Closing the Energy Efficiency Financing Gap through Innovative Implementation Approaches:

Deep Dive Workshop on:

Practical Actions for Accelerating Energy Efficiency: Finance, Policy, and Public-Private Partnerships

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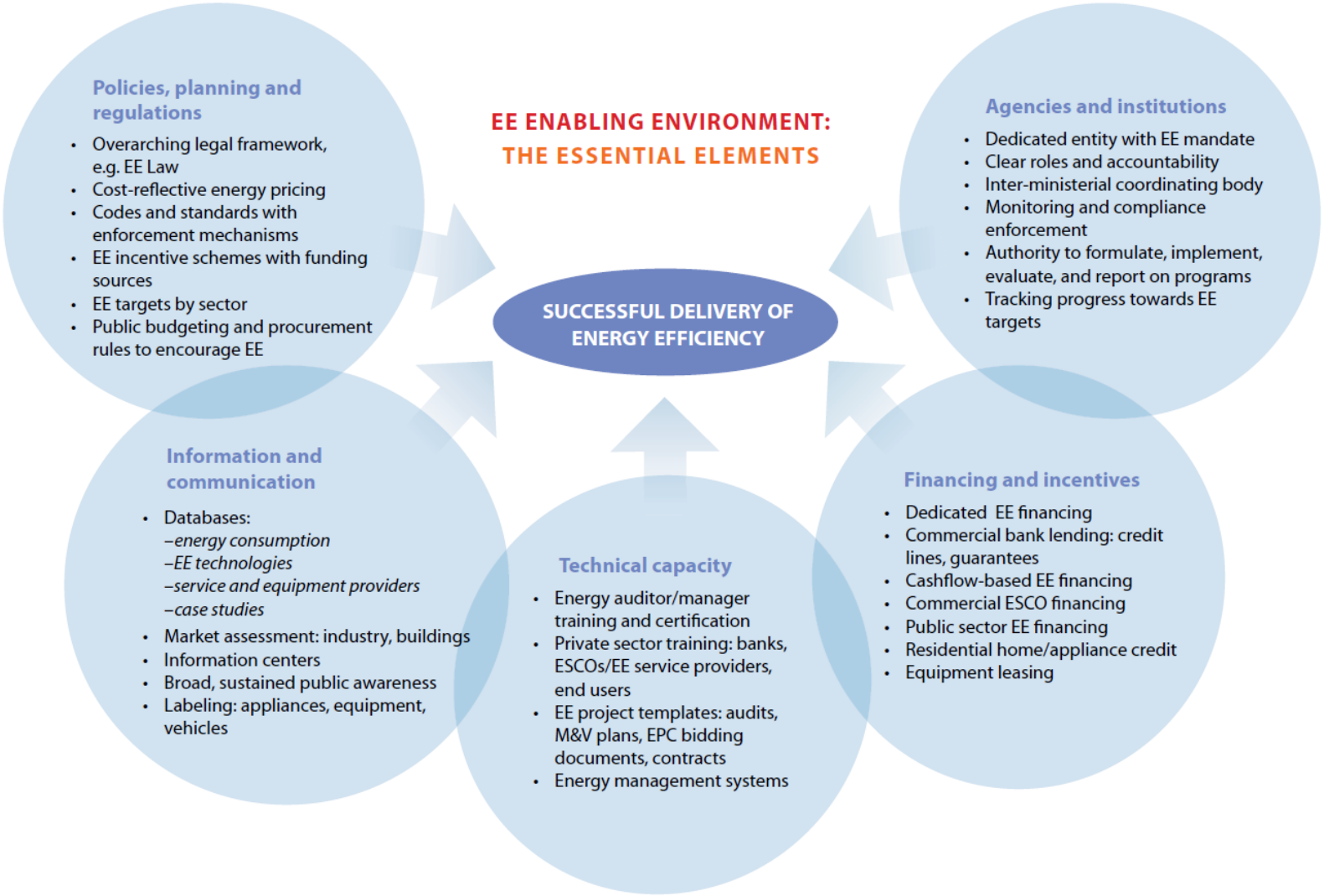
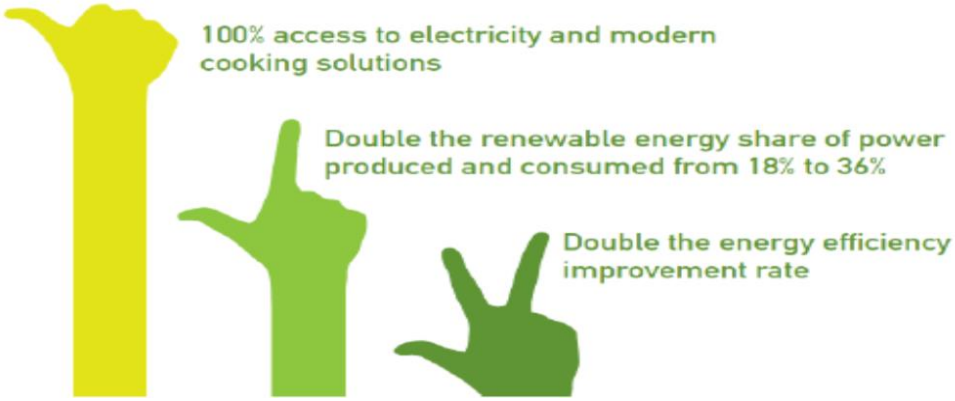
Washington D.C.

