



FINANCING ENERGY EFFICIENCY IN ESCO MODELS

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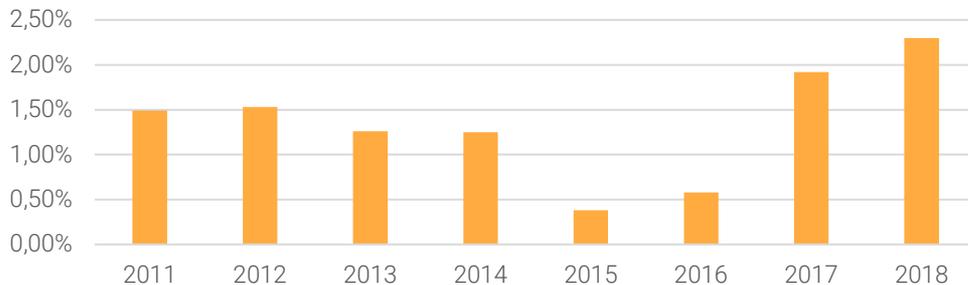
Is energy efficiency a good case
for pay-for-performance,
off-balance sheet solutions?

ENERGY EFFICENCY - OVERVIEW

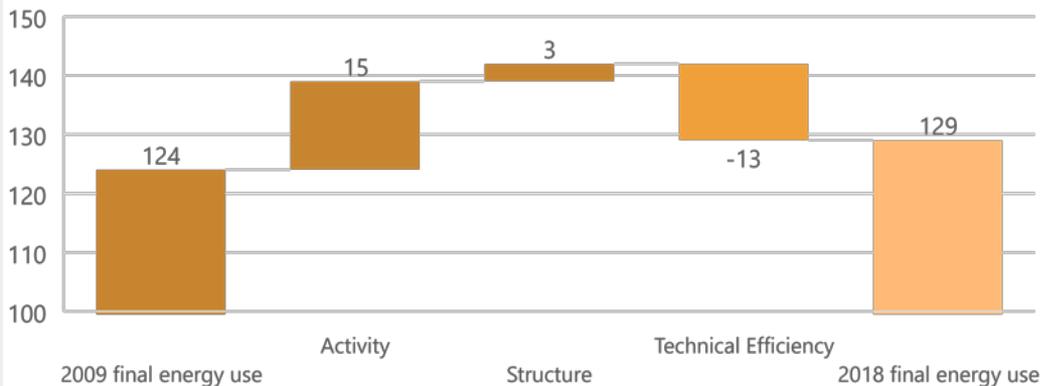


MARKET OVERVIEW

Changes in global primary energy demand



Decomposition of IEA member countries energy use



Key findings:

1. In 2018 demand for primary energy grew **by 2,3%**, which is the highest growth rate in this decade.

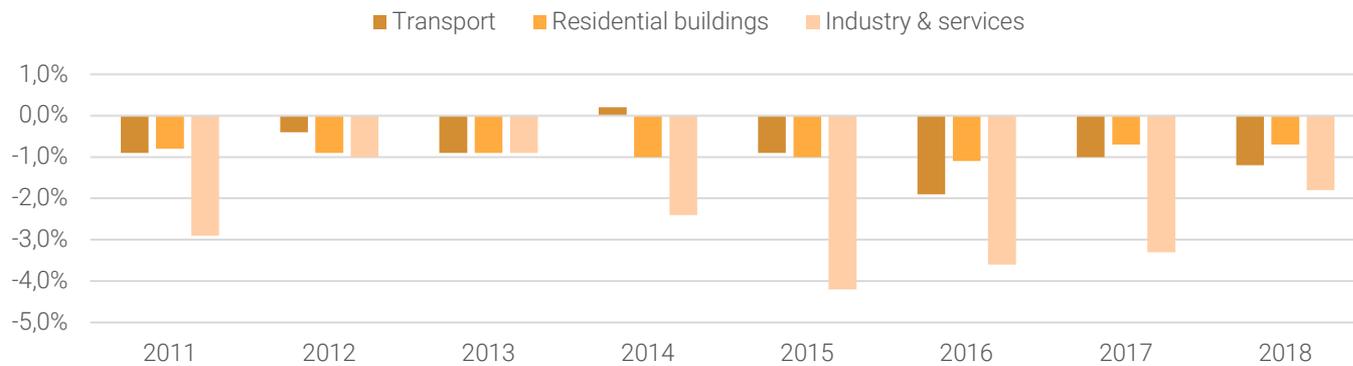
2. Demand increased mainly in terms of **gas usage** (by 6 EJ) and renewables (by 3 EJ).

