



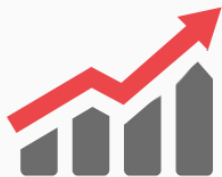
Energy Efficiency Training Week

Financing Energy Efficiency – Guest Speaker

Industry Stream

Patrick Crittenden, Energy Efficiency in Emerging Economies, IEA
Bangkok, 3 April 2019

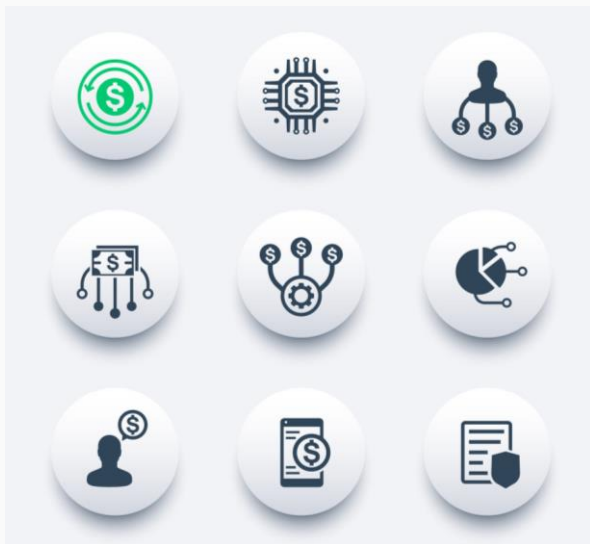
 IEA #energyefficientworld



Toolkit: Financing Energy Efficiency

Scaling up Energy efficiency with Innovative Financial Instruments

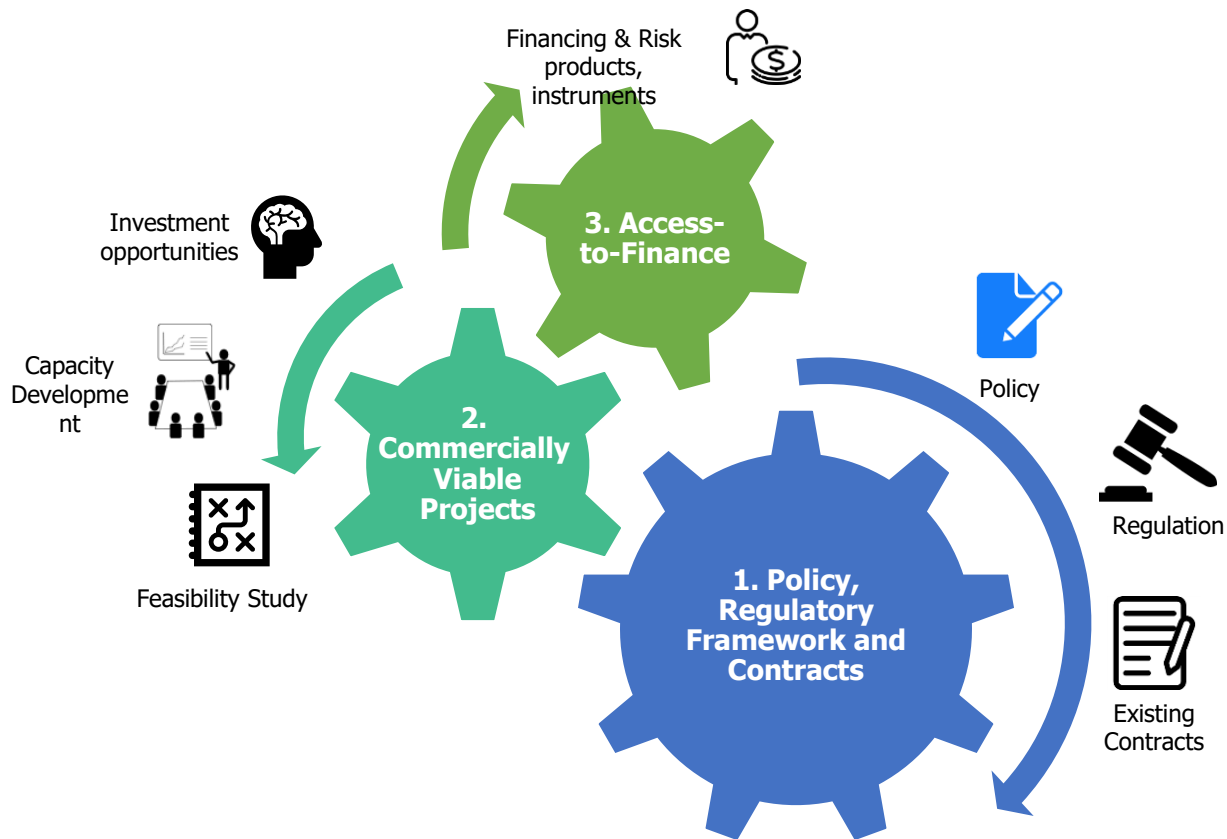
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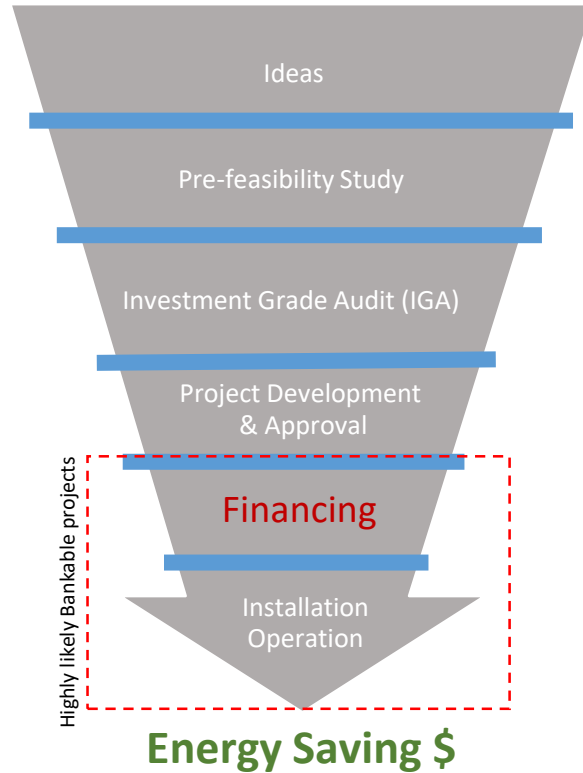
What are the best options to assist industrial businesses with finance for energy efficiency?

