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ESCO projects – how to commercially finance energy efficiency investments with the help of Energy Performance Contracting

Conference on 14 November 2013

Toivo Miller
European Bank for Reconstruction and Development

SEI investment areas

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CORPORATE ENERGY EFFICIENCY

Energy efficiency investments in energy-intensive industrial processes

SUSTAINABLE ENERGY FINANCING FACILITIES

Financing facilities through local financial institutions to support energy efficiency in small and medium-sized projects.

POWER SECTOR ENERGY EFFICIENCY

Improving efficiency of transmission networks and thermal power stations. The aging energy infrastructure includes a large number of plants with low generation efficiency, high running costs, and excessive pollution and carbon emissions.

MUNICIPAL INFRASTRUCTURE

Upgrading municipal infrastructure to provide efficient district heating, public transport networks and water supply systems.

RENEWABLE ENERGY

Supporting the development of renewable energy sources by providing project finance and technical assistance

CLIMATE CHANGE ADAPTATION

Developing approaches to integrate climate risk management and adaptation into project appraisal and development

SEI finance in EBRD region by business areas

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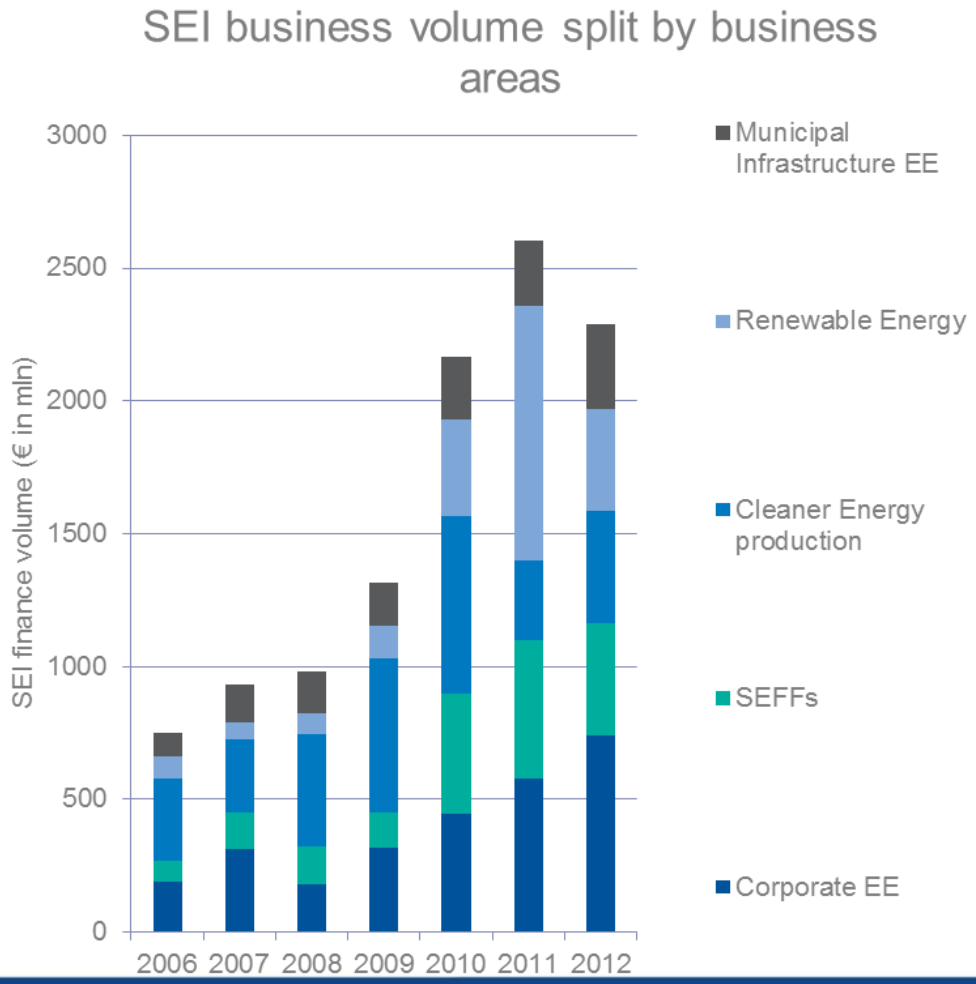
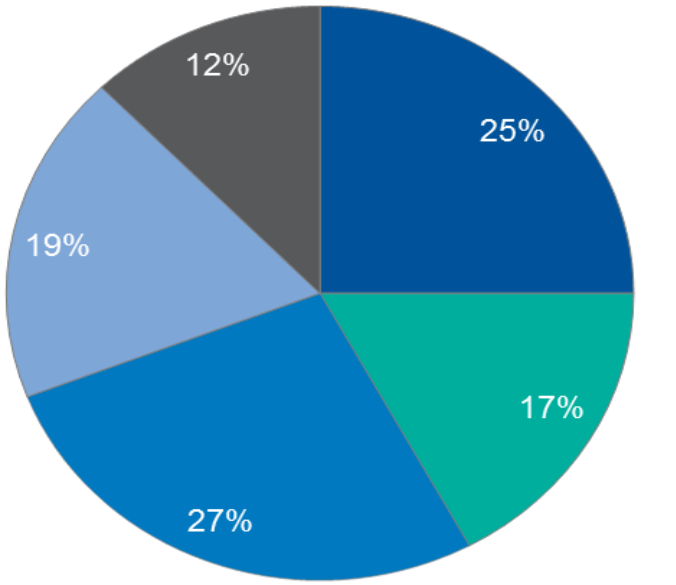
- SEI business volume has shown an increasing trend since 2006, with a peak in 2011 (€ 2.6 billion)
- Since 2006, the share of SEFFs and renewable energy projects increased significantly
- Cleaner energy production account for the bulk of SEI investments with a slight decrease in the past two years



