

# TRANSFERRABLE BUSINESS MODEL FOR IMPLEMENTATION OF ENERGY PERFORMANCE CONTRACTING THROUGH ESCO

## N. DELIVERABLE T1.4.2

Business model that guides schools to best financing choice to implement EE/RES interventions, comprising factors such as debt capacity, credit worthiness, risk level, in-house expertise, ease access to Third Party Financing

Version 02

15 05 2017

<http://www.interreg-central.eu/Content.Node/ENERGY@SCHOOL.html>

*Edited by Graz Energy Agency*

*In cooperation with Certimac and Naxta/UCBR*





## Index

1. Energy@School - Project overview .....	4
2. Summary .....	7
3. Introduction .....	8
3.1. Advantages and Examples of EC-models.....	8
3.1.1. Example Energy Supply Contracting: Biomass Heating, Spain .....	11
3.1.2. Example Integrated Energy Contracting - Castle Retzhof.....	13
3.1.3. Example Energy Performance Contracting - Primary School Pestalozzi.....	15
3.2. The Energy-Contracting model .....	17
3.2.1. Stability and Growth Pact and Energy Contracting .....	18
3.2.2. Energy-Contracting Basics .....	19
3.2.3. Energy Supply Contracting business model .....	20
3.2.4. Energy Performance Contracting business model .....	21
3.2.5. Integrated Energy Contracting (IEC) model .....	23
3.2.5.1. Simplified Measurement and Verification (M&V) Approaches .....	24
3.3. Recommendations - transferrable business model for schools.....	26
4. Customer Needs for Financing Energy-Contracting Projects .....	29
4.1. Introduction.....	29
4.2. Customer Demand Profile .....	29
5. Credit Financing for Energy-Contracting.....	30
5.1. Introduction to Credit Financing .....	30
5.2. Credit Financing Features and Customer Demand .....	32
5.2.1. Direct Financing Costs .....	32
5.2.2. Legal Aspects .....	33
5.2.3. Collateral (Securities).....	34
5.2.4. Taxation.....	36
5.2.5. Balance Sheet and Accounting Issues .....	36



5.2.6. Management Expenditure and Transaction Costs.....	37
6. Leasing Financing for Energy-Contracting.....	39
6.1. Introduction to Leasing Financing .....	39
6.2. Operate and Finance Leasing Common Features and Customer Demand .....	40
6.3. Operate Leasing Features and Customer Demand .....	41
6.3.1. Direct Financing Cost .....	42
6.3.2. Legal Aspects .....	42
6.3.3. Collateral (Securities).....	43
6.3.4. Taxation Implications .....	43
6.3.5. Balance Sheet and Accounting Implications .....	44
6.3.6. Management Expenditure and Transaction Cost.....	45
6.3.7. Finance Leasing Features and Customer Demand.....	45
7. Cession and Forfeiting of Contracting Rates .....	48
7.1. Introduction.....	48
7.2. Cession of Contracting Rates as Security for Credit- or Lease-Finance .....	48
7.3. Forfeiting - An Innovative Option .....	50
7.3.1. Financial Aspects.....	50
7.3.2. Legal Aspects .....	51
7.3.3. Securities .....	52
7.3.4. Taxation.....	54
7.3.5. Balance Sheet & Accounting Aspects .....	54
7.3.6. Management Expenditure and Transaction cost .....	55
8. Comparison and Conclusions .....	56
8.1. Comparison and Evaluation of Financing Offers with Customer Needs .....	56
8.2. Conclusions and Recommendations .....	57
8.3. Recommendations for Preparation of Financing .....	60
8.3.1. How to Determine Your Specific Financing Demand Profile? .....	60



---

<b>8.3.2. Standardized Financing Project Flow .....</b>	<b>60</b>
<b>8.3.3. Description of Project Documentation to be provided by Customer .....</b>	<b>60</b>
<b>8.3.4. FI's Wish List for Securities.....</b>	<b>61</b>



## 1. Energy@School - Project overview

The building sector has high potential for energy optimization being the most consuming one in EU. In terms of public buildings heritage, energy consumption in schools is the second highest expenditure of Municipalities total running costs. This sector offers potential remarkable achievements in terms of Energy Efficiency (EE), Renewable Energy Sources (RES) application and carbon footprint reduction and several disparities exist among Central Europe countries as for planning and implementing performances of proper sector-based strategies, action plans and managerial capacities.

With reference to the **public stock of buildings and infrastructures**, for sure educational facilities are an important opportunity to achieve substantial energy savings, as they constitute a relevant part of the overall amount of energy consumption and therefore of the expenses paid by the national budgets. Energy consumption in schools is the second most significant expense to total running costs and they account up to 70% of the thermal energy cost of Municipalities. Schools, being such an important line in energy-related budget, represent an important sector of public administration to tackle with reference to buildings' upgrade, retrofitting and renovation. Furthermore, schools are the best environment for behavior change and awareness raising of students and, indirectly, their families because they are the privileged place for the dissemination of culture and information as a whole and therefore also in the field of energy saving and efficiency. Consumption in schools can be quite variable depending on country, climate, building year of construction and type. However, considering an average energy use profile, consumes can be roughly divided as follows: 47% heating; 14% lighting; 10% cooling; 9% ventilation; 7% water heating; 4% PC; 2% refrigeration; 1% cooking; 1% office equipment; 5% other. It is estimated that just by making small changes in behavior, schools could save up to 20% of their energy use (and bills). This amount can noticeably increase if energy retrofit interventions are associated to behavioral changes (e.g. around 50% with 0.5 to only 2 years payback period).

Public building sector with reference to schools is therefore one of the main issues and there is concrete need to develop energy-efficient management for schools and strategies on how to improve the energy efficiency. There is also need to raise the awareness of school staff and students, and to involve them in the energy saving activities. People have a crucial role in this process, therefore they need to be supported and provided with the best available solutions.

**Main ENERGY@SCHOOL objective** is to increase the capacity of the public sector to **implement Energy Smart Schools**, by application of an integrated approach that **educate and train schools staff and pupils to become Senior and Junior Energy Guardians (EGs) who will engage on progressive and sustainable energy efficiency of buildings and an adequate transfer of a correct attitude towards energy consumption (“energy culture”)**. Thanks to a commitment to high-performance schools, many school districts are discovering that smart energy choices can have lasting benefits for their students, communities, environment. The key idea is to provide concrete technical Tools and Devices and specialized trainings for School Planning Managers on financing opportunities, designing, operating &



maintaining energy solutions. The innovative character lies in the active involvement of employees, experts, students, teachers, families in the process of transforming the school into an energy smart school through specific and targeted training and education activities.

The project will therefore address common barriers associated with energy smart-school management, it will develop and provide a Methodology & Approach usable and replicable within other school buildings, together with the necessary Tools, Devices & Protocols. In this way all parties involved in the energy decisions of a public school (technicians and ICT professionals, administrators, school employees Energy managers) can face in a coordinated manner the issue of Energy Efficiency by implementing effective and validated solutions.

The project will deliver:

- ⇒ 1 Common/Transferrable and 8 customized Strategies for Smart Schools,
- ⇒ 1 joint and 7 customized Energy Smart-school Management Plans,
- ⇒ 3 smart phones APPs for Energy Guardians,
- ⇒ 8 tested pilot solutions of EE & RES application in schools under direct contribution of Energy Guardians, in the form of Guidelines, Toolbox, Best Practices as reference documents and experiences to be capitalized far beyond the project end.
- ⇒ Training & education programs as adaptable & replicable models for capacity-raising and Energy Culture rooting.

#### **ENERGY@SCHOOL expected results:**

- I. Optimization of energy consumption in schools,
- II. Concrete and progressive increase of EE and RES use in schools not only thanks to technical application of smart solutions, but also to non-technical factors such as a better management capacity and responsible behavior toward energy use,
- III. Increase of capacity of public sector to deal with increase of EE and RES use in schools thanks to strategy, action plans, tools (methods, approaches), trainings, pilot actions defined and implemented within the project,
- IV. Increase in managerial and organizational competences as well as in human resources to ensure the progressive and sustainable energy efficiency and renewable energy use in public schools (trainings),
- V. Creation of conditions for new job opportunities (trainings),
- VI. Creation of “energy culture”, thus responsible attitude towards energy use, thanks to education and raising awareness activities, as it is demonstrated that amount of saved energy can noticeably increase if energy retrofit interventions are associated to behavioral changes.



### List of Project Partners

- 1 Union of Municipalities of Low Romagna Region, Lead Partner - Italy
- 2 CertiMaC s.c.r.l. - Italy
- 3 City of Bydgoszcz - Poland
- 4 ENERGY AGENCY OF SAVINJSKA, ŠALEŠKA AND KOROŠKA REGION - Slovenia
- 5 City of Karlovac - Croatia
- 6 University of Bologna - Dept of Industrial Chemistry - Italy
- 7 Municipality of the CITY Szolnok with County Rank - Hungary
- 8 Local Government of Town Újszilvás - Hungary
- 9 City of Stuttgart - Germany
- 10 Klagenfurt - Austria
- 11 Graz Energy Agency - Austria
- 12 City municipality of Celje - Slovenia

**Responsible Partner of Thematic Work Package “Analysis phase and definition of Energy Guardians Smart-school Management Plans” and the present document: CertiMaC - Research Laboratory -Italy.**



## 2. Summary

Availability of financial resources is one of the key success factors for the implementation of energy efficiency projects. (Pre-) Financing energy efficiency investments has become increasingly burdensome for cities and public bodies, because they reach their credit lines and credit liabilities (Maastricht criteria).

Consequently, **innovative finance options** like operate, finance lease or “pure” forfaiting options have to be considered and compared to classical finance instruments like credits. Also **crowd financing** and **crowd funding** is a new opportunity, but very often limited in extent and legal circumstances (partly unclear so far) and sometimes risky with high costs.

The **energy performance contracting model (EPC) with ESCOs** (Energy Service Companies) is a well-tested and good opportunity to pre-finance EE-measures without touching own budgets, but still has some hurdles to overcome to exploit the full market potential.

Also the question of who is best capable of providing financing - public body, ESCo or a finance institution (FI) as a third party has to be considered. ESCo's are not necessarily the best source for finance themselves. But they can certainly help to arrange for financing.