IEA Energy Efficiency in Emerging Economies
Southeast Asia Training Week Program
1-4 April 2019, Bangkok, Thailand

Scaling Up Private Sector Investment in Energy Efficiency



Pipeline of EE project development



EE Financing Options

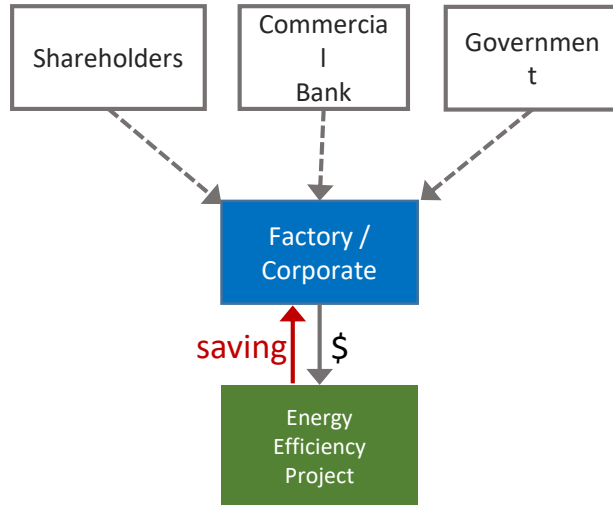
- 1. Self-Financing
(on-balance sheet financing)**
 1. Corporate Financing
 2. SME Financing
- 2. Third-Party financing
(off-balance sheet financing)**
 1. Energy Service Company (ESCO) Financing
 2. On-bill Financing
 3. Project Aggregation Financing

EE Financial Instruments

- 1. Grant / Subsidy**
- 2. Loan**
- 3. Credit Guarantee**
- 4. Equity**

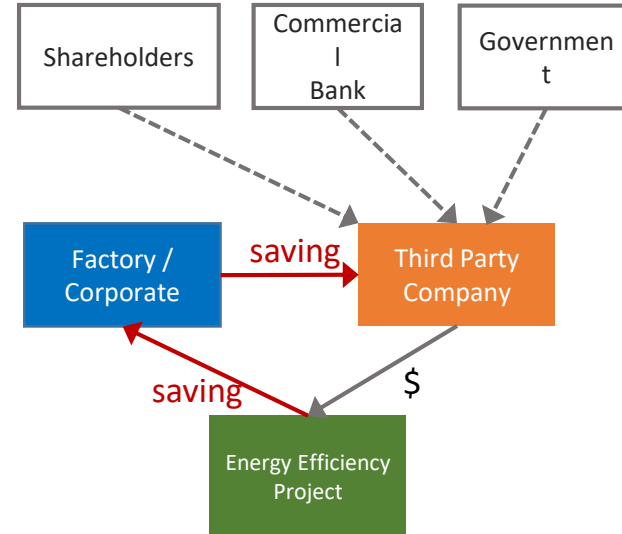
What are the best options to assist industrial businesses with finance for energy efficiency ?