SEI finance in EBRD region by business areas



Business area	Financing volume (€ in mln)
Corporate EE	2,761
SEFFs	1,888
Cleaner Energy production	2,984
Renewable Energy	2,055
Municipal Infrastructure EE	1,354
Total	11,042

SEI business model

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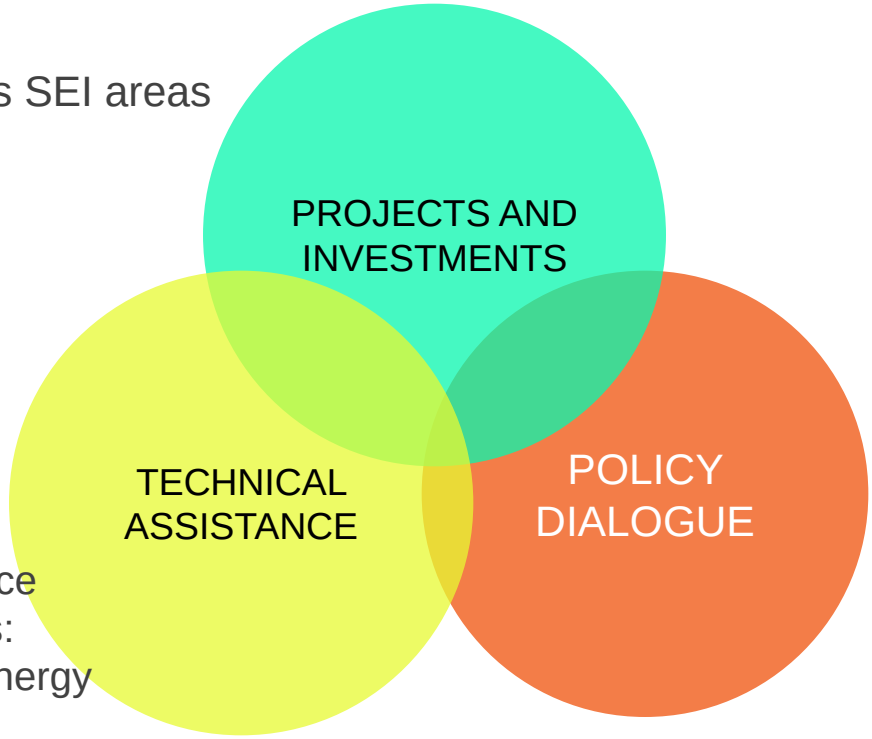
Projects across SEI areas



Technical assistance to address barriers: market analysis, energy audits, trainings awareness raising, grant co-financing with incentives and to address affordability constraints

Working with governments to support development of strong institutional and regulatory framework that incentivises sustainable energy

Existing Energy (Cost) Saving Opportunities

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Problem – Public and private sector assets (eg buildings) are often characterised by underinvestment. This causes energy inefficiencies.

