



Advancing climate-resilient  
low emission development  
around the world

# Training Session 3: Financial instruments and innovative risk mitigation instruments



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**USAID**  
FROM THE AMERICAN PEOPLE



Climate Economic Analysis for  
Development, Investment, and Resilience



# Financial Instruments & Innovative Risk Mitigation Instruments for Climate Financing

**Alan Miller**, USAID/CEADIR (Crown Regents USA)

**Michèle Laird**, USAID/CEADIR (Abt Associates Inc.)

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# Agenda

## Welcome

**Michèle Laird and Alan Miller**, *USAID CEADIR*

## Overview of private climate finance and public incentives

**Michèle Laird and Alan Miller**, *USAID CEADIR*

## Innovative Instrument Case Study: Energy Savings Insurance

**Asger Garnak**, *IADB* and **Daniel Magallon**, *BASE*

## Table Discussions

**All Participants**

## Report out and questions

# Put your hands in the air





**PUT YOUR HANDS IN THE AIR!!**



## QUESTION 1

**IS THERE ENOUGH MONEY IN THE  
WORLD TO FINANCE CLIMATE  
CHANGE MITIGATION AND  
ADAPTATION?**

## ANSWER 1

**YES!**

# Where is the money?

There is no shortage of finance in the world . Indeed there are almost 100 trillion US dollars in managed assets

Figure 1. Total assets by type of institutional investor in the OECD, 2001-2013  
In USD trillions



PPRFs = Public Pension Reserve Funds.

## QUESTION 2

**IS ENOUGH MONEY CURRENTLY  
FLOWING TO CLIMATE CHANGE  
MITIGATION AND ADAPTATION  
PROJECTS IN DEVELOPING  
COUNTRIES?**



## ANSWER 2

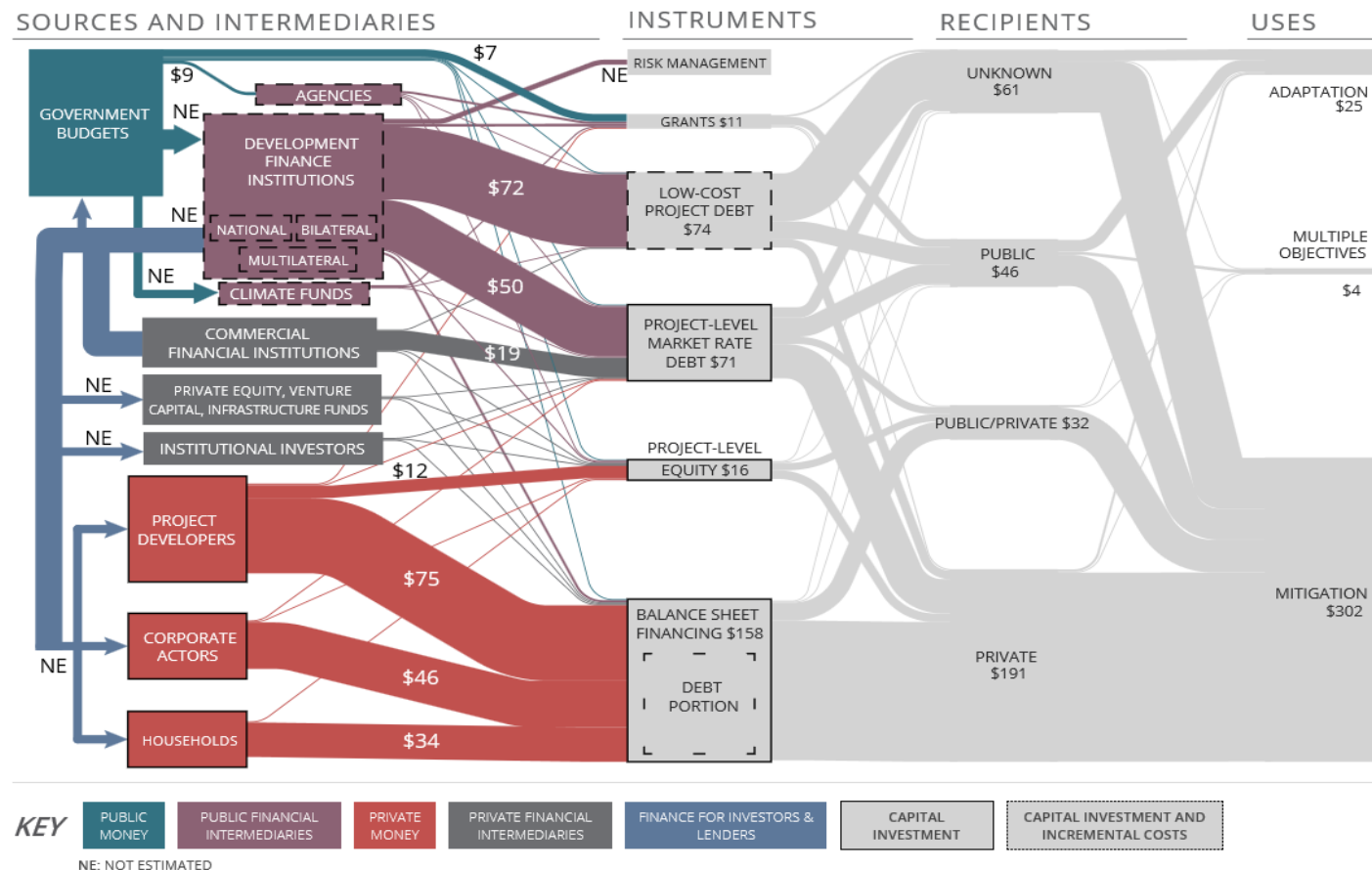
**NO!**

# Only a small portion is reaching climate investments

USD 331 bn Total

## LANDSCAPE OF CLIMATE FINANCE 2014

Landscape of Climate Finance 2014 illustrates climate finance flows along their life cycle for the latest year available, mostly 2013



## So then, what's the problem?

- A very small amount is currently directed to “climate friendly” or “green” investments
- Absence of funding for activities can be for many reasons but it is rarely due to and absolute lack of financial resources.
- There are trillions of dollars of private capital seeking investment opportunities.
- But ... private investors are seeking not just any investment opportunity, but the right one.

