8. Financing

John Dulac

Bangkok, 3 April 2019

IEA #energyefficientworld

8. Financing

Trainer(s): John Dulac

Scenario: There are ambitious targets but seemingly little funding available to realise energy efficiency projects.

Question: What are the financing options that you can take?

Training Overview

1. **Investment grade energy efficiency policy**
   - Why is it important?
   - Introduction to a banker
   - Why is it important?

20 mins

2. **Financing Approaches**

3. **Public Procurement**
   1. Energy efficiency and sustainable procurement
   2. Energy Efficient Purchasing
   3. ESCOs

70 mins

4. **Case Studies**

5. **Public Procurement Trends and Digitalisation**

1. Investment grade energy efficiency policy

What is it?
Introduction to a banker
Why is it important?

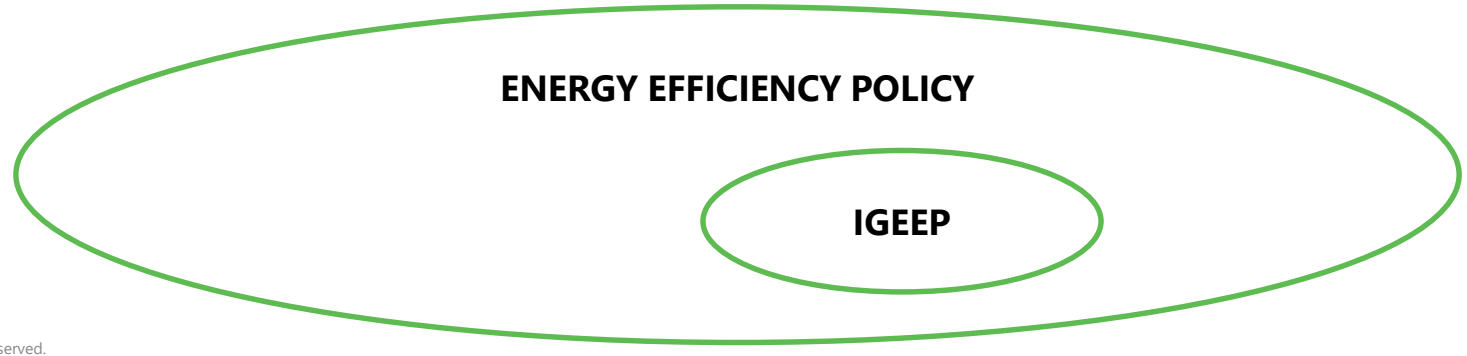
Investment Grade Policy: What is it?

- What is energy efficiency policy?
  - A set of strategies, legislation, regulations, measures, programmes that together stimulate energy efficiency improvement

- What is investment-grade energy efficiency policy?

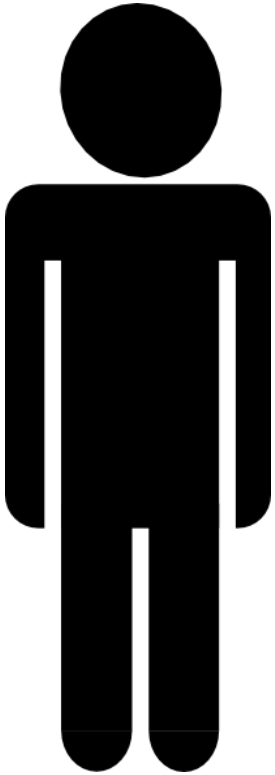
A set of strategies, legislation, regulations, measures and programmes that together that stimulate energy efficiency improvement

and investment



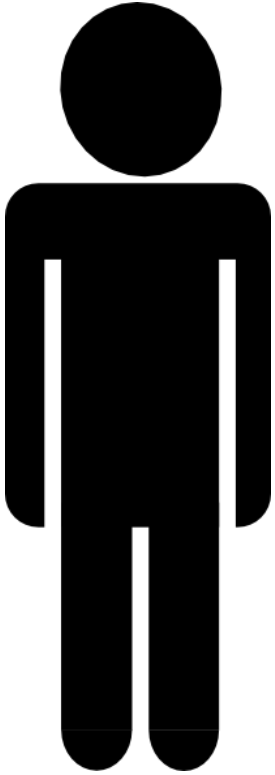
Source: EBRD

Investment grade policy: Introduction to a banker



Policy maker

Long term	**Time horizon**	Short term
Public good	**Motivation**	Revenue target
Social cost benefit analysis	**Evaluation criteria**	Internal rate of return (IRR)
Political	**Relationship to risk**	Legal
Casio	**Type of watch**	Rolex
Economic impact Political impact	**Big concerns**	Risk, bankability, creditworthiness,



Banker

Source: EBRD

Investment grade policy: Why is it important?