Self-Financing Model



- On-Balance Sheet Financing
- Energy-as-an-**Asset** model

Third-Party Financing Model

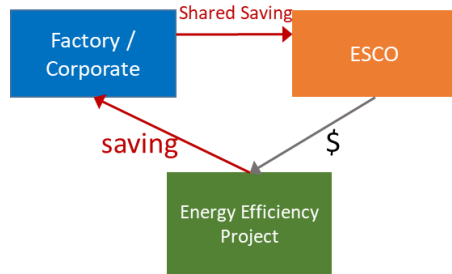


- Off-Balance Sheet Financing
- Energy-as-a-**Service** model

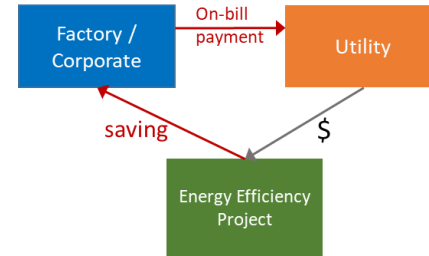
Third Party Financing Models



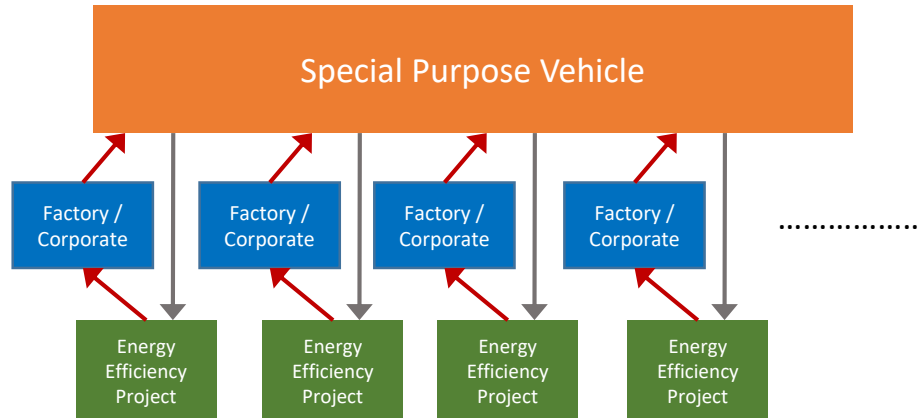
ESCO Financing



On-Bill Financing

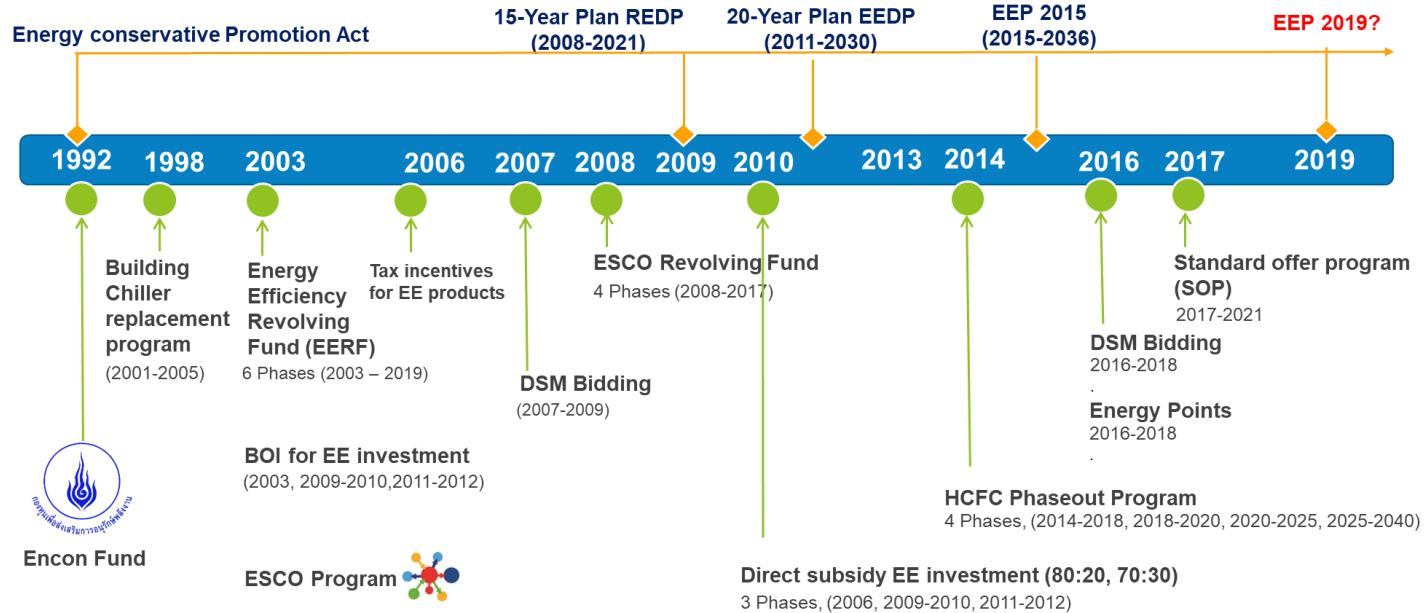