3. Rise of technical efficiency limited increase of energy usage **by 72%**

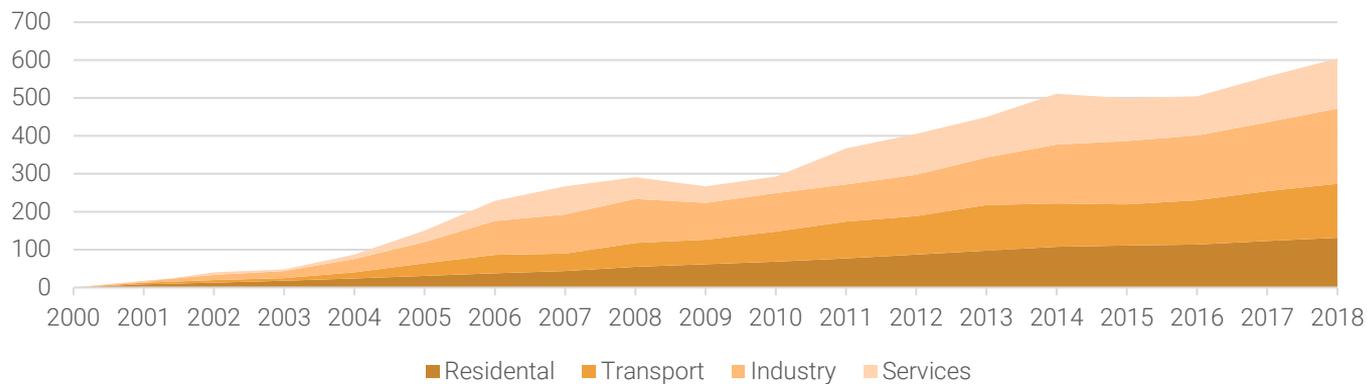
4. Avoided expenditure on energy reached **600 billion USD** (since 2000)

MARKET OVERVIEW

Impact of Technical efficiency improvements as a share of sectoral final energy demand



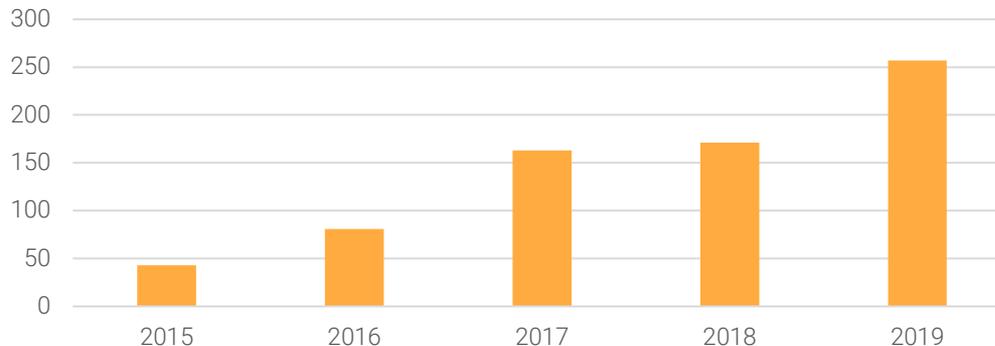
Estimated expenditure savings in IEA member countries (in billions USD)



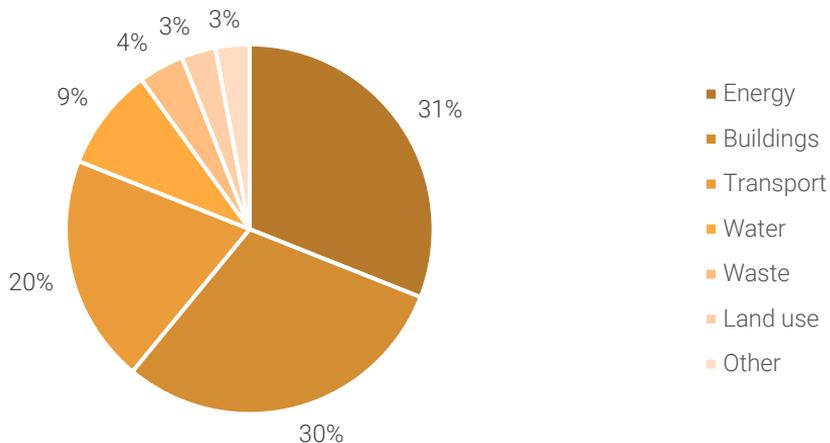
Source: Energy Efficiency 2019, IEA

MARKET OVERVIEW

Green bond issuance (in billions USD)



Use of proceeds from green bonds and loans



Key findings:

1. Green Bonds issuance reached record sum of **255 billion USD**

2. In 2020 it is expected that **350 – 400 billion USD** of Green Bonds will be issued

3. The Energy and Buildings sectors dominated green proceeds allocation with **61% of market share**





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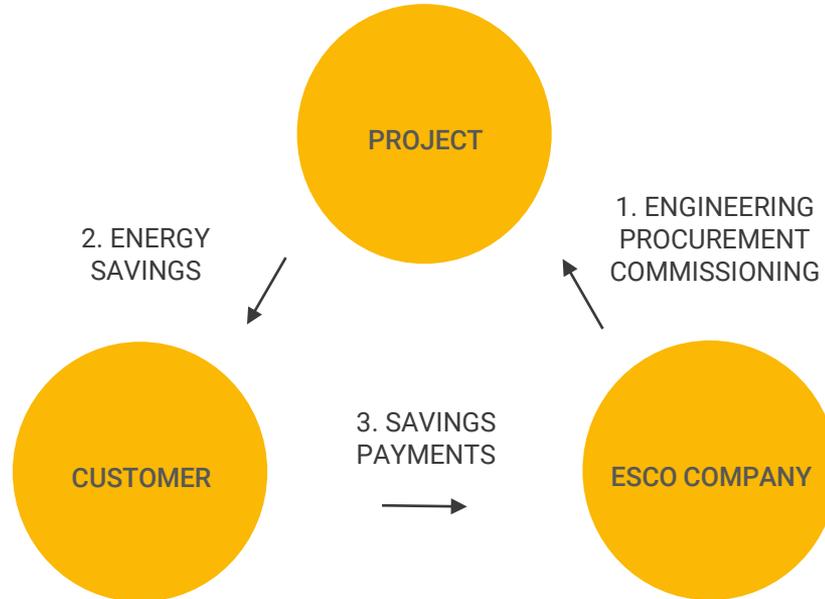
ENERGY SAVING COMPANY



