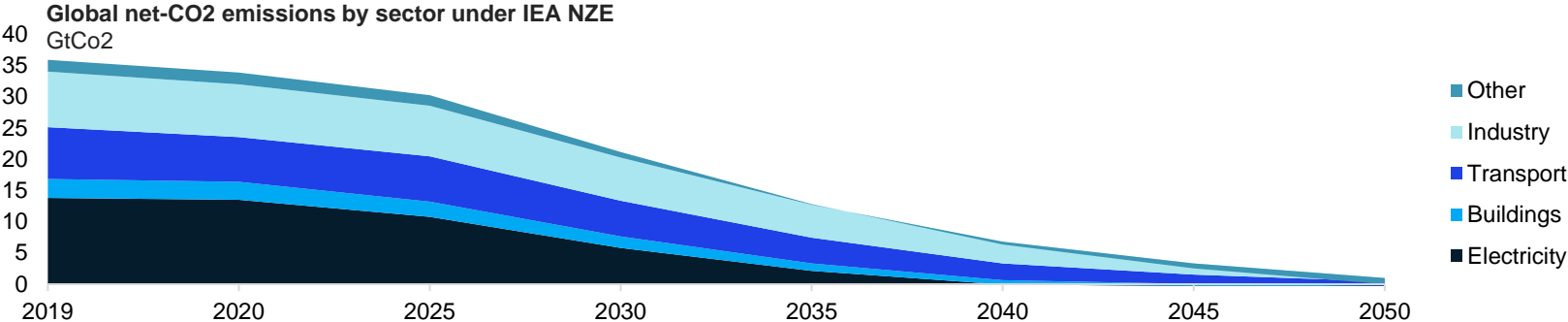
The private sector could provide 70% of this investment globally, ranging from 50% to 95% across regions with different levels of market maturity

Increased and well-targeted public support will be needed to support increased private ambition, including policy, regulation, market building, direct investment and blended finance

This analysis takes into account project changes in technology costs projected improvements in financial market conditions and underlying enabling environments across different investment geographies. The 70% assessment of private sector investment potential includes an assessment of scaled-up public support through blended finance to enable private investment into currently challenging markets and/or technologies. Without this additional public blended finance support, the private sector may only be able to support 65% of total investment opportunities.

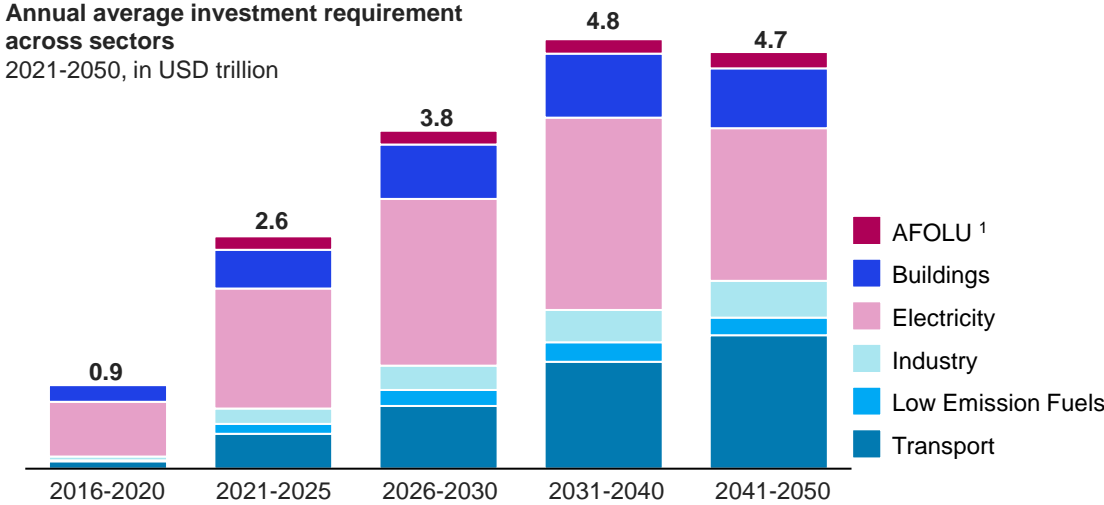
A net zero transition calls for a transformation of the global economy, affecting the whole financial ecosystem

