Net Zero Financing
Roadmaps

9 March 2023
Agenda

1. Introduction
2. Methodology & Outputs
3. Key Findings
4. Updated analysis
5. 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 the 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 2050

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
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

Disaggregated to region, sector, and technology level, in 5 or 10 year intervals up to 2050
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

<table>
<thead>
<tr>
<th>Recent annual investment 2016-2020</th>
<th>Annual investment needed now 2021-2025</th>
<th>Average annual investment beyond 2025 2026-2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>$900 billion</td>
<td>$2,600 billion</td>
<td>$4,500 billion</td>
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</table>

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
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

<table>
<thead>
<tr>
<th>2021-2025, in USD billion</th>
<th>NGOs and public primary financing actors</th>
<th>Households/Individuals</th>
<th>Corporations</th>
<th>Commercial FIs</th>
<th>PE/VC funds</th>
<th>Institutional investors</th>
<th>Infrastructure funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total annual investments</td>
<td>2,600</td>
<td>200</td>
<td>460</td>
<td>1,940</td>
<td>320</td>
<td>100</td>
<td>170</td>
</tr>
<tr>
<td>Grant finance</td>
<td>200</td>
<td>280</td>
<td>180</td>
<td>320</td>
<td>100</td>
<td>230</td>
<td>20</td>
</tr>
<tr>
<td>Consumer finance</td>
<td>200</td>
<td>100</td>
<td>30</td>
<td>560</td>
<td>20</td>
<td>70</td>
<td>20</td>
</tr>
<tr>
<td>Commercial finance</td>
<td>180</td>
<td>100</td>
<td>30</td>
<td>540</td>
<td>20</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>Project equity</td>
<td>170</td>
<td>20</td>
<td>30</td>
<td>510</td>
<td>20</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Project debt</td>
<td>270</td>
<td>30</td>
<td>30</td>
<td>510</td>
<td>20</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Balance sheet equity</td>
<td>410</td>
<td>20</td>
<td>30</td>
<td>510</td>
<td>20</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Balance sheet finance</td>
<td>1,050</td>
<td>30</td>
<td>30</td>
<td>510</td>
<td>20</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Balance sheet debt</td>
<td>540</td>
<td>130</td>
<td>10</td>
<td>510</td>
<td>20</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>

- **USD 900 bn** of annual project finance decarbonisation investments, of which USD 390 bn financed directly by private debt and equity investors

- **USD 800 bn** of annual decarbonisation investments on corporate’s balance sheets require additional funding from secondary private debt and equity investors
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

<table>
<thead>
<tr>
<th>Annual investment</th>
<th>Opportunity roadmap examples</th>
<th>Key enabling actions</th>
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<tbody>
<tr>
<td>USD billion, 2021-25</td>
<td></td>
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### Early technology bets
with high but highly uncertain potential returns, requiring enabling policy frameworks

- Alternative protein in APAC
- Green hydrogen globally
- Green steel in China
- Green chemicals in China

#### Key enabling actions
- Reducing technology risk by publicly funding RD&D and commercialization
- Incentivizing demand
- Investing in supporting infrastructure and establishing taxonomies

- **200**

### Maturing technologies in emerging regions
with large market potential but accompanying market risk

- Solar PV in Africa
- Electricity networks in Central and South America
- Off grid power in Africa

#### Key enabling actions
- Managing market risks through public support and blended finance
- Improving market information & assessments

- **1,600**

### Market creation opportunities
to ensure market development and adequate investment incentives

- Biomethane globally
- Buildings retrofits and efficiency in Eurasia
- Buildings retrofits and efficiency in in Middle East
- Forestry, peatland and mangrove restoration in Central and South America

#### Key enabling actions
- Building new markets by establishing frameworks and providing incentives
- Promoting market access for new entrants

- **400**

### Established investment opportunities
with attractive investment profiles to be unlocked through addressing non-financial barriers

- 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

#### Key enabling actions
- 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

- **400**

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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.
Catalytic climate finance could help a shift to a NZ pathway

Blending is one approach to catalytic finance

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

Illustrative example


Source: McKinsey analysis for MAS and COP27 events