ESCO

Paying for energy efficiency (ESCO model) also in industry is not only a way to improve energy efficiency, but also a way to effectively use the company's human and financial resources.

Taking all these elements into account together with the achieved effect means that improving the energy efficiency of an industrial customer in the ESCO model is not only more convenient for the client but also more profitable.



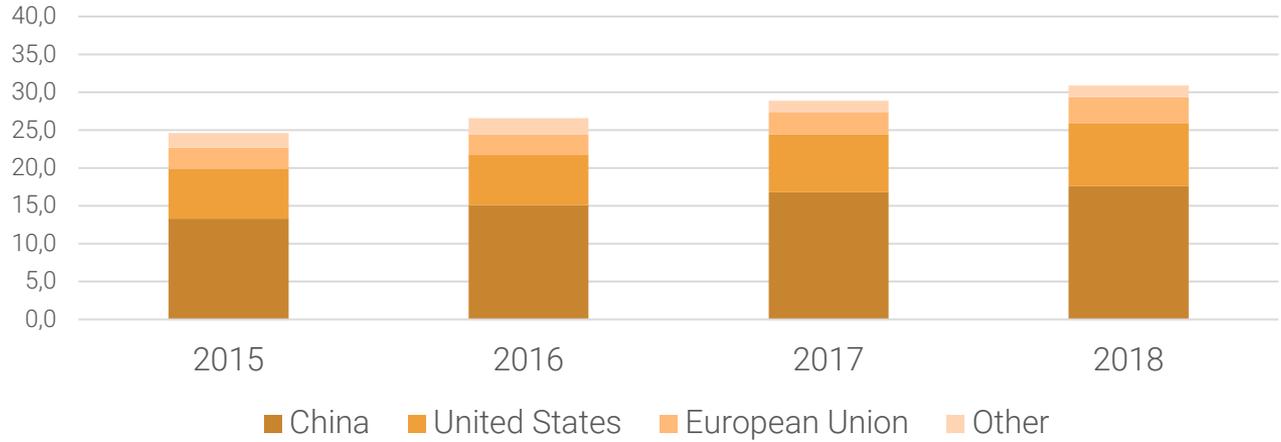
ESCO features:

1. Transfer of technical/credit risk
2. Long term contract
3. Limited or no upfront costs of capital expenditures for customer
4. Direct access to the specialists with proven track record
5. New technologies, external know-how

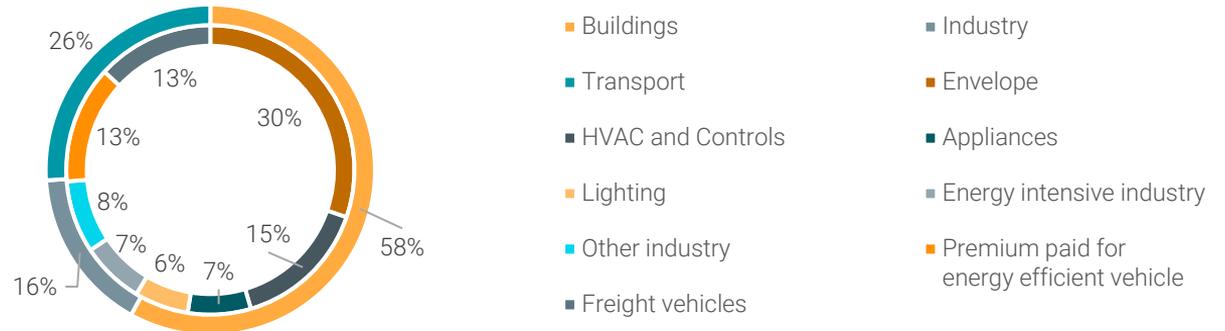
Energy service companies (ESCOs) deliver energy efficiency projects that are financed based on energy savings.