Ambitious emissions reductions under a 1.5°C net zero scenario requires the decarbonization of virtually all sectors by 2050

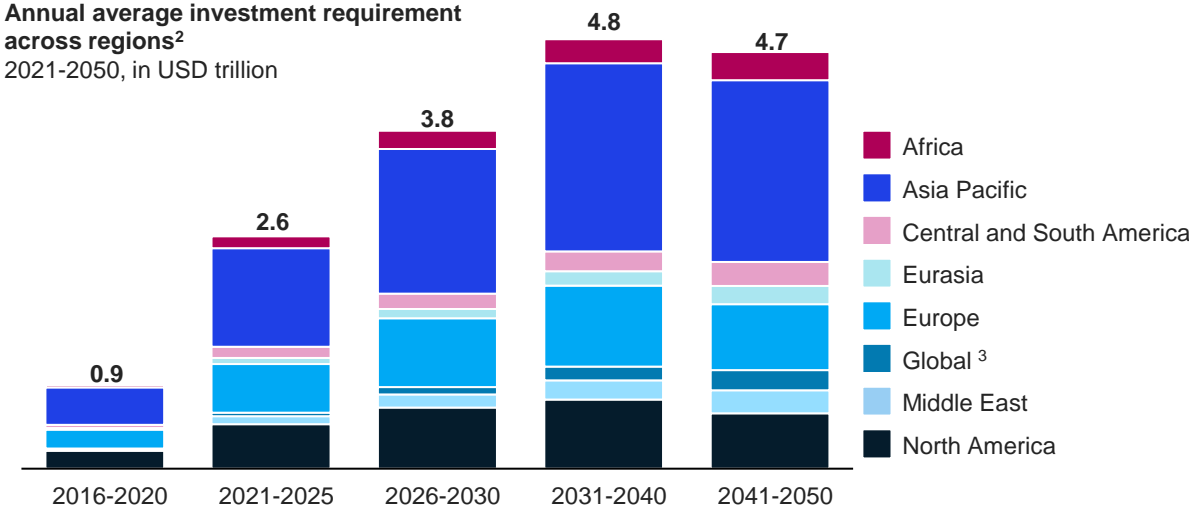


This will require over \$125 trillion in low carbon investments by 2050, channeled through public and private investors

Annual average investment requirement across sectors
2021-2050, in USD trillion



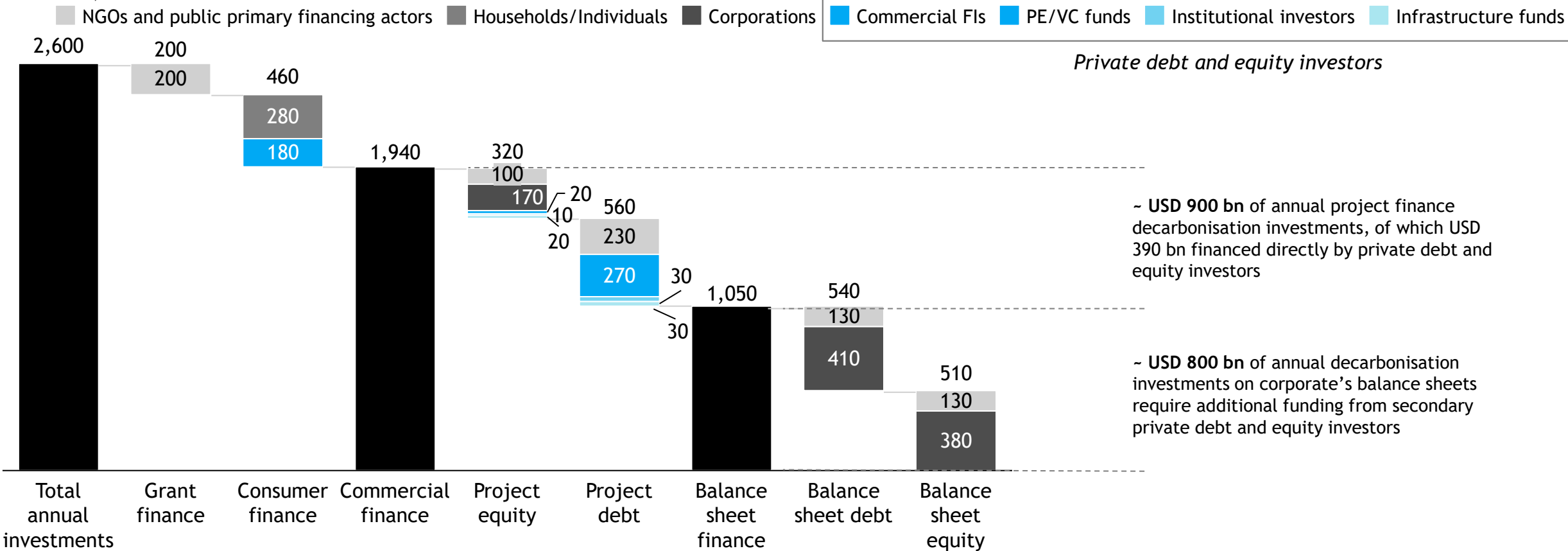
Annual average investment requirement across regions²
2021-2050, in USD trillion