It provides **environmental certainty** in EE project investment that gives investors **greater confidence**:

- Focused **goal**
- Focus on specific set of **barriers**
- Focused group of **stakeholders**
- Specific **criteria**
- Specific **types of measures**

IGEEP

Setting **standards**

Applying market-based **incentives**

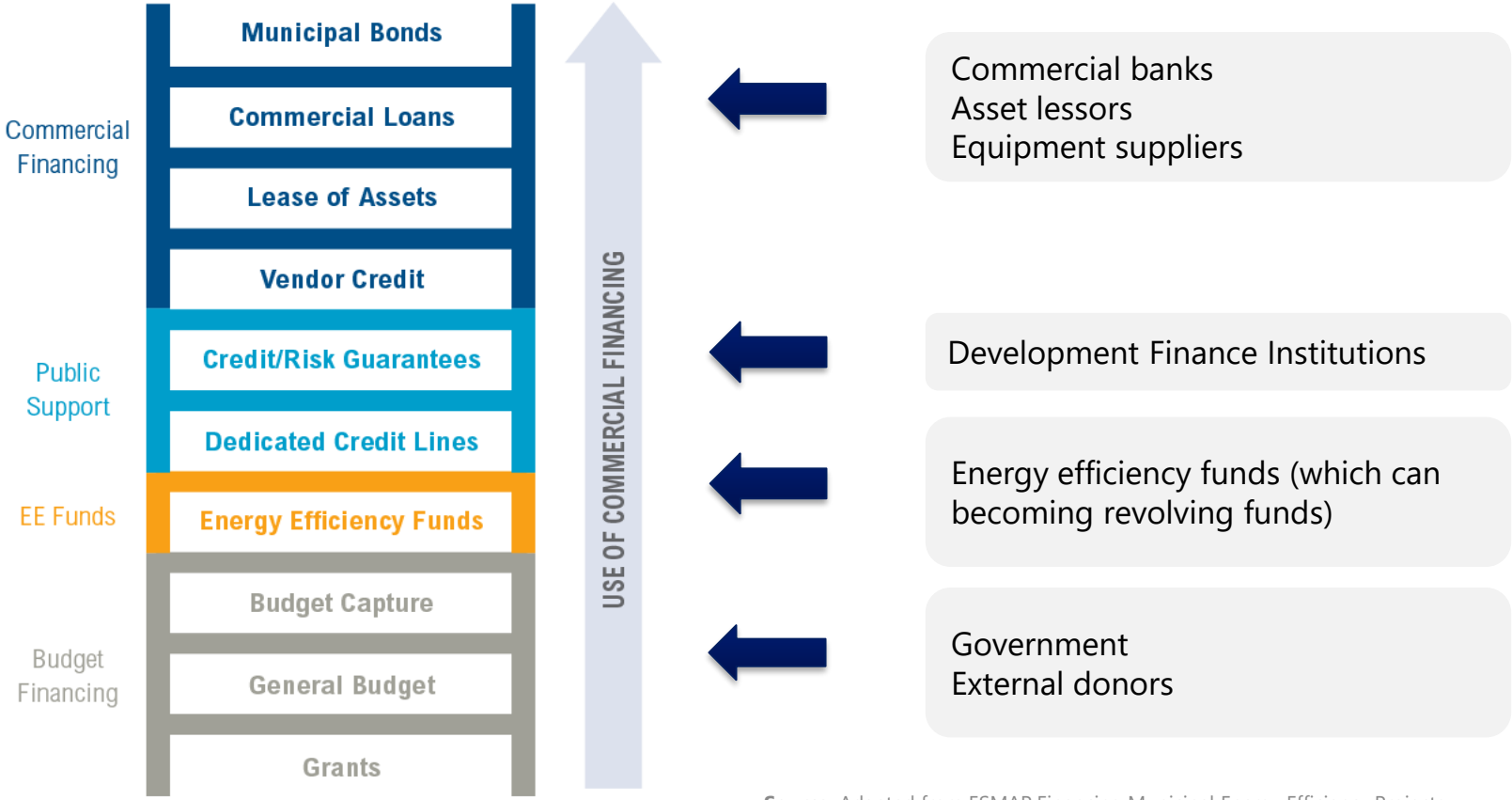
Designing tailored **financing mechanisms**