## QUESTION 3

**SO, WHAT ARE PRIVATE  
INVESTORS LOOKING FOR?**

**IT DEPENDS....**

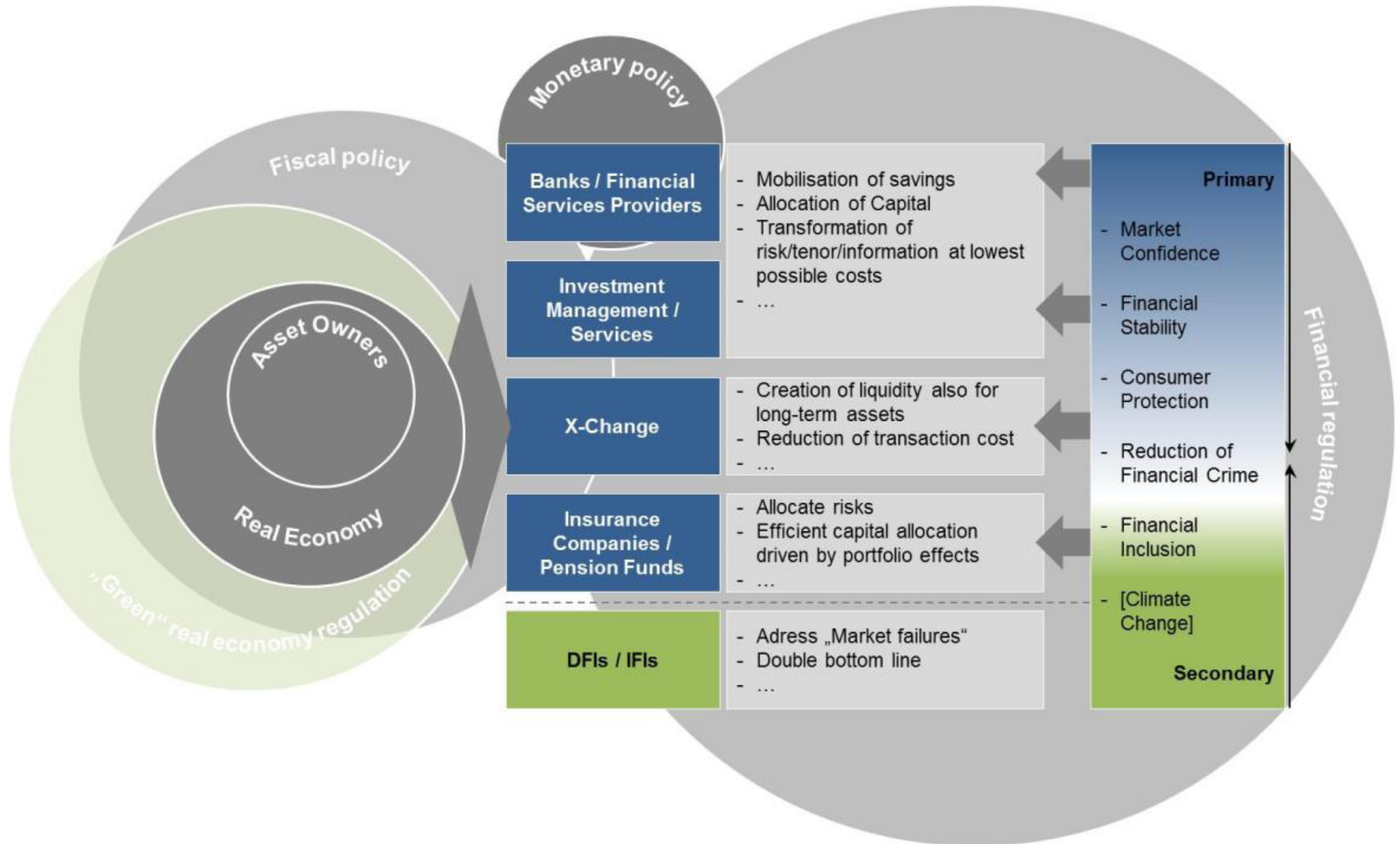


# Nature of private finance

The private financial landscape is complex and diverse:

- Private finance is provided by a wide range of actors and through a variety of channels.
- It features different levels of risk and return expectations.
- It features varying levels of liquidity.
- It involves different actors ranging from small angel investors to very large banks and institutional investors.
- It can be short-, medium- or long-term.

# Snapshot of financial market players



# Individual transactions

Individual private transactions can be described and differentiated by reference to the following six dimensions:

Individual private transactions can be described and differentiated by reference to the following six dimensions:

- Legal nature of the financial transaction.
- Transaction seniority and associated risk profile.
- Channel and intermediary actors through which the flow of finance is arranged.
- Term or tenure of the financial arrangement -- closely linked to the liquidity of the financial asset.
- Source and origin of the financial resource
- Use of proceeds related to the transaction.

# Boiling it down

- At heart: appropriate *risk-adjusted* returns for the providers of these funds.
- The greater the *risk* (or the greater the perception of that risk), the greater the returns that will be expected
- The language of *risk and returns* -- financial and investment decisions are primarily a balancing of financial costs and returns.
- *In practice*, however, a much broader variety of nationally specific factors -- only some of which can be readily described in financial terms -- affect financial decisions and ultimately the nature and direction of financial flows.



## Barriers to mobilizing private finance

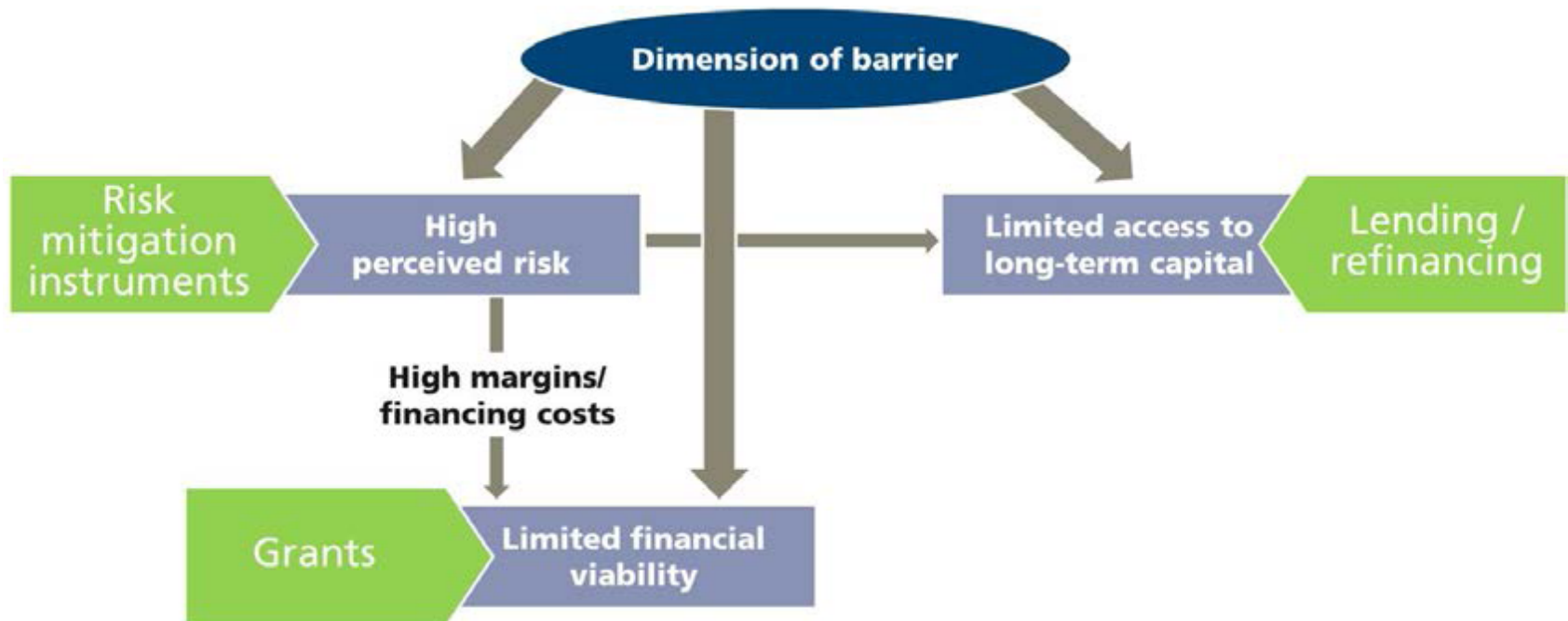
- Barriers to mobilizing private finance for climate change related mitigation/adaptation in developing countries are often those common to any private finance in the country:
  - instability of legal, economic, and regulatory frameworks within which private sector activity unfolds,
  - shortcomings in the reliability and longevity of regulatory schemes linked to project returns,
  - the commercial viability, bankability, and/or creditworthiness of the project or venture at hand.

Or, factors commonly referred to as indicators of the *investment climate*



# Public finance mechanisms can overcome barriers

- Risk mitigation instruments can address high (perceived) risk.
- Direct investments by Development Finance Institutions (DFIs) / International Finance Institutions (IFIs) can supply additional long-term capital
- Grants can address gaps in the financial viability.



# Overview of PFI instruments to support climate change projects

Risk	Functions	Tools and Instruments
Facilitate access to capital	<ul style="list-style-type: none"> <li>• Providing long-term capital</li> <li>• Facilitating access to private capital</li> </ul>	<ul style="list-style-type: none"> <li>○ Concessional and non-concessional lending</li> <li>○ Equity investment</li> <li>○ International climate funds</li> <li>○ Public-private partnerships</li> </ul>
Reduce risk	<ul style="list-style-type: none"> <li>• Risk-sharing</li> <li>• Credit enhancement mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>○ Structured finance: Guarantees</li> <li>○ Public-private partnerships</li> <li>○ Junior debt/Mezzanine financing</li> <li>○ Insurance products (e.g. political risk insurance) – complex to deploy</li> </ul>
Fill the capacity gap	<ul style="list-style-type: none"> <li>• Aiding project development</li> <li>• Reducing project risks</li> </ul>	<ul style="list-style-type: none"> <li>○ Technical assistance</li> <li>○ Capacity building</li> <li>○ Information tools (GHG quantification, energy certificate tracking, etc.)</li> </ul>

# All climate change projects are not the same

- Each type climate change-related project has unique issues and challenges in attracting private finance.
- Private financial requirements vary by project types; each project type is likely to confront obstacles specific to its financing needs.
- Public intervention to move different types of climate change related projects forward similarly varies
- *Thus*, effective use of climate finance to bring about private investment depends on understanding
  - which issues are most relevant
  - for a specific project or strategy
  - in a given market
  - at a particular time

# Perceived risks

Figure 1: Perceived Risks Classification

## POLITICAL, POLICY, SOCIAL RISKS

### Sources:

- Actions of governments and citizens

### Enhanced by:

- Reliance on public financial and institutional support
- Investment horizon longer than policy cycle
- Environmental impact of some technologies creating social resistance

