Driving Sustainable Development Through Better Infrastructure

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In collaboration with the New Climate Economy Consortium, Grantham Research Institute (LSE) and McKinsey.
The Current Focus on Sustainable Infrastructure

- G20 Growth Agenda
- SDGs and Addis Ababa Action Agenda
- Road to and from Paris
A commitment to better infrastructure can dramatically improve global outcomes for climate and development

<table>
<thead>
<tr>
<th>From business as usual outcomes</th>
<th>To better infrastructure outcomes</th>
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<tbody>
<tr>
<td><strong>Inadequate investments</strong> in sustainable infrastructure in most countries constraining growth and development</td>
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<tr>
<td><strong>Inadequate provision of affordable infrastructure</strong> for the poor, creating the risk of serious reversals in the fight for development and poverty reduction</td>
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<tr>
<td><strong>High proportion of high-carbon infrastructure investments</strong> and inefficient use of infrastructure, creating danger of lock-in and irreversible climate change</td>
<td><strong>Scaled investment</strong> in sustainable infrastructure globally, leading to improved economic development and growth</td>
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<td><strong>Increased infrastructure access and affordability</strong> for the poor, leading to improved development outcomes</td>
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<td><strong>Increased preference for investments in low-carbon infrastructure</strong>, mitigating climate change risks and increasing probability of a 2 degree scenario</td>
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<td><strong>Low resilience</strong> infrastructure, creating vulnerability to risks of climate change (especially among the poor)</td>
<td><strong>More resilient infrastructure</strong> that accounts for climate risks and protects populations most vulnerable to climate change</td>
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</table>
Drivers of Projected Infrastructure Demand

Past neglect and aging of infrastructure in Advanced Economies
- Large rehabilitation needs
- Opportunity for improving footprint

Structural change in the global economy
- Higher weight of EMDEV Economies
- Higher growth in EMDEV Economies

Structural drivers in EMDEV Economies
- Access deficits
- Constraints to growth and competitiveness
- Rising incomes and growth of the middle class
- Structural change and network externalities
- Urbanization
- Regional and sub-regional connectivity
- Sharper focus on sustainability and resilience
Infrastructure Investment Projections
Annual, USD billions, constant 2015

Note: Projections are the mid point values between upper and lower estimates.
Reduced electricity transmission and distribution
Reduced capex from more compact cities
Infrastructure demand in low carbon scenario
Additional energy efficiency
Additional low-carbon tech for power generation
Reduced fossil fuel capex
Reduced electricity transmission and distribution
Reduced capex from more compact cities
Infrastructure demand in low carbon scenario

Source: Global Commission on the Economy and Climate
Infrastructure demand by infrastructure class (2015-2030)
USD trillions, constant 2010

<table>
<thead>
<tr>
<th>Infrastructure Class</th>
<th>Share of Demand</th>
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<tbody>
<tr>
<td>Transport</td>
<td>27</td>
</tr>
<tr>
<td>Power</td>
<td>40</td>
</tr>
<tr>
<td>Telecom</td>
<td>7</td>
</tr>
<tr>
<td>Water</td>
<td>19</td>
</tr>
</tbody>
</table>

Source: Global Commission on the Economy and Climate
Projected global infrastructure gap, 2015-2030
USD trillions, constant 2010 dollars

Conservative investment growth scenario

Projected investment: 42
Demand: 93
+$51T

Aggressive investment growth scenario

Projected investment: 54
Demand: 93
+$39T

Assuming all investment (including China) grows at a rate of 1.81% p.a., which is the rate of growth seen globally if China’s growth rate is excluded.

Assuming investment growth continues at 4.28%, which is the historic growth rate. This implies that China continues to increase investment at the historic rate of 13% per year.

SOURCE: Global Commission on the Economy and Climate; McKinsey Infrastructure Practice deal database
Infrastructure demand, 2015-2030
USD trillions, constant 2010

By country class

By infrastructure class

1 Extrapolated from historical spending and assuming a continuation of real investment growth (assumes China maintains current investment but does not continue growth in investment at current rate)
Note: For infrastructure demand by country class numbers appear to only add to a gap of $50 trillion instead of $51 trillion due to rounding

Source: McKinsey & Company Analysis
Impediments to Sustainable Infrastructure: A Vicious Cycle

Policy and Institutional Gaps
- Investment planning and prioritization
- Subnational and municipal institutional capacity and finance
- Investment climate (including legal framework and regulatory risk)
- Project preparation and project pipelines
- PPP design and implementation
- Fiscal space, debt sustainability and management of contingent liabilities

Sustainability Gaps
- Fossil fuel subsidies and absence of carbon pricing
- No sustainability criteria in investment strategies
- Addressing climate risk in financial regulation
- Sustainable Procurement

Project Development Gaps
- Intrinsic constraints and risk characteristics of infrastructure
- Lack of effective and contestable project developer capacity

Financing Gaps
- Sovereign, sub-sovereign and project risk ratings
- Lack of risk mitigation instruments over the project cycle
- Regulatory constraints on banks and institutional investors
- Lack of well-established investment vehicles and structures

Higher Project Costs

Higher Sustainability Costs

Higher Financing Costs
Gaps in Financing Framework

Despite exceptionally low global interest rates, financing costs for sustainable infrastructure in emerging markets and developing countries remain relatively high.