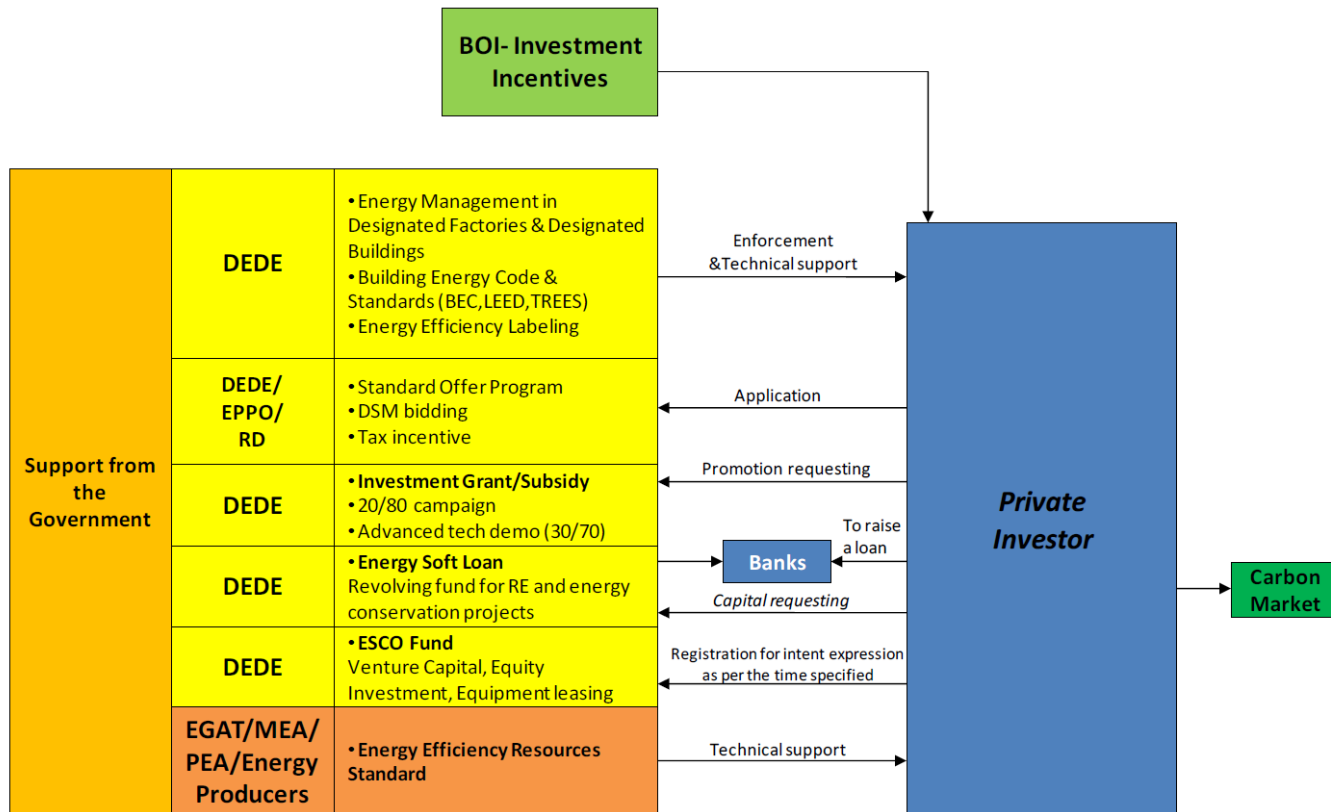
Project Aggregation Financing



Case Study

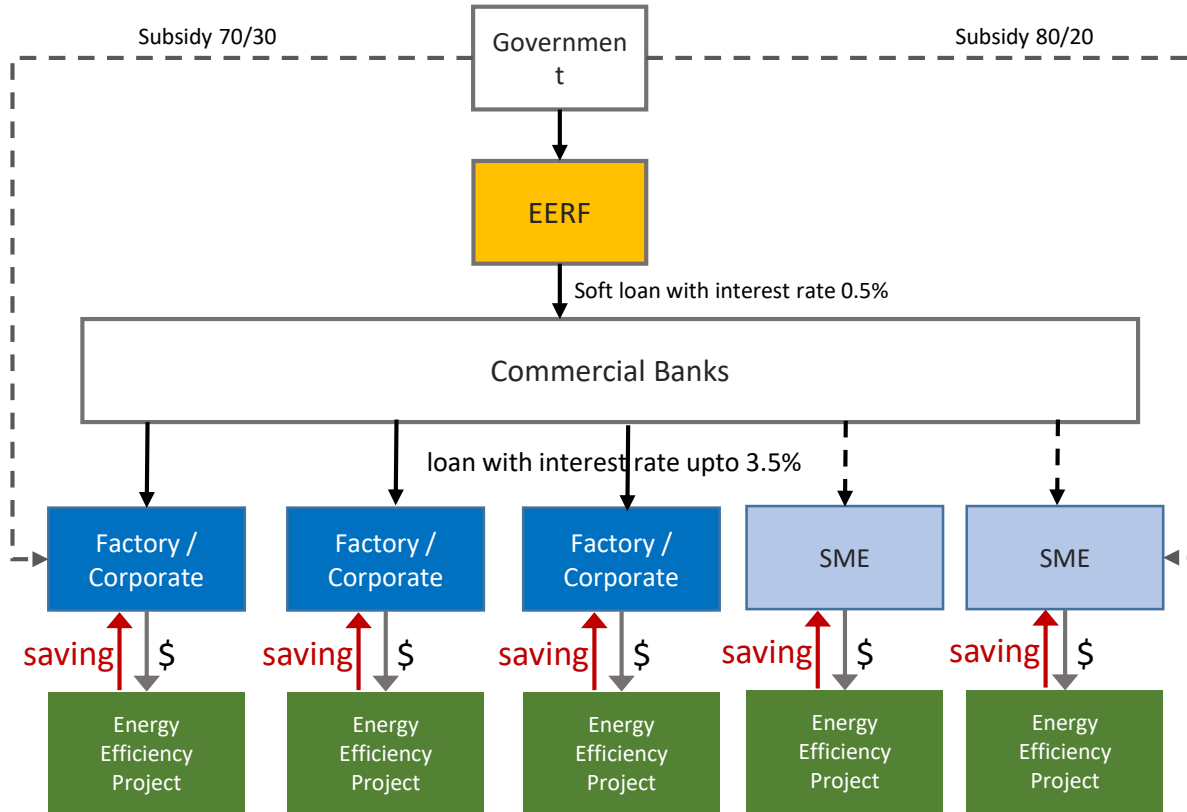
Thailand has introduced several financial instruments to promote energy efficiency for over 2 decades