## TECHNICAL, PHYSICAL RISKS

### Sources:

- Technology characteristics
- Environment/sites impacts

### Enhanced by:

- Not yet proven green technologies
- Lack of accurate technology performance data
- Uncertainty over measurements of the natural resources availability

## MARKET, COMMERCIAL RISKS

### Sources:

- Valuation of input and output
- Cost and availability of financial resources

### Enhanced by:

- High upfront costs
- Long investment horizon and payback periods
- Financiers' unfamiliarity with green investments
- Complexity of infrastructure investments

## OUTCOME RISKS

### Sources:

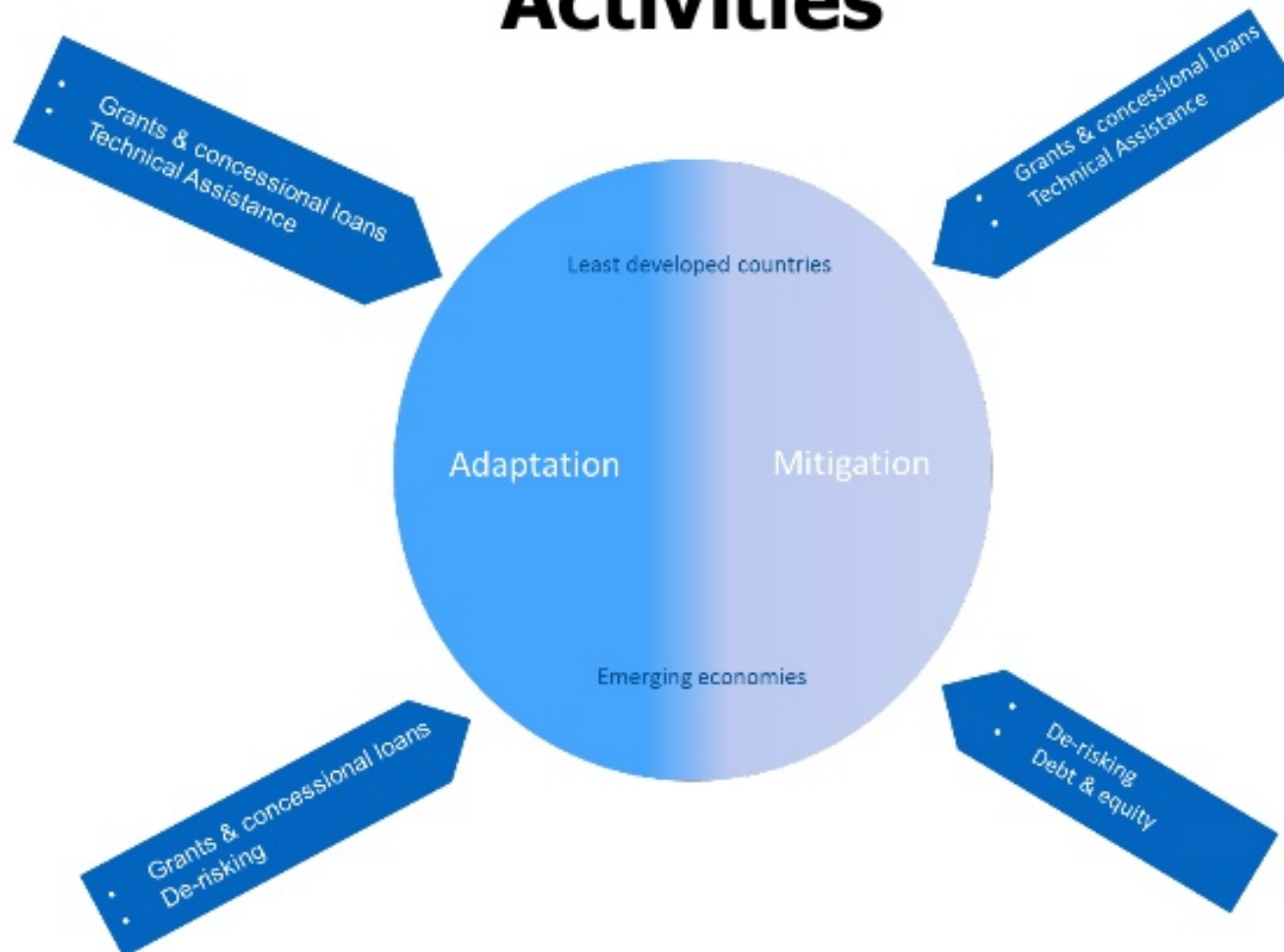
- Commitment of limited public resources
- Uncertainty of delivering public interest goals objectives

### Enhanced by:

- Amount of public support required
- Current budget constraints

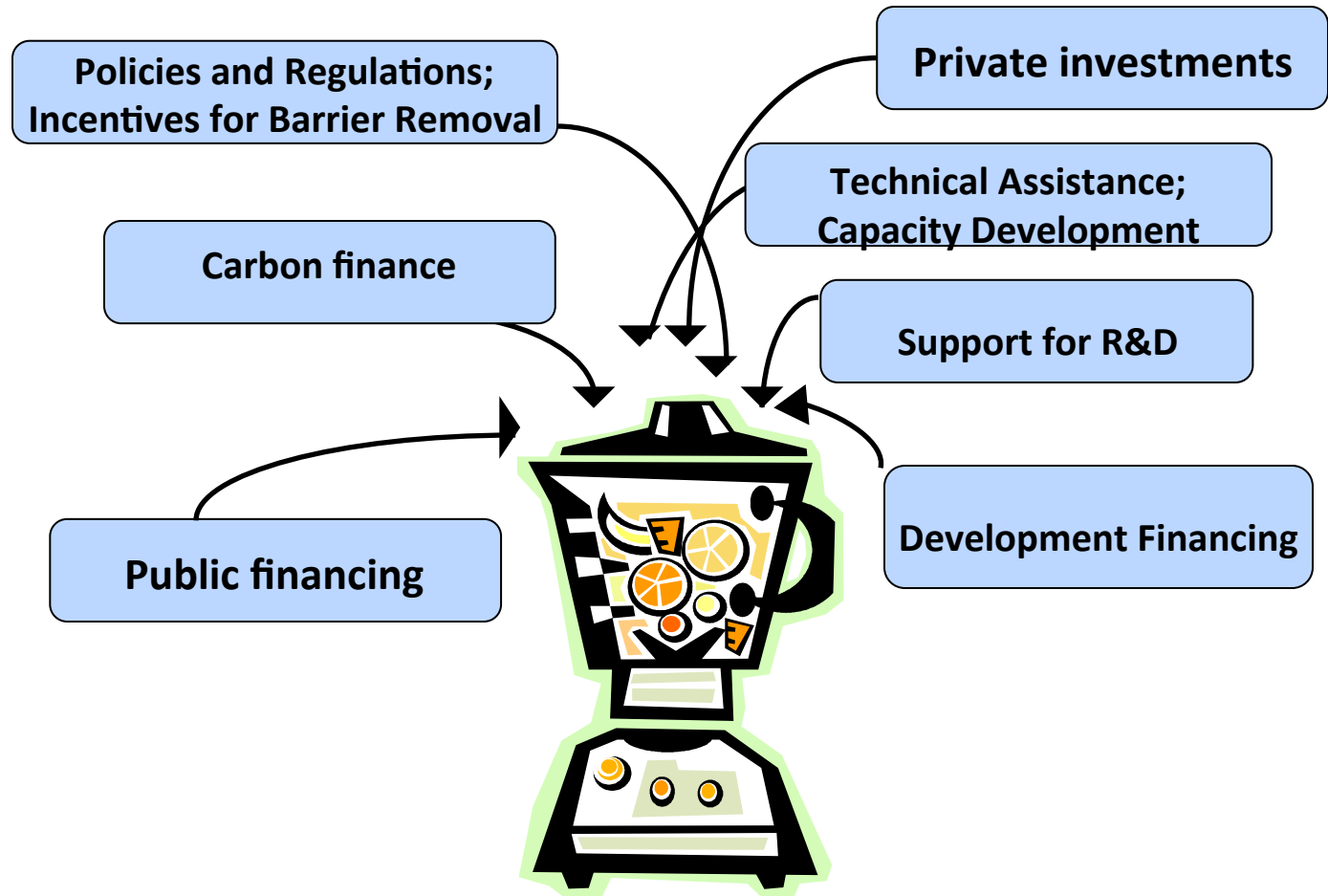
# Different instruments for different activities

## Targeting Different Climate Activities





# Blending of financial sources and policy instruments necessary



Project needs to be financially solid to be able to deliver real, measurable and long-term benefits related to the mitigation of or adaptation to climate change