Scaling Up EE Needs an Integrated Enabling Environment: *finance is one part of the puzzle*



Source: World Bank (2015)

SE4ALL 2030 Targets and Financing Gaps



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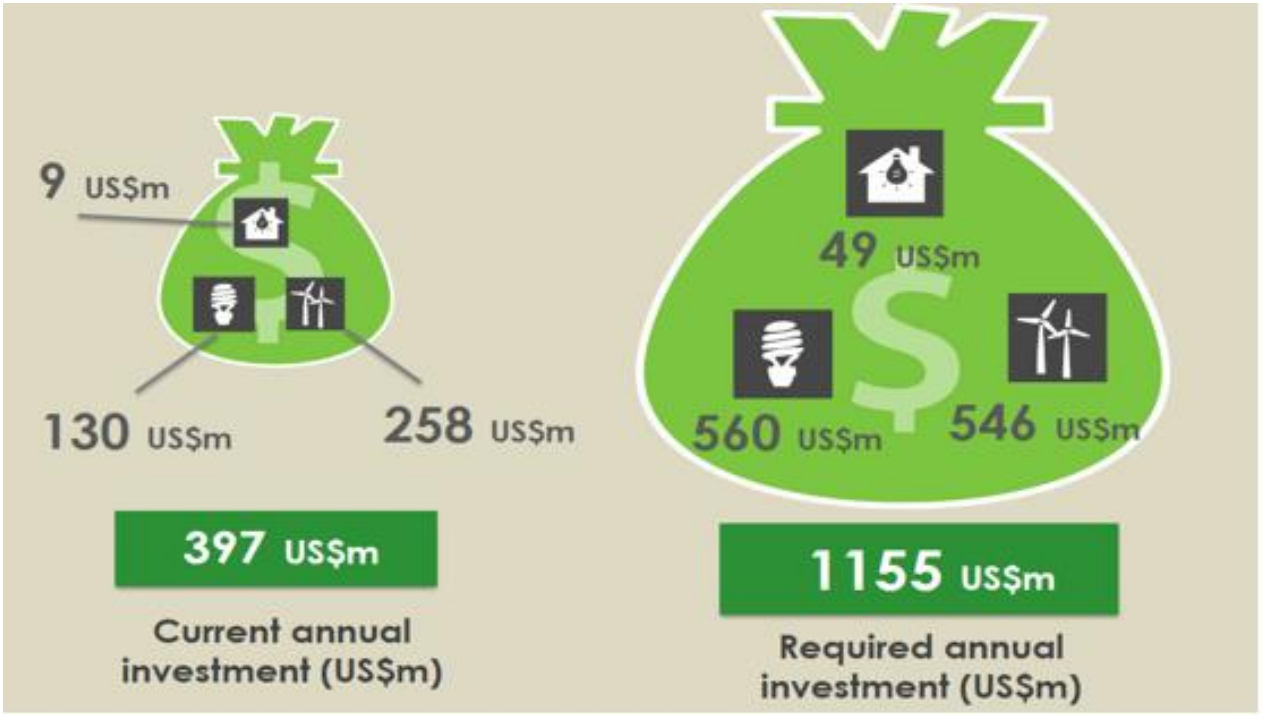

Source: SE4ALL- GTF (2015)

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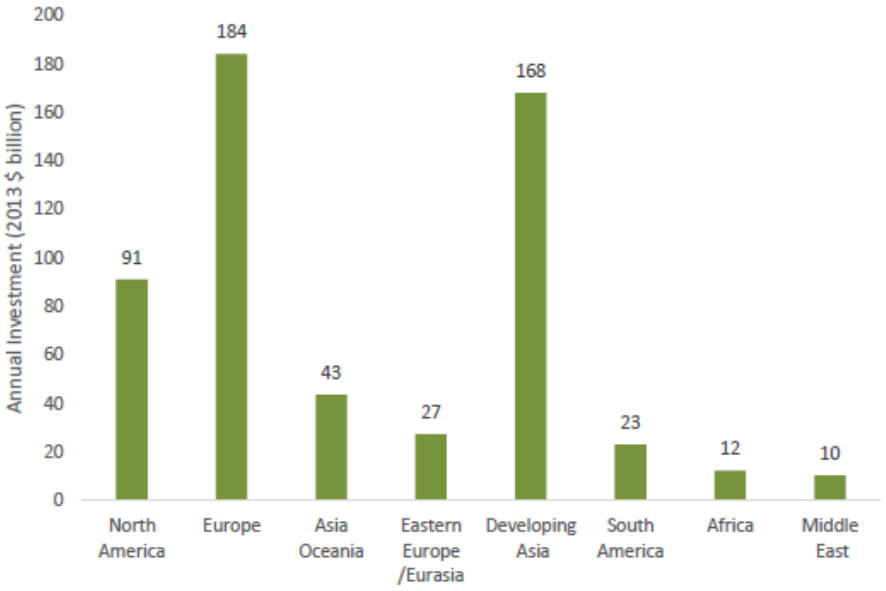
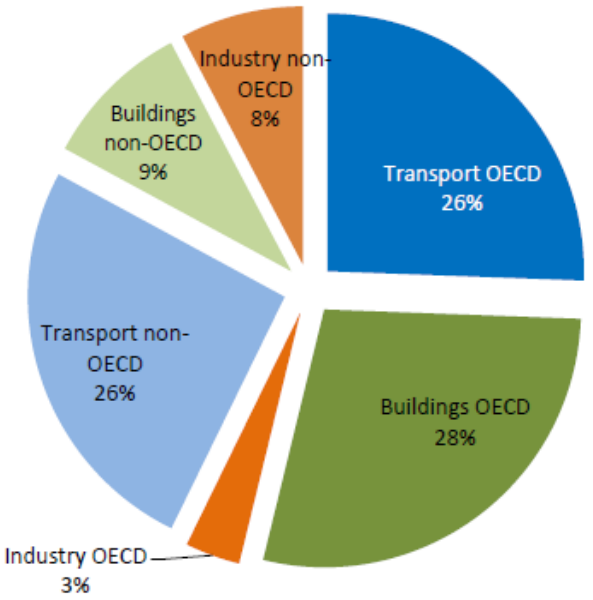
Where are Future Energy Efficiency Investments Required?