The approach of this guide is to start from the perspective of public institutions, who wish to lend money for project financing (demand side). The financing requirements and specific framework is shown in a customer demand profile and contains criteria such as

- Direct financing cost
- Legal aspects
- Securities/collateral required
- Taxation implications
- Balance sheet & accounting implications
- Risks

In addition to the mentioned financing options a transferrable, service based business model to implement EE and RES measures through ESCOs is designed in this task, based on already tested EPC-models.

The following informations are partly results from IEA DSM Task XVI activities and have been summarized and further developed within this project.



### 3. Introduction

The following pages will give a comprehensive overview of business and financing models that guides schools to best choice to implement EE/RES interventions and to ease access to Third Party Financing. Results are transferrable business models for implementation of energy performance contracting through an ESCO. The question of the best financing option is different to the question of the right service model/Energy contracting model. It is strongly recommended to separate the decisions and also the financial flows. The best combination of service and financing model has to be decided on each project separately. It is also recommended to combine smaller renovation objects to a tendering pool to reduce transaction costs.



Fig. 1: Financing options of EE/RES measures (source: Graz Energy Agency; EESI2020 facilitators guideline)

This paper will help you to take the right choice of options, but maybe you will need some help from experienced consultants on the topic of EC-models for the first projects, especially for the contractual issues.

#### 3.1. Advantages and Examples of EC-models

To realize EE and RES interventions with the help of ESCOs give a couple of strong advantages:

A specialized energy service company (Contractor or Energy Service Company [ESCO]) implements long-term projects in close partnership with the building operator and the building owner in order to achieve sustainable energy savings and modernize facilities. The Contractor is responsible for the conception, planning, implementation and proof of success of the energy saving measures and can, if necessary and intended, also take over the financing of the investment.

Added value of an ESCO model compared to the self-realization:

##### 1. Risk Acceptance by the ESCO:

Every investment or modernization project involves risks: If the right design has been selected, the installation is carried out correctly and in a timely manner, will the system work as planned, does the cost remain within the scope?

One of the greatest advantages key aspects in this context of investing in energy savings through an ESCO is the outsourcing of the technical and financial risks to the contractor.

- ✓ Energy contracting is the guarantee that the overall system / modernization will work according to the specifications throughout the entire contract term
- ✓ Guaranteed technical function of the new plants over the entire contract period - technical risk (material risk) lies with the Contractor
- ✓ Guaranteed energy savings under specified conditions (no deterioration of comfort for the user!) - The financial risk of whether an energy saving is actually achieved is transferred to the contractor
- ✓ Everything from a single source - one contact for various trades: The contractor erects and maintains the technical facilities.



Fig. 2: One face to the customer (source: Graz Energy Agency; EESI2020 facilitators guideline)

For the planning, construction and maintenance of a technical system, the building operator would normally have to commission various external service providers as well as their own personnel with specific responsibilities. In the event of a system failure with an unclear guarantee status, these distributed responsibilities can result in conflicts between different parties (e.g. the planner, the installer and the maintenance company) having to be clarified under difficult circumstances and it is time consuming. The result is delayed problem solving and financial losses. In the case of a EC-contract, all questions concerning a new system are the responsibility of the ESCO. In the operating phase, the Contractor must solve all problems arising with new technical devices, as well as guarantee the achievement of the guaranteed savings in case of an Energy Performance Contracting model. The customer thus benefits from the contractor, who is the sole contact person for all questions concerning the implementation of the corresponding measures within the scope of the contract.

- ✓ Financing of the measures possible by the ESCO - the financing of the modernization is no budgetary burden (financing according to the Stability and Growth Pact is possible).
- ✓ Operational management and maintenance: efficient and effective not only in the first year, but also in the 10th year (in the own interests of the contractor, as he is compelled by the contractual performance)

The municipality has long term securities: The measures are to be amortized within the agreed term of the contract, so the terms of the contract are normally 10 years and more.



## 2. Common Interests and Expectations of Customers and Contractor

Energy Contracting offers a classic win-win situation as both the customer and the contractor profit from the savings achieved. In addition, the customer and the contractor have a common interest in the way savings are to be achieved:

- Focusing on the most economic measures ensures the best cost-benefit ratio,
- Use of modern, highly efficient equipment and systems,
- Compliance with effective monitoring standards,
- Continuous and reliable maintenance of the new equipment over a long period (term of contract).

In the Energy Performance Contracting there are also areas where the customer and contractor have different interests, e.g. at the comfort level (e.g. indoor temperatures). Therefore, such questions must be clearly defined in the call for tenders and the contract so that conflicts cannot arise afterwards. This requires experienced service providers in the field of contracting contracts.

### Examples from practice

On the following pages three types of EC-models will be described in detail (and in theory):

- Energy Supply Contracting (ESC)
- Integrated Energy Contracting (IEC)
- Energy Performance Contracting (EPC)

To make the models more tangible, here are some examples of these models (the financing question is treated later on in detail):



### 3.1.1. Example Energy Supply Contracting: Biomass Heating, Spain

Example from the IEA-DSM Task 16 Report “Competitive Energy Services”

**Contractor: Kawarna Energía S.L., Madrid, Spain**

**Facility:**

- Several facilities (model is independent of use of the buildings; the Energy Supply Model is similar in all Europe - this is an exemplary example from Spain)
- Private initiative funded both by private and public funds
- Experience of more than 200 project implementations on a national basis incl. schools
- Scope of the project: generate green and efficient energy using all kind of biomass materials

**Initial situation:** There are no specific problems identified but high efforts in communication and awareness about the green energy technology and also about guaranteed savings/heating cost reductions are expected. The first steps of these projects are an initial and comprehensive energy audit.

**Goals:**

- Reduction in energy costs by changing energy sources
- Reduce energy consumption through more efficient equipment
- Renew equipment at zero cost to the final client
- Control and minimize greenhouse gases

**Measures:**

- Energy management and controlling system
- High efficient biomass thermal generation
- New logistics and procurement activities
- Turnkey implementation, including design, asset management, storage, measurement and invoicing

**Business Model:**

Energy Supply Contract:

- ✓ KaWarna as the ESCo audits the initial situation, designs and implements the engineering project and subcontracts local implementation companies.
- ✓ The operation and maintenance is controlled and managed by the ESCo.
- ✓ Measures of the energy produced are centrally managed by remote devices for all implemented projects.

Financial Management:

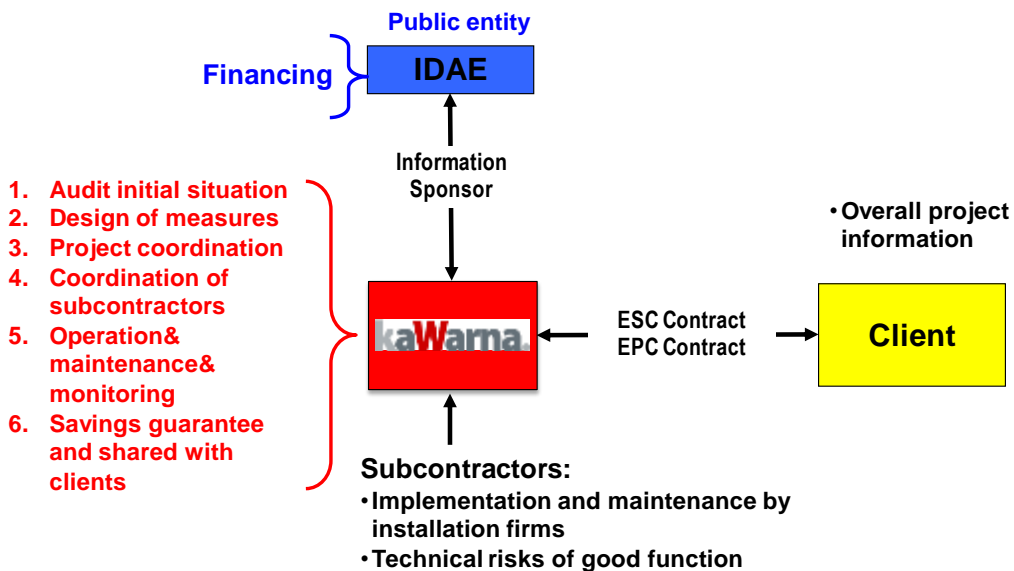
- ✓ Finance almost in every project in Spain comes from IDEA - Instituto para la Diversificación; subsidized loan (100%). An example that the best financing has to be found locally
- ✓ KaWarna has implemented projects for a maximum of 350.000€, and also projects for 12.000€.
- ✓ Contract period 10 years - the client gets the property rights of the installation after that period.

Savings:



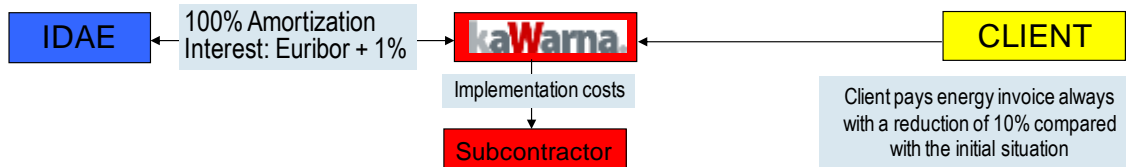
- ✓ KaWarna guarantees at least a 10% reduction indexed to initial energy source. This requirement is mandatory to access the finance.

**Contractual Relationships:**



**Biomass ESC with public finance through ESCO - contractual relationships**

**Cash Flows:**



**Biomass ESC with public finance through ESCO - cash flows**

**Lessons Learned, Innovations and Client’s Advantages:**

- ✓ KaWarna takes total care: implementation, fuel, maintenance, measurement, invoicing, paying
- ✓ Customer makes no investment and receives the installation after 10 years
- ✓ Reduce energy costs by 10 %
- ✓ Scope: national projects
- ✓ Sponsored by the local authority
- ✓ The installation is guaranteed for the contract period of 10 years and the total lifetime is expected at 25 years.



