Incentivizing private sector investments into sustainable infrastructure in emerging economies
Think Week: Sustainable Infrastructure Development – Challenges and Opportunities for Emerging Economies, Beijing, 3 Nov 2015

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The lion’s share of global energy-infrastructure investments will be invested in emerging economies

USD37tn by 2035 in energy infrastructure
additional USD17tn to reach 450ppm scenario

⇒ Not only additional finance needed but re-direction of planned capital flows from high-carbon to low-carbon energy infrastructure investments

⇒ Note that higher investment needs do not automatically mean higher life-cycle costs!
Infrastructure (investment) has specific characteristics

1. Infrastructures provide **public goods** or commodity-type services which are foundation of many economic activities.

2. They are often characterized by **natural monopolies**.

3. There **upfront costs** are relatively large – especially for most “sustainable” infrastructure projects (as they are more CEPEX-intensive).

4. Total investment **sums** can be very high.

5. They have typically **long life times**.

6. The revenues are typically relatively **stable** but **not very high**.

Which private sector investors can handle these conditions?

- Institutional investors, banks, OEMs
- Indirect investments (equity, asset-backed securitization)
Sustainable infrastructure often is more capital-intensive, which makes (low-cost) finance even more important.
Investment risk is instrumental criterion besides scale and returns

1. Scale (as to reduce transaction costs)
2. Acceptable risk levels (depending on risk-preference)
3. Returns that compensate for risk levels

How to achieve bankability and get institutional investors on board?

Source: EPG (ETH Zurich)
## Different ways of addressing risks

<table>
<thead>
<tr>
<th>Approaches to address risks</th>
<th>Risk compensation (increased returns)</th>
<th>Risk mitigation (policy derisking)</th>
<th>Risk transfer (financial derisking)</th>
<th>Risk pooling (portfolio derisking)</th>
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</thead>
<tbody>
<tr>
<td><strong>Provide higher returns that compensate for high risk levels</strong></td>
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<td>• Typically very expensive</td>
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<td>• Often do not result in bankability</td>
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<td><strong>Address root cause of risk</strong></td>
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<tr>
<td>• Policy reform</td>
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<td>• Reduce likelihood of negative events</td>
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<td><strong>Transfer risks to third party that aggregates projects</strong></td>
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<tr>
<td>• Mitigate financial impact for investor in case of negative event</td>
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<td><strong>Aggregation of projects in portfolios</strong></td>
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<td>• only relevant for modular/small-scale infrastructure</td>
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<td>• hardly any research on this in emerging economies</td>
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Public policy has a major impact on risks and thus Cost of Capital

- Directly or indirectly determined by energy sector regulation
- General policy/situation

**Infrastructure policy derisking:**
- Better regulation (not less!)
- Regulation needed: public good/monopolies
- Can (theoretically) be very inexpensive

**Financial de-risking:**
- Need for public funds to provide guarantees
- Can be quite expensive

Sources: UNDP/EPG (ETH Zurich)
Systematically combining policy instruments can reduce risks and thereby increase the cost-effectiveness of infrastructure policies.

Leveraging private sector infrastructure investment becomes more cost-effective by systematic derisking

In order to design investor-friendly policies, one needs to understand their needs: room for public-private-sector interaction

- Data on financing costs, risk levels, de-risking effects of policy reform etc. very sparse
  => More data collection by public sector on private sector at international level*

- Policy design should be informed by investor needs
  - Many policy models do not adequately reflect risk*
  - Methodologies to assess risk often not very systematic*
  => More research with private sector input needed*

- Dynamic perspective:
  - Policy reform (slow) vs risk transfer (fast)*
  - Policy de-risking needs time to result in trust by private investors*
  => More risk-transfer at beginning that phases out (but also here, data & research is lacking*)

Thank you for your attention!

More information about our work: www.epg.ethz.ch