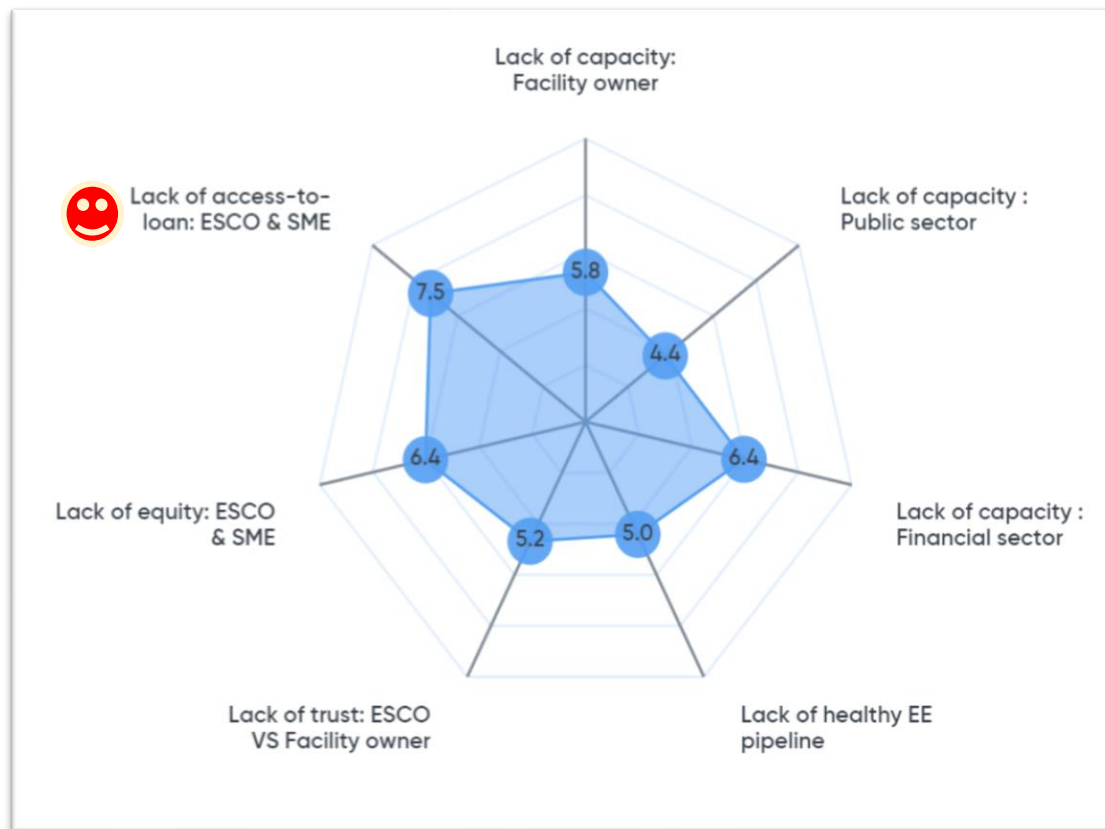


Source: UNDP

Example: Thailand's Energy Efficiency Revolving Fund (EERF)



Survey result on the main barriers on EE investment in Thailand*



*Remark: Based on the survey from Stakeholder Engagement Workshop, "Innovative Financial Mechanisms to scale up EE investment in Thailand" on 25th January 2019 (38 voters)

Source: the Creagy (2019)

Energy Efficiency Financing Landscape in Thailand



Existing financial instruments have been accessed mostly by large factories & buildings

Subsidized financing for those who already have access-to-finance may be a poor use of public funds and may even increase access to finance for the underserved groups

EE Finance is Nascent

Commercial financing is not widely available for EE projects

Expectations mismatch among stakeholders & Quality of the projects

Mistrust among end-users VS ESCOs/Suppliers is created and spread across the industry. The market dominated by fee-for-service rather than EPC.

Low Energy Prices become a challenge to various financing schemes

Small & Medium Enterprises (SME) / ESCOs still face significant challenges accessing to capital

Due to its nature, EE financing is mostly evaluated against the creditworthiness of the borrowers

Energy efficiency is still not seen as a top business priority

EE related investments continue to be overshadowed by other investments deemed more critical to the company's core business operation