### 3.1.2. Example Integrated Energy Contracting - Castle Retzhof

Contractor: Clean Energy Austria GmbH, Austria

Facility:

- Castle Retzhof, Leitring, Austria
- educational building (adults, professionals) and guesthouse
- Different construction periods: 16th century, 1960 and 2009
- Three buildings supplied by heating network
- Heated area: 4.000 m<sup>2</sup>



Initial situation:

- Inefficient natural gas boiler, high energy costs
- No insulation of building envelope (protection of historic monument)
- Energy consumption ratio: ~ 185 kWh/m<sup>2</sup>/year
- Demolition of old boiler house to make room for new guest house

Goals:

- New boiler installation
- Outsourcing of energy supply and financing
- Reduction of energy demand, -cost and CO<sub>2</sub> through demand side energy efficiency measures

Measures:

- Condensing gas boiler and micro CHP for heat and electricity baseload
- Insulation of upper floor ceiling with inflated cellulose (recycling product)
- Energy management and -controlling
- New control system
- Thermostatic valves and hydraulic improvements



Business Model:

Integrated Energy Contract:

- ✓ Combination of energy efficiency and useful energy supply
- ✓ Quality assurance substitutes EPC savings guarantee (see figure)
- ✓ Awarding: Combined competition of price and ideas on the bases of a functional service description

Financial Management:

- ✓ Duration of contract: 15 years

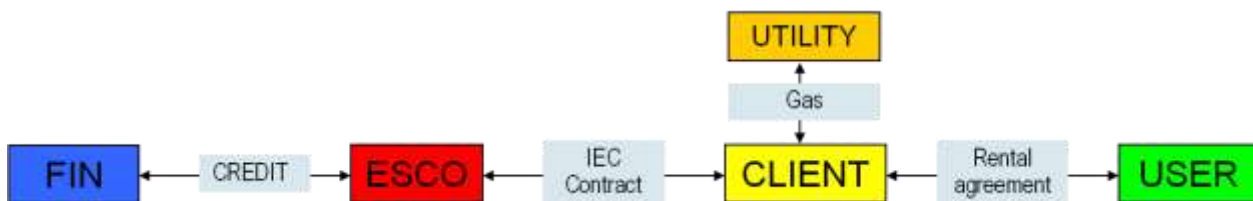


- ✓ Total project value: €530.000 (net project value [NPV] over 15 years)
- ✓ Total investment costs: €110.000
- ✓ costs on energy (heat): €33.000 per year
- ✓ investment costs for energy efficiency measures: € 27.000
- ✓ part of the financing came from the user (€ 38.000,-)

**Savings:**

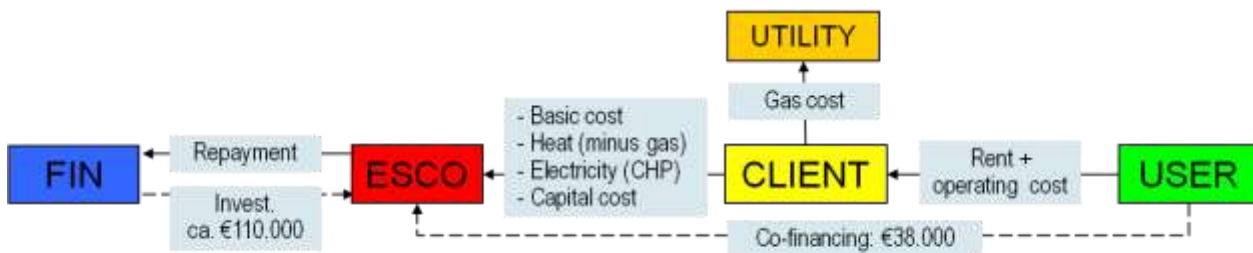
- ✓ Savings through energy efficiency measures: € 2.000 (46 MWh) per year
- ✓ Savings through change of heating system € 6.800 per year

**Contractual Relationships:**



Integrated Energy Contracting through ESCO - contractual relationships

**Cash Flows:**



**Total project value: €530.000 (NPV over 15 years)**

Integrated Energy Contracting through ESCO - cash flows

**Lessons Learned, Innovations and Client's Advantages:**

- ✓ Combination of new heating system and efficiency measures in an old (protected) building
- ✓ ESCo finances CHP at own risk and sells electricity
- ✓ The development of comprehensive energy efficiency projects requires at least one dedicated protagonist and endurance.
- ✓ Protected historic monument: Only insulation of upper floor ceiling works easily (low cost option with cellulose)
- ✓ ESCo finances CHP at own risk and sells electricity
- ✓ Co-financing by building user (who shares from the reduced energy costs) decreases capital cost



### 3.1.3. Example Energy Performance Contracting - Primary School Pestalozzi

**Contractor:** Siemens AG, Austria

**Facility:**

Primary School and Kindergarten Pestalozzi,  
Wiener Neustadt, Austria

3.922 m<sup>2</sup> heated floor space

Built 1929, renovation and new roof floor 1992/93



**Initial situation:**

The city of Wiener Neustadt wanted to have implemented cost-saving measures in the areas of heat and power (building services) in order to reduce the energy consumption in their buildings. The implementation of the measures has been carried out within an "energy performance contracting" model, which includes both investments and energy efficiency measures through operational optimization. The investment in the Primary School Pestalozzi was part of an energy performance contracting pool (pool of 7 buildings), which was tendered in 2014.

**Goals:**

1. CO<sub>2</sub> and energy cost reduction
2. Modernization of facilities

**Measures:**

3. Thermostatic valves
4. Adaptation control system
5. Renovation of Windows (window seals)
6. Optimization district heating
7. User motivation measures
8. New electronic pumps (heating distribution system)

**Business Model:**

**Energy Performance Contract:**

- ✓ All measures have to be amortized in between the contract period incl. financing and services
- ✓ Awarding: Combined competition of price and ideas on the basis of a functional service description
- ✓ Duration of contract: 15 years

**Financial Management:**

- ✓ Investment € 103.000,--
- ✓ Yearly pay back rate € 7.880,--
- ✓ Yearly service costs € 4.060,--

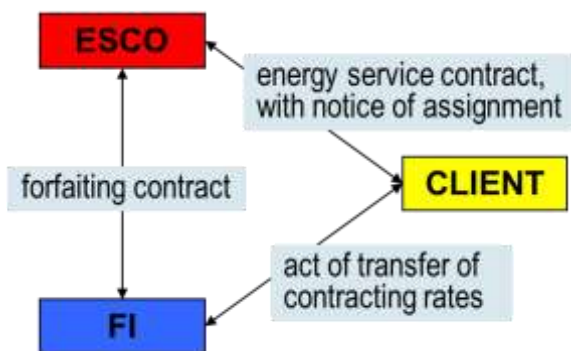




Savings:

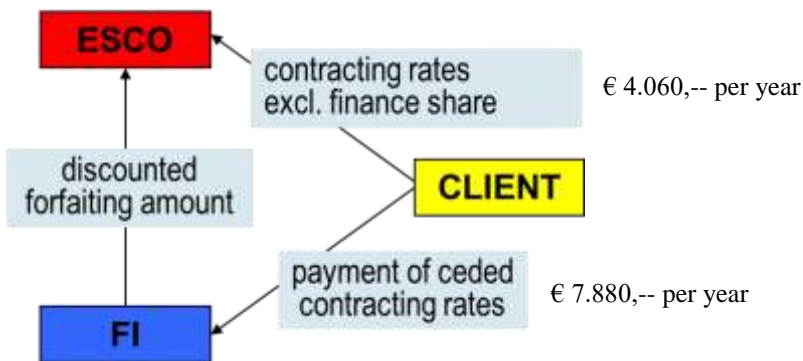
- ✓ 145.000 kWh heat per year (-32 %)
- ✓ 3.000 kWh electricity per year (-6 %)
- ✓ € 11.950,-- energy cost reduction per year (guaranteed)

Contractual Relationships:



Energy Performance Contracting through ESCO - contractual relationships (special situation: financing over forfaiting)

Cash Flows:



Energy Performance Contracting through ESCO - cash flows

Lessons Learned, Innovations and Client's Advantages:

- ✓ High savings in an old building through optimization of the control system and renovation of windows



## 3.2. The Energy-Contracting model

**Energy-Contracting<sup>1</sup>** (EC) is widely promoted as an instrument to overcome obstacles against the implementation of energy efficiency investments. Especially for the public sector this model of Public-Private-Partnership is considered to be one of the most effective tools to enhance energy efficiency in buildings and has been successfully implemented especially in Germany and Austria with other European countries following the example. Also other end-use sectors like commercial buildings<sup>2</sup> are under development.

Availability of adequate financial resources for the efficiency investments is a key success factor for the implementation of Energy-Contracting like energy performance contracting (EPC) and Energy Supply Contracting (ESC). At the same time **EC projects generate future cash flow from energy cost savings**. These savings can be used to (partly) re-finance the energy efficiency investments. The savings are guaranteed by an ESCo and backed by a payment obligation in case of non-performance.

Nevertheless, (pre-) financing of energy efficiency investments has become increasingly burdensome for Energy Service Company (ESCO's) as well as for the public bodies: Market partners reach their credit lines, credit liabilities and fixed assets burden balance sheets and require more equity capital. And also Basel II, Maastricht criteria and international accounting guidelines like US GAP cast their shadows. And the EC concept is sometimes not understood well enough.

**External financing** has implications on a variety of factors such as direct financing costs but also provision of securities, taxation and financial statement aspects. The sole look at direct financing costs, as expressed in interest rates or fees, will not deliver an optimal financing solution.

Consequently, innovative finance alternatives like operate or finance lease and forfeiting options have to be considered and compared to classical finance instruments like credits. Also the question of who is best capable of providing financing - customer, ESCo or a Finance Institution (FI) as a third party has to be considered?

New forms of financing like crowd financing is not tested in the field very well. It is a legally wide and new topic and is not covered within this task in detail. At the moment it is a non-proved option for EC projects, several research projects tackle this topic at the moment.

It is necessary to have a **comprehensive look at the sum of all implications** of any external financing option before taking a financing decision. To put in other words: A comparison of the broad range of implications from the different categories could be accomplished by way of cost-benefit-analyses<sup>3</sup>, allowing integrating monetary and other criteria into one evaluation system. Depending on the specific situation of the debtor, the goal is to optimize the sum of the effects.

We strongly recommend to analyse the benefits of the ESCo's services separated from the different financing options and to separate the service and financing cash flows.

---

<sup>1</sup> Also referred to as "ESCO or Energy Service". We prefer the term "Energy-Contracting" to emphasize the difference to a standard fuel supply or maintenance contract, which does not imply any outsourcing of risks or provision of guaranties for the overall system performance (see also 0).