Private investors could directly finance \$390 billion, and more indirectly

Private investors directly finance investments, but they also participate as secondary investors, providing up to \$800 billion of corporate balance sheet investments





Annual investment requirement
2021-2025, in USD billion



And were aggregated across four archetypes of decarbonization investment, which face different barriers to investment

The NZFRs tool includes 17 detailed opportunity roadmaps

The analysis identifies different types of investment and different enabling actions across four archetypes of decarbonization investment, each of which face different barriers to scaling up investment

	Annual investment USD billion, 2021-25	Opportunity roadmap examples	Key enabling actions
 <p>Early technology bets with high but highly uncertain potential returns, requiring enabling policy frameworks</p>	200	Alternative protein in APAC Green hydrogen globally Green steel in China Green chemicals in China	Reducing technology risk by publicly funding RD&D and commercialization Incentivizing demand Investing in supporting infrastructure and establishing taxonomies
 <p>Maturing technologies in emerging regions with large market potential but accompanying market risk</p>	1,600	Solar PV in Africa Electricity networks in Central and South America Off grid power in Africa	Managing market risks through public support and blended finance Improving market information & assessments
 <p>Market creation opportunities to ensure market development and adequate investment incentives</p>	400	Biomethane globally Buildings retrofits and efficiency in Eurasia Buildings retrofits and efficiency in Middle East Forestry, peatland and mangrove restoration in Central and South America	Building new markets by establishing frameworks and providing incentives Promoting market access for new entrants
 <p>Established investment opportunities with attractive investment profiles to be unlocked through addressing non-financial barriers</p>	400	Wind energy in North America Wind energy in Europe Solar PV in Middle East EV chargers in Europe EV chargers in North America Electricity storage globally	Policy and regulatory action and reform to support technologies and associated markets Addressing non-financial barriers to investment and technology uptake, inc. network effects, grid integration, etc