Annual average energy efficiency investment in the 450ppm Scenario by region, 2014-30



Share of annual average energy efficiency investment in the 450ppm scenario by sector and region, 2014-30



EE Investments need to increase by 4.3x of current levels
Most action will be in Europe, Developing Asia and North America

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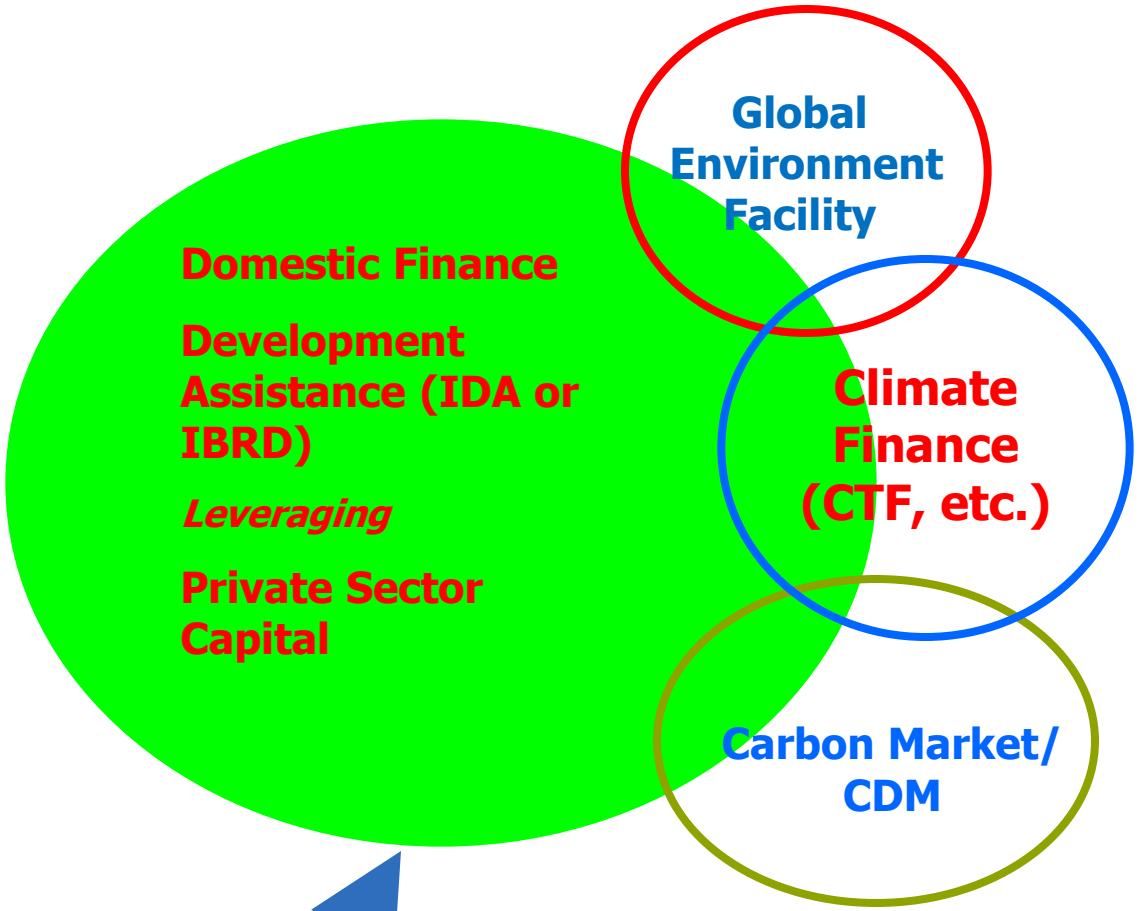
Source: SE4ALL- GTF (2015)

How World Bank Supports EE Programs
(Financing Sources & Technical Assistance)

Technical Assistance & Capacity Building/ Training

- Utility Load Research
- Program Design and Implementation
- Consumer Surveys
- Technical Specifications
- Procurement
- Testing and Quality Issues
- M&V and Impact Evaluation
- Tariffs or Financial Policy Incentives (Taxes)
- Inefficient EE Lighting (IL) Phase Out Policies