<sup>2</sup> An Austrian example of an impulse programme is [www.ecofacility.at](http://www.ecofacility.at)

<sup>3</sup> This kind of analyses is also applied to evaluate ESCo-proposals to functional specifications/ tenders



### 3.2.1. Stability and Growth Pact and Energy Contracting

#### What is SGP (from wikipedia)

The Stability and Growth Pact (SGP) is an agreement, among the 28 Member States of the European Union to facilitate and maintain the stability of the Economic and Monetary Union (EMU). It consists of fiscal monitoring of members by the EU and the issuing of a yearly recommendation for policy actions to ensure a full compliance with the SGP also in the medium-term. If a Member State breaches the SGP's outlined maximum limit for government deficit and debt, the surveillance and request for corrective action will intensify through the declaration of an Excessive Deficit Procedure (EDP); and if these corrective actions continue to remain absent after multiple warnings, the Member State can ultimately be issued economic sanctions

The fiscal discipline is ensured by the SGP by requiring each Member State, to implement a fiscal policy aiming for the country to stay within the limits on government deficit (3% of GDP) and debt (60% of GDP); and in case of having a debt level above 60% it should each year decline with a satisfactory pace towards a level below. After the reform of the SGP in 2005, fiscal programmes have also included the Medium-Term budgetary Objectives (MTO's), being individually calculated for each Member State as the medium-term sustainable average-limit for the country's structural deficit, and the Member State is also obliged to outline the measures it intends to implement to attain its MTO. If the EU Member State does not comply with both the deficit limit and the debt limit, a so-called "Excessive Deficit Procedure" (EDP) is initiated along with a deadline to comply, which basically includes and outlines an "adjustment path towards reaching the MTO". This procedure is outlined by the "dissuasive arm" regulation

**What does it mean:** to maintain the level of expenditure and investment below the predetermined threshold. Local Authorities of Public Bodies cannot make investments even if they generate savings, as in the case of energy efficiency, and also in the event that the Administration has the availability of financial resources. It's not applied for Municipality below 1000 inhabitants.

#### EPC and Stability and Growth Pact

Because the investment is developed by the ESCO (with their own resources or through the use of financial institutions), these costs should be considered "foreign" to the Stability Pact constraints. In any case, municipalities must be careful not to share the cost of energy supply as a fixed fee (instalment) but variable (i.e. only if the fee paid by the administration to repay the investment of ESCO is not fixed, but it varies according to the contract of management performance parameters). In fact there are existing different interpretations of the SGP over Europe, the national interpretation of the SGP concerning financing via Energy Contracting has to be checked.

#### Green Public Procurement and Energy Efficiency for Public Bodies

Energy saving and energy efficiency are compared to Green Public Procurement because of the avoided emissions. Thanks to the GPP, the Administrations may award a competition on the basis of environmental parameters and not just on the basis of economic parameters. Energy savings or avoided CO2 emissions can be a criterion for preferential award. The only contractual formula that ensures the administration on the result achieved to the implementation of the intervention is the EPC contract! Several standard contracts and recommendations (manuals) exist out of European Research Programs (Horizon 2020, Intelligent Energy Europe).



### 3.2.2. Energy-Contracting Basics

The energy service approach shifts the focus away from the sale of secondary or final energy carriers like electricity or fuel towards the desired benefits and services derived from the use of the energy, e.g. the lowest cost of keeping a room warm or air-conditioned. The knowledge and experience of an energy service provider (ESCO) is used to provide the energy service requirement at least cost to the end user.

An "Energy service company" (ESCO) is defined as a company that delivers energy services, energy efficiency programmes and other energy efficiency measures in a user's facility, and accepts some degree of technical and sometimes financial risk in doing so. The payment for the services delivered is based (either wholly or in part) on meeting quality performance standards and/or energy efficiency improvements.

The next chart follows an energy added value chain gives an overview of classical energy supply and the two basic energy service models (energy supply contracting (ESC) and energy performance contracting (EPC)) and indicates typical measures:

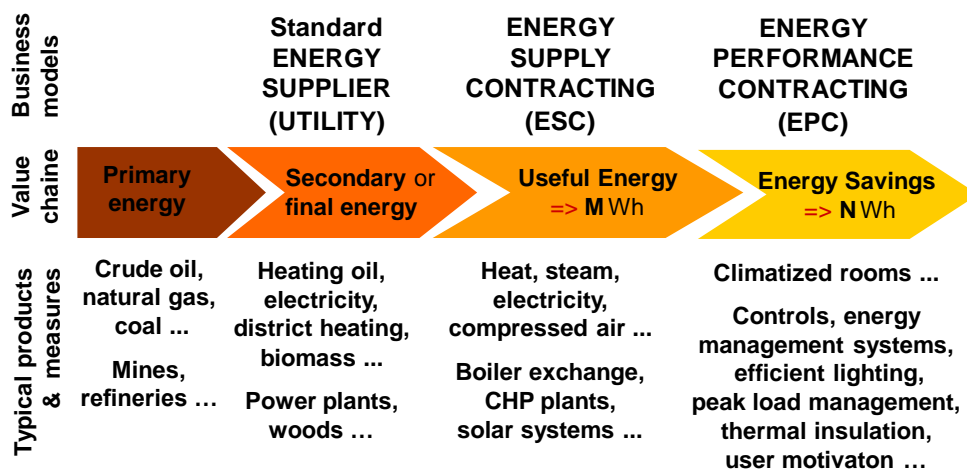


Figure 1: Energy service value chain, two basic Energy-Contracting models and typical (efficiency) measures (source: Graz Energy Agency)

Energy-Contracting is a service package that can be arranged specifically to the needs of the building owner and thus quasi is a modular system. This means the client defines what components he wants to outsource and what components he carries out himself. For example, financing can be provided either by the ESCo or the building owner - it depends on who can provide better financing conditions. This means the contracting package in no way automatically includes external financing<sup>4</sup>.

The central elements of an EC-package are summarized in the following chart:

<sup>4</sup> This topic has been elaborated in more detail: Bleyl, Jan W.; Suer, Mark: Comparison of Different Finance Options for Energy Services. In: light+building. International Trade Fair for Architecture and Technology. Frankfurt 2006.

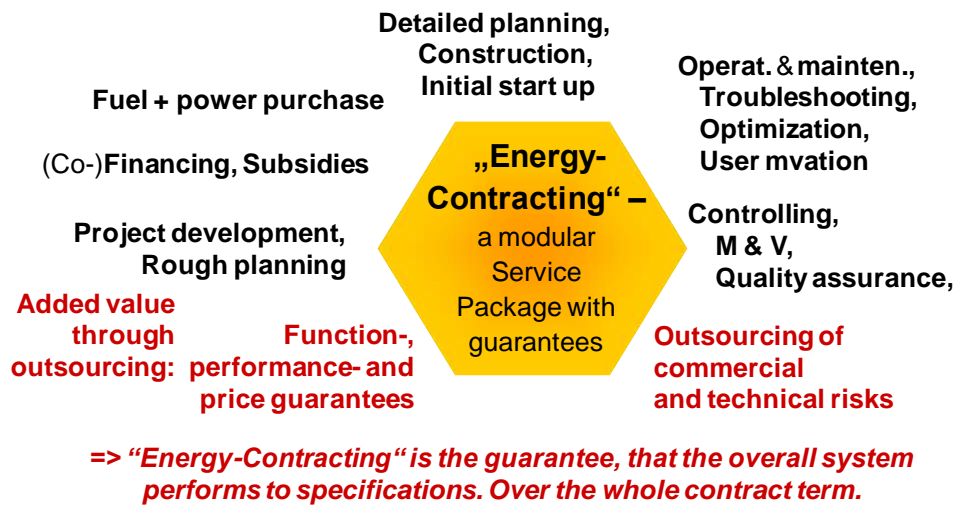


Figure 2 ELC: Energy-Contracting: A modular package with success guaranties

The transfer of technical and economic implementation and operating risk as well as takeover of function, performance and price warranties by the ESCo play a crucial role. These elements create added value compared to in house solutions and should be obligatory guaranteed in the EC-contract. In other words: Contracting is more than putting together individual components. The contracting concept incorporates incentives and guarantees, that - throughout the contract term - the entire system performs according to specifications.

### 3.2.3. Energy Supply Contracting business model

At **Energy Supply Contracting**, efficient energy supply, including purchasing of final energy is contracted (comparable to district heating). The result is the output payed in the height of the metered consumed energy (heat, cooling in kWh etc.). The borders of optimization of the technical equipment is the brought in installations by the ESCo, there is usually no optimization of the delivery system or the whole building (ESCo profits very often from selling more heat/cold etc.).

**Energy Supply Contracting** is a well proven instrument to realise energy efficiency measures within the energy supply plants. Very often it is an instrument to implement innovative, environmental protective technologies such as combined heat and power, biomass or solar thermal plants. The EC-approach will lead the focus from a pure primary energy supply to the use of the consumed energy. In the case of ESC the focus is for example at the optimized hot water supply, the provision of compressed air at a certain level or the decentralised production of electricity.

In most cases the ESCO designs, constructs, operates and finances the energy supply facilities and is responsible for purchasing the necessary materials such as primary energy like gas or biomass. The ESCO delivers the useful energy at guaranteed prices (energy consumption and basic price) and has therefore the interest to operate the facilities efficiently.

At ESC, the Client and the ESCo enter into a contractual relationship, which can be shorter than at Energy Performance Contracting. It is possible to design the contractual relationship flexible so that the Client has the chance of a buy-out before end of contract.



