

# **Attracting private investment through NAMAs: the role of risk, return and policy design**

## ***Part 1: why and how private investment matters***

**Regional workshop on promoting international collaboration to  
facilitate preparation, submission and implementation of NAMAs**

**Mexico City, December, 2013  
Speaker: Tobias Schmidt, ETH Zurich**

# Agenda

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1 The role of finance in low carbon development

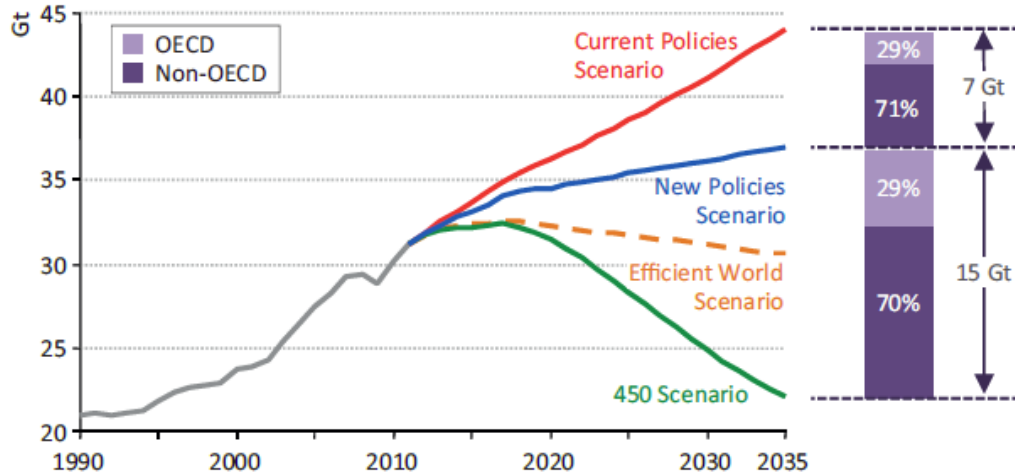
2 Sources of finance

3 Basics of private investor investment decisions

4 Policy measures to tap private funds

5 Summary

# Low carbon development necessitates tapping additional, and redirecting existing, investment flows

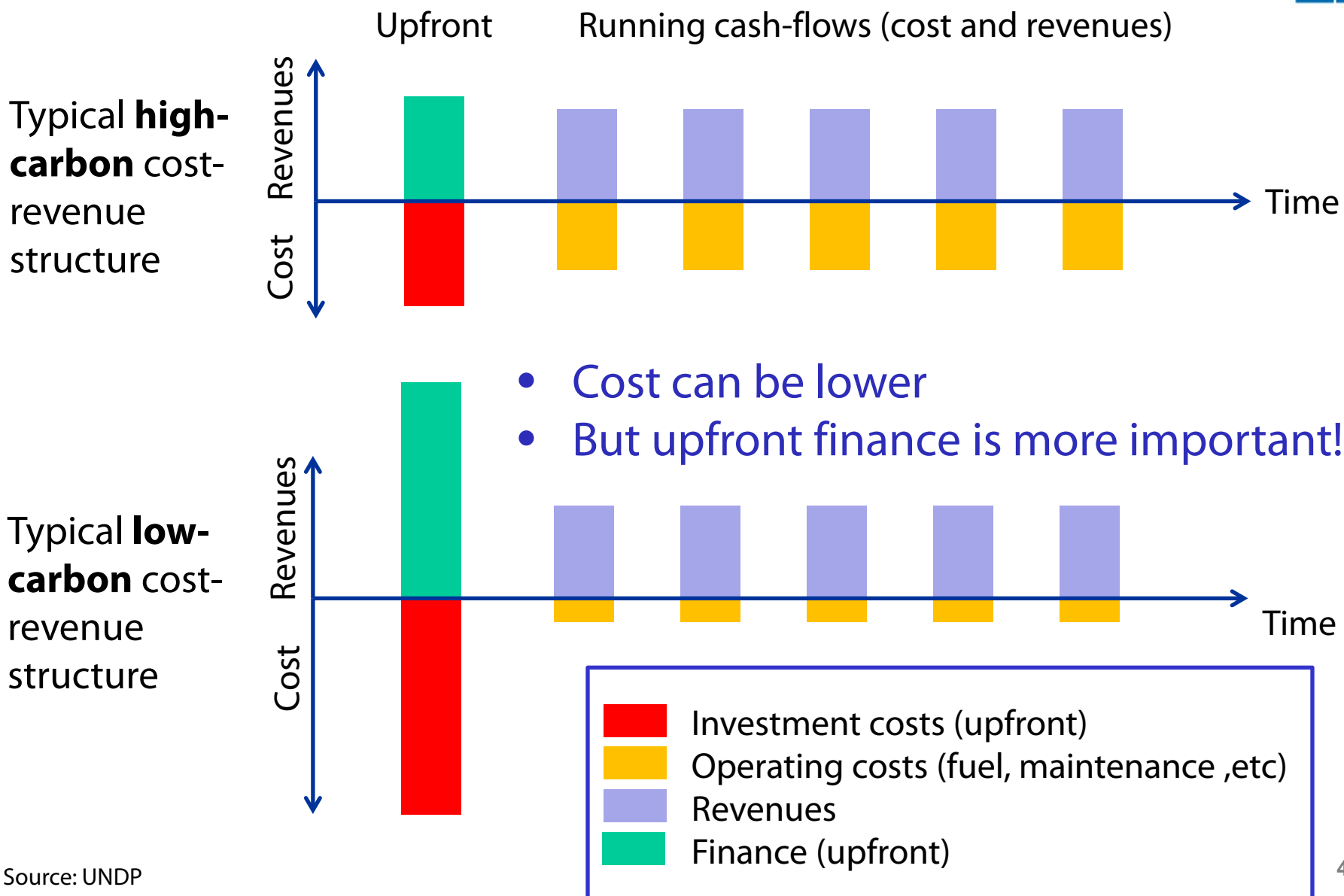


**USD37tn** by 2035 in energy infrastructure

additional **USD17tn** to reach 450ppm scenario

- Higher emission reduction potentials compared to baseline are in non-OECD countries
- Most investments in non-OECD countries
- Not only additional finance needed, but **redirection** of existing and planned capital flows from traditional high-carbon to low-emission, climate-resilient investments
- Additional investment does not mean additional cost! (often these investments can save costs)