ESCO

Global ESCO market growth 2015-18 (in billions USD)



Energy efficiency investment by sector in 2018



Source: Energy Efficiency 2019, IEA



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ESCO CONTRACTING MODELS



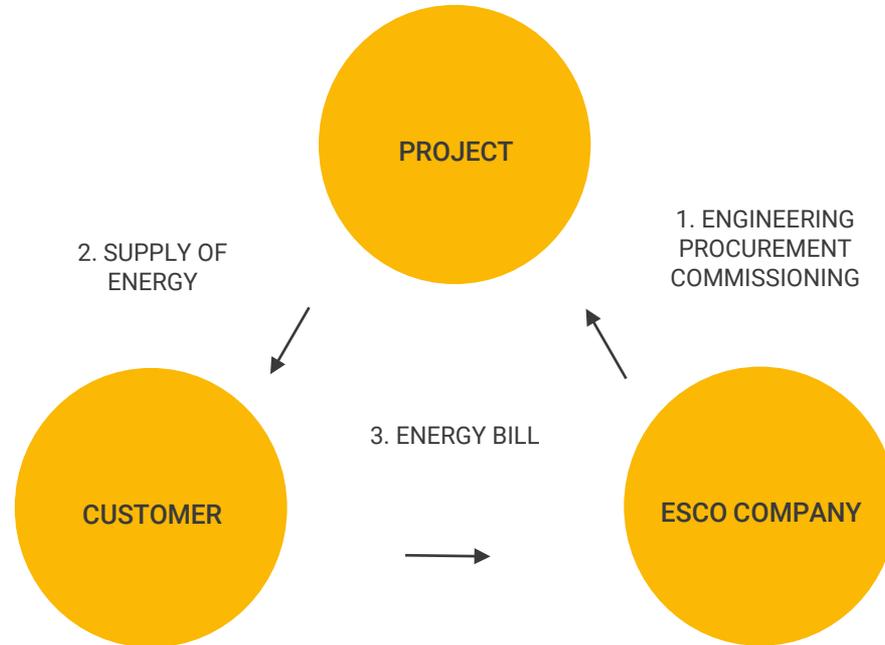
TYPES OF CONTRACTS

ENERGY SUPPLY CONTRACT



ESC within ESCO model is an example of an investment that would not have been implemented by the client company due to the lack of appropriate know-how, adequate human resources and its focus on core business investments. Easiest way of common understanding will be then remuneration for produced Energy (with greater efficiency).

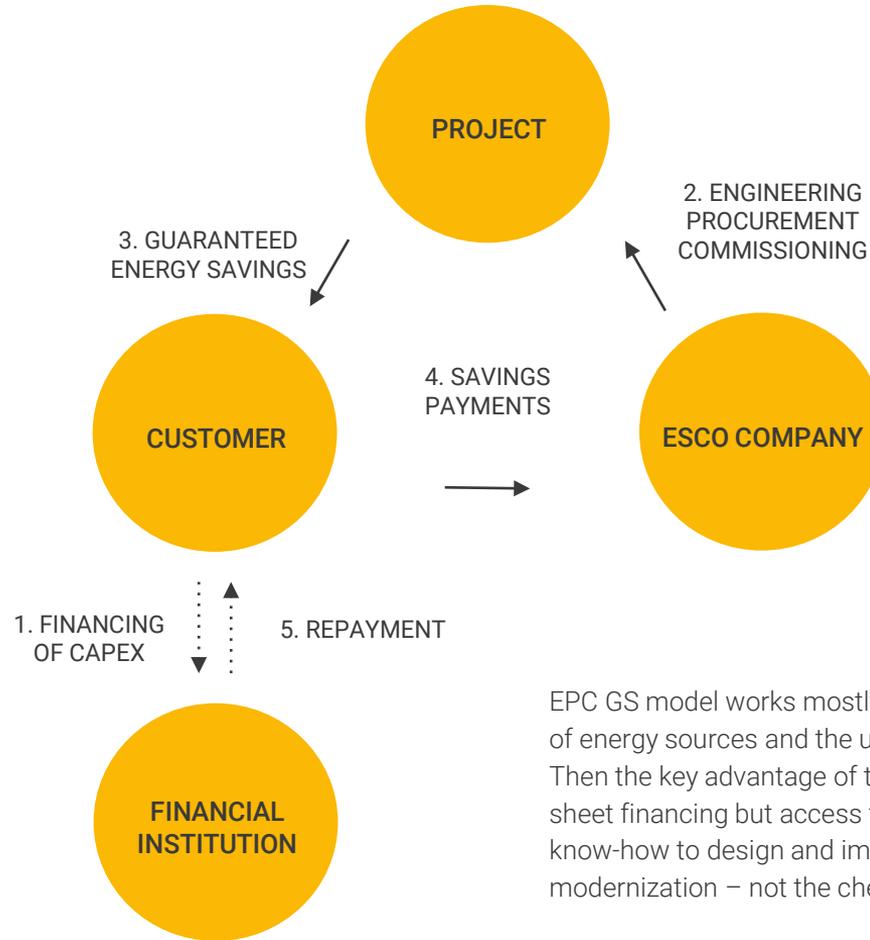
Energy Supply Contracting (ESC) focuses on energy supply not energy efficiency



TYPES OF CONTRACTS

ENERGY PERFORMANCE CONTRACT

GUARANTEED SAVINGS



Energy Performance Contract Guaranteed Savings model (EPC GS): the ESCO guarantees a certain savings on the client's energy bill.

