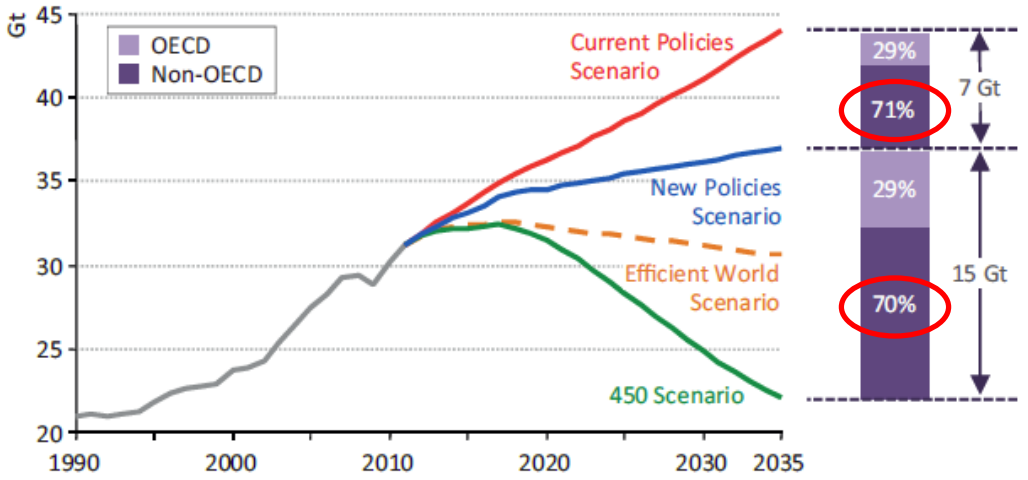
Incentivizing private sector investments into sustainable infrastructure in emerging economies

Think Week: Sustainable Infrastructure Development – Challenges and Opportunities for Emerging Economies, Beijing, 3 Nov 2015

Prof. Tobias Schmidt, Energy Politics Group, ETH Zurich (www.epg.ethz.ch)