Opportunity – inefficiencies give rise to energy (cost) saving potentials

Constraint to opportunity – asset owners usually focus on their core business activities but lack

- knowledge needed for designing energy efficiency (EE) investments and
- funds for financing EE investments

Solution – ESCO projects solve this constraint by offering:

- **private sector expertise** for project design, implementation and operation and accept the related performance risk
- selection of the **most economic energy efficiency solution**
- **commercial financing** (=off-balance sheet finance)

Energy Performance Contracting (EnPC) address entire efficiency value chain

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- Operating buildings – all building owners do it
  - ensuring supply of primary and secondary energy sources
  - Operating building technology (BT)
- Optimised operation – few building owners
  - energy controlling: collecting ener
    analysis and optimisation operatic
  - developing clear operational instru
    and manuals advising staff
  - maintaining BT

ESCO/Energy Performance Contracting (EnPC/EPC) focuses on this and optimised operations

- Efficiency investments –very few building owners
  - Detailed analysis
  - multi-annual efficiency investment plan
  - Plan for optimised operations

Advantages of EnPC approach over traditional procurement of efficiency in public sector

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- Advantages of ESCO projects (Energy Performance Contracting):
  - Private sector **expertise to design, implement EE investments and optimised operation**
  - Procurement based on **energy performance** and **NPV**
  - **Off balance sheet financing** on commercial basis (factoring/forfeiting)

- As opposed to Traditional financing of EE in public sector:
  - Clients lack expertise to design, tender and implement EE investments and operate
  - Procurement procedure does not relate to EE performance
  - Requires on balance sheet debt financing or large amounts of grants of either ESCO or client

Benefits of EnPC approach

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End-users will benefit from

- improved comfort levels in shopping malls, hospitals, schools, public administration, street lighting etc.

Building owner benefits from

- private sector expertise available for efficiency project design, implementation and operation
- the most economic efficiency solution being procured on basis of life cycle costing
- contractually guaranteed energy cost savings
- off-balance sheet investments and savings result in budget relief
- available budget or grants can be leveraged = more investments in energy efficiency than through traditional procurement and more efficient use of grants

Private sector benefits from

- new economic activities and employment in private sector (ESCOs)
- ESCO services and its benefits can extend to residential, commercial and industrial sectors

Banking sector

- new financing products for financing energy efficiency; cash flow based financing; forfeiting; new, secure long term product

Case-study and next steps: ESCO energy efficiency projects 1/2

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The ESCO model

Energy Saving COmpanies design, invest and operate EE investments for beneficiaries. The investments are paid back from the resulting energy savings.

Because savings occur over a long period of time, the ESCO sells the expected stream of receivables from savings so as to re-finance itself for other investments.

Benefits:

•Private sector engineering expertise

•Commercial finance in addition to grants for energy efficiency in public sector (state budget relieve)

•Improved comfort levels for end-users

High school “St. Kiril and Metodii” – Strelcha town

Next steps for further developing the ESCO market:

•Support to legislator to improve the legal framework in order to facilitate more ESCO projects in public sector

•Support municipalities to prepare an ESCO project pipeline

Case-study and next steps: ESCO energy efficiency projects 2/2

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Client
"Bulgarian ESCO Fund" (BEF), an SPV sponsored by Enemona, a successful Bulgarian ESCO. BEF purchases the receivables from the energy saving investments of Enemona.

EBRD support
- 2007 loan: € 7 million
- 2012 loan: €10 million

Results of the first loan (by end of 2010)
- > €6 million invested in more than 30 buildings.
- total cost savings from these investments are estimated to be >€ 0.8 million /year.
- Total estimated energy savings: 15,000 MWh/year.
- CO_2 emissions avoided: 4,900 tCO_2/year.