Source: EBRD

2. Financing Approaches

Financing approaches

The Financing Ladder

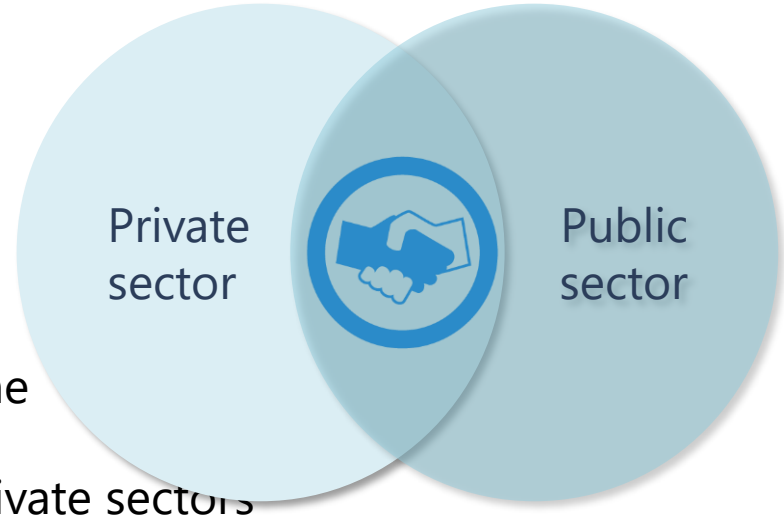


Source: Adapted from ESMAP Financing Municipal Energy Efficiency Projects

Financing approaches

PPPs for increased investment in municipalities

- PPPs make projects **affordable**
- Injection of **private capital**
- **More efficiency** in procurement
- **Faster project delivery** in a defined timeframe
- **Better risk allocation** between public and private sectors
- **Reduced costs** to the public sector for energy efficiency



3. Public Procurement

Energy efficiency and sustainable procurement
Energy Efficient Purchasing
ESCOs

Energy efficient and sustainable procurement

- **What?** The government purchasing efficient and sustainable products and services
- **Why?** Because governments spend more money and can influence the market for products and services
- **How?** Define minimum efficiency requirements into procurement specifications and enable purchases based on cost effectiveness and cost benefit analysis (and not first cost)
- **Result?** Efficient and sustainable product and service prices will go down, further improving the cost effectiveness of energy efficiency

Adapted from: OECD and Sustainable Procurement Platform.

Procurement: Energy Efficient Purchasing (EEP)

- Purchasing energy-using products that meet certain energy-efficient criteria

- Approaches and tools for EEPs:
  - EE Labelling
  - Technical Specification Catalogue
  - LLC, Best Value Award
  - EE Product Preference
  - Qualifying Product List

From left to right: US ENERGY STAR, EU Energy label, China EE Label, India Bureau of EE Label, Korean EE Label, Mexico Sello FIDE, Thailand EGAT EE Label, Brazil Selo Procel


TECHNICAL SPECIFICATIONS FOR ENERGY EFFICIENT TUBELIGHTS

A. Product Specification

Annexure I

Guarranteed Technical Particulars for 28W T-5 EETL with EB as a Composite Fixture

DAKSHIN HARYANA BIJLI VITRAN NIGAM LIMITED

SPECIFICATION NO. S-130/DD-177 (Version-II)