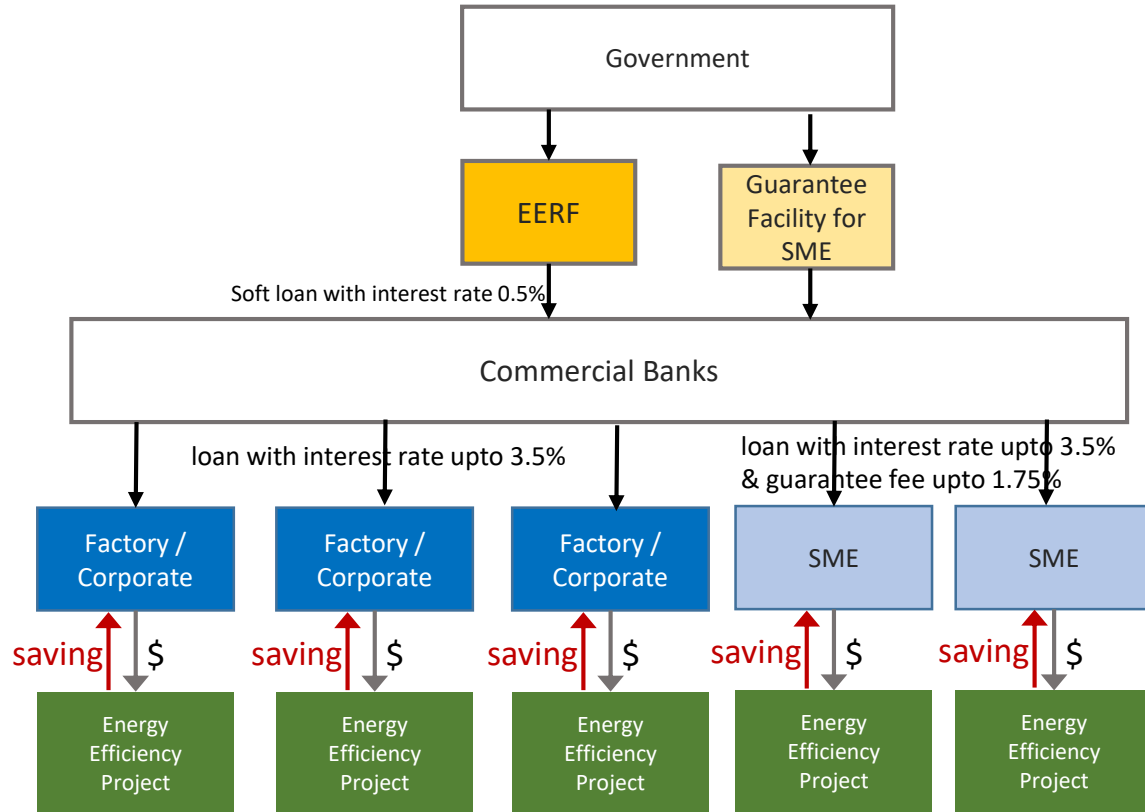
Perceived Risk is a Major Factor

Risk mitigation and track record are key to financing decisions for the conservative lending culture. De-risk mechanism (e.g. credit enhancement, guarantee, insurance) and lower transaction cost mechanism is needed for stimulating smaller EE projects

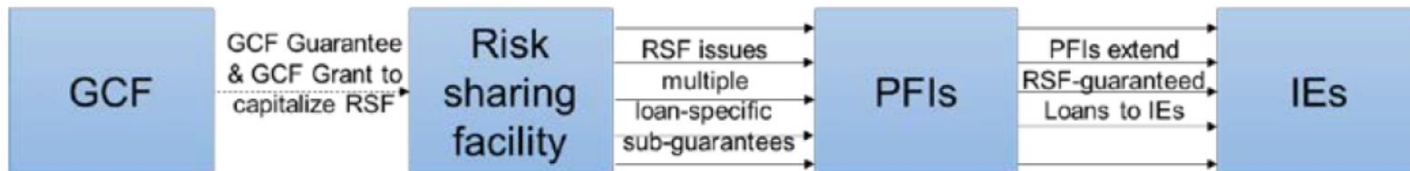
Conservative Banks & Timid Investors

The lending conditions are suboptimal for smaller-scale energy efficiency projects