# Upfront finance is more important in low carbon investments than in high-carbon investments



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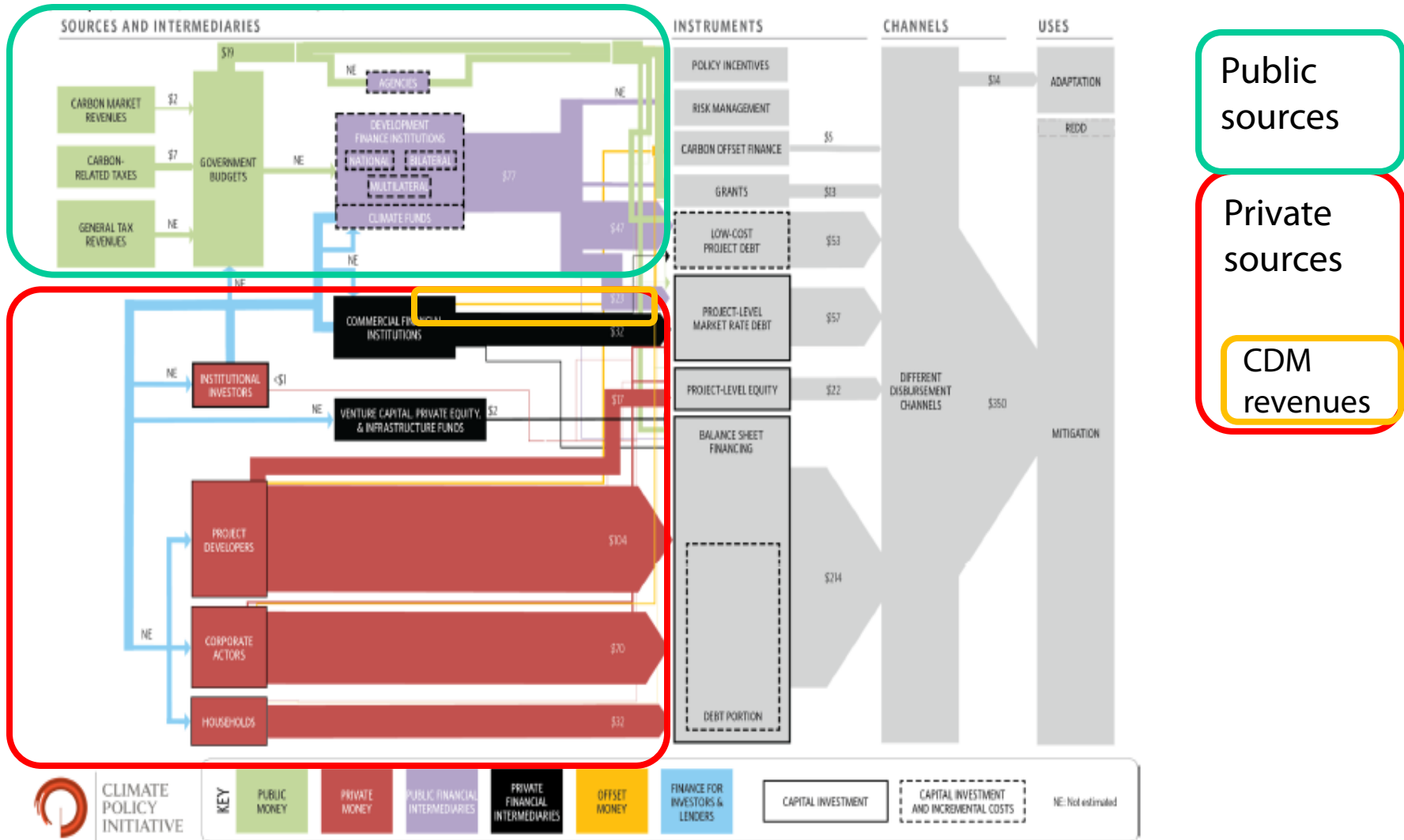
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# Already today most climate finance is provided by the private sector



Public sources

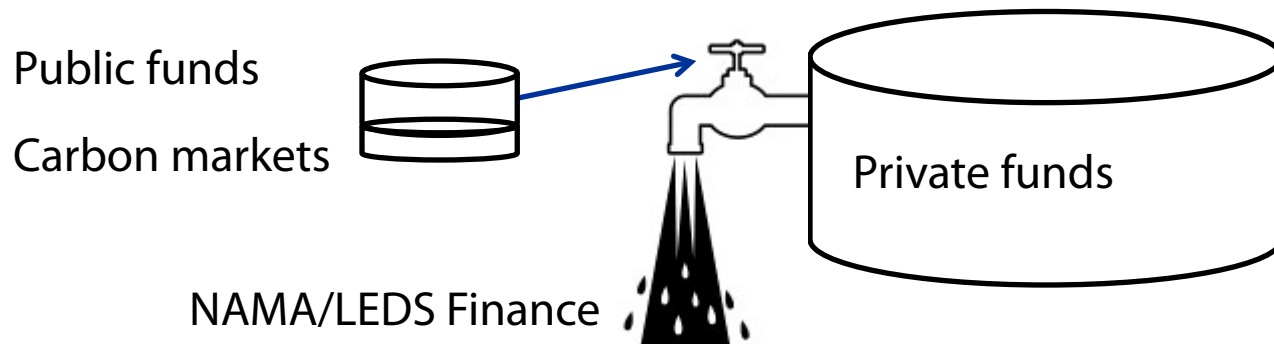
Private sources

CDM revenues

# Private funds represent by far the largest source of Climate/NAMA/LCES finance

	Domestic	International
<b>Public funds</b>	mostly limited	limited
<b>Carbon markets</b>	limited	limited
<b>Private funds</b>	varying	large