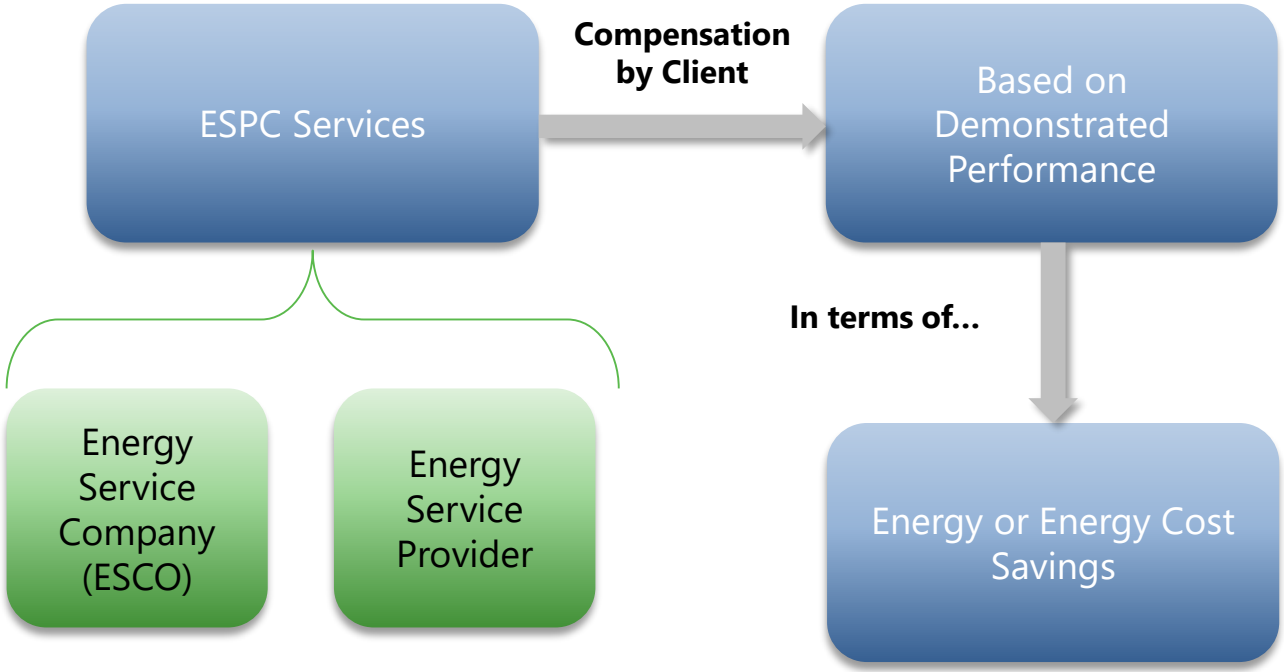
TECHNICAL SPECIFICATION FOR ENERGY EFFICIENT TUBELIGHTS

Issue Month : June, 2007

Source: ESMAP Driving Energy Efficiency Markets through Municipal Procurement

Energy Savings Performance Contract (ESPC)

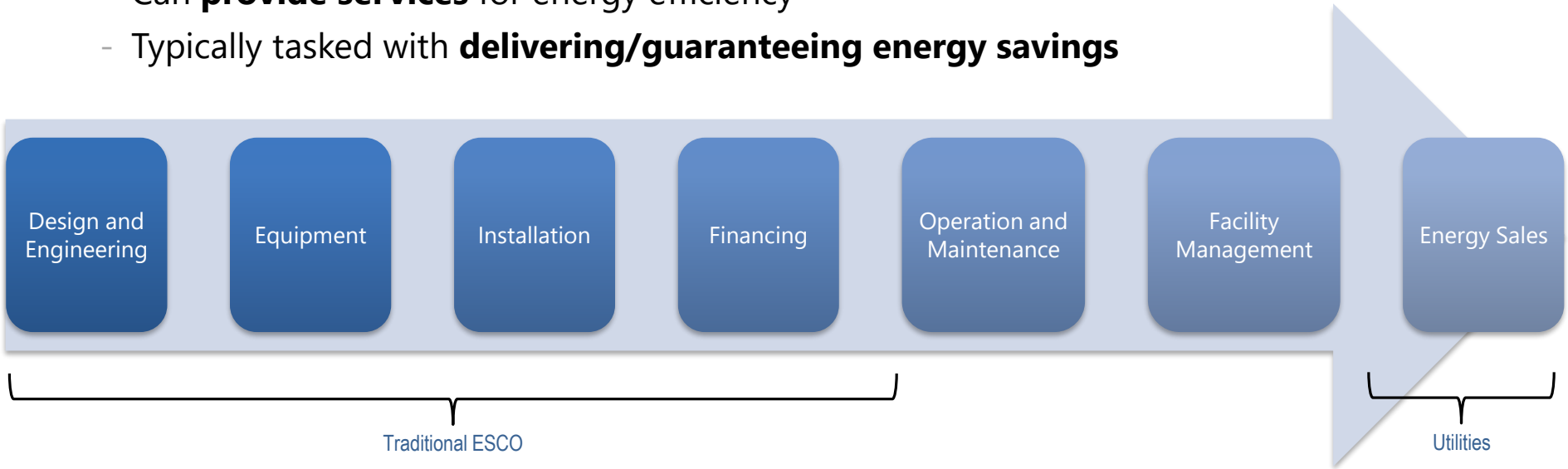
- A financing mechanism to implement EE projects and deliver energy savings