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

Source: IEA, World Energy Outlook 2012

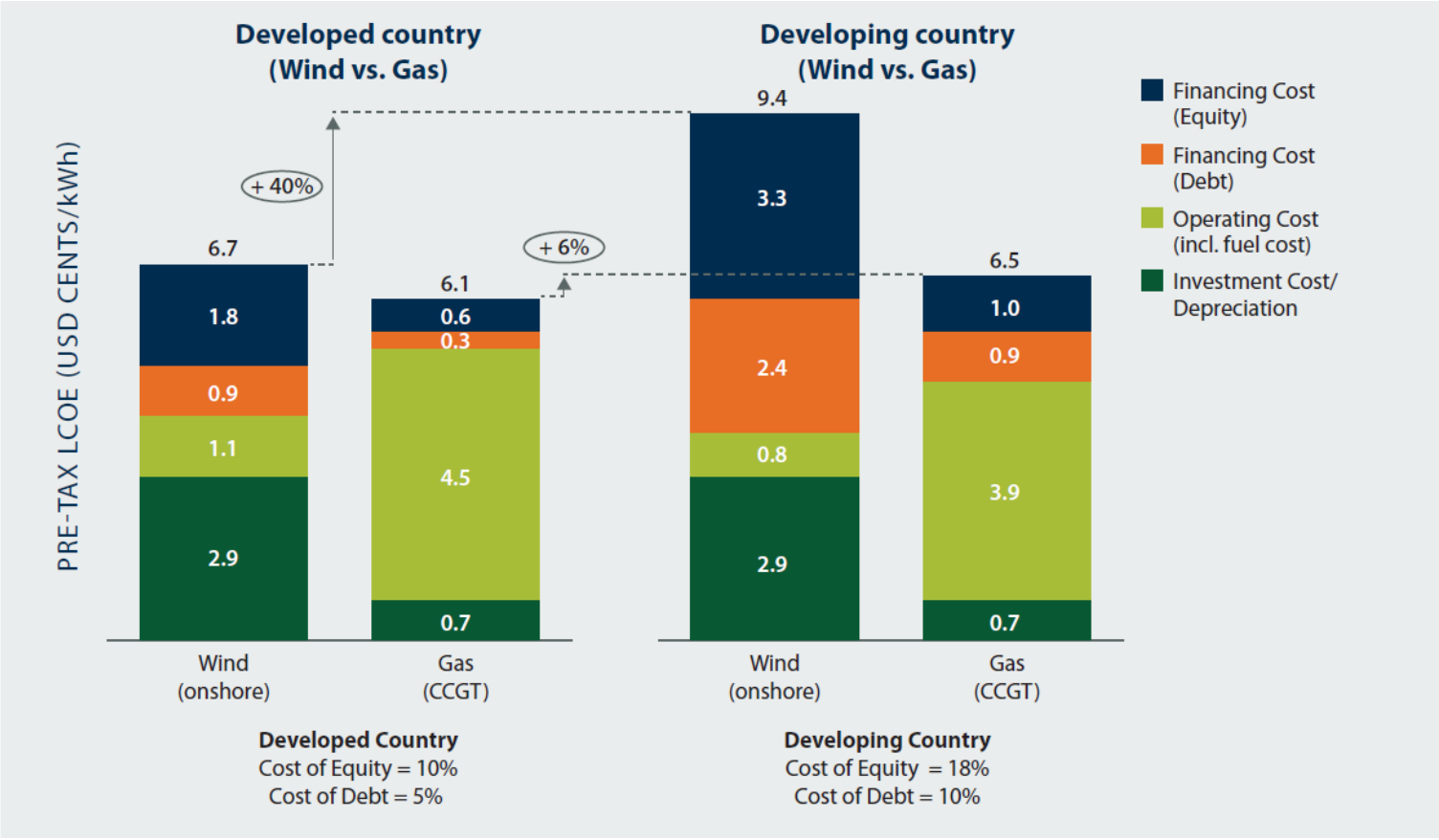
- Not only additional finance needed but **re-direction** of planned capital flows from high-carbon to low-carbon energy infrastructure investments
- Note that higher investment needs do not automatically mean higher life-cycle costs!

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?
Ø institutional investors, banks, OEMs
Ø Indirect investments (equity, asset-backed securitization)