The ESC business model is shown in the following chart:

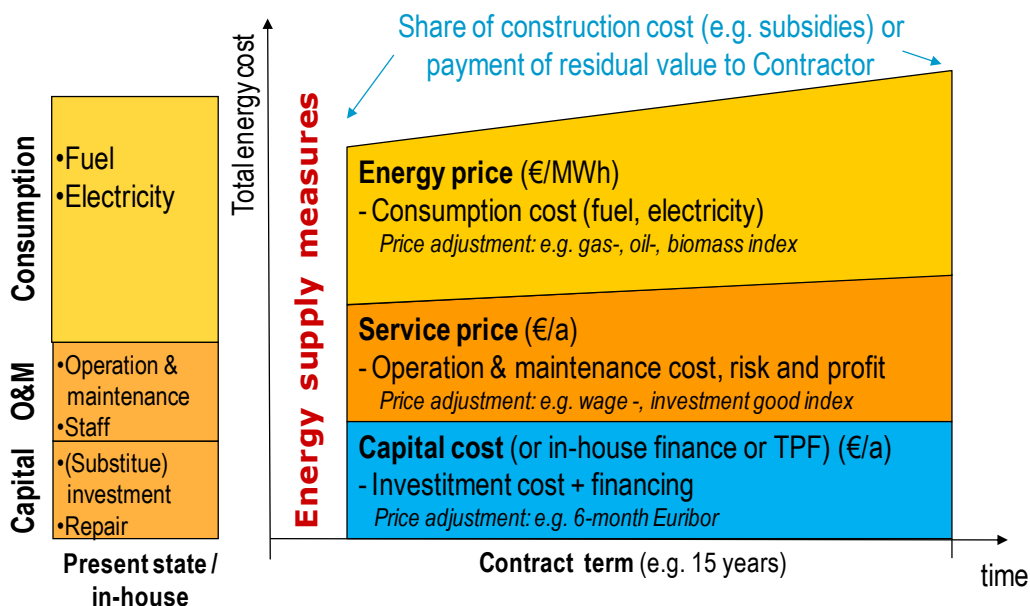


Figure 3: Energy Supply Contracting (ESC) business model in comparison to present state / in-house implementation

### 3.2.4. Energy Performance Contracting business model

At **Energy Performance Contracting**, the building owner and energy service provider enter into a **long-term contractual relationship**. Short-term focusing on profit will not lead to success for either of the parties involved - it is an “Energy Saving Partnership” with the focus of optimising live cycle costs and long term guaranteed savings. EPC has the whole building in mind and covers energy supply systems as a whole (incl. delivery systems) as well as the building envelope and users.

Building technology measures can mostly be **refinanced** from the future energy cost savings within a project period of 10 to 15 years. This is not true for building construction measures, such as building envelope insulation, with today’s energy prices. Therefore, the building owner has to participate in financing the building measures e.g. by means of a building cost allowance, (which may, e.g., also be taken from maintenance reserve funds or subsidies), and/or paying a residual value at the end of the contract (see figure “business model ...”). EPC models can also be implemented with a leasing finance partner.

EPC has higher transaction costs than ESC and has therefore the need for higher project volumes (typically > € 150.000,- Euro energy costs per year, possible savings at least € 20.000,- per year, but pooling of smaller buildings is possible).



The EPC business model is shown in the following chart:

## Performance Contracting - Business Model

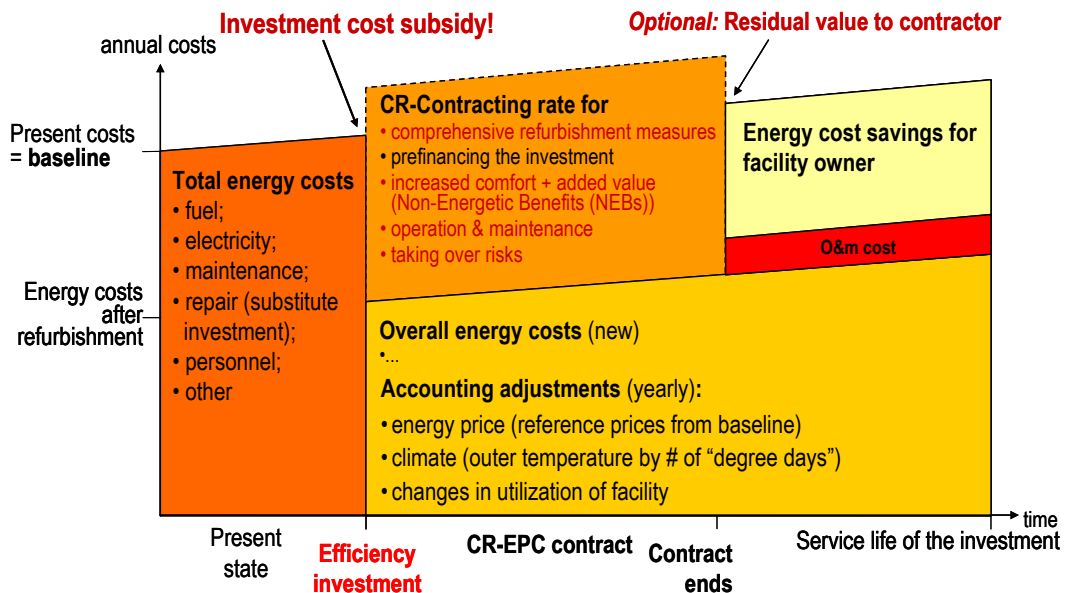


Figure 4: Business model of Energy Performance Contracting

The key features of EPC are:

An Energy Service Company (ESCO) plans and realizes energy efficiency measures and is responsible for their operation and maintenance throughout the contract term.

The ESCo has to guarantee energy cost savings compared to a present state energy cost baseline.

The efficiency investments are (partly) paid back out of the future energy cost savings.

The client continues to pay the same energy costs as before (sometimes even a smaller amount). After termination of the contract, the entire savings will benefit the client.

The ESCo's remuneration is the contracting rate and depends on the savings achieved. In case of underperformance the ESCo has to cover the short fall. Additional savings are shared between building owner and ESCo.

Based on the previous remarks, we define Energy Performance Contracting as

- A comprehensive energy service package aiming at the guaranteed improvement of energy and cost efficiency of buildings or production processes. An external Energy Service Company (ESCO) carries out an individually selectable cluster of services (planning, building, operation & maintenance, (pre-) financing, user motivation ...) and takes over technical and economical performance risks and guarantees.<sup>5</sup>

<sup>5</sup> Following Seefeldt, Leutgöb (2003) "Energy Performance Contracting - Success in Austria and Germany, Dead End for Europe?" eceee paper id #5158.



### 3.2.5. Integrated Energy Contracting (IEC) model

The IEC model has been developed by Graz Energy Agency in the last years and there are already realized projects in Styria. The IEC business model is based upon the relatively widespread and robust ESC model.<sup>6</sup> Its scope of service is extended to the savings potentials in the entire facility (building and/or production plant). To verify correct implementation and performance of the energy-efficiency measures, IEC prefers to use quality-assurance instruments (QAIs) for the individual measures (see Section 3.2.5.1 for details) instead of energy saving guarantees like in EPC projects.

The ESCo takes over implementation and operation of the energy service package at its own expense and risk according to the project-specific requirements set by the contract. In return, the ESCo is remunerated for the useful energy delivered, depending on the actual consumption as well as a flat-rate energy-efficiency and service fee for operation & maintenance including quality assurance. A stipulation of bonuses and penalties for over- or underachievement of the efficiency measures can be added. Financing is a modular component of the service package, as mentioned earlier

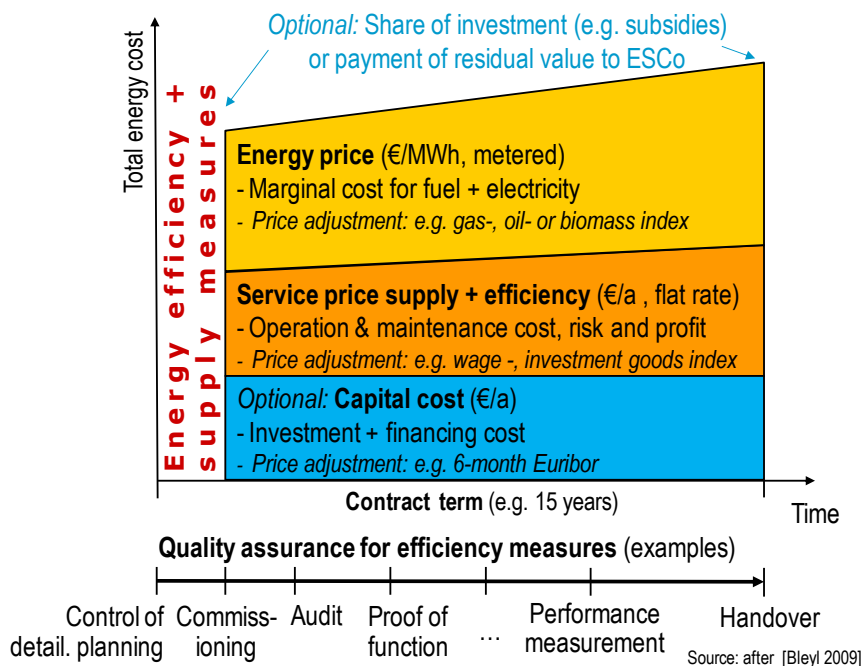


Figure 5: Integrated Energy-Contracting business model with QAIs for energy-efficiency measures

The ESCo’s remuneration consists of the following three price components<sup>7</sup>:

**Energy price** (per MWh of useful energy metered): This covers only the “consumption-related”, marginal cost of useful energy supplied, i.e. the costs of generating an additional MWh.<sup>8</sup> The price is deliberately set at this level to avoid creating a consumption-related profit margin, so that the ESCo has no incentive to sell more energy. It also reduces the ESCo’s risk in case of demand reductions, e.g. from thermal refurbishment.

To account for market fluctuations in fuel prices, the ESCo’s contract contains an index-linking clause

<sup>6</sup> The price structure of the ESC model is comparable to that of standard district heating.

<sup>7</sup> For a definition of consumption and operation related cost, refer to [VDI 2067]

<sup>8</sup> Alternatively, fuel can also be purchased by the client in case of better purchasing conditions and cleared with the energy price.





pegging the energy price to suitable statistical price indices for the fuels used (e.g. gas or biomass index). In this way, the risk of changes in the final-energy price remains with the client.

**Service (or basic) fee for Energy Supply (flat rate):** This rate covers all operations-related costs - the costs of operation & maintenance of the energy supply infrastructure (including staff, insurance, management etc.), and also entrepreneurial risk.

The prices are adjusted over the course of the contract period (typically every year retrospectively) by linking to statistical indices such as wage or investment-goods indices.

**Service fee for Energy Efficiency (flat rate<sup>9</sup>):** This rate covers the operational costs of the energy-efficiency measures. As shown in Figure 5, the two flat-rate fees can be combined.

**Capital cost** of energy-efficiency and supply investments may or may not be part of the service package. If (co-) financed by the ESCo, the ESCo is remunerated for its capital cost minus subsidies and building cost allowances.

During the contract period, the capital cost may be adjusted by using statistical indices such as the “6-month Euribor”.

In the above-mentioned price components, all the ESCo’s expenditure items for the defined scope of services throughout the contractual period must be included (“all-inclusive prices”). In this way, the IEC model is based on project or life-cycle costs (LCC), and on this basis the outsourced solution can be compared against an in-house implementation.