Lack of access to and costs of long-term financing undermines affordability and sustainability of infrastructure:

- Perceived and real risks at the level of sovereign, sub-sovereign and project levels
- Need to mobilize financing and manage risks over the project cycle
- Need to address viability and sustainability gaps
- High potential to mobilize financing from institutional investors
- Biggest constraint is in early stages of project development
Financing sources for sustainable infrastructure

Inputs
- Sector reform
- PPP reform

Plann-ing
- PPP pipeline development
- Feasibility
- Design
- Project structur-ing
- Procur-ement
- Construc-tion
- Operation

Government financing
- ODA grants
- MDB grants

Common financing mechanisms

MDB equity
Private sector equity

Less available financing

Private sector debt
MDB debt
Assets under management
USD trillions, constant 2010

Incremental annual spend from private and institutional investors
USD trillions

- Natural growth in AUM: 0.55
- Current investors meeting target allocations: 0.12
- Current investors meeting "reach" allocation: 0.30
- New investors entering market: 0.2
- Private sector incremental investment: 1-1.5

Annual investment gap ~$3 trillion

1 Weighted average target allocation = 5.96% across investor groups
2 "Reach" allocation define as 8% weighted average across investor groups
3 Assumes 60% of non-infrastructure investors begin investing at level comparable to peer current allocations

Source: Preqin Ltd. 2015. Preqin Global Database.
Foreign direct investment in greenfield infrastructure, 2005-2014

Percentages

Source
Europe 47%
North America 19%
Latin America & Caribbean 3%
Asia Pacific 23%
Middle East/ Africa 8%

Destination
Europe 25%
North America 9%
Latin America & Caribbean 14%
Asia Pacific 29%
Middle East/ Africa 22%

Flows to own region

Source: McKinsey & Company Analysis
**Value of infrastructure shifted to energy efficient by using development capital to finance sustainability premiums**
Cumulative shift, 2015-2030

<table>
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<tr>
<th>Capital deployed for upfront sustainability capex</th>
<th>Value of infrastructure shifted to be energy efficient&lt;sup&gt;1&lt;/sup&gt;</th>
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<tbody>
<tr>
<td><strong>Annual</strong></td>
<td><strong>15 year</strong></td>
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<tr>
<td>$5 billion</td>
<td>$75 billion</td>
</tr>
<tr>
<td>$10 billion</td>
<td>$150 billion</td>
</tr>
<tr>
<td>$15 billion</td>
<td>$225 billion</td>
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<tr>
<td>$20 billion</td>
<td>$300 billion</td>
</tr>
</tbody>
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1 Sustainability premium calculated based on the highest average upfront construction cost required for LEED platinum certification which is 8.5%

**Source:** McKinsey & Company Analysis
Challenges for Old and New Multilateral Finance Institutions

- Address project development costs and risks
- Direct and catalytic provision of finance—implications for scale
- Need for improved risk mitigation instruments
- Sharper focus on sustainability and climate risk
- Cost effective project preparation and lending procedures
- Effective and legitimate governance
Achieving better infrastructure outcomes require concerted actions

<table>
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<th>Areas</th>
<th>Actions</th>
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<tr>
<td>Financing costs</td>
<td>Transform low interest rates into low financing costs through effective de-risking and blending private financing with concessional finance</td>
</tr>
<tr>
<td>Subsidies and carbon pricing</td>
<td>Eliminate fossil fuel subsidies and establish carbon price corridor to incentivize sustainable infrastructure and augment resources¹</td>
</tr>
<tr>
<td>Planning</td>
<td>Strengthen planning and preparation capabilities based on revamped national commitments and international support, improved governance, and incorporation of sustainability criteria</td>
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</table>
| Financing mechanisms         | Transform financing architecture to improve scale, affordability, and sustainability  
                                 | • Leverage MDBs to mobilize much larger sums of private capital commensurate with affordability  
                                 | • Ensure sufficient ODA to promote affordability and sustainability, especially in poor countries  
                                 | • Deploy targeted climate finance to tilt incentives and enable climate actions |
| Financial regulations        | Address regulatory constraints on long-term financing and take further steps to encourage low carbon investments, including through the use of voluntary codes and standards² |
| Environmental standards      | Strengthen environmental regulations and standards to push for low carbon trajectories and other co-benefits³ |
| Technology                   | Promote new mechanisms and financing for technology innovation and diffusion |

¹ This will take time so a key challenge is how to influence investment choice towards low carbon infrastructure and efficiency of use in the meantime.  
² Examples include market developed standards for green bonds and codes of good practices by sovereign wealth funds.  
³ A good example is the Clean Air Act in the U.S. which has been used to lower emissions including carbon emissions.
Proposed annual incremental financing from different source to close infrastructure gap
USD trillions, constant 2010

Current investment  Gov’ts and NDBs  Private sector  MDBs\(^1\)  ODA\(^2\)  Demand\(^3\)

2-3  1-1.5  1-1.5  0.15-0.2  0.05-0.1  6

1 Multilateral development banks
2 Official development assistance
3 Based on demand of ~$93 trillion over 15 years (~$6 trillion per year)

NOTE: See Driving Sustainable Development Through Better Infrastructure (Bhattacharya, Oppenheim, Stern) for full explanation of potential investment across actors.
Climate finance is defined as investments that promotes low-or-lower carbon activity in infrastructure through both mitigation and adaptation (e.g. renewable energy infrastructure, sea walls). Climate finance sits across all included classes of investors.

Source: Bhattacharya, Oppenheim, Stern (2015)