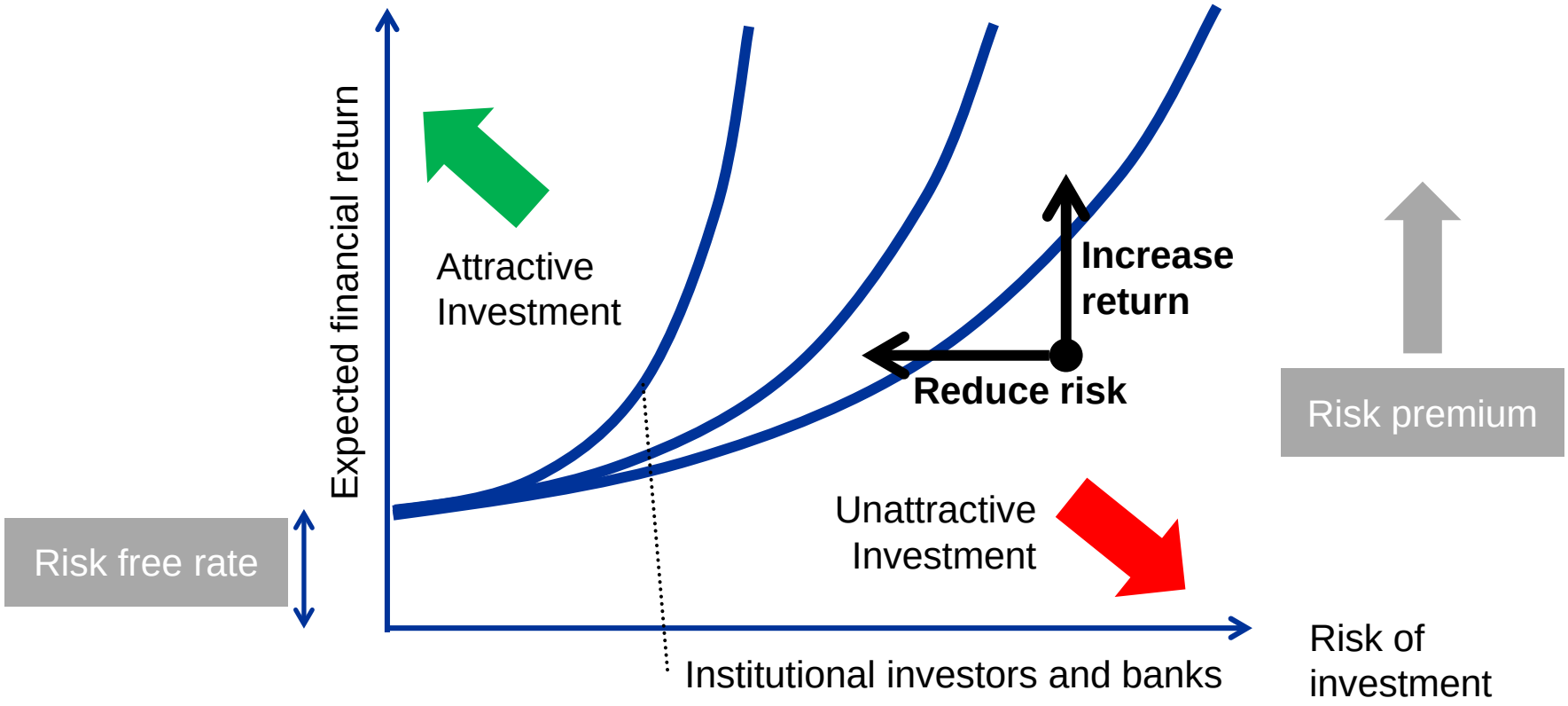
Sustainable infrastructure often is more capital-intensive, which makes (low-cost) finance even more important



Source: Waissbein, O., Glemarec, Y., Bayraktar, H., & Schmidt, T.S. (2013): "Derisking Renewable Energy Investment. A Framework to Support Policymakers in Selecting Public Instruments to Promote Renewable Energy Investment in Developing Countries". New York, NY: United Nations Development Programme www.undp.org/drei