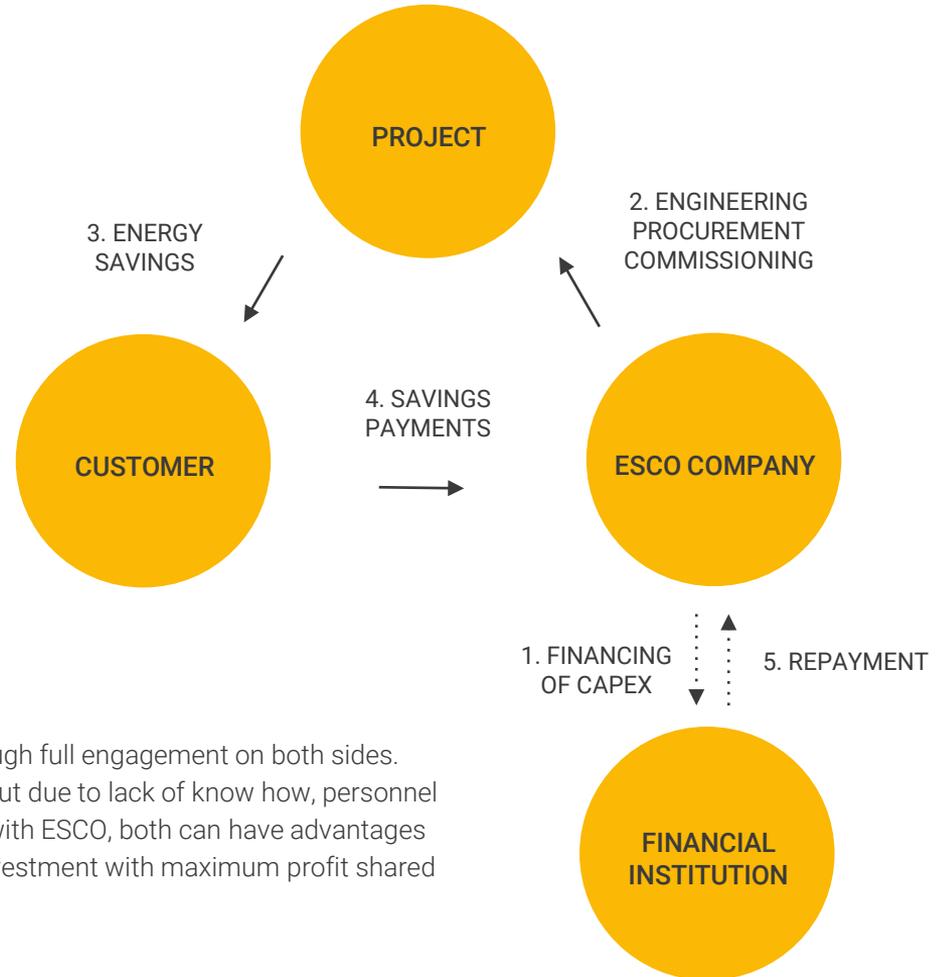
EPC GS model works mostly with an investment in the area of energy sources and the use of energy by the industrial process. Then the key advantage of the ESCO model is not off-balance sheet financing but access to specialists who have the necessary know-how to design and implement a non-obvious energy-saving modernization – not the cheapest but with warranty on the effect.

TYPES OF CONTRACTS

ENERGY PERFORMANCE CONTRACT

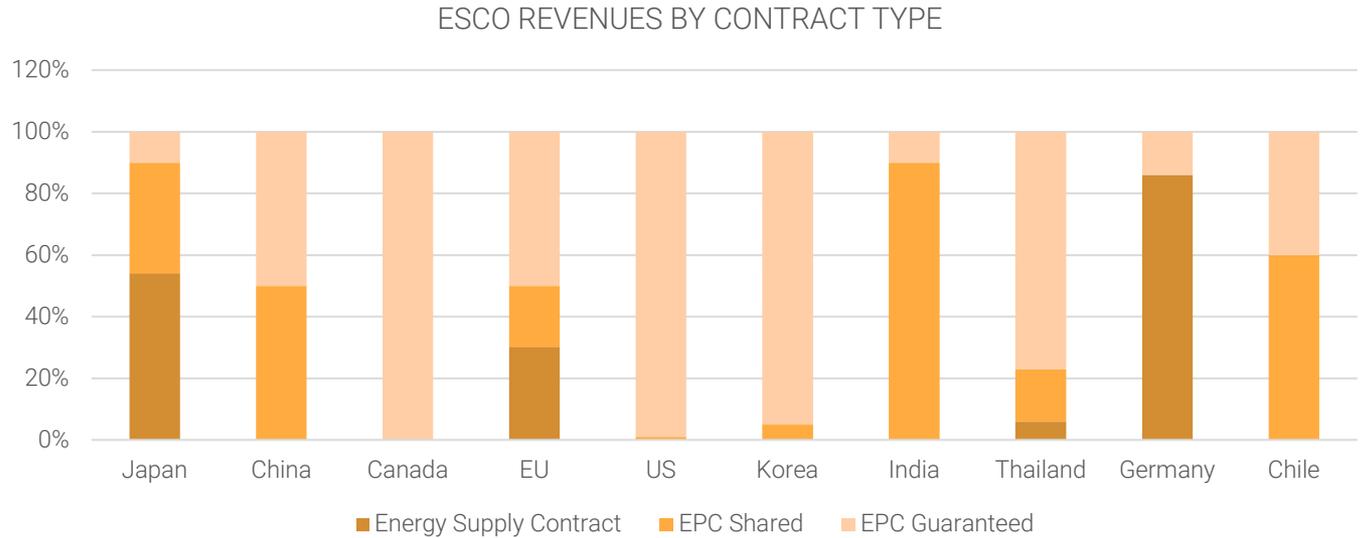
SHARED SAVINGS

Energy Performance Contract Shared Savings model (EPC SS): the ESCO can provide financing, as well as project development and implementation costs, with the energy savings shared between the ESCO and the client over the contract period.