Institutions: Electric Supply/Distribution Utilities; Municipalities, etc

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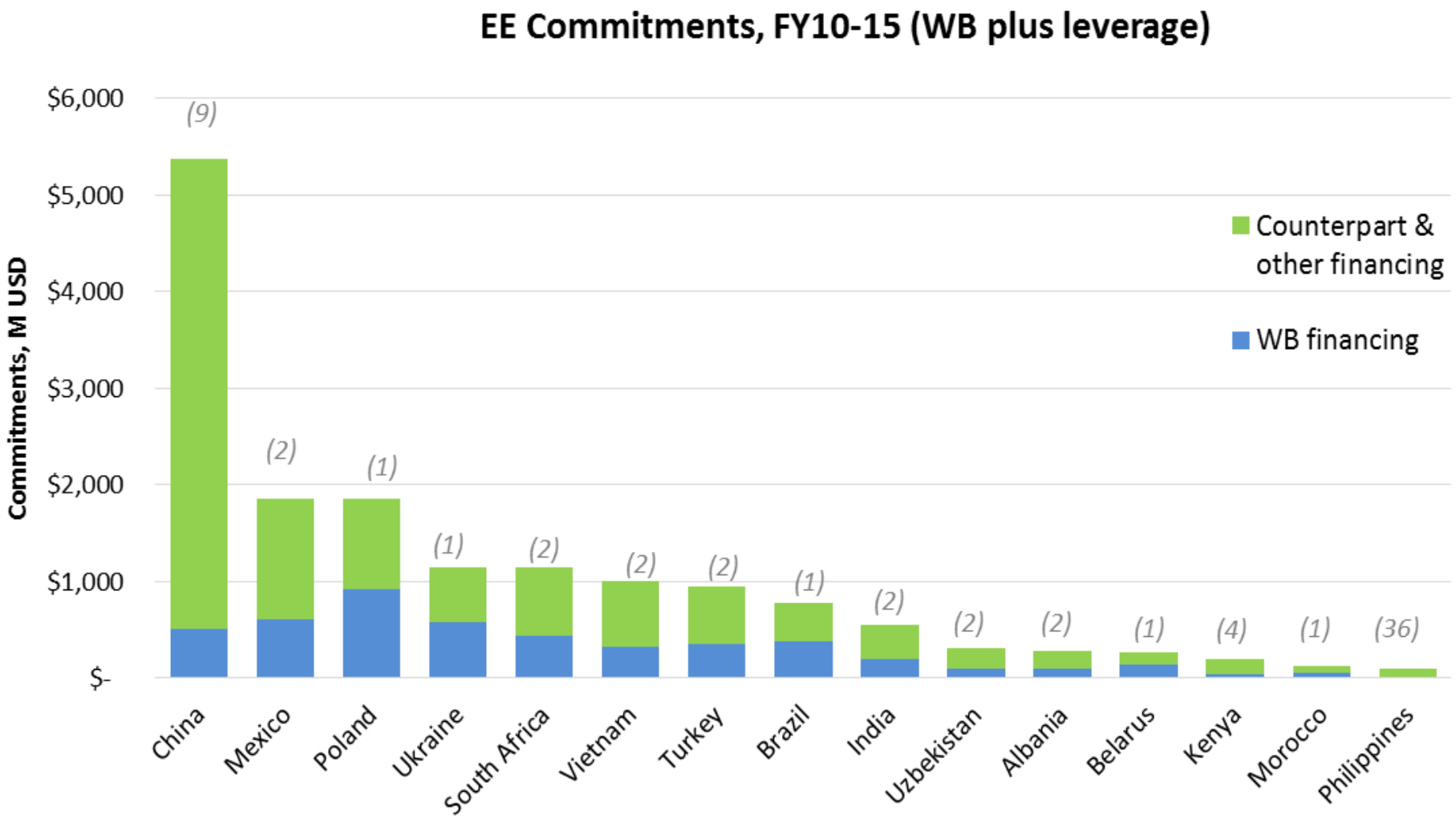
Financing Sources and Instruments for Large Scale EE Investment Programs

- Public Investments (by Government and electric utilities)
- Support from Development Finance Institutions such as the World Bank through following instruments:
  - Soft/low interest investment lending,
  - Grant finance, mostly for technical assistance,
  - Lending through utilities or financial intermediaries (incl. private capital leverage)
  - Development Policy Credit
- Support from Global Climate Finance Mechanisms
  - Carbon Finance – Clean Development Mechanism
  - NAMAs, NDCs, etc
  - Clean Technology Fund (CTF).....also GCF
  - Global Environment Facility (GEF)
- Modality of Finance
  - Stand –alone
  - Blended
  - PPPs