Investment risk is instrumental criterion besides scale and returns

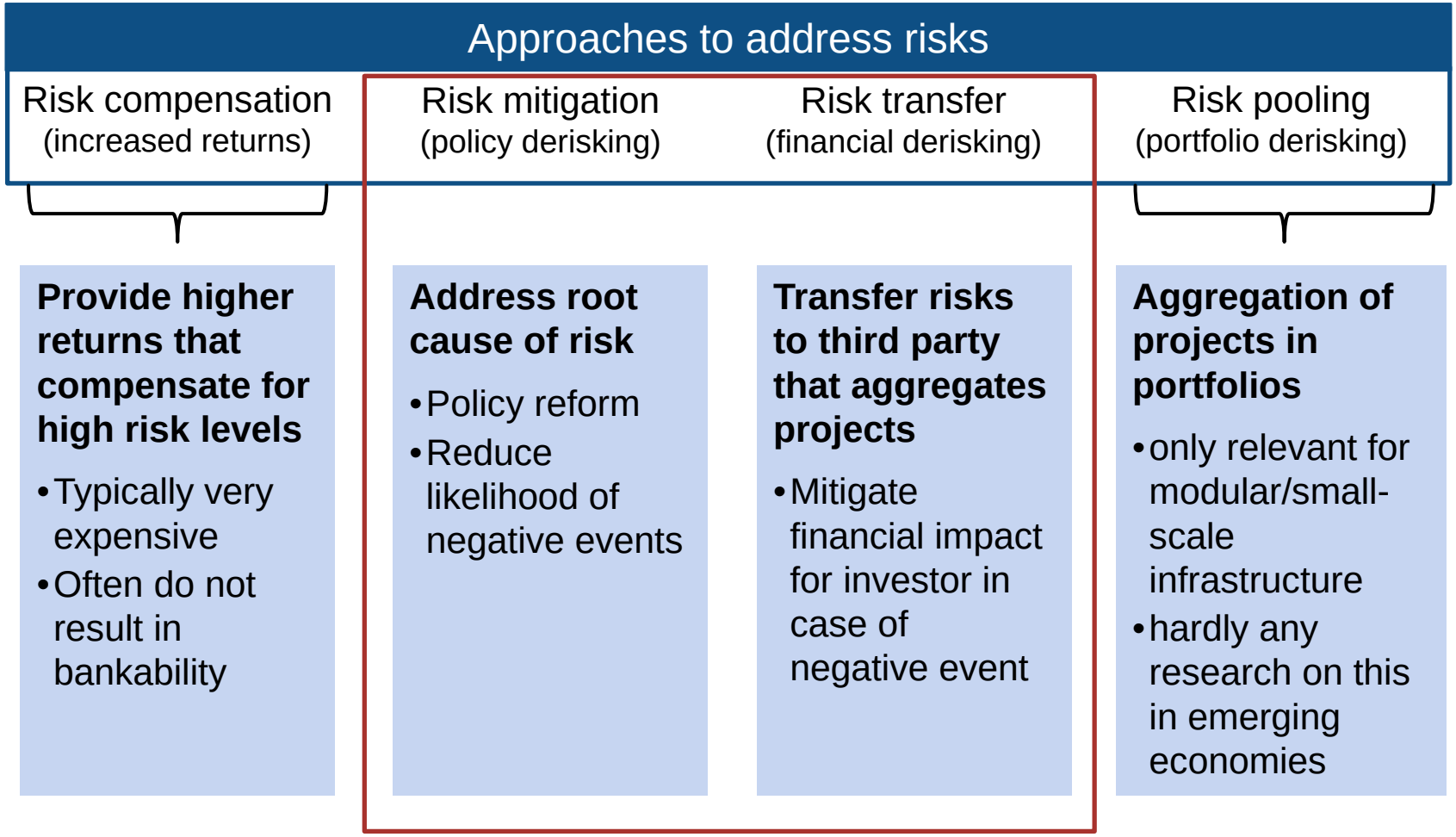
1. Scale (as to reduce transaction costs)
2. Acceptable risk levels (depending on risk-preference)
3. Returns that compensate for risk levels