**Challenge:** How to *leverage* private funds using public funds/carbon markets?



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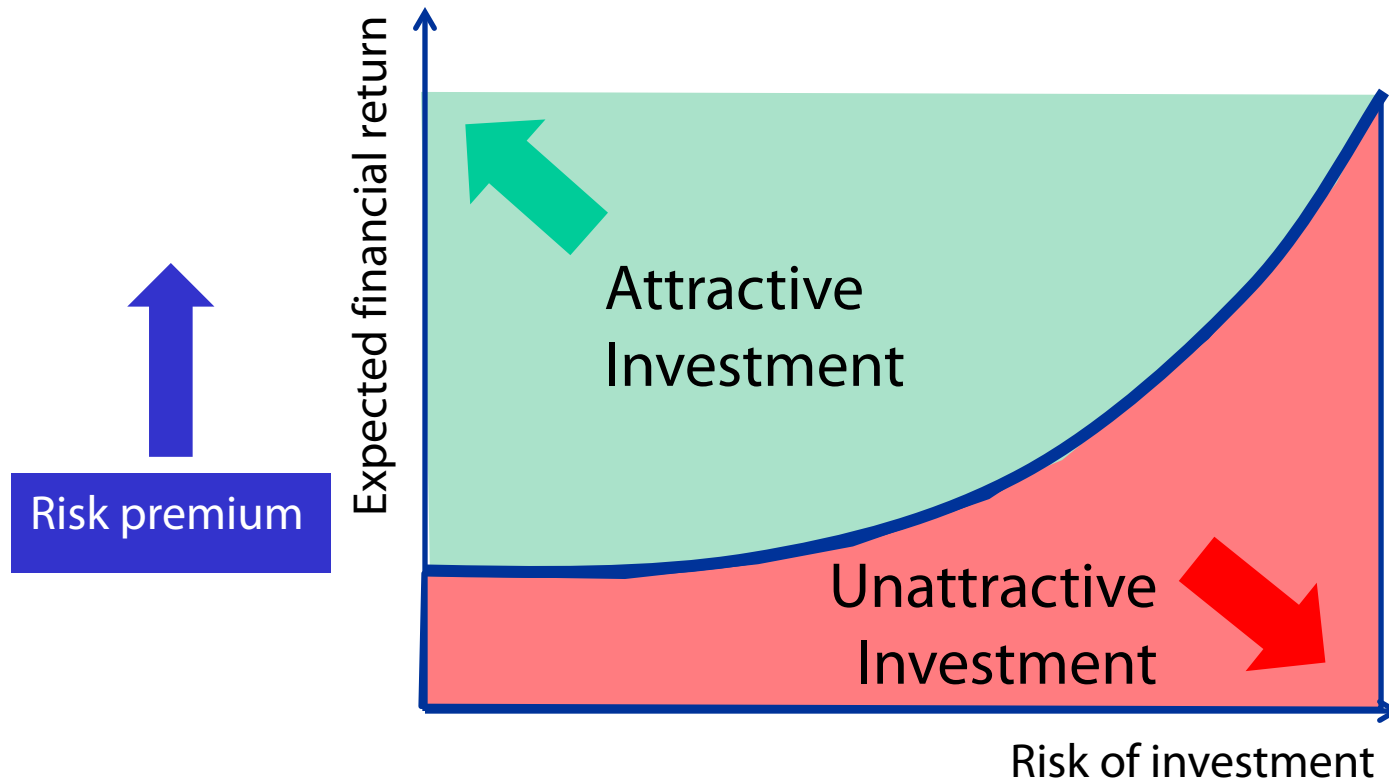
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# Private investors' decisions are mainly guided by the risk-return profile of an investment opportunity



⇒ **Investment Risk** is an essential part of private sector's investment considerations

# Downside investment risk is defined by the combination of the probability of a negative event and its potential financial impact

## Concept of investor risk

### Drivers of risk

Existence of **barriers** in investment environment

### Components of Investor Risk

Result in increased **probability of negative events** affecting wind farm

Negative events result in **financial impact** for investors

## Practical example: licensing risk

### Drivers of risk

**Barrier:** Lack of clear responsibility of different agencies for renewable energy approvals

### Components of Investor Risk

**Probability of negative event:** High probability of delays due to poorly administered licensing

**Financial impact:** Transaction costs; delayed revenues; under- or no investment

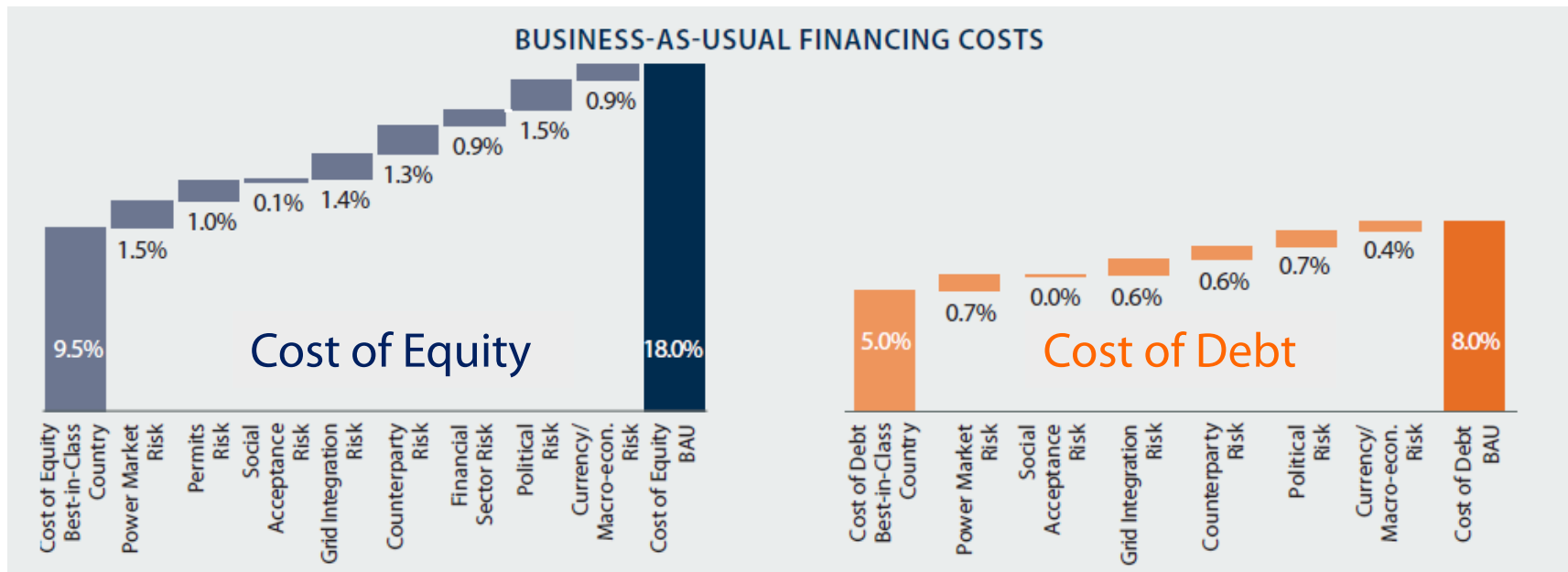
## Different risk levels result in different cost of capital