Energy Efficiency Financing and Leverage



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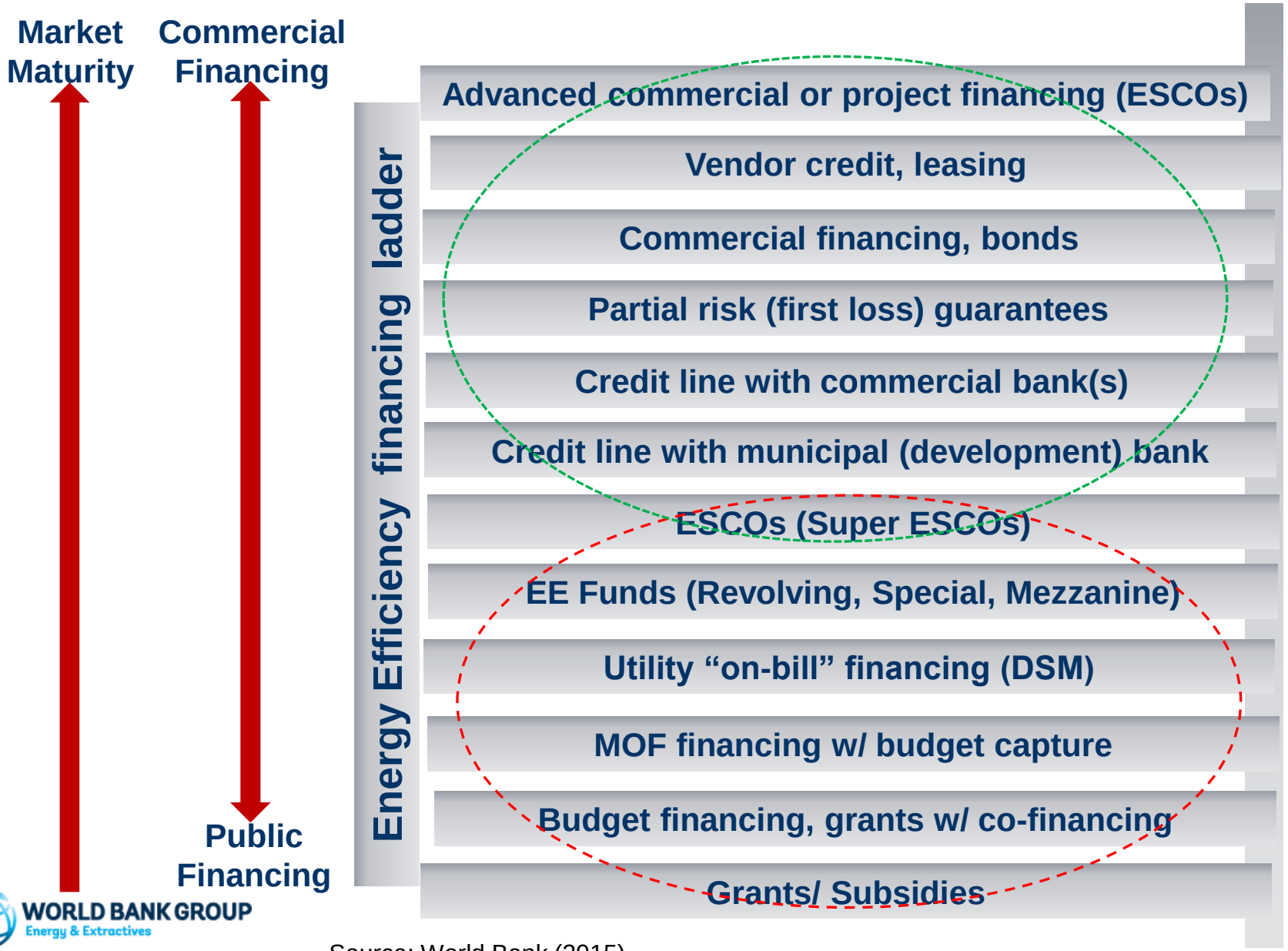
Sustainable EE Financing Mechanisms: Utilizing Public Finance to Mobilize Private Capital



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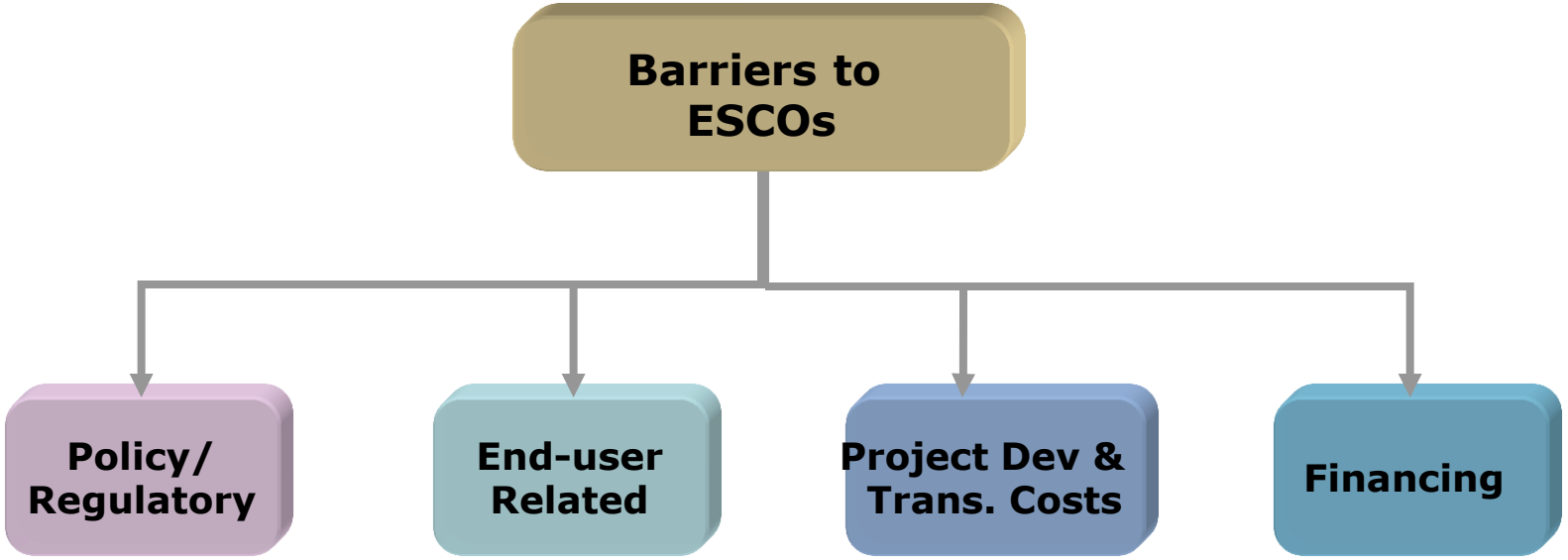
Source: World Bank (2015)