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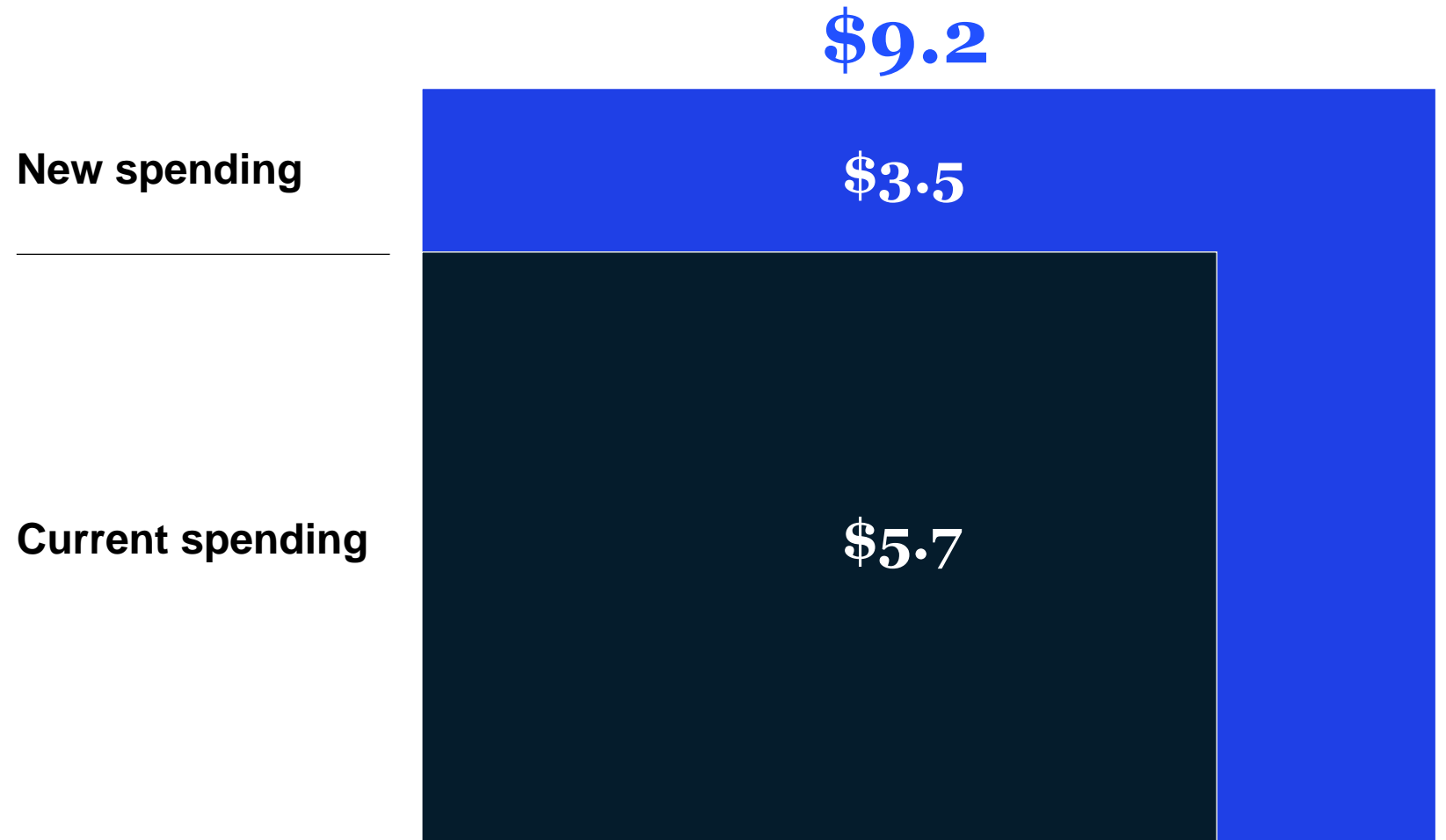
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We are updating a MGI 2022 Net Zero report to answer the question: *'Who pays for the transition?'*

The report will be published this summer and also analyse the sustainability-inclusion interlinkages

Annual spend on physical assets for energy and land-use systems under a NGFS Net Zero 2050 scenario, average 2021-2050, \$ trillion

Out of the total spending, low-emissions assets spend would grow from 35% today to 70% in 2050



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Catalytic climate finance could help a shift to a NZ pathway

Blending is one approach to catalytic finance

1.

Project-Based Financing

Finance or project support to enable climate investments
e.g. wind plant, climate-resilient roads
2.

Financial Sector Reform

Financial sector regulations that catalyze green investment
e.g. regulations for green bonds, climate risks in portfolio assessments
3.

Fiscal Policy

Setting taxes and adjusting spending priorities to support climate action
e.g. green taxes/improved subsidy targeting, green procurement
4.