Source: www.iea.org/media/training/presentations/latinamerica2014/8A_Energy_Service_Companies_and_Financing.pdf

Energy Savings Performance Contract (ESPC)

- A financing mechanism to implement EE projects and deliver energy savings
- Energy service companies (ESCOs) often deliver on ESPCs:
  - Can **provide financing** for energy efficiency
  - Can **provide services** for energy efficiency
  - Typically tasked with **delivering/guaranteeing energy savings**



Source: www.iea.org/media/training/presentations/latinamerica2014/8A_Energy_Service_Companies_and_Financing.pdf

4. Case Studies

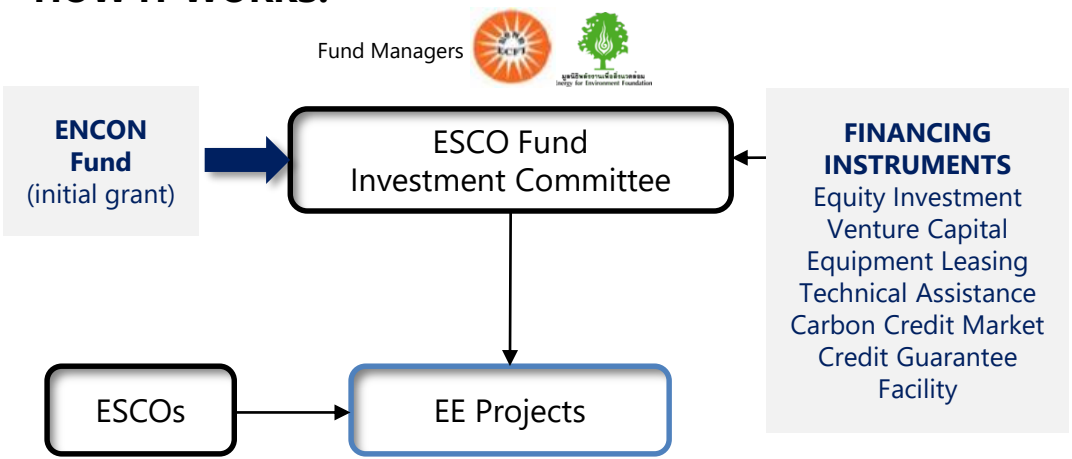
Case Study: Thailand ESCO Revolving Fund

THAILAND ESCO FUND

Established: 2008

Objectives:
- Stimulate private financing for energy efficiency and renewable energy projects
- Support private investments through ESCOs
- Promote $40+ million in investment
- Accrue $8 million in energy savings

HOW IT WORKS:



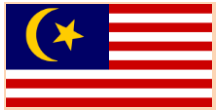
Implementation Results:

- Projects supported: **39**
- Total investment: **$ 160 million**
- Energy savings: **$ 18 million/year**
- Energy savings: **21 ktoe/year**

(No. of ESCOs: 45)