Global ESCO Development Results have been Mixed

- Some countries, such as USA, Canada, Germany, Australia, France, China, Japan, Korea, Armenia etc. have seen good growth of the ESCO industry.
- Others, such as India, Turkey and Thailand, etc. have seen limited ESCO growth and development.
- Many barriers to ESCOs particularly in the public sector



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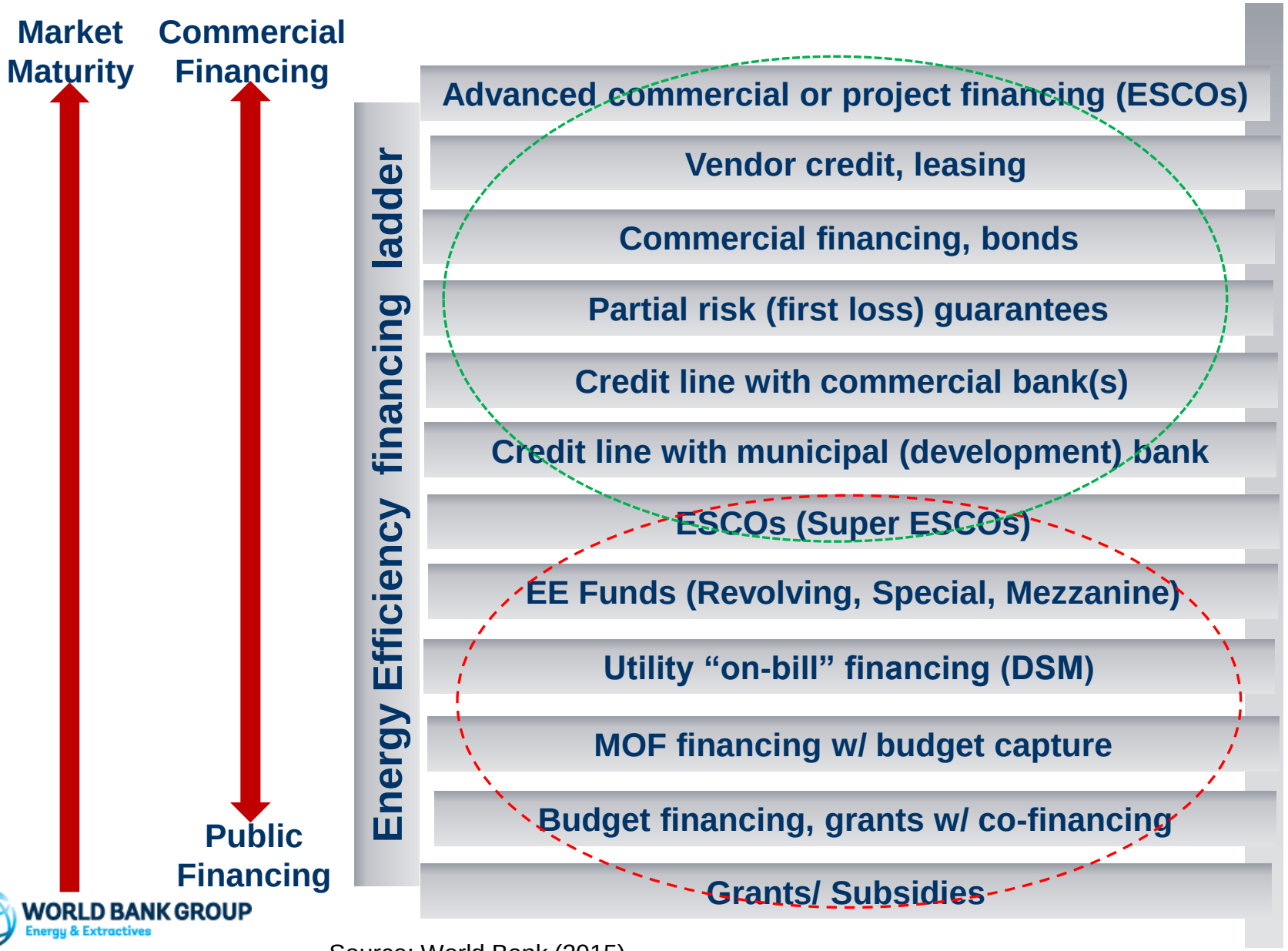
Source: World Bank (2013)

ESCO Global Experiences & Results: Examples of Success

Country	Market Size	Results	Projects
United States (FEMP)	US$3.8 billion	- 18 trillion BTU/yr (2006) - US$7.1 billion energy cost savings	460 ESPC projects
Canada (FBI)	Can$320 million	- 20% energy intensity reduction - Can$40 million energy cost savings - 285 kt CO_2 reduction	85 EPC projects (7,500+ buildings)
Germany	~€200 million	- 20-30% energy cost reduction - €30-45 million energy cost savings/yr	2,000 properties
Japan	~10 billion yen	- 12% reduction energy intensity - 265kt of CO_2 reduction	50 ESPC projects in FY06
South Korea	~220 billion Won	n/a	~1,400 public ESCO projects