The advantages in comparison to the ESC and EPC models:

Lower transactions costs than EPC projects (smaller projects possible)

Total building optimization (EE measures combined with energy supply measures)

Quality assurance measures and performance guarantees integrated

Disadvantage: No comprehensive saving guarantees like in EPC-projects

### 3.2.5.1. Simplified Measurement and Verification (M&V) Approaches

IEC is compatible with a wide spectrum of M&V methods. However, since the intention is to make the model attractive for smaller projects, we will emphasize the simplified M&V measures which are affordable on smaller budgets. Of course, if the project is large enough to support a bigger M&V budget, more comprehensive approaches (e.g. adhering to IPMVP) can be used.

With IEC, M&V simplifications are achieved in two areas: on the one hand through the direct measurement of the supply share of the energy service package and on the other hand by using (simplified) energy savings calculations in combination with QAIs for the energy conservation measures.

For the energy supply part of the energy service package, megawatt-hours delivered from boilers, solar systems or heat-recovery installations are metered directly. This avoids efforts and risks arising from indirect measurement of savings, such as the determination of energy cost baselines or their adjustment for changes in utilization of a facility. Since the supply of useful energy typically constitutes a significant share of the project volume, this can lead to a significant reduction of M&V costs compared to the EPC model.

To verify the energy conservation part of the energy service package, the basic idea is to devise QAIs for the energy-efficiency measures in combination with (simplified) savings calculations. Each QAI is designed to verify that a specific energy-efficiency measure has been correctly implemented and that it is

---

<sup>9</sup> Possibly supplemented with a bonus/penalty system



effective, without however attempting the kind of continuous monitoring used in the baseline- based M&V methods.

Here are two examples to illustrate typical QAIs in combination with saving calculations:

1. Contract partners may agree to quantify the savings of a thermal insulation measure through a heat-demand calculation before and after the measure and to verify its implementation quality using a blower-door-test, and a thermographic analysis of the building after the modification.
2. For a street or indoor re-lighting project, the power consumption by the system is measured in short once-off tests before and after the retrofit to verify the power savings. If the reduction in power consumption is multiplied by previously measured or deemed operating hours, a figure for the energy savings over time can be calculated, and factored into a flat-rate remuneration. Additionally compliance with the illuminance specifications is measured.

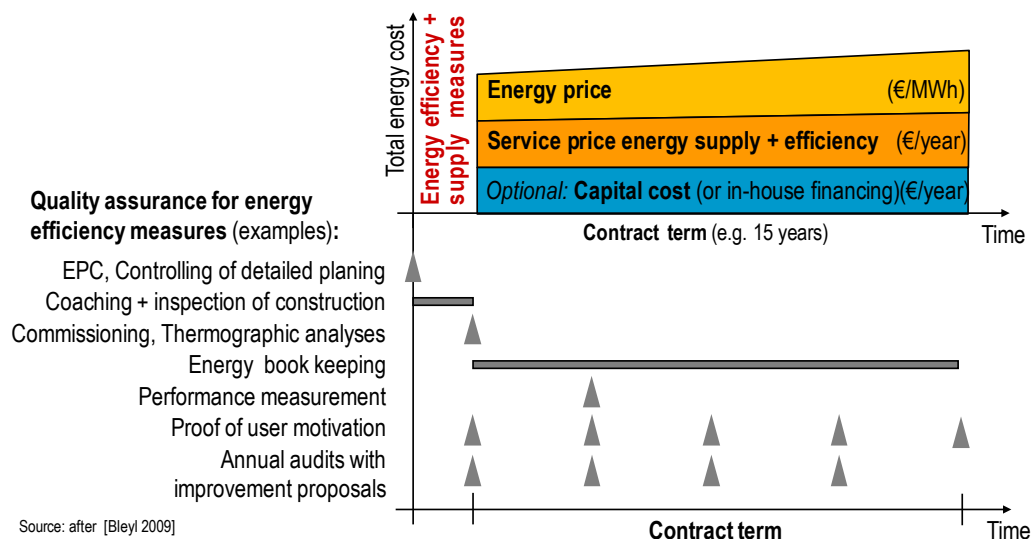


Figure 6: IEC business model: sample QAIs as a substitute for savings measurements

An important issue is the discussion of individual and practicable QAIs. QAIs can either be specified by the client or suggested by the ESCo as part of the competition of solutions during the procurement process or the detailed project design. The selection of QAIs as well as their exact design will depend on the specific requirements of the project scope and the parties involved.

As can be seen in Figure 6, the once-off QAIs (on commissioning of the energy-efficiency measures) are supplemented by a number of periodic QAIs. The function of the latter is to ensure the ESCo has an incentive to maintain performance levels throughout the entire contract period.

Backing up these measures is the fact that the ESCo takes on the technical and economic risks of construction and operation of the energy-efficiency measures at its own expense (for the scope of services defined in the contract) for the duration of the contract period, and therefore has a strong interest in ensuring that they are well implemented.

### 3.3. Recommendations - transferrable business model for schools

There are a lot of examples of realized EC-projects with schools all over Europe and therefore the existing models are well transferrable to our schools.

Our recommendation is to differ into the height and type of foreseen investments (energy efficiency and/or renewable energy measures). Realizing lower investments in RES or EE-measures (mostly focussed on a single topic) needs other business models than comprehensive and overlapping measures.

In principle the phases of the projects with ESCos are the same (independent of the EC-model):

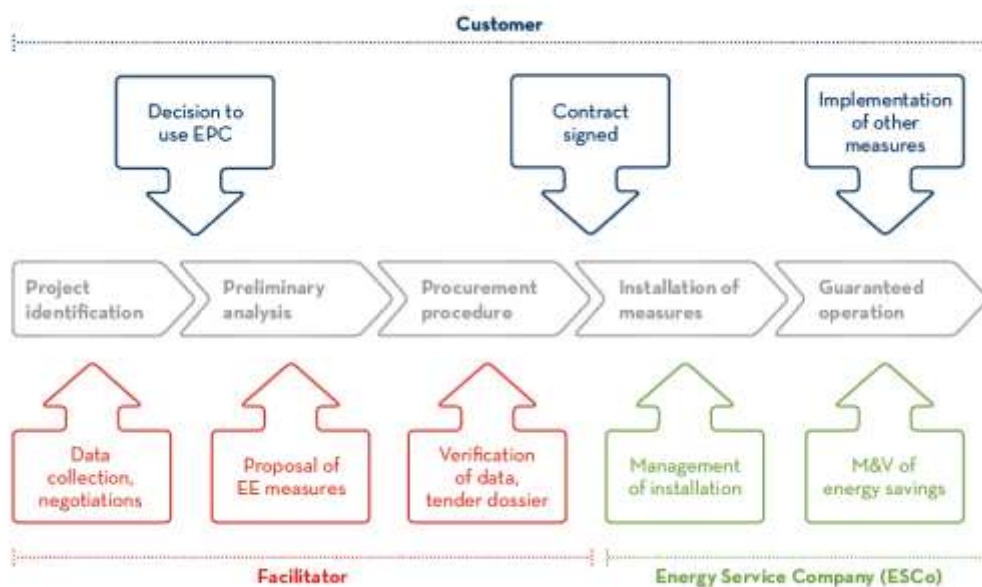


Fig.: Phases of an EPC Project (source: Graz Energy Agency, EESI2020 facilitators guideline)

It starts with the initial investigation of the situation (energy audit) through a third party or own staff of the municipality (energy managers/Senior Energy Guardians). Out of that you have a first idea of possible and useful measures in your buildings.

Depending on the foreseen measures you can decide on the ESCO model:

1. If you want to realize RES measures (solar installations, biomass heating): Choose the Energy Supply Contracting (ESC) model.
2. If you have single EE-measures (low investments) in combination with RES-measures: Choose the Integrated Energy Contracting (IEC) model!
3. If you want to realize comprehensive energy efficiency investments and generate higher savings: Choose the Energy Performance Contracting (EPC) model. This is a quite complex model and has higher requirements (e.g. Energy costs recommended > 100 000 Euro if the savings should finance the measures; high saving of at least 15.000,- should be possible; pooling of different facilities is possible and recommended to reduce transaction costs).



Fig.: Possible pooling of facilities in one Energy Performance Contracting (EPC) project is possible! (source: Graz Energy Agency)

The question how to finance is a different one. Choose the best combination of available financing options for the project (including subsidies, own funding etc. - see introduction chapter 2 and the following chapters). Use the savings out of the measures (directly or indirect) for repayment, at least for part of the investments and get guaranteed savings out of the tendering procedure.

Out of more than 25 tendering procedures with ESCO models we have the following recommendations for the implementation:

- If you compare a realization via EC-model with an own realization: Compare the full costs including all components (full cost comparison incl. costs of own staff, maintenance etc.)
- Use a standard contract for all bidders (comparability!)
- Describe the initial situation including times of use and the building and existing equipment as precisely as possible (for later adjustments)
- Please do not re-invent the wheel: use existing model documents
  - o Minimum contract components (among others):
    - ✓ Rules during the implementation phase
    - ✓ Guarantees (e.g. guaranteed savings, energy prices etc.)
    - ✓ Comfort standards (e.g. minimum room temperature...)
    - ✓ Duties and responsibilities of all contract parties (precise definition of service and limits!), time for reaction in case of system faults etc.
    - ✓ Modus for measurement and verification (M&V) of the guaranteed savings
    - ✓ Start and end date (!)  
conditions for termination of contract



- ✓ Property of equipment
  - ✓ Duration, termination of contract
  - ✓ Transfer of ownership
  - ✓ Status of equipment at the end of the contract
  - ✓ Residual value at the end of the contract?
  - ✓ What are reasons for early termination of contract, and how to proceed in this case?
  - ✓ Prices and their adjustments
- Separation between (re-)investment, operation and maintenance, overhead
  - Use suitable indices for each price component
  - Don't burden an ESCo with risks they cannot calculate (e.g. energy prices -> index adaptation necessary; e.g. life time of existing equipment – full maintenance contracts of existing (old) equipment are expensive because of the high and incalculable risk and are not useful)
  - If you make the first tendering procedure with ESCOs: Call upon experienced experts on EC-models, preferably with know-how of the local/federal legal situation.



## 4. Customer Needs for Financing Energy-Contracting Projects

### 4.1. Introduction

The goal of any finance planning is to minimize overall capital cost, secure liquidity and to reduce transaction cost. But also legal aspects, tax implications and balance sheet issues have to be considered.