# Example of public and private sector together financing climate change project: Concentrating Solar Power (CSP)

ACTOR	BARRIER TO INVESTMENT	PROJECT RESPONSES AND EFFECT
Government of India	High cost of CSP	Subsidized PPAs allocated through a reverse auctioning scheme promote cost reductions; bundling of CSP with cheap publicly-owned coal power finances subsidized PPA
Government of India	CSP developers and investors do not trust PPAs with sub-national electricity distribution companies, as the latter are financially weak	The PPA counterpart under the NSM is financially stronger public entity at the national level than sub-national electricity distribution companies and an additional payment security scheme addresses the risk that the sub-national distribution companies buying the electricity may default
Developer (Reliance Power)	High investment costs and short-term orientation of Indian capital market	Debt with long maturity from development finance institutions and US Ex-Im bank; choice of Areva Solar as U.S. technology provider enables debt from US Ex-Im bank (the latter only lends to U.S. companies)
All investors	Debt from foreign institutions in USD-terms implies high foreign exchange (FX) risks as PPA and most investment costs are in local currency	Dynamic FX hedging for 60-80% of risks, remaining risks are taken by Reliance Power with its strong balance sheet
All investors (Areva)	Perceived high technology risks due to the innovative nature of Areva's linear Fresnel in the country and the large scale of the plant	Developer secures comprehensive technology warrantee from Areva that mitigates perception and impact of technology risk

# Example: Menengai Geothermal Development Project

- Kenya recognized that investors are reluctant to take geothermal exploration risk (and if investors take the risk, tariff becomes high). So, given country's well-developed energy policy, including **feed-in tariffs**, Kenya established the Geothermal Development Company (GDC) which is responsible for the developing geothermal fields, in specific steam production – which the private sector will subsequently use to produce electricity.
- For GDC's development of the Menengai Field, the government of Kenya provided USD 247 m while the African Development Fund provided USD 125m blended with USD 25m from the Scaling-up Renewable Energy Program – one of the **Climate Investment Funds** – alongside other IFI funding (AFD USD 72 m, EIB USD 38 m, IDA being finalized).
- This investment in drilling and steam production laid the foundation for private sector investment in (Independent Power Producers) IPPs. Three 35 MW plants are being financed, designed, built, installed, operated and maintained on a build-own-operate basis by three IPPs. Additional projects planned.
- African Development Fund approved USD 12.7 m **Partial Risk Guarantees** to ease investor risk for initial part of project. PRG is for first 105 MW electricity produced by plants operated by three IPPs, to provide investors with comfort on the steam supply by GDC to the IPPs under the aegis of the steam supply agreements.

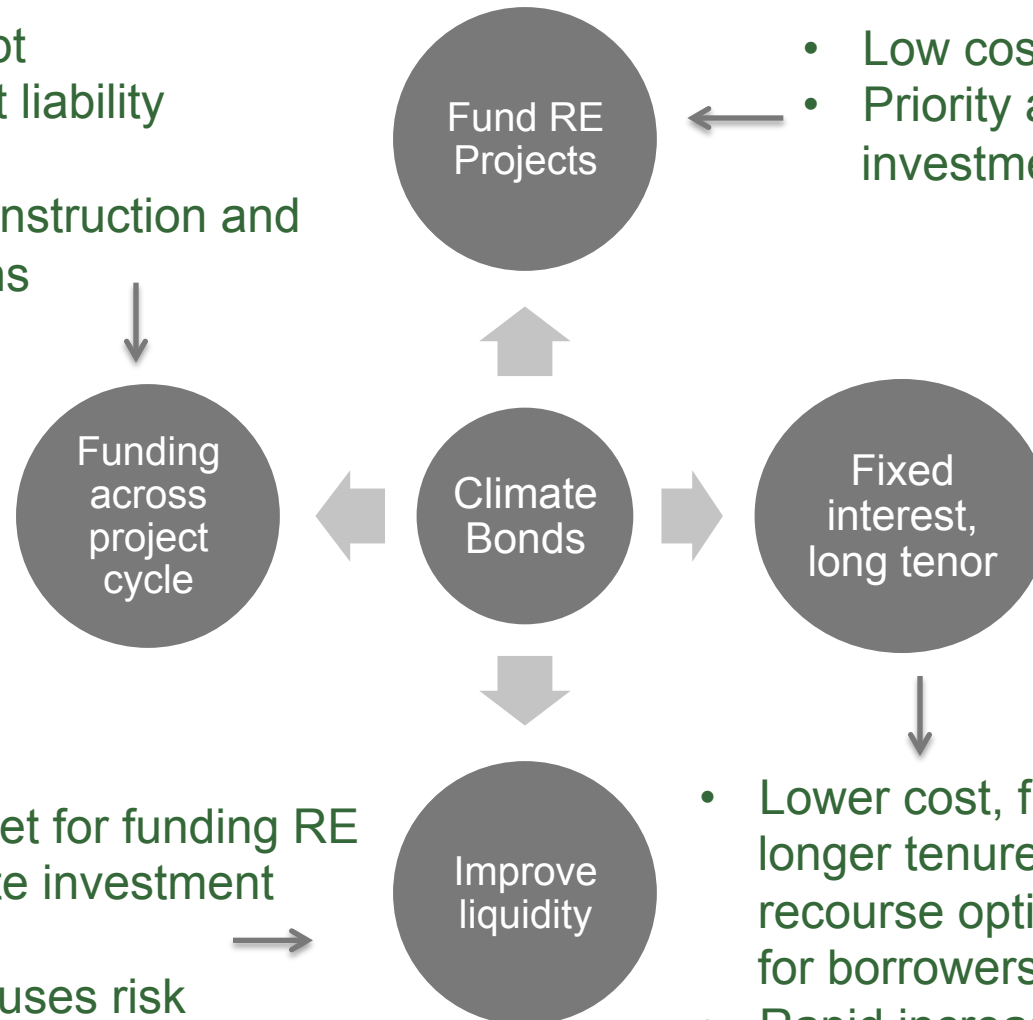
# Example: USAID CEADIR and Climate Bonds

- Climate/green bonds created to fund projects that have positive environmental and/or climate benefits.
- **Green bonds** are standard bonds with “green” or “climate” as a bonus
  - Proceeds earmarked for climate or environmental projects
  - Labelled as ‘green’ by the issuer
- Majority of the green bonds issued are **green “use of proceeds”** or **asset-linked bonds** - proceeds are earmarked for green projects but are backed by the issuer’s entire balance sheet.
- Other types include: green “use of proceeds” revenue bonds; green project bonds; green securitized bonds
- USAID/CEADIR is working with countries to facilitate issuance of green bonds by PFIs, sometimes with additional of partial guarantee, as means to attract private sector finance

# Climate/Green bonds address funding challenges

- Long term debt
- Address asset liability mismatch
- Re-finance construction and long term loans