CHINA: In 1997, only 3 ESCOs. In 2015, 5,000 ESCOs with $10 billion business

Sustainable EE Financing Mechanisms: Utilizing Public Finance to Mobilize Private Capital



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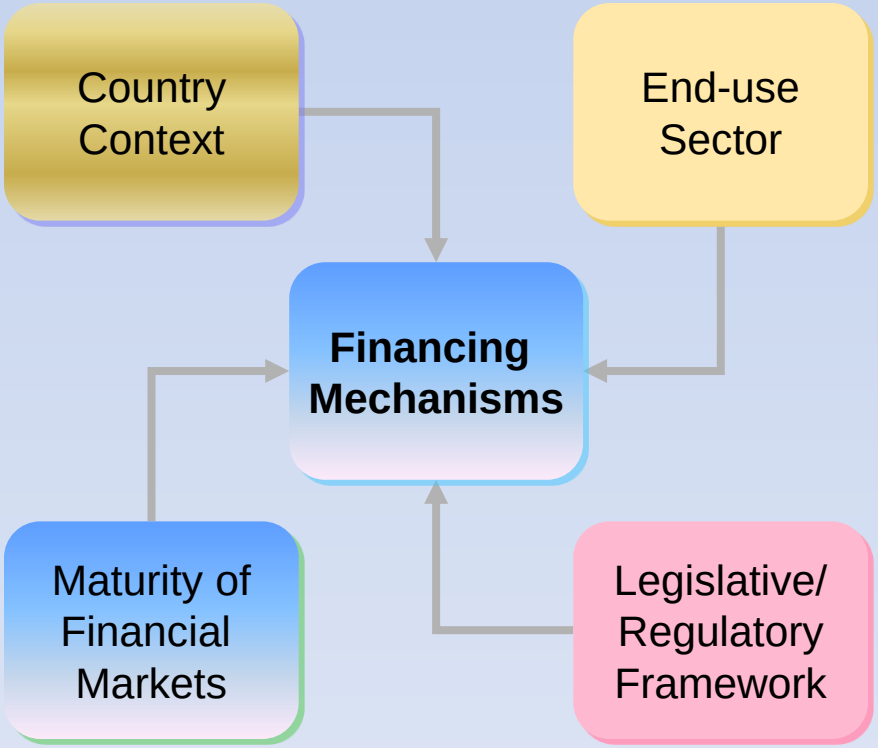
Source: World Bank (2015)

Factors Determining Choice of EE Financing Mechanism



- Selection of mechanisms depends on local conditions
- Different mechanisms may be needed for different sectors
- Combinations of mechanisms may be more effective
- International experience provides useful information, but must be adapted to local conditions

India – Energy Efficiency Potential

Energy Efficiency Potential Across Sectors

No.	Market	Investment potential (Rs crore)	Thermal mtoe	Electrical Billion kilowatt-hours	Avoided Capacity MW	Payback period (years)[a]
1	Industrial	12,100		49	7 000	0.5
	Generic energy efficiency	4,200		23.7	3 400	
	Process energy efficiency	7,900		25.3	3 600	
2	Commercial	570		1.71	553	0.7
	Government-owned offices	340		0.76	360	1
	Government-owned hospitals	85		0.87	140	0.2
	Privately owned hotels	145		0.18	53	0.6
3	Municipal	1,300		3.7	1 688	0.9
4	Agriculture[b]	30,000		30	5 095	—
5	PAT	30,603	9.78		5623	
6	Utilities (Utility Efficiency Program)[c]	28,000			9000	5 years
	Total	1,02,573	9.78	84.41	15,176	—

[a]Assuming average commercial electricity cost of Rs 5 per kilowatt-hour

[b]Assuming that half of the estimated 2 crore pump-sets, mostly inefficient, are replaced over the next 2–3 years through public–private partnership

cDistribution Energy Efficiency Program for reduction of Losses at the DT level.

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Source: SIDBI - 2016

India's Global Commitments- Climate Change

India's Intended Nationally Determined Contributions (INDCs): Key points

- Commitment to reduce the CO_2 emissions intensity by 33-35% by 2030 from 2005 levels.
- Increased thrust on **Energy Efficiency**, Renewable Energy, Cleaner Production, etc.
- Investment of **USD 2.5 trillion** required for meeting India's climate change actions.