Financing Approach
Revolving Fund

Case Study: Malaysia Green Technology Financing Scheme



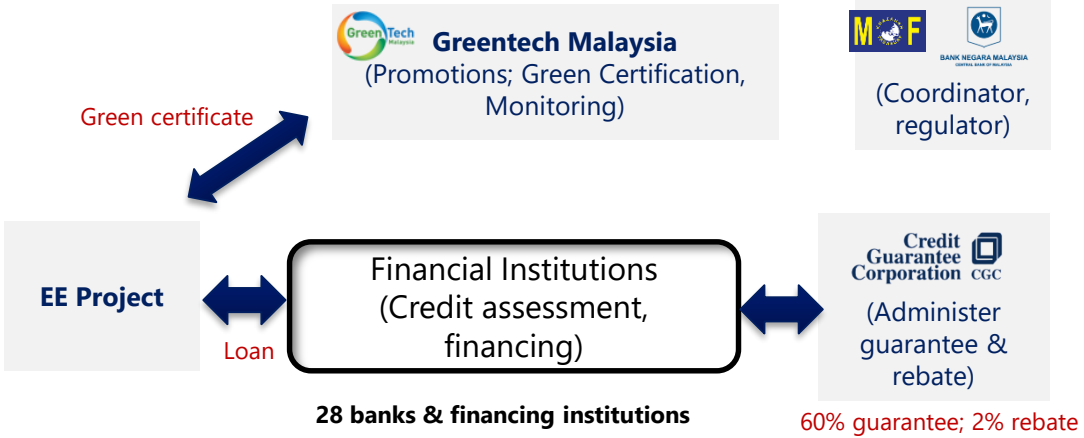
MALAYSIA GREEN TECHNOLOGY FINANCING SCHEME

Established: 2010

Objectives: Promote investments by providing easier access to financing and at a lower financing costs

Partners:

HOW IT WORKS:



Implementation Results:

- Total projects supported: **272**
- EE projects supported: **15**
- Total investment: **$ 28 million**

Expected impact:*

- Green investment: **$ 1.36 billion**
- Jobs created: **4,645**
- Emission reduction: **3.16 mtCO2eq/yr**

Financing Approach
Guarantees

* From total 272 projects

Case Study: Emfuleni Water Leak Management Project

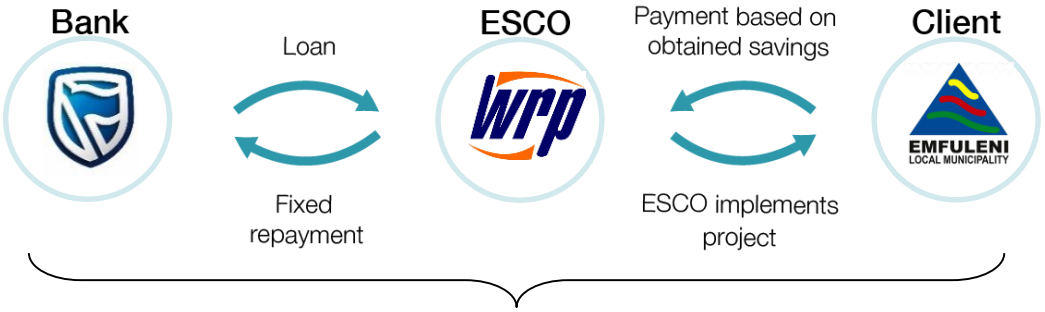
EMFULENI WATER LEAK MANAGEMENT PROJECT

Implemented: 2005

Objectives: Reduce water leakage secure energy savings through an ESPC

Partners:

HOW IT WORKS:



PPP Build-Own-Operate-Transfer
Shared Savings Performance Contract

Implementation Results:

- Water savings: **7-8 million m³/yr**
  - (30% of former supply saved)
- Energy savings: **$ 3.8 million/yr**
- Energy savings: **14,250 MWh/yr**
- GHG emission reduction: **12,000 tonnes/yr**
- Payback period of initial investment: **<3 months**