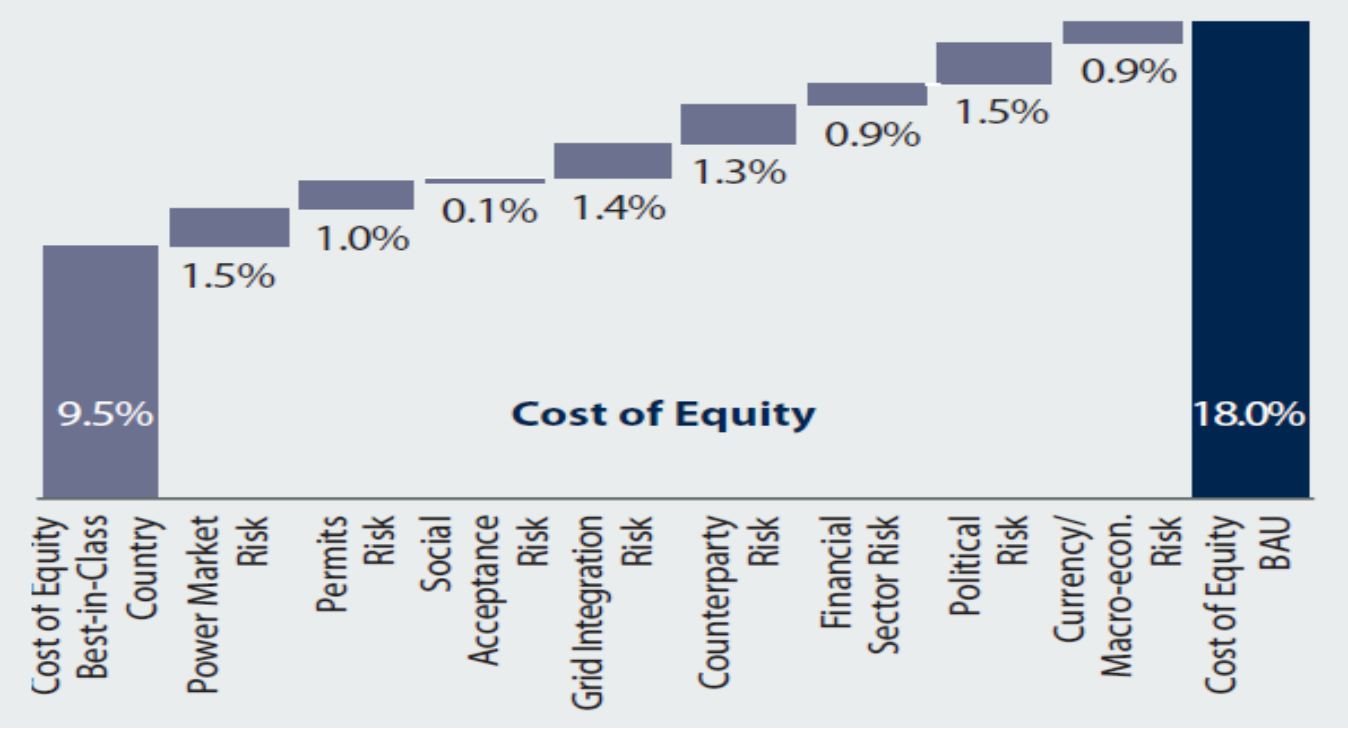
How to achieve bankability and get institutional investors on board?

Source: EPG (ETH Zurich)