- The cost of capital reflects the risk involved in an investment
- The cost of debt represents a bank loan's interest rate
- The cost of equity represents the hurdle rate for equity investors
- Due to seniority, debt has lower cost than equity

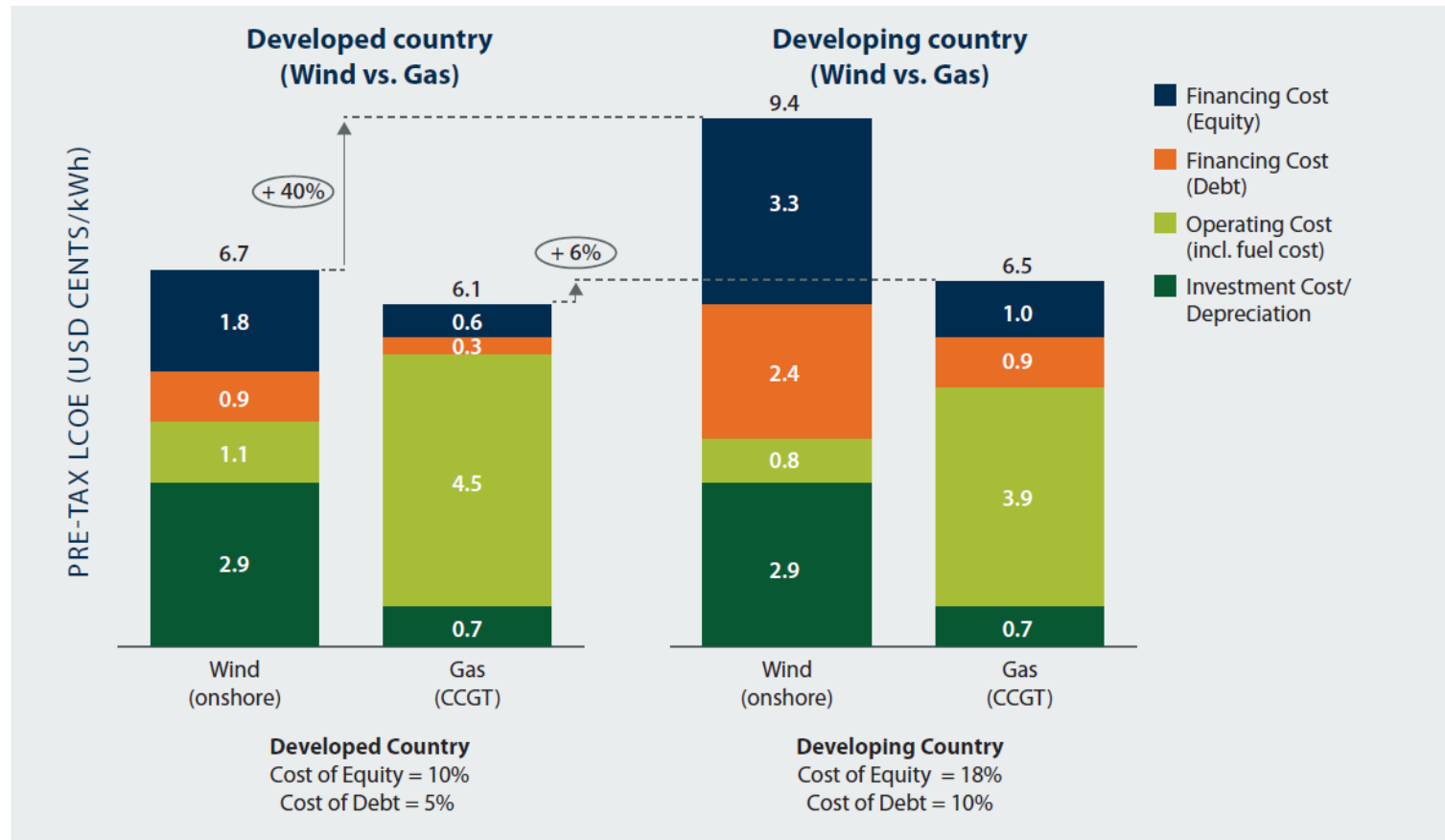
Venture Capital	Private Equity	Infrastructure Funds	Pension Funds	Bank Mezzanine Debt	Bank Senior Debt
Start ups, new technology, prototypes	Pre-IPO* companies, demonstrator technology	Proven technology, Private companies	Proven technology	Demonstrator/ proven technology, new companies	Proven technology, established companies
>50% Internal Rate of Return (IRR)	35% IRR	15% IRR	15% IRR	LIBOR* + 700 bps	LIBOR + 300 bps

# As investment risks in developing counties are typically higher financing costs are increased

- More barriers increase the risks perceived by investors
- The financing costs increase with perceived risks
- A project feasible in one country might be infeasible in another due to higher perceived risks