- Low cost funds
- Priority area for green investments



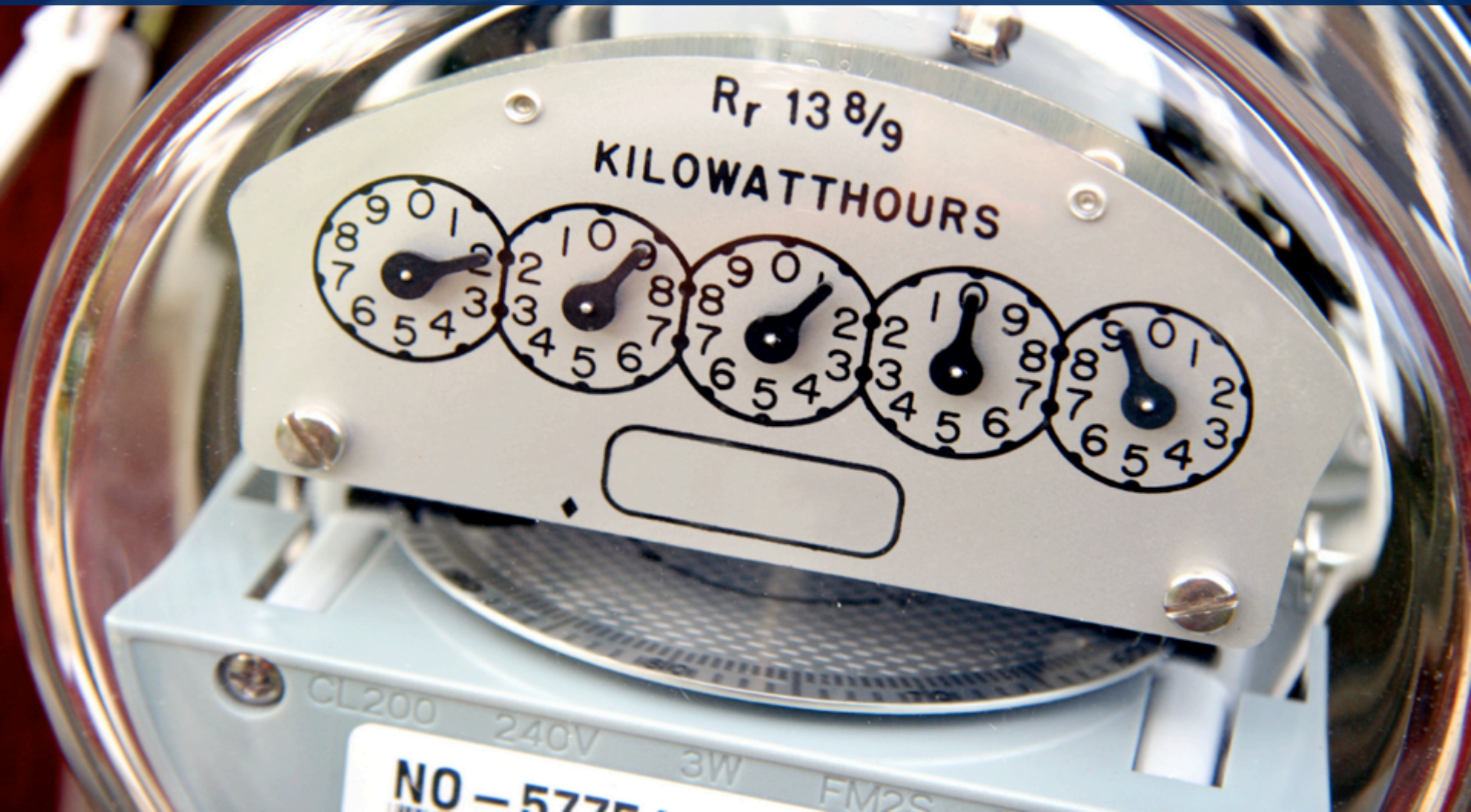
- Alternate market for funding RE
- List on alternate investment markets
- Bilateral trade uses risk mitigated, ring fenced structures

- Lower cost, fixed interest, longer tenure, and non-recourse options of financing for borrowers
- Rapid increase in corporate issuances

# Energy Savings Insurance



# Energy Savings Insurance



1. Rationale for EE investments. Risks and barriers

2. The Energy Savings Insurance approach

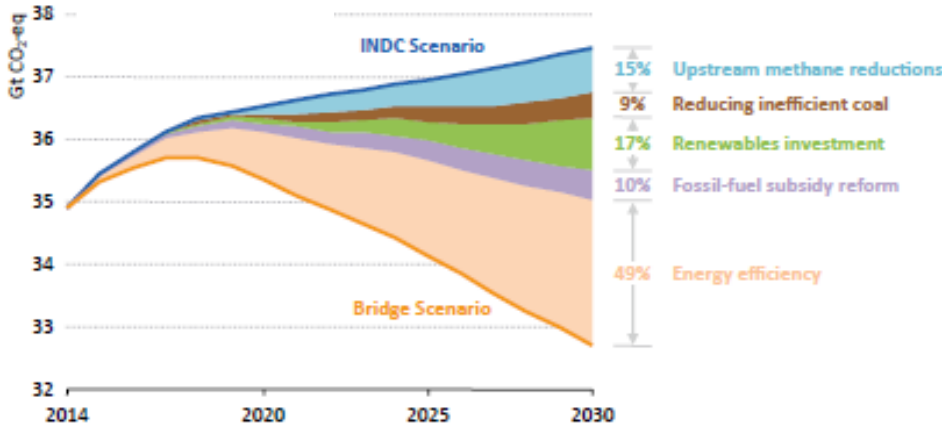
3. ESI in action. How to introduce it, case studies

4. *How to implement the mechanism in your country?*

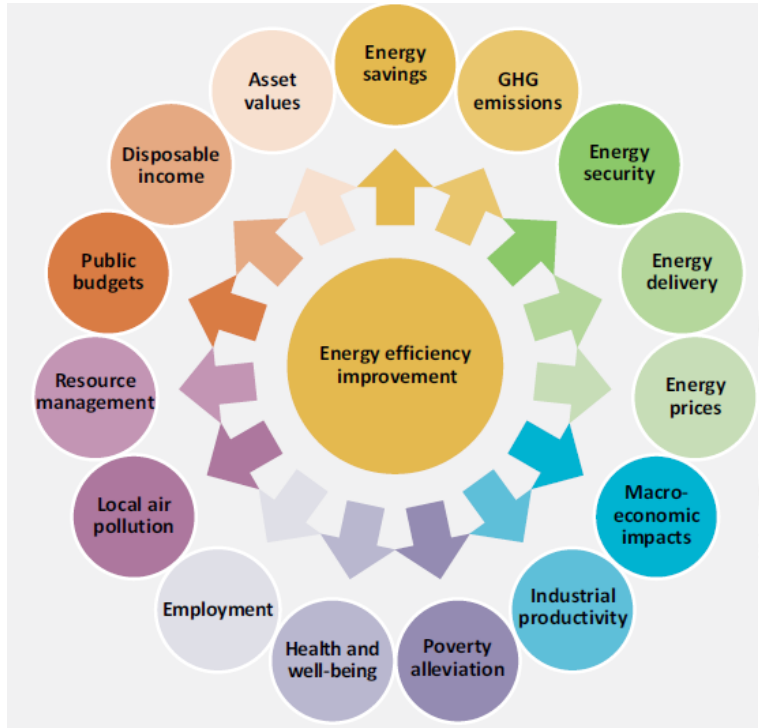


# Energy efficiency – for many good reasons, including half of GHG reduction potential to 2030

**Figure 3.2** Global energy-related GHG emissions reduction by policy in the Bridge Scenario relative to the INDC Scenario