Dr Georgi Stoev Schvarz, Troyan

Financing structure for ESCO projects

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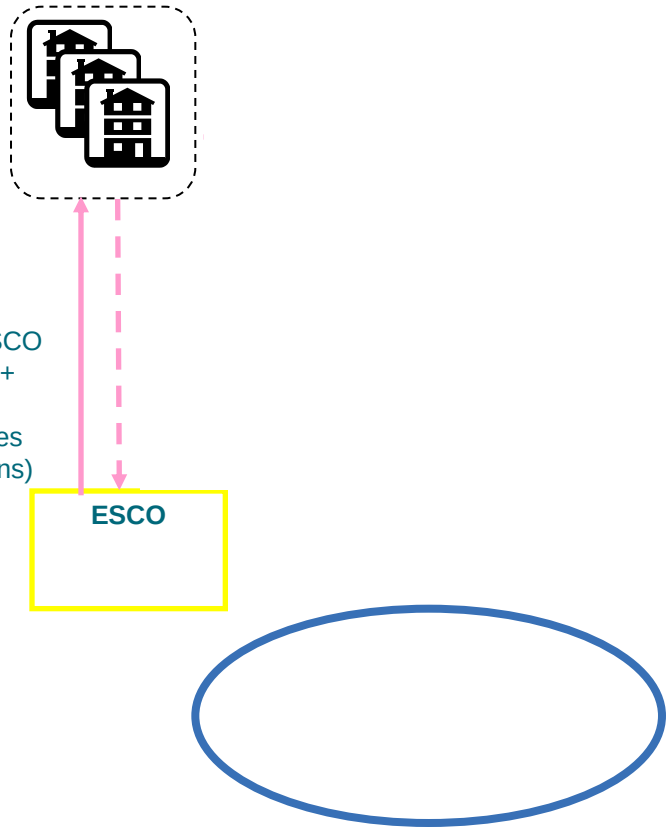
Risk of default minimised and cost of financing, i.e. discount rate decreased by
•clear regulatory and contractual framework
•Transparent project preparation
•Transparent and reliable procurement process and budget law



Overview of EBRD's support to ESCO market development

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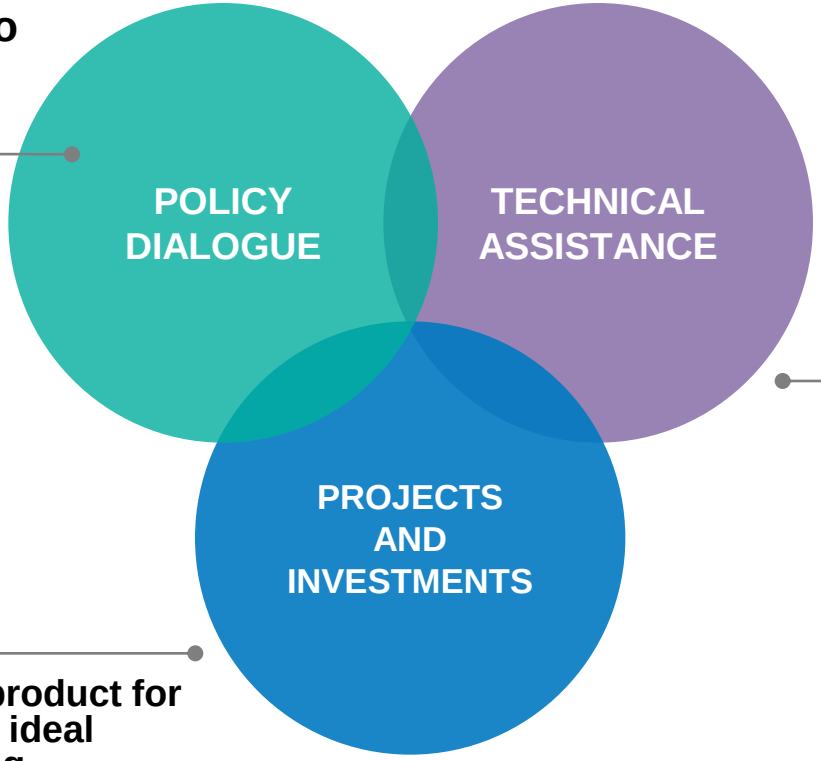
Support government to create an ESCO enabling framework



Support ESCO project preparation

your assignment

- engage with cities and train key staff members
- identification of public buildings
- energy audits
- prepare ESCO tenders

Develop financing product for ESCO projects with ideal characteristics being

- treated as off-balance sheet for public building owners and ESCOs
- appropriate risk allocation and mitigation

Supporting an ESCO/EnPC project enabling legal framework

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Legal support to governments

Objective

- supporting to improve their legal framework for ESCO projects (Energy Performance Contracting, EnPC)

Scope

- public budget code
- procurement law
- standard contract template, tender templates, guidance notes, administrative instructions etc.

Prerequisites

- Government needs to receive support with its institutional structure (dedicated working group).