# Financing costs heavily affect the competitiveness of renewables (more than of fossil fuel-based technologies)



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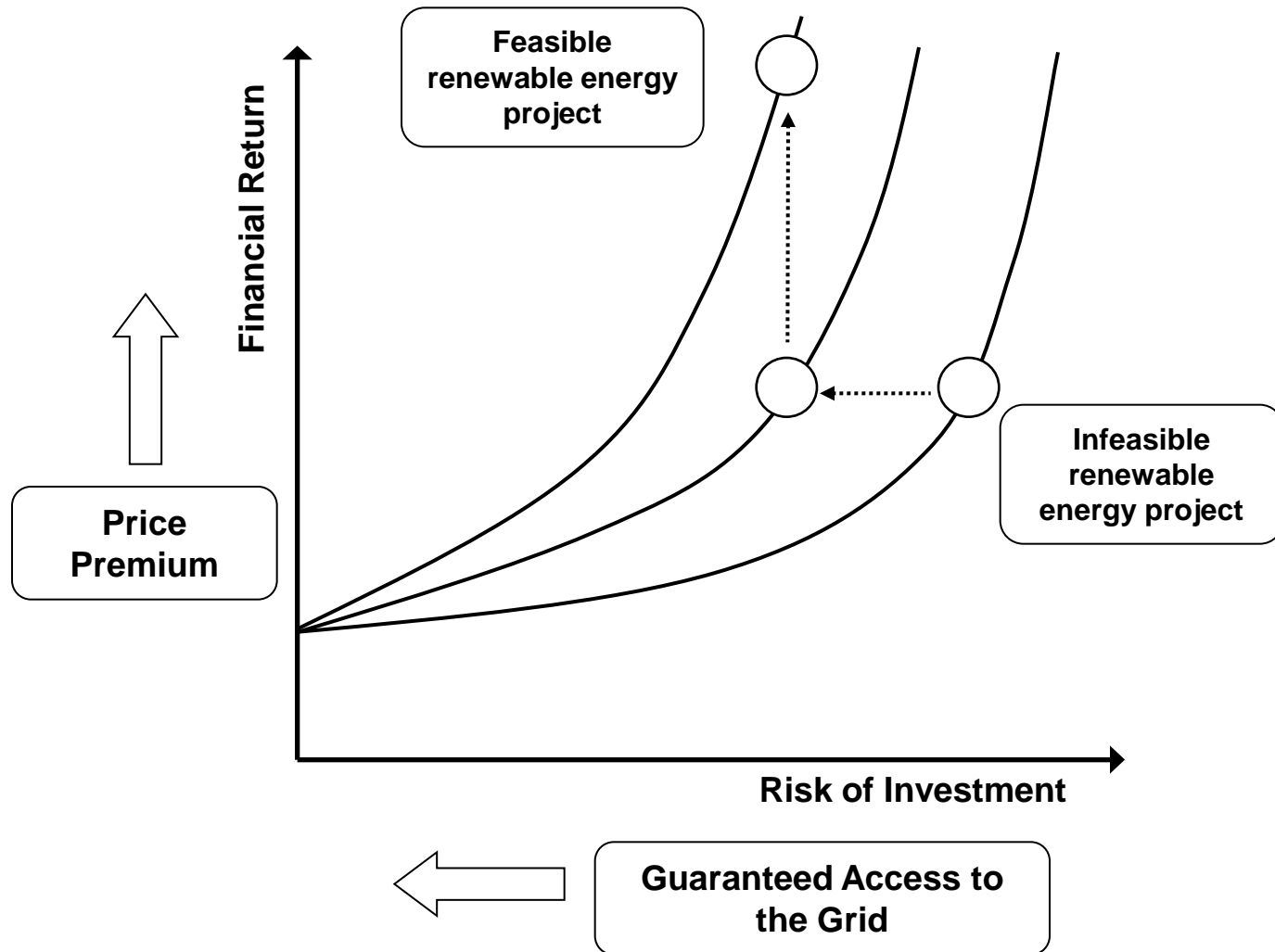
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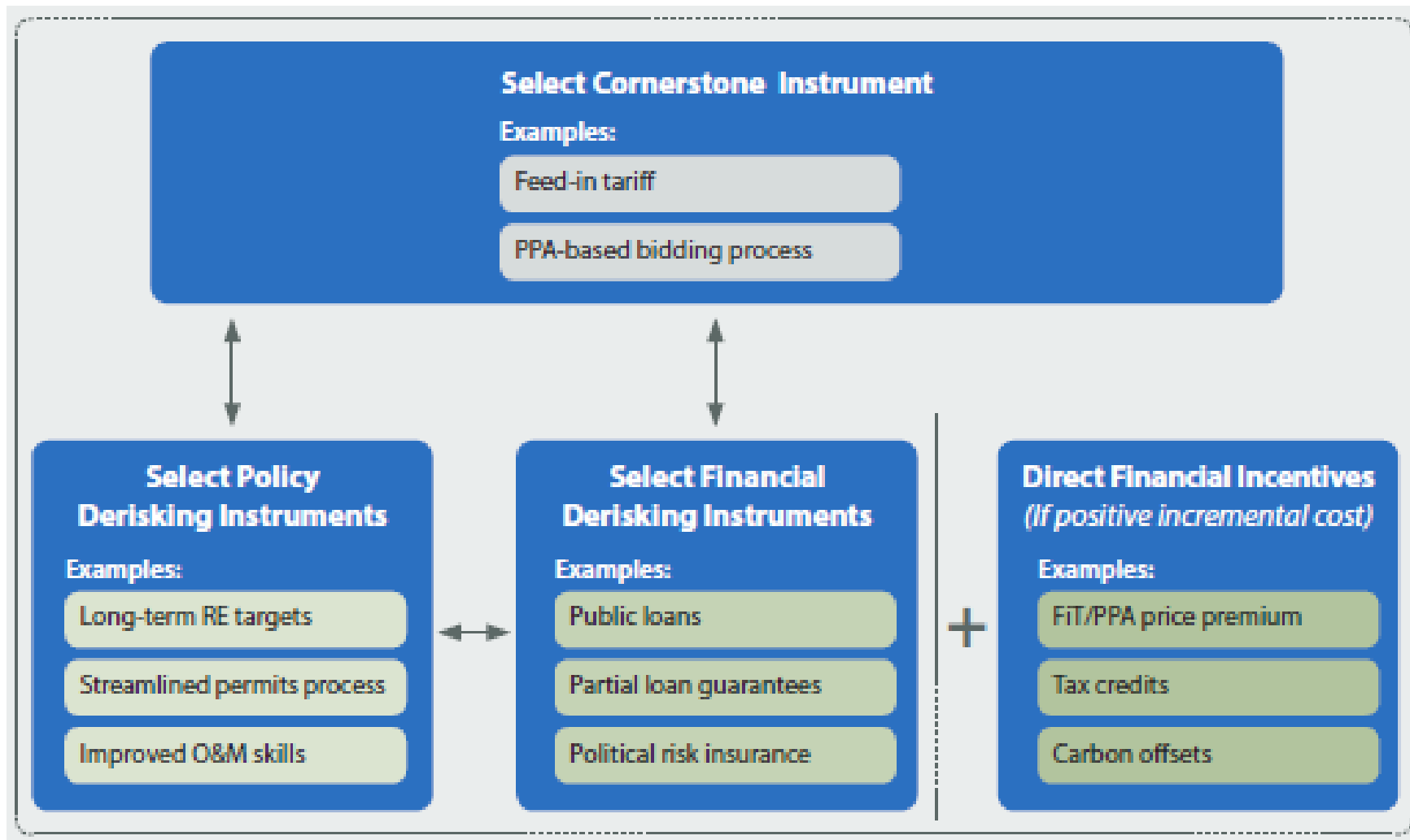
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# Policy makers need to create a favorable investment environment to attract low-carbon investors