Of course, financing needs depend on the individual circumstances of the borrower. And they depend on the specific project. Nevertheless we aim at developing a **customizable methodology** for describing generic characteristics of financing needs for EE projects, which can be adapted to the specific situation. Here we are talking about properties such as financing cost and terms, legal implications, tax and balance sheet effects as well as management expenditure. **Only a comprehensive look at the sum of the financing implications will allow deciding for the best financing option.**

In order to structure financing implications, the **relevant categories** are:

- Direct financing cost (financing conditions, interest rates, fees ...)
- Legal aspects (Rights and duties, ownership, contract cancellation, end of term regulations ...)
- Required collateral (**securities**) by financing institution
- Taxation implications (VAT and purchase tax, corporate income tax, acquisition of land tax ...)
- Balance sheet & accounting implications (who activates the investment (=> on or off balance?), balance sheet effects like credit lines, performance indicators, Maastricht criteria ...)
- Management expenditure (transaction cost, comprehensive consultancy ...)

### 4.2. Customer Demand Profile

The customer demand profile lists standard properties which may vary with specific projects, countries and players. In order to facilitate the overview, the different criteria are grouped and presented in a table:

Criteria	Customer expectations
<b>Direct financing cost</b>	<b>Costs as low as possible:</b>
	✓ Low interest rates, fees and other cost
	✓ Extent of financing: as high as possible (100 % external finance)
<b>Legal aspects</b>	✓ Subsidies: Compatibility, eligibility
	<b>Legal implications:</b>
	✓ Financing term: affordable, adjustable terms during contract period
	✓ What can be financed? Financing of complete energy service investments including soft cost
	✓ Cancellation of contract: flexibility and conditions
✓ Legal and economic property aspects	



Criteria	Customer expectations
	<ul style="list-style-type: none"> <li>✓ Transfer of ownership at end of term</li> </ul>
<b>Collateral/ Securities</b>	<b>Reduce collateral requested and own risks:</b>
	<ul style="list-style-type: none"> <li>✓ Preferably project based finance: =&gt; repayment from future project incomes/savings</li> <li>✓ Financial securities (equity capital, bonds, insurances, guarantees ...) as low as possible</li> <li>✓ Tangible securities / collateral (entry in land register, mortgage, ...)</li> <li>✓ Personal (e.g. personal liability)</li> </ul>
<b>Taxation</b>	<b>Reduce taxable income and use tax exemptions:</b>
	<ul style="list-style-type: none"> <li>✓ Increase of tax deductible expenses</li> <li>✓ Optimization of timing of deductible expenses (e.g. depreciation, interest, ...)</li> <li>✓ Value Added Tax (VAT)</li> <li>✓ Benefits from tax exemptions</li> </ul>
<b>Balance sheet &amp; accounting aspects</b>	<b>Optimize balance sheet performance indicators:</b>
	<ul style="list-style-type: none"> <li>✓ Legal and economic property aspects =&gt; who capitalizes investment?</li> <li>✓ Balance sheet performance indicators (e.g. debt-equity ratio, credit lines, Maastricht criteria, ...)</li> </ul>
<b>Management expenditure / Transaction cost</b>	<b>As small as possible:</b>
	<ul style="list-style-type: none"> <li>✓ One face to the customer/one stop shop</li> <li>✓ Knowledgeable financing partner with regard to Energy-Contracting and subsidies</li> <li>✓ Consultancy comprehending tax, accounting, legal optimisation and subsidies =&gt; custom tailored financing solutions</li> <li>✓ Reduce paperwork (investment documentation, ...)</li> <li>✓ Reduce time to receive financing promise + reliable time frame for provision of money</li> <li>✓ Customer approval process: complexity and reduction of approval necessities</li> </ul>

Figure 7: Customer demand profile

The classification of some criteria is not always unambiguous and depends on individual experiences and preferences.

## 5. Credit Financing for Energy-Contracting

### 5.1. Introduction to Credit Financing

Credit (or loan) financing means that a **lender** (FI) provides a **borrower** (customer) with capital for a defined purpose over a fixed period of time. Borrowers in our case can be real estate owners, enterprises or ESCos. A credit is settled over a fixed period of time, with a number of fixed instalments (debt service). These instalments have to cover the amount borrowed, plus interest rates, as well as other transaction costs such as administrative fees. Loans are disbursed against a proof of purchase in order to secure the earmarked use of the funds.

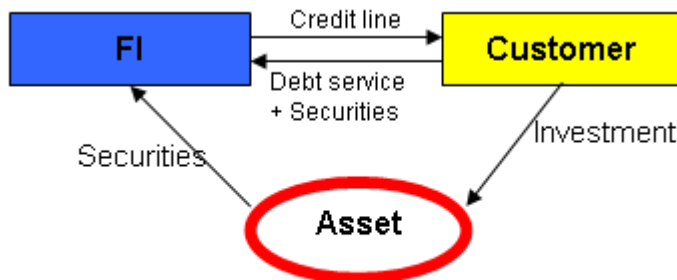


Figure 8: Credit financing - general scheme

A credit serves in fact as an extension of the total amount of capital that an enterprise can use to do its business, i.e. deliver services or produce goods. Credits are also referred to as **committed assets** or **loan capital**.

Credits require a creditworthy borrower. This means that a credit has to be backed by the ability of the borrower to perform the debt service. It is assumed that this ability is linked to a certain level of equity capital, typically 20-30 % of the loan. The creditworthiness of a borrower (together with the project chances and risks), will be reflected in the amount of securities needed to cover the lender's risks associated with handing out a credit.

The borrower is both economic and legal owner of the investment made with a loan. Therefore the investment is capitalized on his balance sheet which, in return, downgrades his equity-to-assets ratio. A reduced share in equity means less capital to do business with and also results in a reduced ability to get further credits (credit line).

Another factor that influences the borrower's possibilities to receive a credit is connected to "BASEL II". It means that, clients are evaluated by international uniform criteria and divided in classes, which declare the creditworthiness. It is expected, that credits will be more difficult to obtain and that they will cost more.

The following graphs visualise the basic cash flow relationships for a typical credit finance. The cash flows depend on whether the ESCo or the building owner is the lender for the credit. Figure 7 shows the former case, 8 the latter.



Figure 9: Credit financing - cash flow in EC projects with ESCo financing

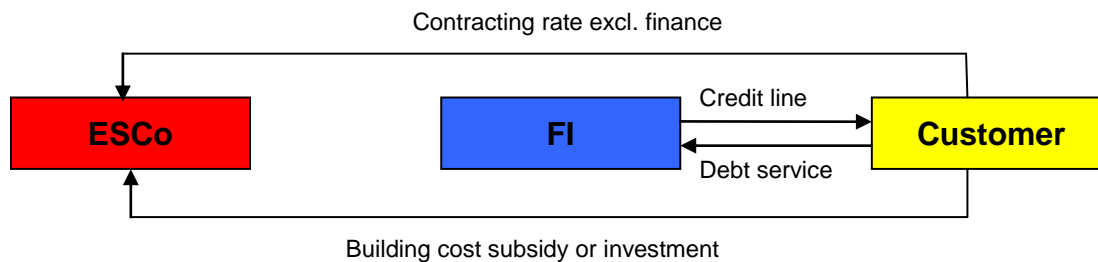
Comments to Figure above

- The ESCo is responsible for the energy efficiency measures and refinances the investments from a credit line.
- The customer pays a contracting rate which includes a finance share to the ESCo (subject to the performance of the ESCo's savings guarantee)
- The ESCo uses the financing part of the contracting rate to perform the debt service





- The ESCo can cede (the finance share of) the contracting rate to the FI, so the customer directly repays the ESCo's debt
- The previous is the “traditional” ESCo-Third-Party-Financing model, which is not always the optimal financing solution.



The next figure displays the customer as lender of the credit:

Figure 10: Credit financing - cash flow in EC project with customer finance

Comments to the figure 8:

- The ESCo is responsible for the implementation of the energy efficiency measures and receives financing from the customer
- The EE-investment is paid out of the customers credit line and respectively (in part) from subsidies or from maintenance reserve funds
- The customer payments for the investment can be either a building cost subsidy or the remuneration of an equipment supply contract (in the latter case, VAT is due on the complete investment at once)
- The customer finance model is advisable, if the customer has better finance conditions than the ESCo

In praxis, a synthesis between ESCo and customer finance is advisable. In many cases the customer contributes to the finance with subsidies, from maintenance reserve funds or with an equity capital share.

## 5.2. Credit Financing Features and Customer Demand

### 5.2.1. Direct Financing Costs

	Costs as low as possible:	
Direct financing cost	✓ Interest rates, fees, ...	✓ Repayment + interest
		✓ Single payments <sup>10</sup> : <ul style="list-style-type: none"> <li>- Up-front fee (0,1- 0,5% of loan amount)</li> <li>- Commitment Fee</li> <li>- Administrative Fee (negotiable)</li> <li>- Notary fee</li> </ul>

<sup>10</sup> Values applicable in Austria



Direct	<b>Costs as low as possible:</b>	
	<ul style="list-style-type: none"> <li>✓ Extent of financing</li> <li>✓ Subsidies: Compatibility, eligibility</li> </ul>	<ul style="list-style-type: none"> <li>✓ Part financing only (typically 70 - 80%)</li> <li>✓ Yes, reduces loan amount or interest rate<sup>11</sup></li> <li>✓ Application by debtor (owner of investment). Typically no support from bank</li> </ul>

Figure 11: Credit financing - direct financing costs

The **total credit costs** depend on the risks that the lender attributes to the credit, i.e. the risk of not being paid back (non-performing credit). Also the quality of the securities offered, the contract duration the credit volume and the transaction expenditure are reflected in the credit costs.

Some of the payments are negotiable to a certain extent, such as interest rates, the administrative fees that apply, and also the repayment period, others are not such as notary fees. These are predefined in the honorary list for notary services. The structure of the repayment instalments for a credit is often negotiable, but will influence the interest rates, and the repayment period needed.

**Extent of financing:** A credit can cover up to 90% of the amount of capital needed asking as a minimum 10 % of equity capital and/or other financial sources from the borrower. Typically, a credit covers 70-80% of the needed capital. However, the borrower will want to keep his own capital as flexible to use as possible, and will therefore want to keep the amount of his contribution low. The amount of a borrower's equity capital needed will increase with a decreasing creditworthiness.