Supporting municipalities in preparing an ESCO/EnPC project pipeline

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Technical assistance to public building owners

Objective

- supporting individual local entities (e.g. cities, regions) to implement ESCO/EnPC programmes and individual projects

Scope

- prepare ESCO investment programmes; identify, prepare, tender and monitor ESCO/EnPC projects
- Procurement of consultants
- call-off notice

Prerequisites

- municipalities to demonstrate political will and interest and allocate sufficient administrational resources for an ESCO programme

Thank you!

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Toivo Miller

EBRD

e-mail: millert@ebrd.com

Elements of an enabling legislative framework

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a. EnPC as concept is admissible.

b. multiannual budgeting is admissible.

c. operational EnPC savings of the energy cost budget title can be retained for paying EnPC investments.

d. assignment of receivables (forfeiting) is admissible for re-financing these EnPC investments (explicit safeguards and conditions are needed).

e. individual EnPC projects do not require up-front feasibility studies but the concept as such is admissible and can be tendered on basis of walk through audits (completed tender documentation with baseline, technical building specifications but NO investment grade audit).

f. there is no need for providing an economic detailed analysis that determines the advantageous of EnPC over traditional procurement mechanisms.

g. competitive and functional tendering is admissible (energy performance, NPV of investments as selection criteria and not lowest offer).

h. possibility of tenderers being a single company or consortium and the possibility of subcontractors being used.

i. blending of investment grants + budgets with commercial ESCO finance.

j. EnPC investments and subsequent future payment obligations are not counted as public debt (not considered as credit-like transactions, even though there might be a budgetary provision for them).

k. administrative instructions and guidelines are issued.

l. EnPC and forfeiting contract and tender templates.

Distinguishing EnPC from other energy services

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Energy Performance Contracting (EnPC)

- Procurement of works and services on basis of NPV
- Contents: system analysis, (pre-)financing, design, implementation & optimised operation of entire building, controlling
- Payments based on achieved savings
- Requirement: long, stable use of building and stable consumption
- Ideal application: public buildings

Energy Supply Contracting (ESC)

- Procurement on basis of fixed price per consumed energy unit (plus additional base price)
- Contents: planning, financing, implementation of usually one process (e.g. heating system only or pressured air in industry etc.), operation
- Requirement: sufficiently high demand or agreed price per kWh
- Usual application: commercial property (heat) or industry (different secondary energy forms)
- Payments based on pre-agreed price per delivered per kWh

Example of German ESCO Market

Facilitated by enabling legal framework, financing and project preparation

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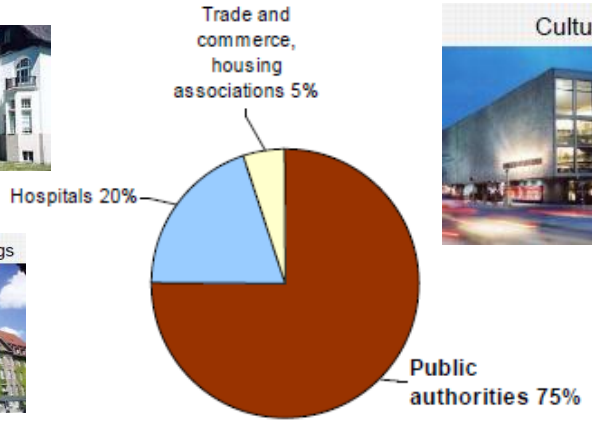
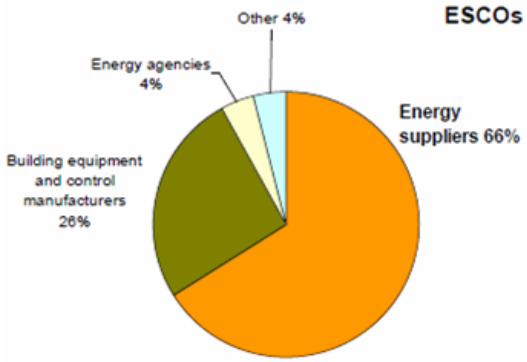
German: one of Europe's most mature ESCO markets(1)

- ✓ **Pioneer market in Energy Services with stable growth**
- ✓ **Market of more than EUR 2 - 4 billion**
- ✓ **More than 100,000 projects**
- ✓ **Number of ESCOs: 250-500**





(1) ***Joint Research Centre (JRC), "Energy Service Companies Market in Europe – Status Report 2010"***