Different ways of addressing risks



Public policy has a major impact on risks and thus Cost of Capital



Directly or indirectly determined by energy sector regulation

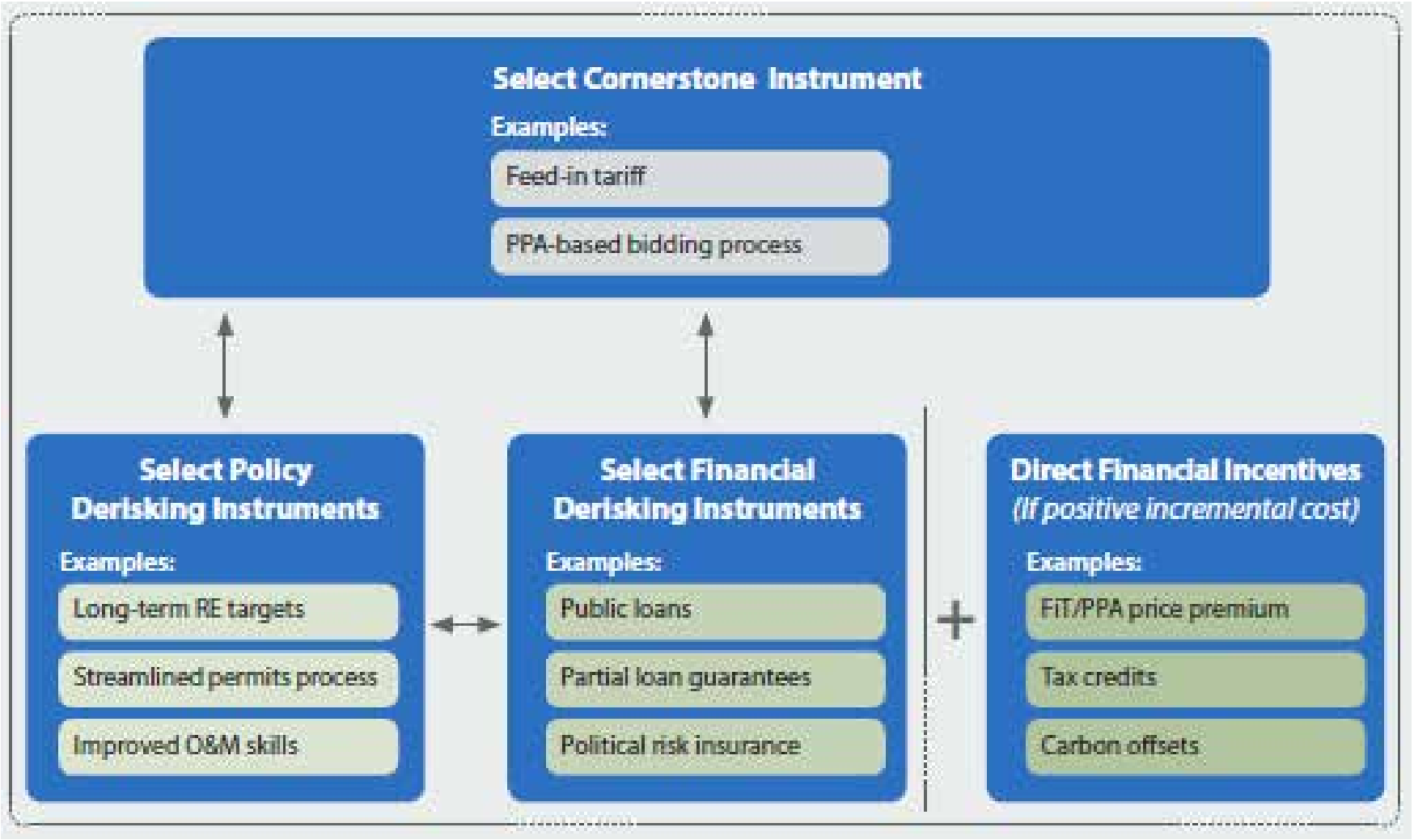
General policy/situation

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

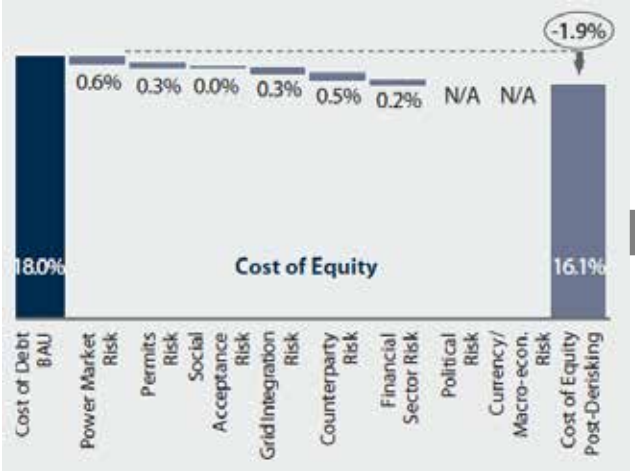
 Sources: UNDP/EPG (ETH Zurich)