Source: IEA WEO Special Report 2015



Source: IEA Capturing the Multiple Benefits of Energy Efficiency, 2014

# Exchange equipment, save energy cost, and pay back investment

## Scenario with existing equipment

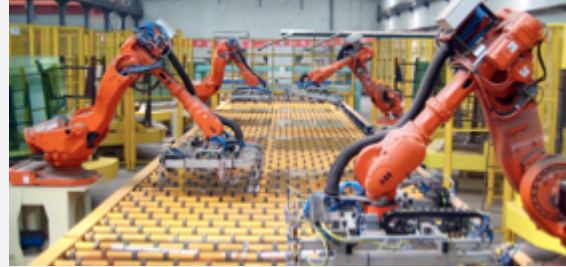


Maintenance cost

Energy cost

period of 5 years

## Scenario with EE equipment



Investment

Maintenance cost

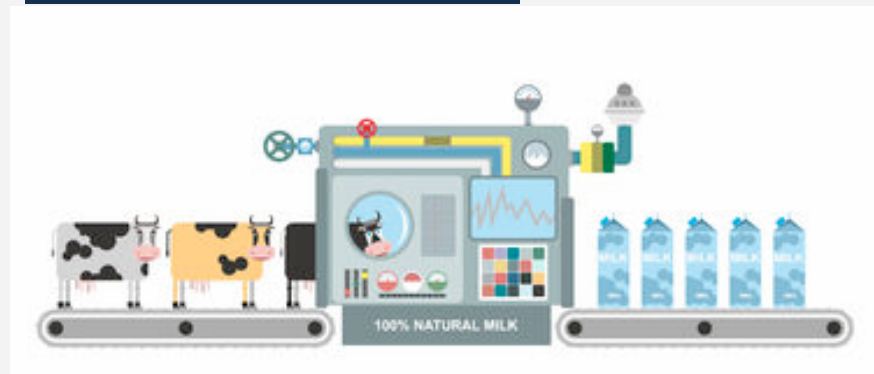
Energy cost

period of 5 years

Savings

# ESI Initial Sectors

## Mexico : agro-industry



≈ 4,900 enterprises  
Target ⇨ 190 projects  
Investment ⇨ USD 25 million

## Colombia: Hospitals/Hotels



≈ 1,100 private Hospitals  
≈ 6,800 Hotels  
Target ⇨ 125 projects

Investment ⇨ USD 25 million

# ESI Focus: Standardized technologies

Investments from USD 50K to 1 million; payback from 2 till 5 years



Air conditioning system



Solar water heating systems



Industrial boilers



Automation System



Solar pool heating systems



Cogeneration

# Why does it not work so easily? Barriers and risks



**Enterprises**

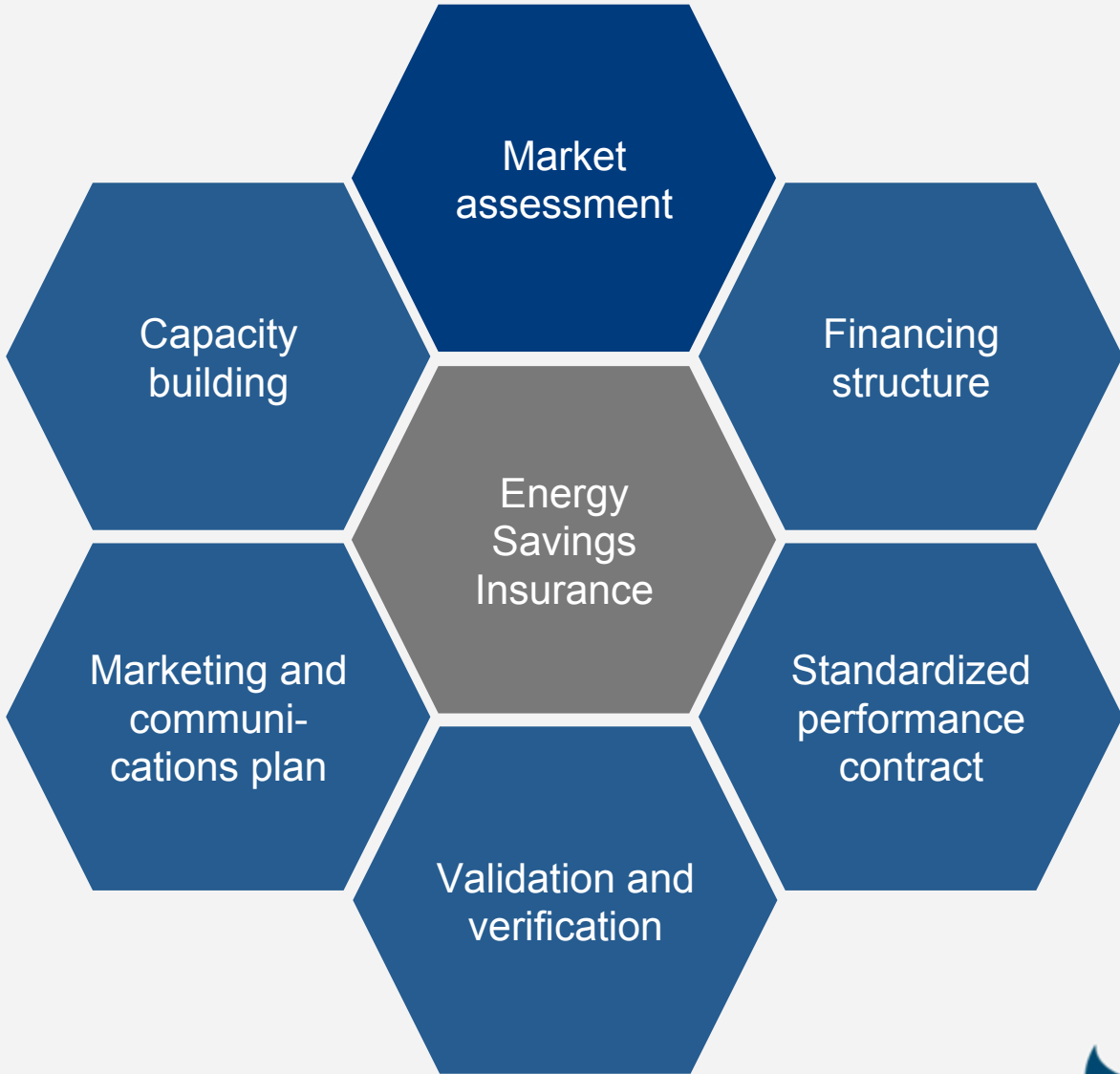


**Solution Providers**



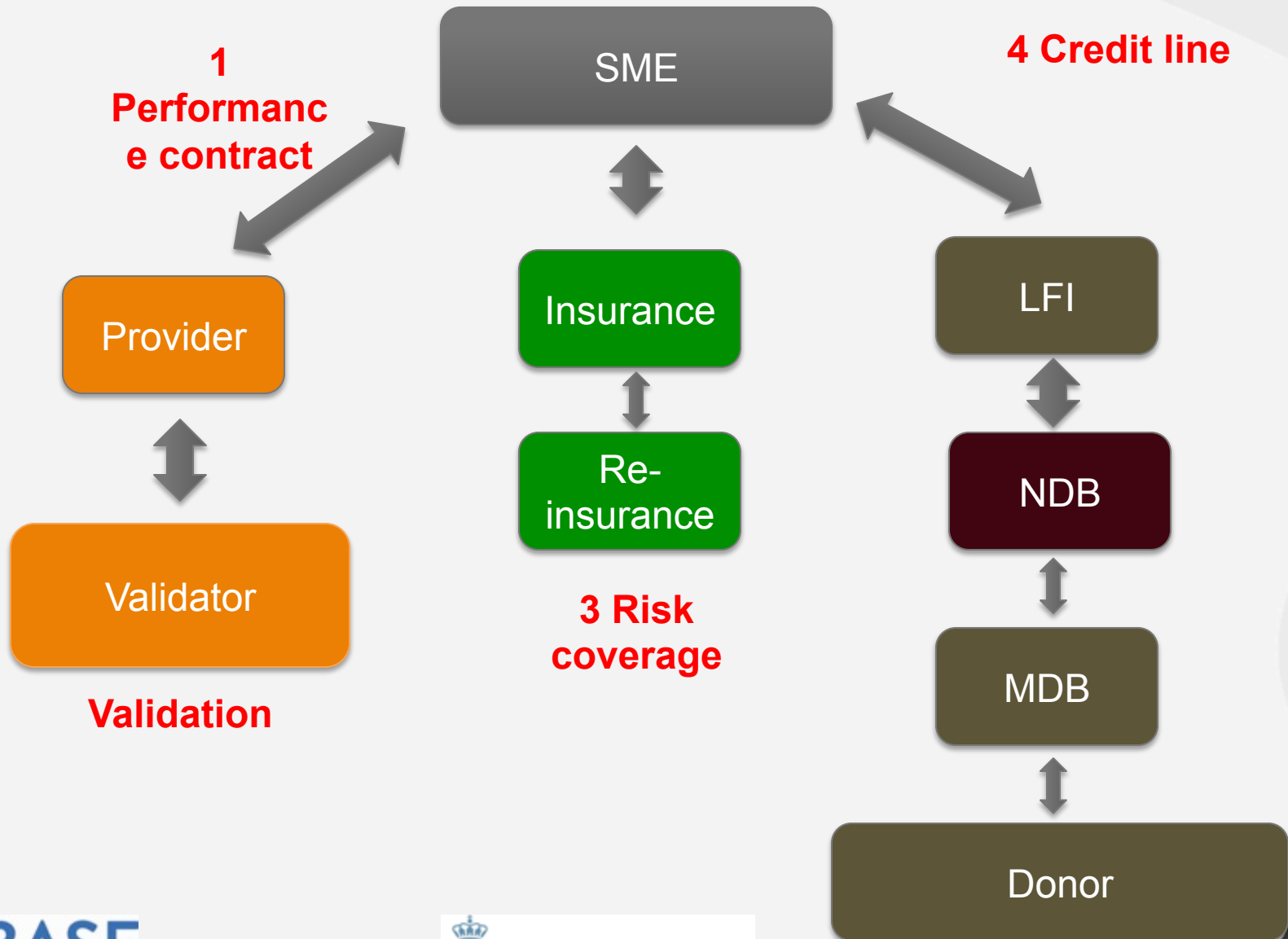
**Financial Institutions**

# The ESI toolkit: A package of measures to address barriers and mobilise private investments



# Developing EE markets:

Addressing risks; mobilizing demand and supply; providing finance.