Partial Credit Guarantees (Risk Sharing) for Catalyzing EE Investments

- Designed to address the problem of access to finance
- Risk perception of banks and financial institutions
- Government or donor agency provides a partial guarantee covering loan loss from default
- Participating banks sign agreements specifying loan targets and conditions
- Banks conduct due diligence and process loans
- In case of loan default the guarantee covers a portion of the loss – the program may also include a “first loss reserve”
- Substantial technical assistance also provided to banks, project hosts and project developers (ESCOs)

India: Partial Risk Sharing Facility (PRSF) for Energy Efficiency Project - DESIGN

PDO: Transform the energy efficiency (EE) market by promoting increased level of EE investments through Energy Service Performance Contracting (ESPC) delivered by Energy Service Companies (ESCOs)

Objective	Financing	Execution
▪ **Provide partial credit guarantees** to participating Financial Institutions (PFIs) including banks and Non Banking Financial Companies (NBFCs) and the Small Industries Development Bank of India (SIDBI) **for loans extended to energy saving projects** being implemented by ESCOs	▪ **GEF grant:** US$12 m (first loss) ▪ **CTF guarantee**: US$25 m	▪ **SIDBI** (SIDBI Window- US$6 m & PFI Window- US$31 m)
▪ **Provide TA and capacity building** for participating financial institutions, ESCOs, and beneficiaries ▪ **Carry out market development, project management, awareness building** and outreach to beneficiaries and stakeholders ▪ **Develop standard appraisal and transaction documents**, reporting **templates**, energy efficient **guidelines**, **capacity building** and training, and online support, etc.	▪ **GEF grant**: US$6 m	▪ **SIDBI** (US$4 m) ▪ **Energy Efficiency Services Limited** (US$2 m)

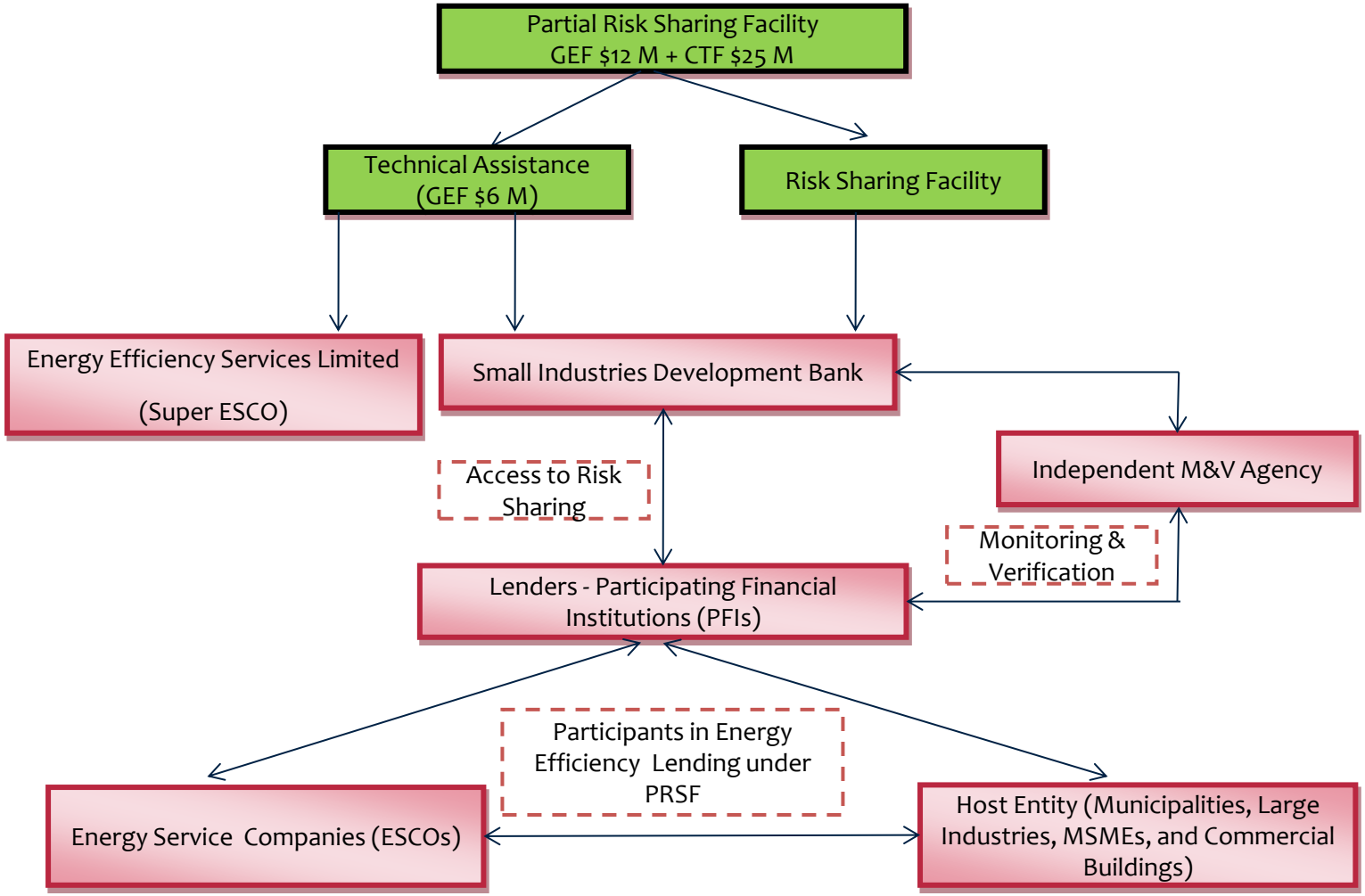
Impact

Mobilize private financing:

US$37 m of GEF and CTF resources are expected to mobilize over US$100 m of commercial financing for energy efficiency investments

- Project duration: 15 years (initial period of 10 years and a follow-on period of 5 years)

India Partial Risk Sharing Facility for Supporting EE Investments through ESCOs



India Partial Risk Sharing Facility (PRSF) for Energy Efficiency

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Thank You

For questions, please contact:

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