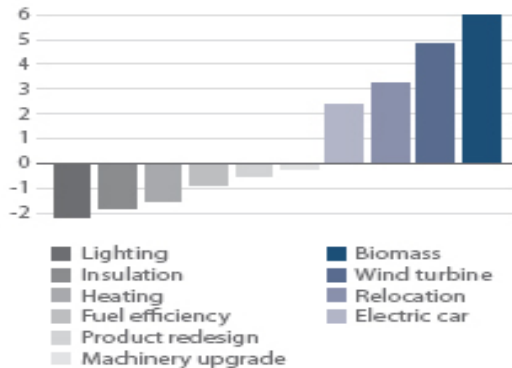
# The policy mix should address both the risk and the return aspect





# Four-step process for selecting the appropriate combination of policy and financial instruments

## Step 1: Identify Priority Mitigation and Adaptation Technology Options



## Step 2: Assess Key Barriers to Technology Diffusion

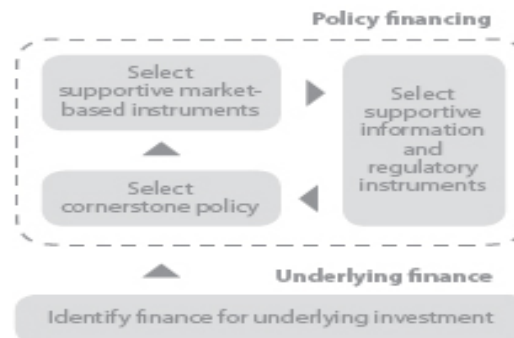
Barriers to technology diffusion	
Behavioural barriers	X
Institutional barriers	
Regulatory barriers	X
Financial barriers	X
Technical barriers	

## Step 4: Select Financing Options to Create an Enabling Policy Environment

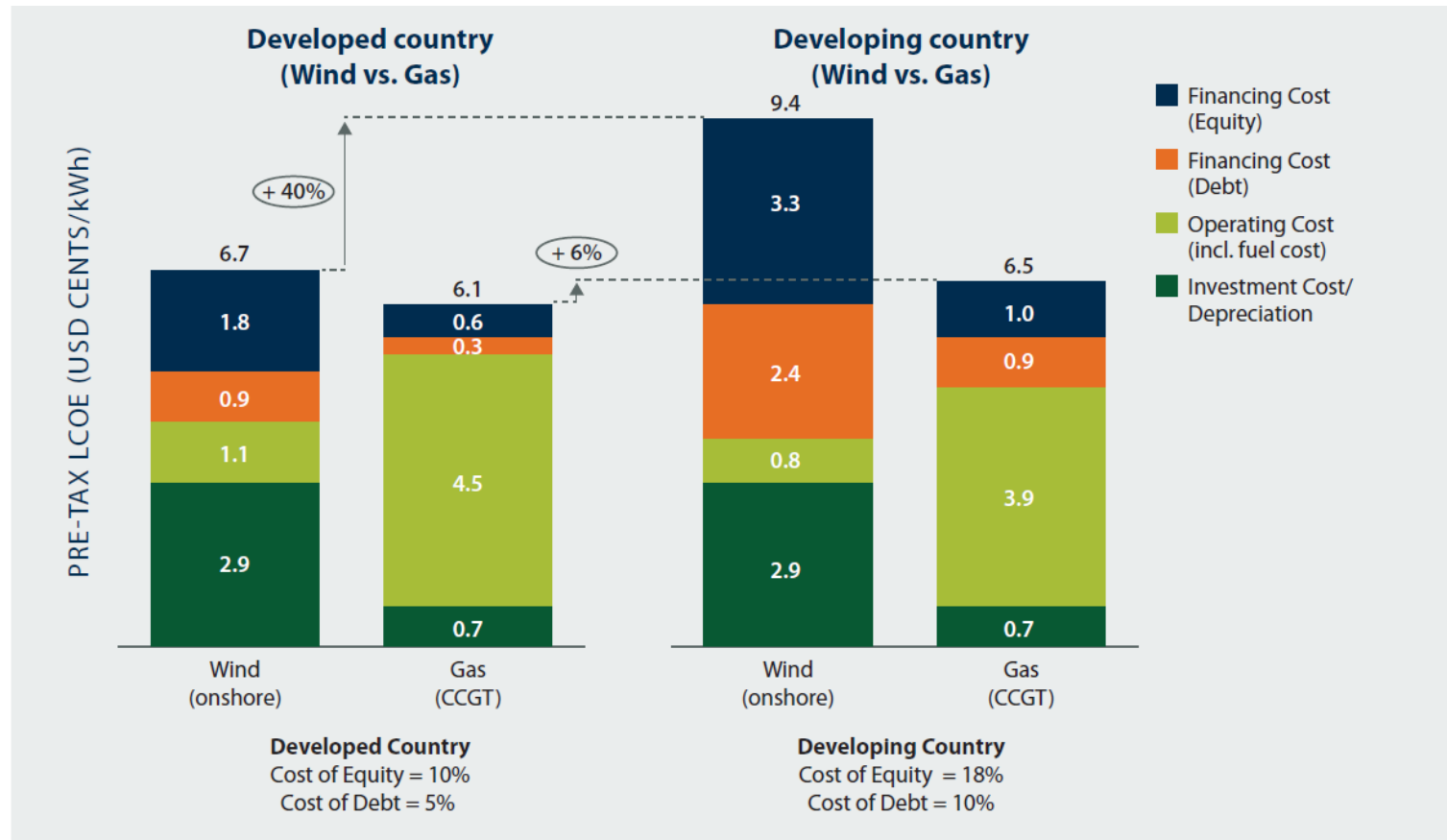
This will result in a blend of different public and private funds.