# The foundation: Understanding the market and its potential

## In-depth analysis :

- **Priority sector(s) with EE potential**
- **Key actors:** businesses, technology providers, financial institutions
- **Existing initiatives**
- **Financing options**

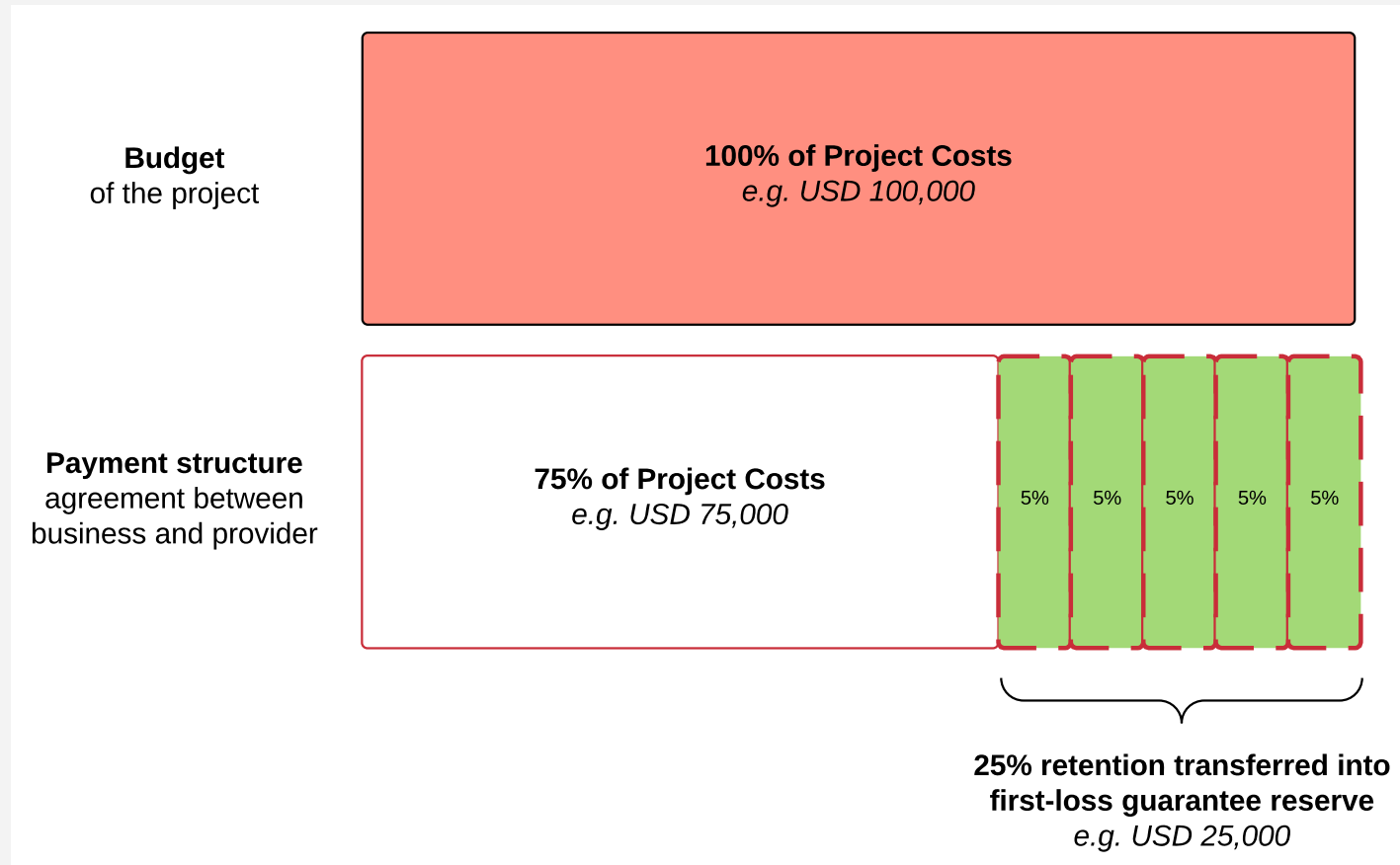
Outcome:

**A report on the state of the market, with recommendations on adapted ESI mechanisms.**

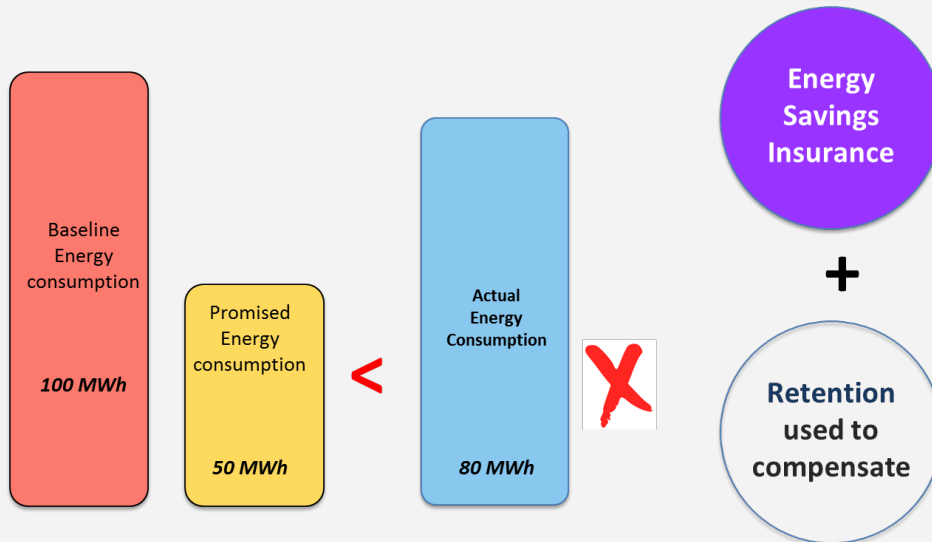
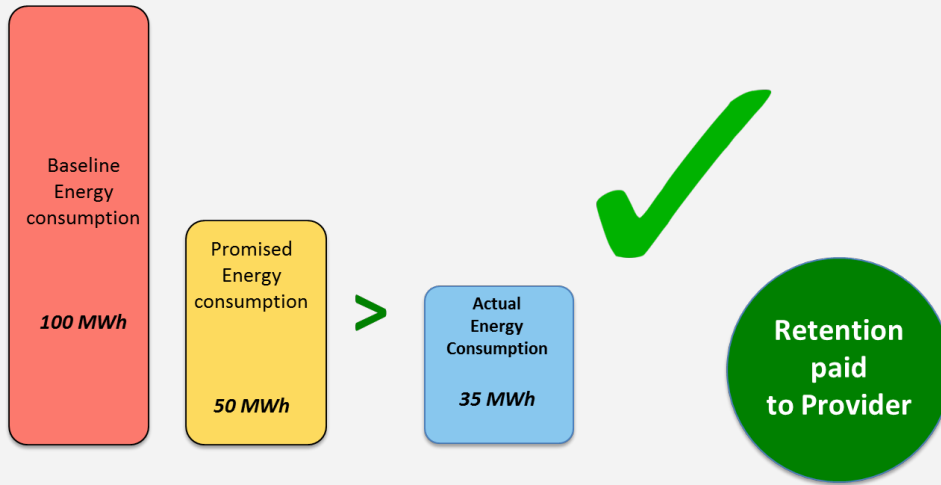