Financing Approach

Performance Contracting

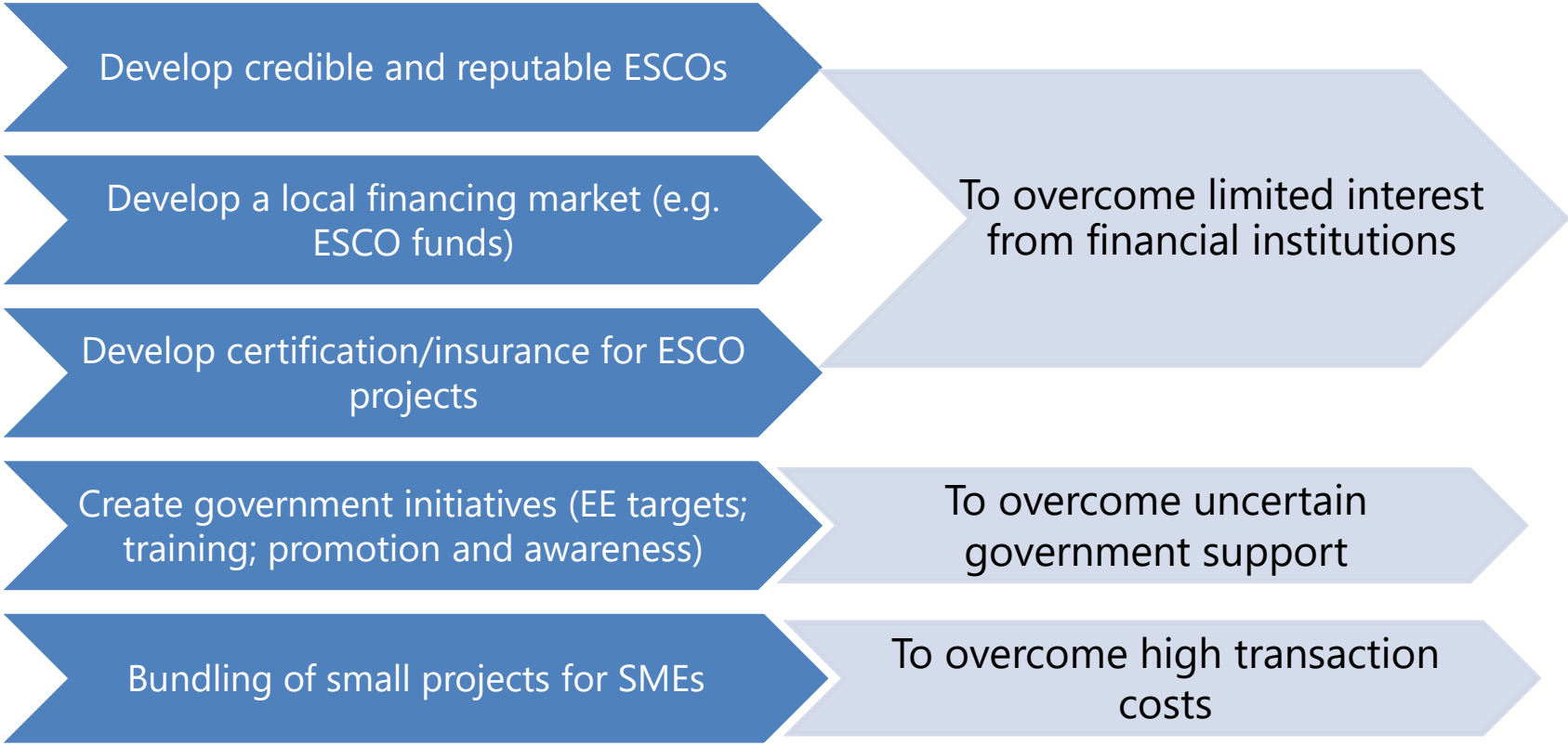
How Energy Efficient Purchasing addresses barriers

Enact EE procurement policies/programs…	To overcome restrictive policies and procedures
Create tools that can facilitate EEP efforts; provide training and dissemination plans…	To overcome poor or no access to information about EE opportunities
Develop incentives strategies	To counteract behavioural inertia
Ensure robustness of certification process through independent inspections; monitor compliance	To enable successful realisation of energy efficiency post-implementation