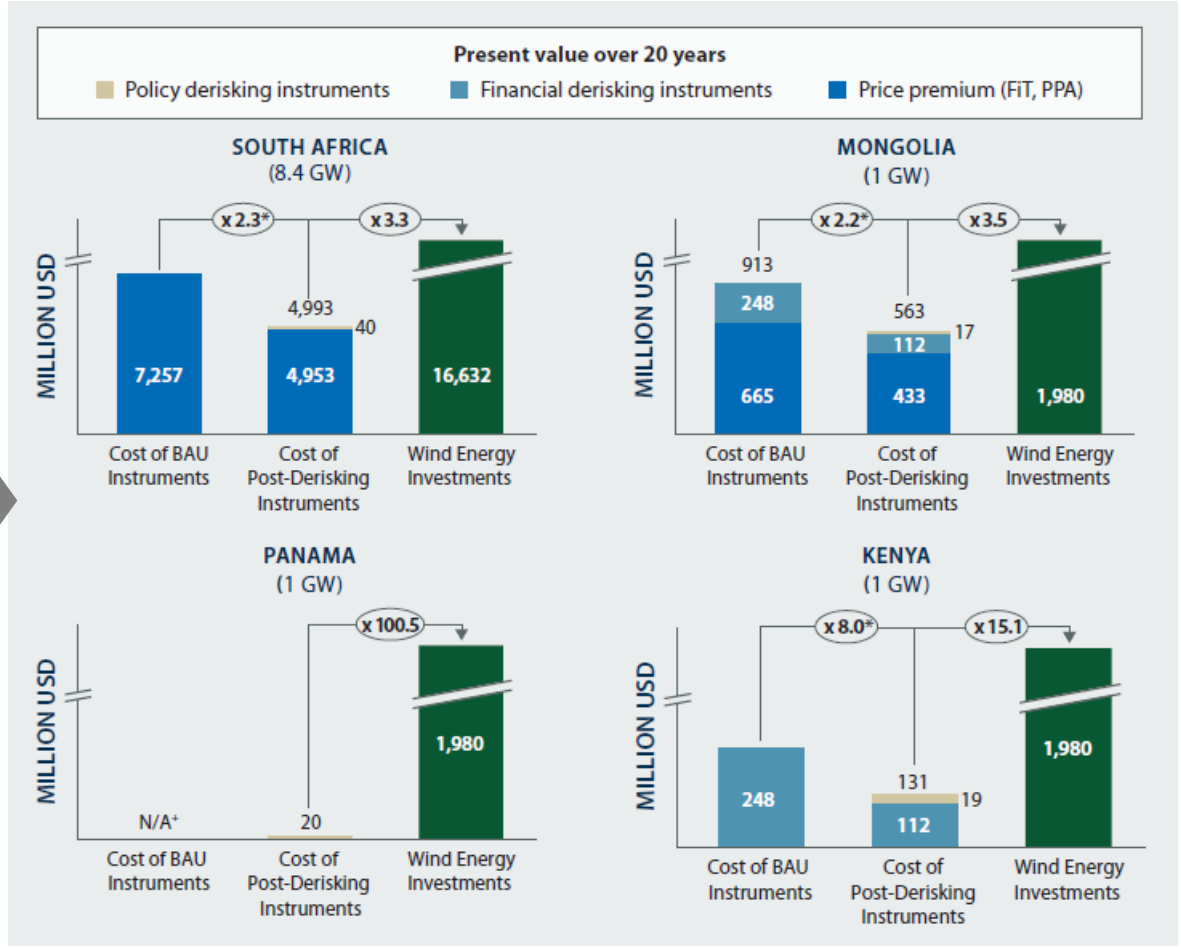
Systematically combining policy instruments can reduce risks and thereby increase the cost-effectiveness of infrastructure policies



Source: Waissbein, O., Glemarec, Y., Bayraktar, H., & Schmidt, T.S. (2013): "Derisking Renewable Energy Investment. A Framework to Support Policymakers in Selecting Public Instruments to Promote Renewable Energy Investment in Developing Countries". New York, NY: United Nations Development Programme www.undp.org/drei

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





Source: Waissbein, O., Glemarec, Y., Bayraktar, H., & Schmidt, T.S. (2013): "Derisking Renewable Energy Investment. A Framework to Support Policymakers in Selecting Public Instruments to Promote Renewable Energy Investment in Developing Countries". New York, NY: United Nations Development Programme www.undp.org/drei

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*)

*compare: Schmidt (2014), Low-carbon investment risks and de-risking. Nature Clim. Change 4, 237-239.

Thank you for your attention!

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

More information on the UNDP Derisking Renewable Energy Investment: www.undp.org/drei