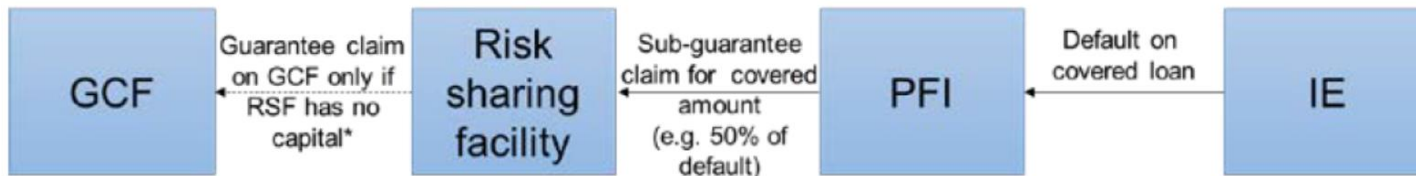
Example of Solutions



Risk Sharing Facility (RSF) Sub-guarantee Structure

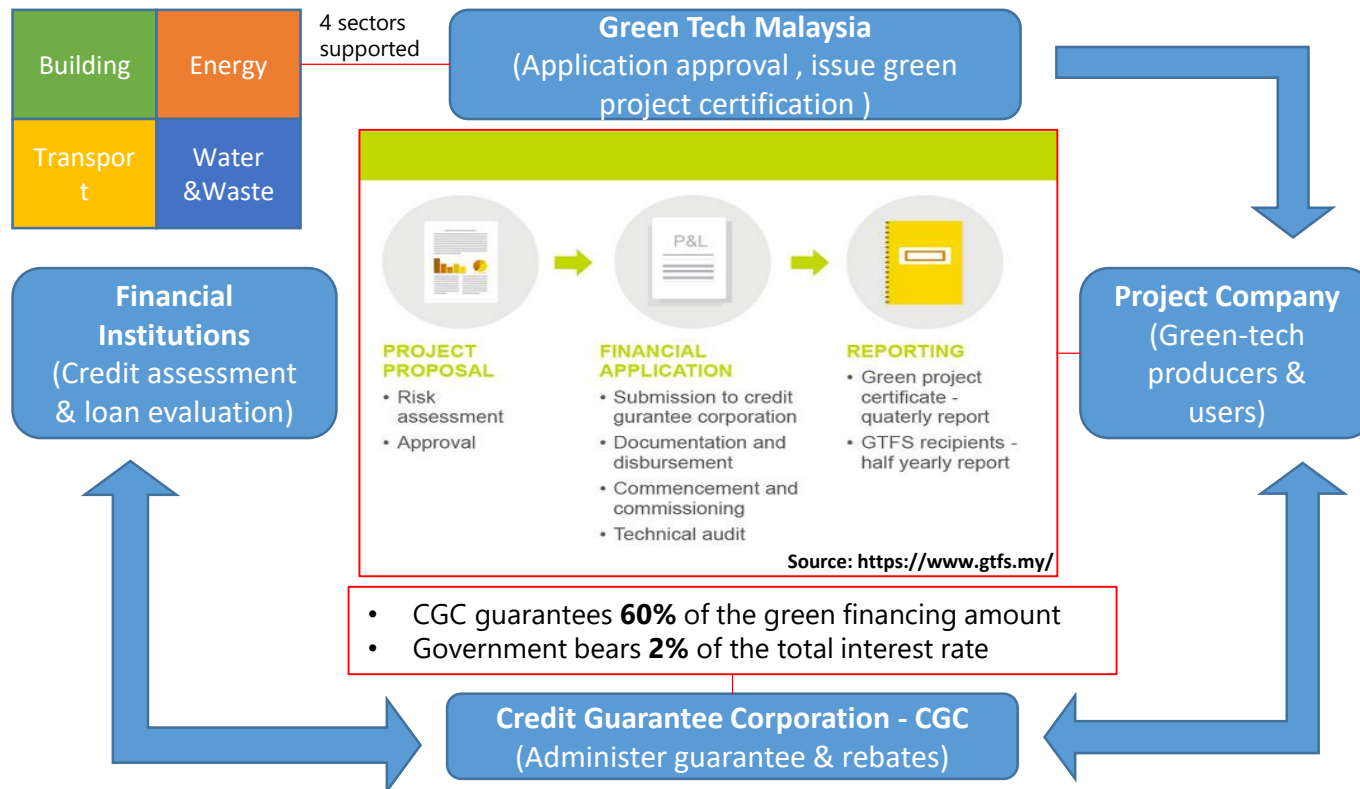


Sub-guarantee Pay-out Sequence



- GCF provides US\$3 million as grants to capitalize RSF and USD\$75 million as guarantees to be issued by the IBRD; US\$10 million on technical assistance
- RSF facility will issue loan-specific sub-guarantees to private financial institutions (PFIs) who will then extend these RSF-guaranteed loans to industrial enterprises (IEs)

Example: Green Technology Financing Scheme (GTFS) in Malaysia



Result - As 31 December 2017, the participating FIs have approved financing of more than RM3.5 billion spread over 319 projects across different sectors

In all, financing of energy efficiency still faces several barriers :

- Due to its nature (e.g. small scale, non-core activity), **EE financing is mostly evaluated against the creditworthiness of the borrowers;**
- Most previous/existing financial instruments are **available for only to large corporates.**
- **SME and ESCO still have difficulty to access to financing.**
- Financing of energy efficiency projects, **needs to consider interactions with existing finance, interactions with existing leases and balance sheet issues.**
- Benefits are in the form of savings rather than revenues;
- **De-risk mechanism (e.g. credit enhancement, guarantee, insurance) and lower transaction cost mechanism** are needed for stimulating smaller EE projects.



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