	International	National and sub-national
Public funds	X	
Environmental market finance		X
Private funds	X	X

## Step 3: Determine Appropriate Policy Mix

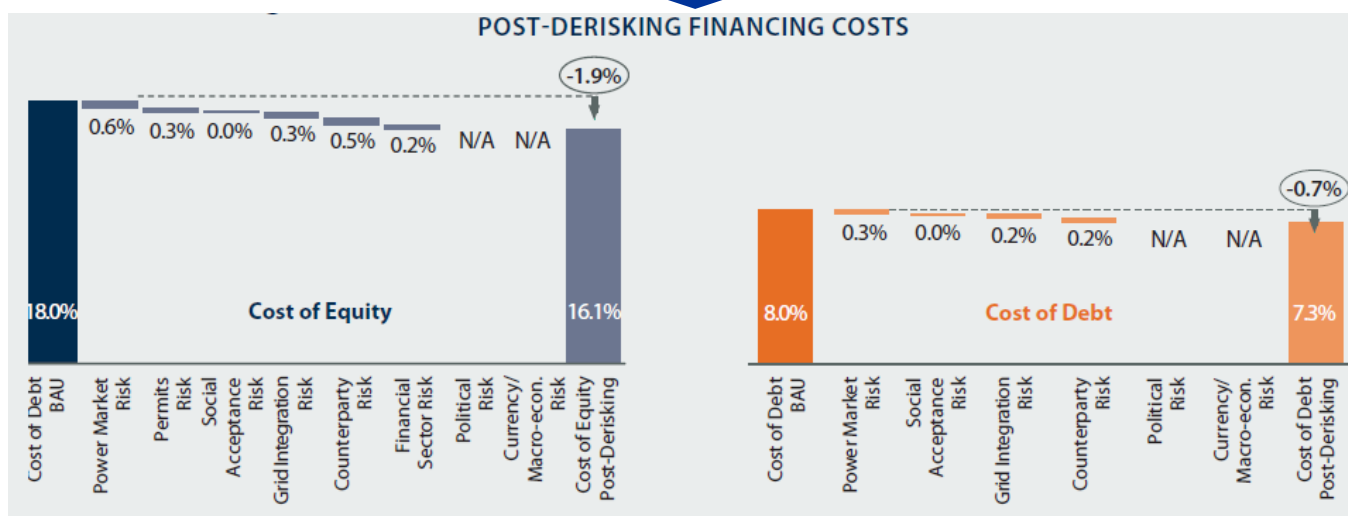
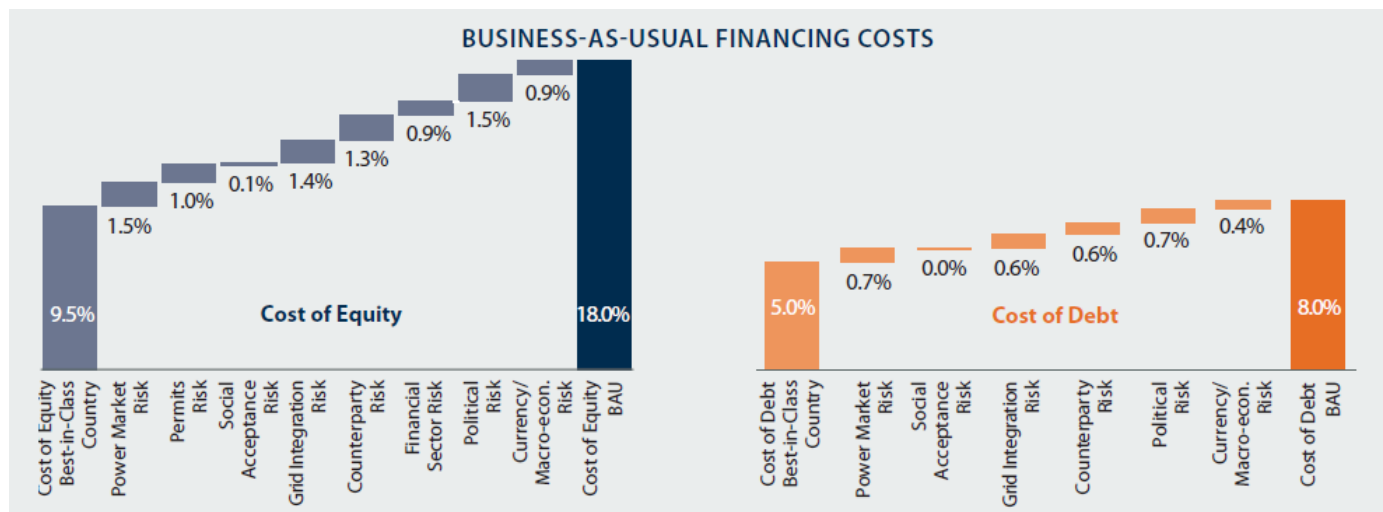