EPC SS model works the best through full engagement on both sides. When a company wants to invest, but due to lack of know-how, personnel or CAPEX is willing to cooperate with ESCO, both can have advantages from well-prepared, carried-out investment with maximum profit shared on an agreed level.

TYPES OF CONTRACTS





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CASE STUDIES



CASE STUDIES

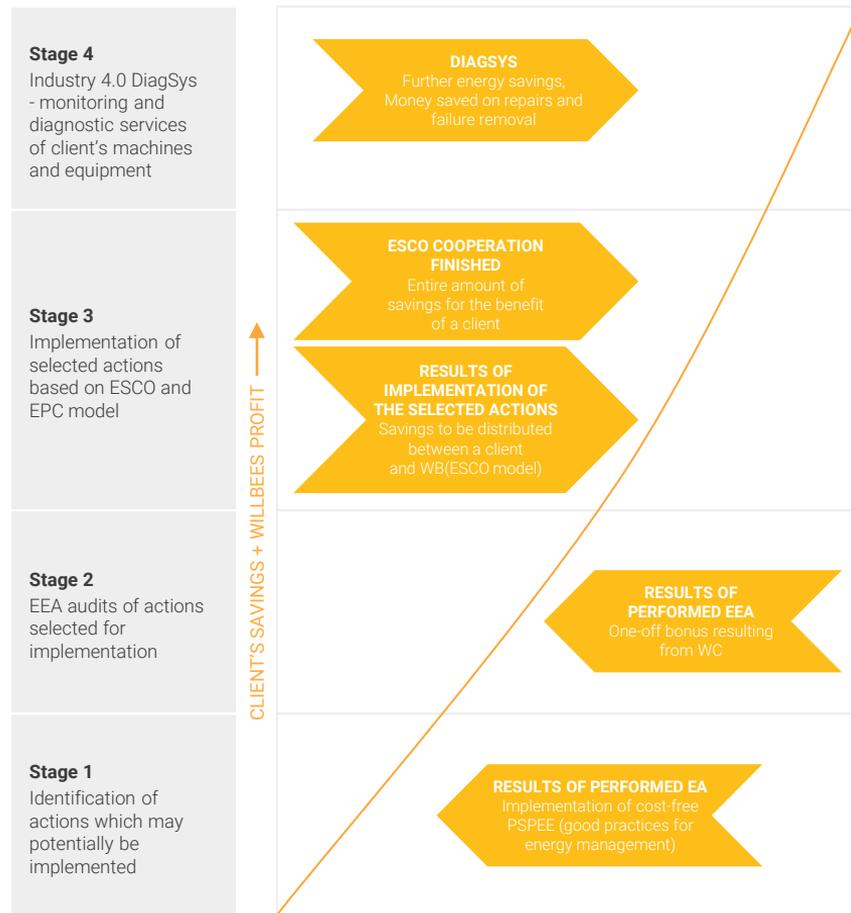
APPROACH

Continuous Improvement Loop

continuous and comprehensive service of the process for improvement energy efficiency – at each stage of cooperation with the client we are looking for new energy-saving investments and continuously monitor the effects.



*PSPEE – stands for polish Przedsięwzięcie Poprawy Efektywności Energetycznej i.e. Energy Efficiency Measures



PROCESS OF ENERGY EFFICIENCY IMPROVEMENT
IN A CLIENT'S INDUSTRIAL FACILITY

CASE STUDIES

SIMOLDES PLASTICOS

Simoldes Plasticos is one of the biggest suppliers for automotive industry. Company has its factories around Europe and Asia, producing dashboards and other plastic elements for cars. Presented case study was based on the investment in Polish site located in JELCZ LASKOWICE, PL.

SCOPE OF WORKS

- Lighting installation, LED for MH replacement
- Modernisation of the plastic injection moulding machines,
- Insulation of the injection units,
- Modernisation of the compressors,
- Replacement of the control system for the chilled water installation

SUMMARY OF SAVINGS

CAPEX [EUR]	Energy saving [EUR/a]	Energy saving [MWh/a]	CO2 reduction [tCO2/a]
440 000	200 000	2 760	1788

TYPE OF AGREEMENT

5 years, EPC shared saving contract

Annual savings generated with the ESCO agreement:

Energy costs of 440 kEUR

Energy saving of 2760 MWh

CO₂ reduction of 1788 tons

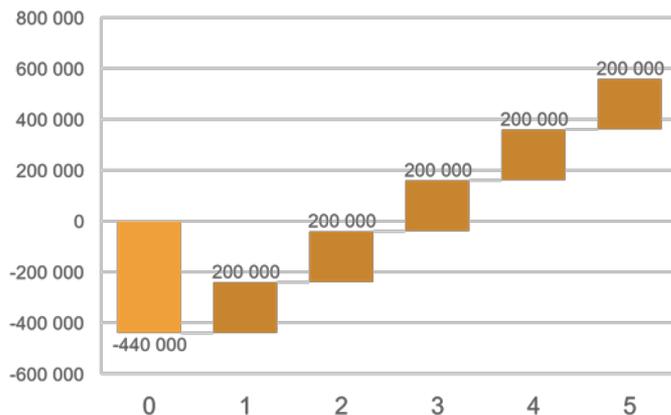
It's around 22% of the company usage

CASE STUDIES

SIMOLDES PLASTICOS



CASH FLOW WITH TRADITIONAL CAPEX INVESTMENT [EUR]



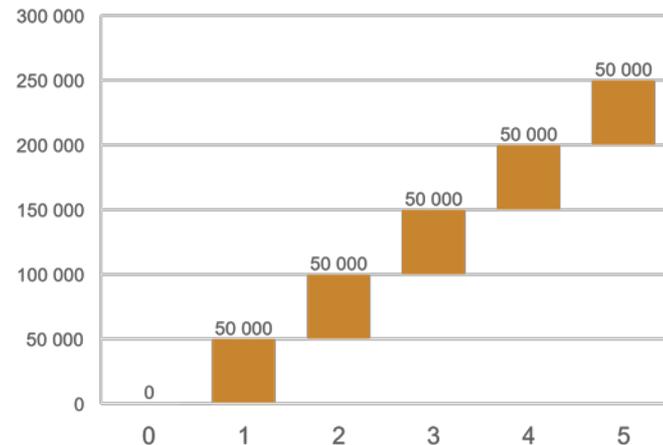
Traditional investment model requires to engage own CAPEX resources – payback period without calculating in the cost of capital will be around 3 years. After this period all the generated cash starts to be a surplus on the company books.

NPV	380 039
IRR	36%

Energy Performance Contract Shared Savings model (EPC SS) company is not spending any money on the CAPEX, everything is on the ESCO side. In our approach, company starts to have surplus just after first remuneration period – in this case with really low risk, one can generate additional cash, for instance for another technological project.

NPV	205 010
IRR	-%

CASH FLOW WHEN COOPERATING WITH ESCO



CASE STUDIES

SOUFFLET MALT

Soufflet Malt Poland is part of Soufflet Group, which is one of the global leaders in delivering malt for beer production. Company has its factories around the world, but the biggest are in France, Poland and Czech Rep. Presented case study is based on the investment in Polish site located in POZNAN, PL.

SCOPE OF WORKS

- Heat pump drying system 3,7-5,5 MWth
- New ammonium cooling system 3 x 1,3 MWch
- CHP plant for supplying electricity and heat 2,7 Mwe/2,4 MWth
- Replacement of the control system for production coordination

SUMMARY OF SAVINGS

CAPEX [EUR]	Energy saving [EUR/a]	Energy saving [MWh/a]	CO2 reduction [tCO2/a]
5 000 000	1 630 000	18 334	8331

TYPE OF AGREEMENT

10 years, EPC shared saving contract

Annual savings generated with the ESCO agreement:

Energy costs of 1,6 mio EUR

Energy saving of 18 334 MWh

CO₂ reduction of 8331 tons

It's around 30% of the company usage

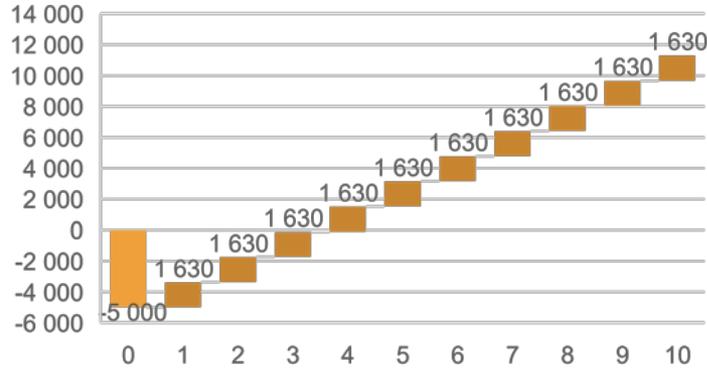


CASE STUDIES

SOUFFLET MALT



CASH FLOW WITH TRADITIONAL CAPEX INVESTMENT [kEUR]



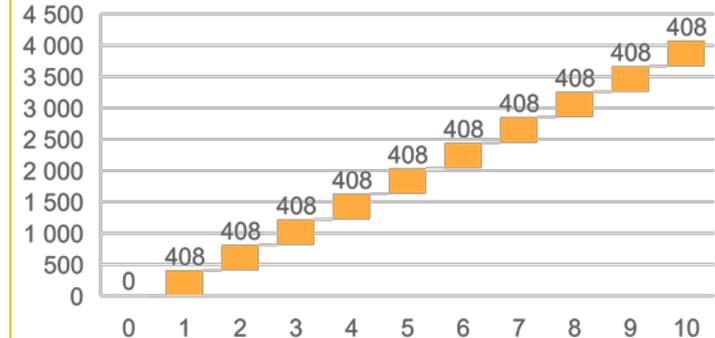
Traditional investment model requires to engage own CAPEX resources – payback period without calculating in the cost of capital will be around 4 years. After this period all the generated cash starts to be a surplus on the company books.