# The standardized performance contract: Incentives and certainty

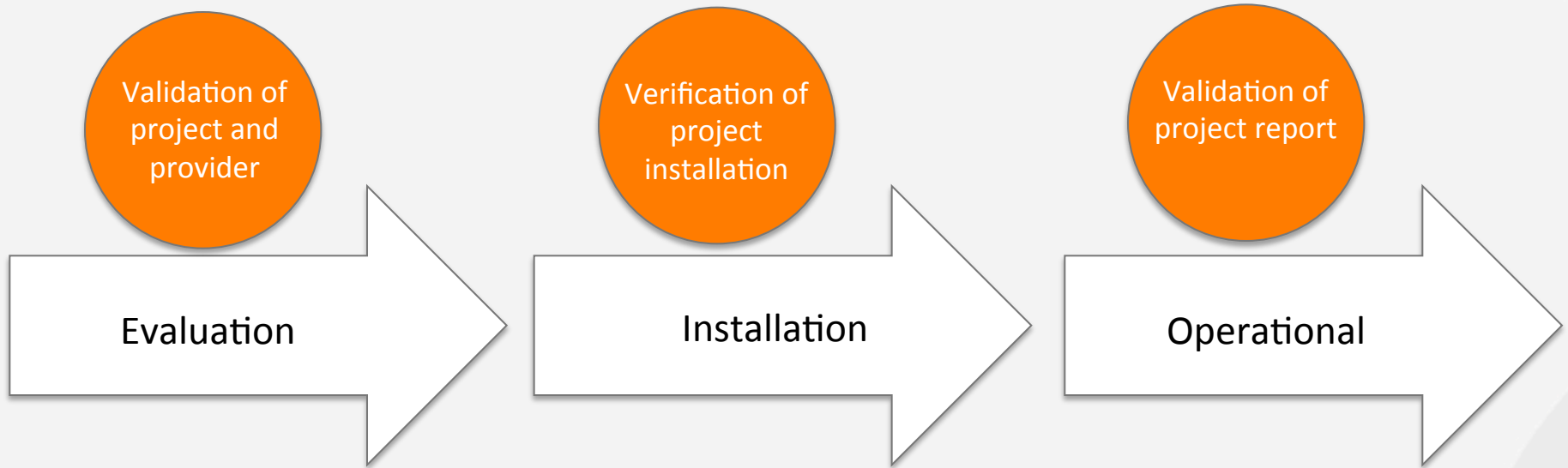


# “Performing” and non-performing scenarios



# Independent Validation Mechanisms:

Gives trust in the project and the technology provider



# ESI – state of play

## Next steps

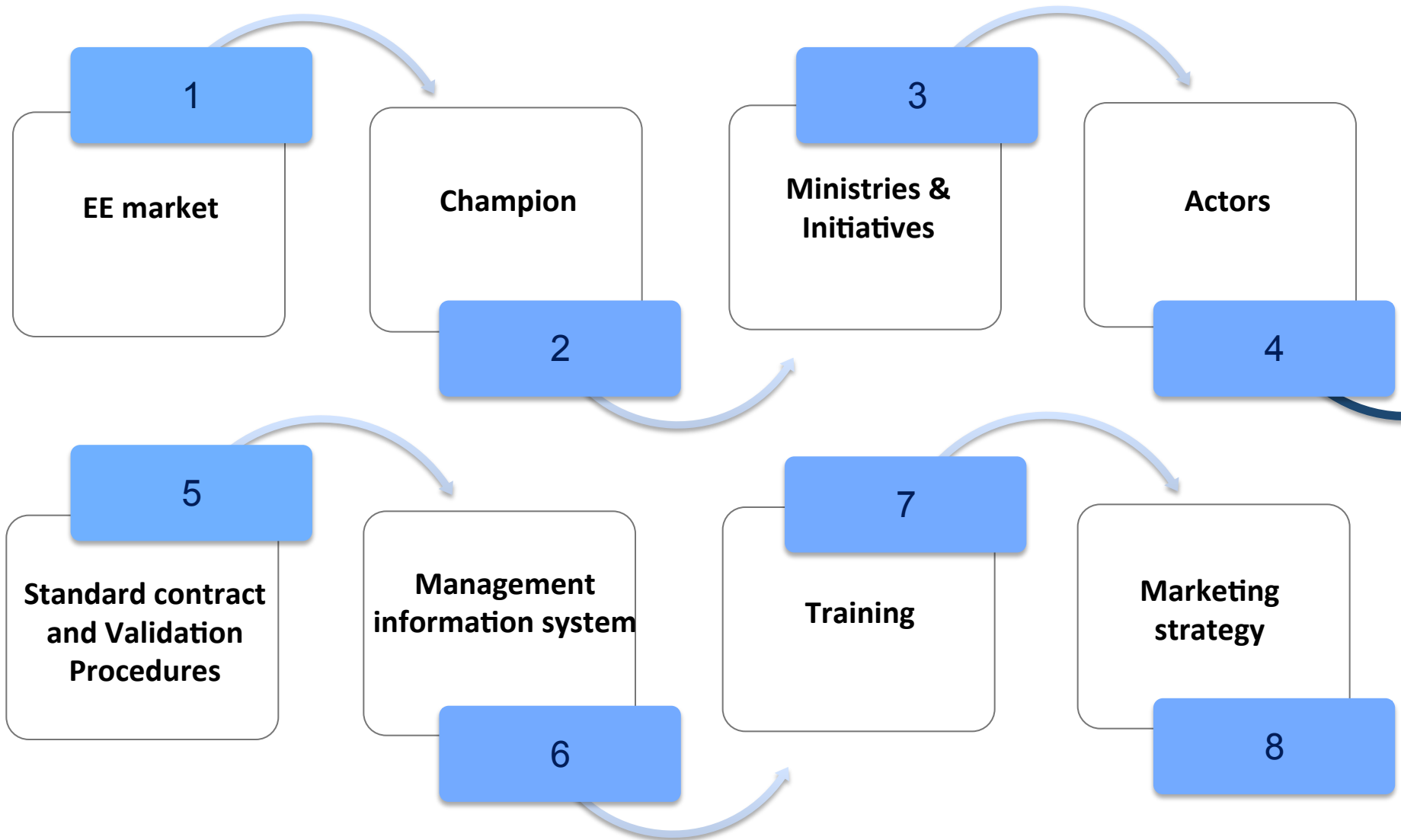
- Replicate and scale up ESI in Latin America and Caribbean.
- Govt. of Denmark has pledged support, others may join.
- Interest in other regions – Asia, Africa.
- IDB establishing knowledge sharing platform.

## Recognition and support for ESI from “Innovation Lab”

- Aims to drive billions of dollars of private investment into climate change in developing countries.
- Has now launched a second cycle and an international call for ideas.



# Introducing the ESI package in a country and sector



## Implementing the ESI program in your country

1

Do the proposed ESI measures address the main EE challenges to EE market development in your country? Which ESI measures are most important to include in your country?

2

Which public and private entities would have to be involved in your country (e.g. specific ministries, business associations, etc.) ?

Which complementary policy and regulatory measures would help ESI?

3

In the pilot countries in Latin America, National Development Banks have been “champions” in introducing ESI. Which organization(s) could manage an ESI program in your country?

# Energy Savings Insurance

**THANK YOU!**

**For more information please contact**

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# Mobilizing private finance in your country

In **groups of 5-8** with both country and technical representation

- Identify a **time-keeper**, a **rappporteur**/note-taker and a **presenter** who will report out
- Review the discussions questions
- Agree on 2-4 questions to be the focus of group discussion
- Share your experiences, successes, and challenges.
- Discuss lessons learned and shared challenges that remain
- Identify key areas for LEDS GP support that could effect transformative change
- Capture ideas on the output template sheets

In considering financial instruments and innovative risk mitigation instruments:

- 1) Do the proposed ESI measures address the main EE challenges to EE market development in your country? Which ESI measures are most important to include in your country? Which public and private entities would have to be involved in your country? Which complementary policy and regulatory measures would help ESI? Which organization(s) could manage an ESI program in your country?
- 2) Beyond the specific example of the ESI, what recent opportunities have there been to apply other instruments/approaches from the LEDS toolkit (or other sources) that provide insight into barriers and opportunities for attracting greater private investment in climate change mitigation and adaptation projects? Have you been able to identify and track climate change related investments made with private finance?
- 3) What next steps are you planning to address any perceived barriers and promote greater private investment in climate change projects?
- 4) How can the LEDS GP support your forthcoming efforts in your country, or across countries (global or regional)?





# Capturing discussion points and outputs

In your learning group:

before you finish your session please be sure to complete your output sheet!

<b>Session Title:</b>	<b>Other - Actions / Requests / Needs:</b>
<b>Group members:</b>	
<b>Selected country challenge discussed:</b>	<b>How LEDS Global Partnership could assist in applying solutions</b>
<b>Good practices and lessons for overcoming these challenges</b>	
<b>Initial ideas on how to apply what's learned</b>	



# Hearing back from you

- Main insights
- Lessons learned and new ideas
- How can LEDSGP support efforts?

Please hand your output sheet to the moderator



Please join the LEDSGP and encourage others to join.

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## Last thoughts....



## Questions to inform leveraging of private finance

Policymakers and climate negotiators should be structuring the discussions on private climate finance in line with the following sequence of questions:

- What is the typical funding profile for each of these project categories? Who are the main financial actors? What kind of private finance is required for successful implementation?
- What are the main barriers currently keeping private capital from these project categories, noting that barriers are often specific to the kinds of finance required?
- What kinds of existing public intervention have successfully overcome these barriers? Can they be strengthened, expanded or copied with the support of the global climate regime?

# USAID CEADIR Climate Finance E-Tool

- USAID CEADIR plans an e-tool focused on financing climate change initiatives at the national and subnational (not project) level
- Will be dynamic, reflecting differences in national needs, financial resources, and policy environment
- Envisions input from public and private communities, with public finance being used to leverage greater private investment
- Will be modular to allow countries to focus on topics most relevant to their needs
- Will draw on country experiences.
- A software product (potentially mobile application) to allow for revision and updates



**Thank you!!!**



# About CEADIR

**CEADIR** supports countries to assess and scale up low-carbon, climate resilient development.

For more information about CEADIR's work in financing climate change activities?

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## **CEADIR Series**

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- ❖ **Critical issues**
- ❖ **Economic analysis**
- ❖ **Financing climate change**