# A reminder about the important role of risk also for policy cost.



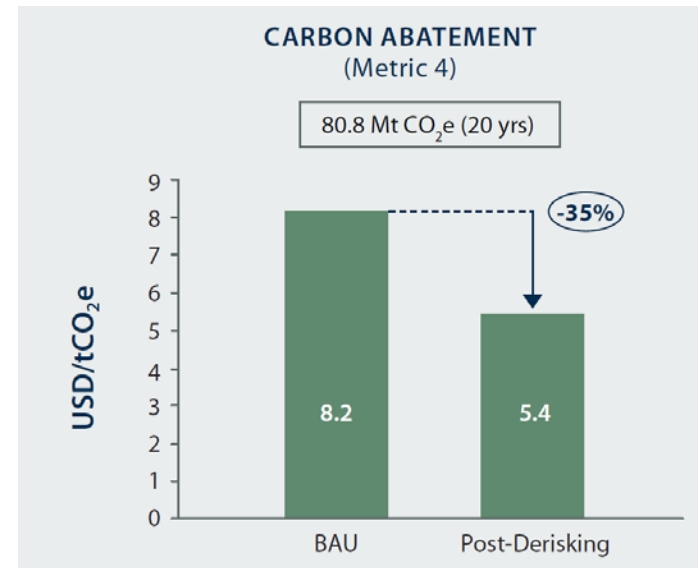
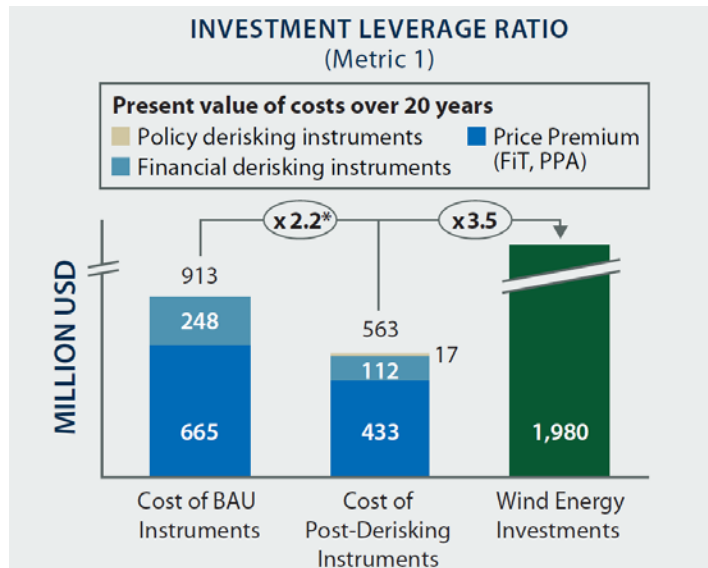
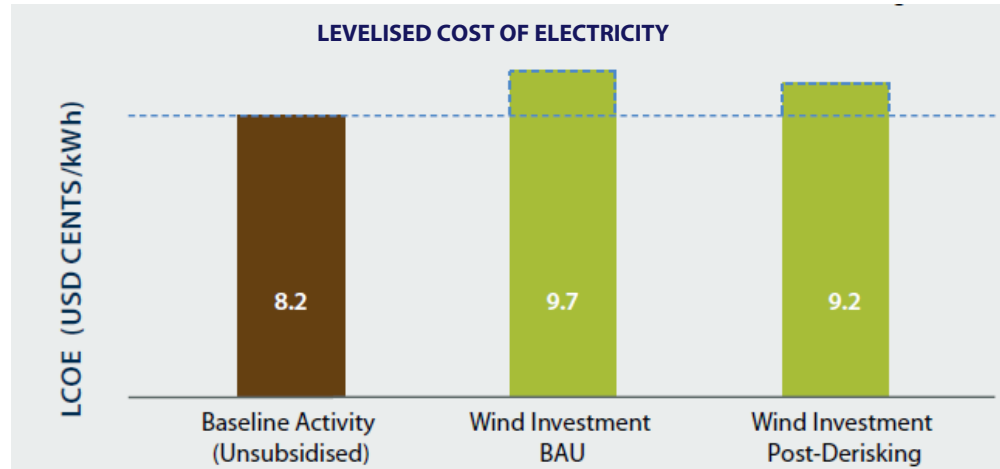
Source: UNDP, *Derisking Renewable Energy Investment (2013)*. See Annex A of the report for full assumptions. All assumptions (technology costs, capital structure etc.) except for financing costs are kept constant between the developed and developing country. Operating costs appear as a lower contribution to LCOE in developing countries due to discounting effects from higher financing costs.

# Bringing down the risk can therefore reduce strongly reduce the capital costs



Source: UNDP, *Derisking Renewable Energy Investment* (2013). Data obtained from interviews with wind investors and developers. See Annex A of the report for full assumptions. The post-derisking cost of debt and equity show the average impacts over a 20 year modelling period, assuming linear timing effects.

# Reduced capital costs can strongly decrease the costs of electricity generation and thereby the NAMA costs



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# Summarizing the 4 key messages

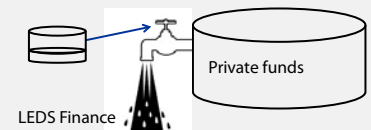
1

Upfront finance is essential to enable low-emission development



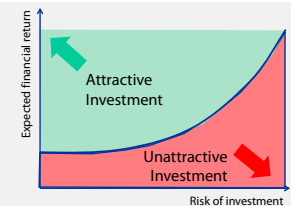
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Important to use scarcer public funds in order to leverage private funds



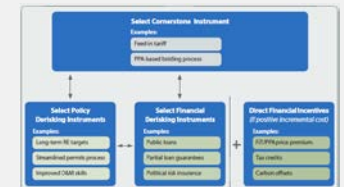
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For private investors, the risk-return profile of an investment opportunity needs to be attractive



4

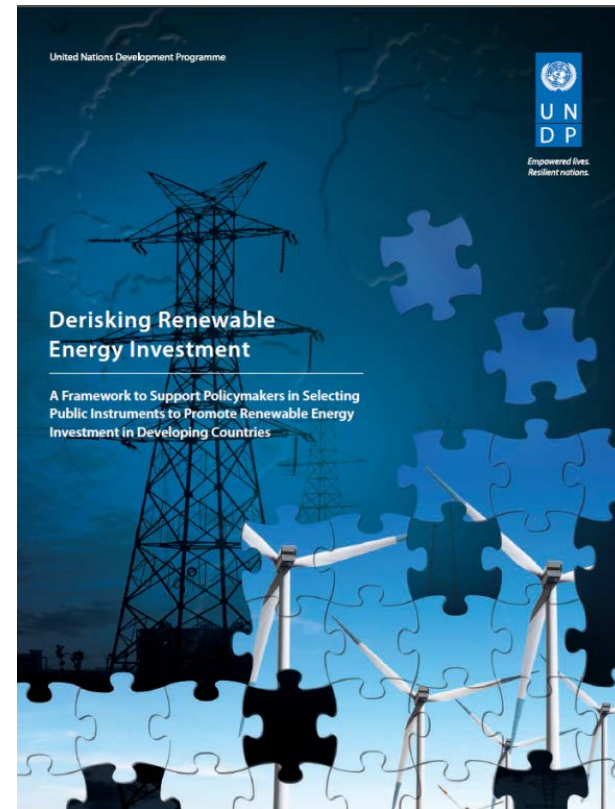
NAMAs & LEDS should provide a policy mix that provides **attractive returns** and **reduces risks**



# Two new UNDP reports on promoting renewable energy in developing countries



(October 2012)



(March 2013)



[www.undp.org/DREI](http://www.undp.org/DREI)