NPV	6 488 000
IRR	19%

Energy Performance Contract Shared Savings model (EPC SS) company is not spending any money on the CAPEX, everything is on the ESCO side. In our approach, company starts to have surplus just after first remuneration period – in this case with really low risk, one can generate additional cash, for instance for another technological project.

NPV	2 862 000
IRR	-%

CASH FLOW WHEN COOPERATING WITH ESCO [kEUR]



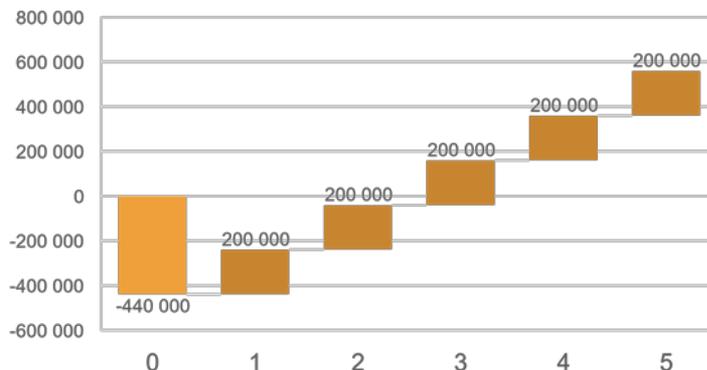
CASE STUDIES

SIMOLDES PLASTICOS

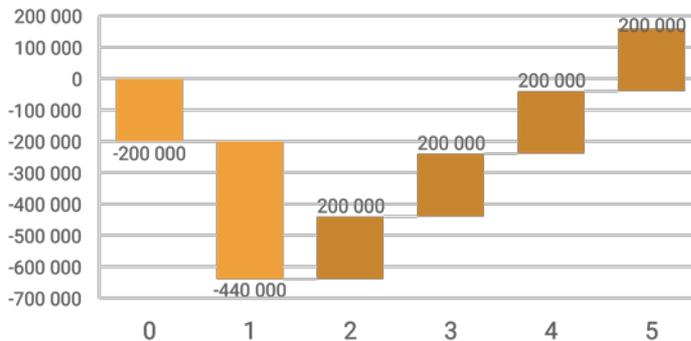
- when you can't get capex financing instantly



CASH FLOW WITH TRADITIONAL CAPEX INVESTMENT [EUR]



CASH FLOW WITH TRADITIONAL CAPEX INVESTMENT [EUR] +1 year



Traditional investment model requires to engage own CAPEX resources – payback period without calculating in the cost of capital will be around 2,5 year. After this period all the generated cash starts to be a surplus on the company books.

NPV	380 039
IRR	36%

But + 1 year for including in annual investment CAPEX, which is quite common in bigger industries:

NPV	21 909
IRR	8%

SUMMARY

Main advantages of ESCO models in implementation of energy efficiency measures for industry:

- Warranty of the effect/savings,
- One party responsible for everything,
- Risk, both technical and financial are moved away on the side of the financing party,
- Service is in general provided by the skilled professionals, who are making the project partly for them self – there is no better warranty on the quality of the service,
- Companies can use external CAPEX without engaging own capitals which highly improves the speed of going in the project,
- It's the only way to implement project in the off-balance scheme,
- Technical advisory and service can be provided through the lifetime of the contract,
- It's a closed loop – on daily basis specialist who are maintaining the installation are checking around for the new opportunities to improve the investment or cooperating installations.

FROM IDEA TO IMPLEMENTATION





Thank you for your attention

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CLIENTS OF DB ENERGY GROUP



WHAT WE DO

Willbee Energy GmbH (Willbee) was established as a part of DB Energy Group an leader in energy efficiency services for industry and is based in Magdeburg (Germany).

We are professionals, providing a wide range of energy efficiency services for industry.

Our main focus is on:



industry energy audits:

- Walk Through (WT)
- Energy audit (EA)
- Energy efficiency audit (EEA)



financing, project design and implementing energy saving projects - ESCO/EPC



engineering services for energy efficiency projects:

- general contracting
- project design
- advisory
- expertises
- white certificates (WC)



diagnostics and monitoring of working parameters – Industry 4.0 – predictive diagnosis and maintenance of rotating machines - DiagSys

DB ENERGY

CAPITAL GROUP



Comprehensive service of the process of improving energy efficiency in an industrial facilities:

- identification of energy-saving investments - energy audits and energy efficiency audits,
- designing of energy-saving modernizations (including detailed designs),
- financing investments in the ESCO model,
- implementation of energy-saving investments,
- monitoring and diagnostics of technical installations.



Measurement services for the industry:

- all types of measurement required for the purpose of energy efficiency audits/tests/improvements, including measurements which involve individual choice of instruments and installation of a measurement system at the client's premises,
- predictive diagnosis and maintenance of rotating machines – DiagSys.

DB ENERGY - CAPITAL GROUP



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Entered in the commercial register

Register court: Local court Stendal

Register number: HRB 27014