Source: ESMAP Driving Energy Efficiency Markets through Municipal Procurement

Source: IEA Energy Service Companies and Financing Presentation

How ESPCs can address the barriers



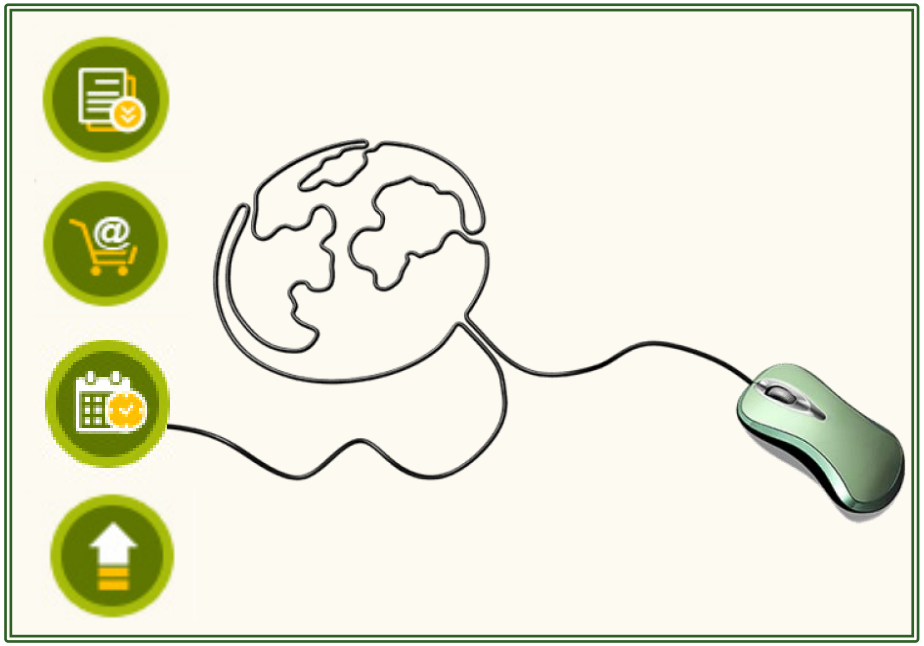
Source: ESMAP Driving Energy Efficiency Markets through Municipal Procurement

Source: IEA Energy Service Companies and Financing Presentation

5. Public Procurement Trends and Digitalisation

Trends in Public Procurement

Harmonisation of public procurement policies

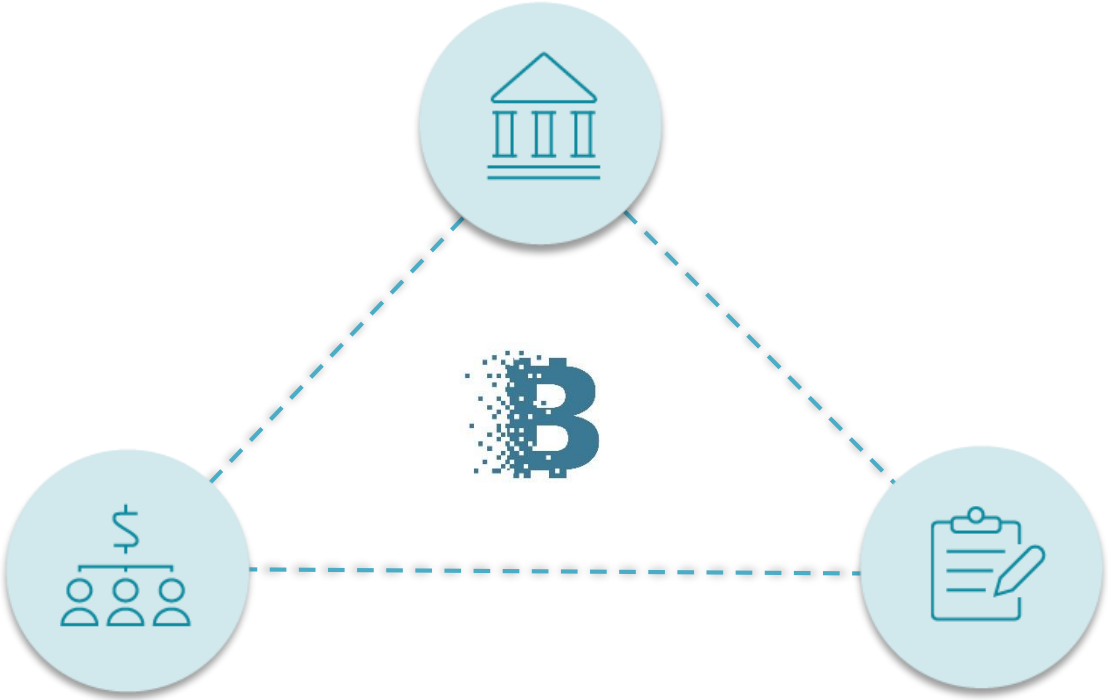


E-procurement

Adapted from: OECD and Sustainable Procurement Platform.

Digitalisation for Energy Efficiency Financing

- Blockchain and smart contracts for ESPCs
  - Automating transactions and repayments



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