Sector Policies

Regulatory standards or information provision policies
e.g. energy efficiency standards, building codes
5.

Trade Policy

Trade policies to encourage exchange of LCCR products
e.g. carbon border tax adjustment, trade liberalization for LCCR products
6.

Innovation and Tech Transfer

Development of new, more effective and cheaper green technologies
e.g. demonstration plants, R&D, SME support, early/discounted financing
7.

Carbon Markets

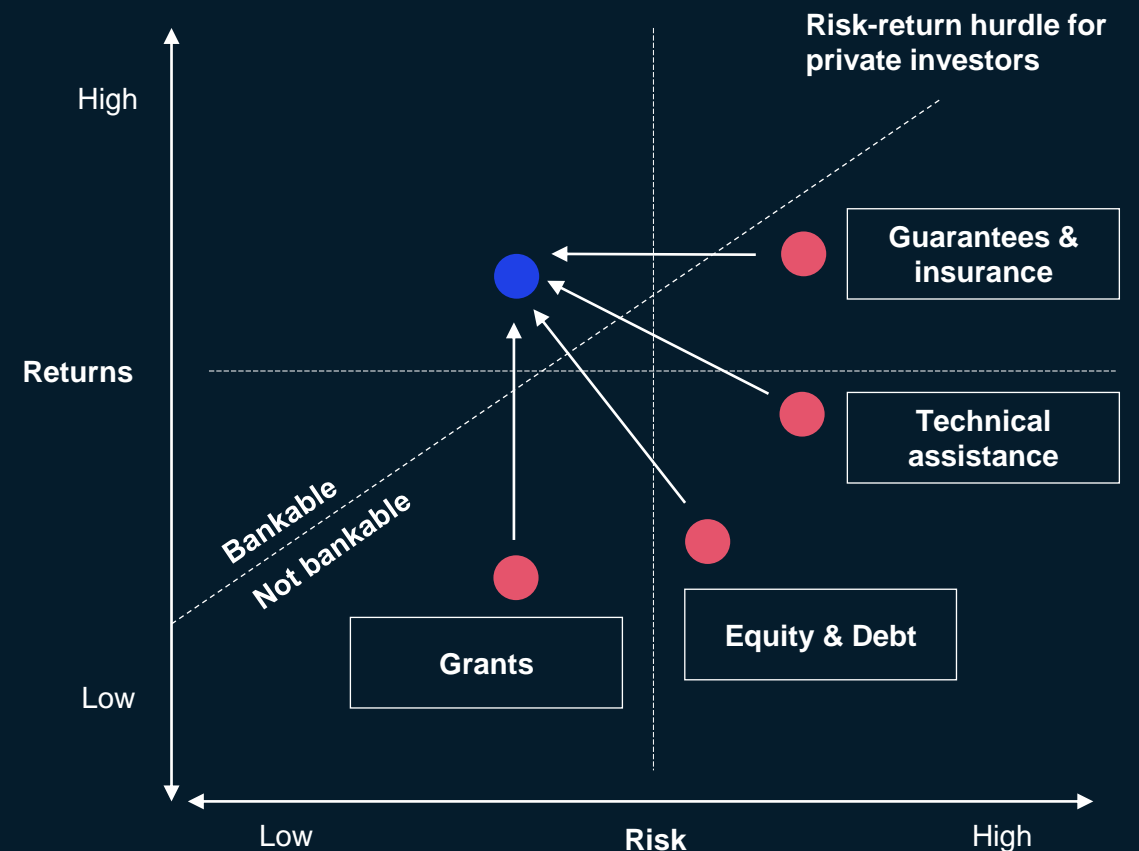
System to define and trade mitigation outcomes for cost efficient mitigation
e.g. emission trading systems, baseline and crediting mechanisms
8.

Climate Intelligence and Data

Knowledge and planning tools to support policy and investment decisions
e.g. 2050 low-carbon resilience trajectories, NDC implementation plans

Blended finance can boost return profiles or de-risk projects to move them to bankability

Illustrative example



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