**Subsidies** are usually compatible with credits:

- A subsidy will reduce the needed credit volume and can be seen as risk sharing instrument, which should reduce the interest rates.
- Some government-owned banks (e.g. the Austrian Kommunalkredit<sup>12</sup> or the German KfW Banking Group<sup>13</sup>) offer so called soft-loan programs (subsidized interest rates) for environmental investments with a FI as implementation partner.

Usually, banks are not willing to take care of the subsidy acquisition, leaving this task with the borrower. A trend is however visible with the larger banks to have more expertise in various fields outside their core business, including energy.

### 5.2.2. Legal Aspects

Legal aspects	<b>1 Legal implications</b>	<b>2</b>
	✓ Financing term	✓ Flexible: according to customer demand. Usually below useful life time of the investment
	✓ What can be financed?	✓ Complete energy service hardware
	✓ Cancellation of contract	✓ Depends on contract type, usually fixed terms. Short rate penalties apply for premature cancellation
	✓ Legal and economic property aspects	✓ Debtor is legal and economic owner (bank may put retention of title or lien)

<sup>11</sup> Some subsidy programmes support interest rates rather than direct investment subsidies

<sup>12</sup> [www.kommunalkredit.at](http://www.kommunalkredit.at)

<sup>13</sup> [www.kfw.de](http://www.kfw.de)



Legal	<b>1 Legal implications</b>	<b>2</b>
	✓ Transfer of ownership at end of term	✓ Debtor remains owner ✓ EPC contract may include transfer of ownership
	✓ Responsibility for operation and maintenance	✓ Debtor is responsible for o & m at his own risk

Figure 12: Credit financing – legal aspects

The repayment period for a credit can, as has been explained above, be adapted to customer needs. Typically it will however be shorter than the normal useful life time of the investment, for which the credit is used.

**Financing term:** The possibility of a premature cancellation of the contract or changing the terms of redemption is available, but implies extra charges for the lost income of the bank and for transaction costs.

When looking at credits for energy service contracts, another typical feature is that a **credit covers only the hardware costs** of a project.

The debtor of the credit is the legal and economic owner of the investment. Typically this is the ESCo, but also the building owner can of course provide the financing. Depending on who is the borrower of the credit in an EPC project, the effects on taxation and accounting vary (see subchapters 5.2.4 and 5.2.5).

The lender generally does not require mandatory operation & maintenance or insurance packages for the assets. These obligations are part of the energy service agreement, not of the financing part.

### 5.2.3. Collateral (Securities)

Securities	<b>3 Reduce securities requested and own risks:</b>	<b>4 Bank wishes to secure loan. Generally securities are based on the credibility of the debtor, not of the project. Securities required: ~ 100 %</b>
	✓ Finance based on project cash flow	✓ No project finance but client finance. Securities based on company cash flow and economic key figures, not project cash flow
	✓ Financial securities	✓ Typically equity capital required (> 20 %) ✓ Additional securities like guarantees from parent companies or banks (Hermes, ÖKB, ...) depend on individual project
	✓ Tangible securities	✓ Desired/required, ✓ Entry in land register, lien on movable objects, reservation of property rights
	✓ Personal securities	✓ Applicable for small projects only

Figure 13: Credit financing - securities

For every loan, a lender asks a security in return. A security has the function to provide the lender the possibility to retrieve the loan. Securities give a lender certain rights that serve to secure his claim against the borrower to pay back the debt.

The lender and receiver of securities is one and the same institution. The securities from the borrower however can have two sources. They can come from the borrower or another party. The rights of the creditor then extend either to the borrower himself or against further parties, so called “principals“.



**Possible securities include:**

- > Lien on moveable objects and land property
- > Guarantees and additional debtors (principals)
- > Retention of titles
- > Cession of securities
- > Cession of receivables e.g. contracting rates

Moveable objects as well as formal obligations are not considered by banks to be a very valuable security. Securities most valuable to financial institutions are (land) property, and personal securities (Personal liability). On average 55% of the credit sum has to be covered by securities, but variations range from 30% to 80%.

At this point, a short differentiation has to be made between cash-flow-related lending and balance-sheet-related lending:

1. **Cash-flow-related lending** is also called project finance. Securities needed in this type of financing are dependent on the expected cash flow of a project. The main risk for a lender in this type of project is the construction and operation risks. If a project is not constructed, it cannot be operated, and therefore it cannot produce cash flow. Where the creditworthiness and hence also securities demanded by the lender are depending on the cash flow of a project, the capital or assets of the company implementing a project are not decisive to receive a loan.
2. **Balance-sheet-related lending** on the other hand will refer back to the company's assets (valuables) for safeguarding of a credit. Energy-Contracting projects are - when financed by a credit - Balance-sheet-related lending (also called asset-based related lending).

From the perspective of the FI, the simplest way of securing a credit for an EPC project is that the ESCo's assets serve as the security.

**Cession:** The ESCo has the opportunity to sell its claims against the client (the contracting rate) to a financial institution. An agreement on the amounts to be paid by the client directly to the FI needs to be concluded. The building owner needs to take into account that usually the claims are to be assigned excluding the right of defence, i.e. the bank secures for itself fixed instalments to be paid irrespective of the success of the performance-contracting project. This is called cession of claims and is described more in chapter 7.2.

**BASEL II:** In the last few years, BASEL II has been an issue hovering above companies and still is connected to large uncertainties. BASEL II is a set of regulations aiming at an increased stability of international financial markets. Its central topic is the evaluation of borrowers by international uniform criteria and following the classification. A high share of equity capital is an important element of influence for borrowers to reach an advantageous evaluation and creditworthiness. Basel II requires FI's to be more sensitive towards risks associated with a specific credit. It is expected, that credits will be more difficult to obtain, especially for small and medium enterprises and that they will cost more. In Germany, the new rules are applying from January 2007.

For **companies**, and especially smaller companies, it is expected that the costs for capital will substantially increase, especially for smaller companies with a lower credit rating (due to e.g. a lower level of equity).

For **the public sector** credit takers, i.e. municipalities, through Basel II the generally high rating for the public sector will become more differentiated. Among the reasons is the fact that many municipalities own companies (e.g. utilities) that are organized and operated as private companies and as such these companies are fully under the rules of BASEL II. Since the municipalities, as shareholders, influence the



rating for these types of companies, a new evaluation and rating of municipalities will become more important. And there is of course a different financial strength in different municipalities. In the future this will be reflected in differentiated credit ratings.

#### 5.2.4. Taxation

<b>Taxation</b>	<b>5 Reduce taxable income: 6</b>	
	✓ Tax deductible expenses	✓ Interest and depreciation (linear AfA-tables) are tax deductible. Redemption payments are not tax deductible
	✓ Point in time of deductible expenses	✓ Depreciation is typically linear ✓ Interest payments decline over time
	✓ Value Added Tax (VAT)	✓ VAT due on total investment at the beginning of project ✓ Public entities can not deduct input tax (additional initial cost)
	✓ Benefits from tax exemptions	✓ Not known

Figure 14: Credit financing – taxation

Credit payments are relevant to taxes paid in an enterprise. Whereas not all parts of credit payments can be tax deductible, interest rates usually are.

The interest rates are in many cases developing linear, and are decreasing over time. Therefore also the amount that is tax deductible will decrease. Differences may apply according to bank practice or country specifics.

In the case of a credit, the borrower is, as has been stated before, the legal and economic owner who therefore has the investment in his books and must depreciate it. This depreciation is also tax relevant and can reduce the borrower's taxable income. The client's payment of the contracting rate are operation expenses and therefore also tax deductible.

#### Value Added Tax

VAT is due on the total of the investment at the beginning of a project. Private companies can retrieve VAT. For public entities that cannot deduct input tax this may result in additional initial costs for a project.

#### 5.2.5. Balance Sheet and Accounting Issues

<b>Balance sheet &amp; accounting aspects</b>	<b>7 Optimize balance sheet ratios:</b>	<b>8</b>
	✓ Capitalization of investment	✓ Debtor is legal and economic owner => Debtor has to capitalize investment
	✓ Balance performance ratios	✓ Loan and assets have to be capitalized in the balance sheet account => negative effects on balance sheet performance figures ✓ Public sector: credit treated as additional debt => Borrowing limits of Maastricht criteria apply

Figure 15: Credit financing - balance sheet and accounting aspects

These are relevant in the three main issues of



- > Assets and Liabilities / Ownership
- > Balance sheet performance ratios, such as capital structure, equity -debt ratio, ...
- > Profit and Loss Statement

Who can take or who has to take the debt of a credit into his books, who the assets? In the case of a credit, the borrower has the debt on his books. A debt will always influence a company's ratio of equity capital. As explained earlier, this will influence credit lines and decrease possibilities to raise capital for further investments.

The capitalization of the assets depends on the economic ownership of the equipment installed:

- > Where the equipment is owned by the ESCo, it is part of his assets in his books and the investment depreciation is subsequently also found in the ESCo's books. The contracting client books the contracting rate as part of his operation expenses.
- > Where the equipment is in the ownership of the contracting client, the assets are also on his balance sheet. The ESCo has the contracting rates as an accrued item (income at later stage, but attributable to time period in which it is in the books) in the books. This procedure is the same for public or private sector clients.

### 5.2.6. Management Expenditure and Transaction Costs

	<b>9 Cost as small as possible:</b>	<b>10 Both FI and Customer want to reduce transaction cost, (standardized products, increase finance volume =&gt;</b>
<b>Management effort / Transaction cost</b>	✓ One face to the customer	✓ Generally not the case
	✓ Knowledgeable financing partner	✓ Depends on bank; requires special know how: Energy-Contracting is not a typical core competence of banks
	✓ Consultancy for tax, accounting, legal optimisation and subsidies	✓ Service is limited to financing. Additional tax, legal service typically not included ✓ => higher effort for coordination on customer side
	✓ Reduce paperwork	✓ Accounting of investment is done by debtor ✓ Company documentation: last three annual accounts ... ✓ Some project documentation required: project description, investment plan, earnings & cash flow report ...
	✓ Time to receive financing promise	✓ Typically 1 month after documentation is complete
	✓ Customer approval process	✓ Approval is easier if funds are drawn from operative (not investment) budgets ✓ Public entities: credit finance is subject to debt ceilings and may require approval legislative or supervising authority => possibly time consuming ✓ Some local authorities have adopted general approval for savings-cash-flow financed EPC-projects (third party financing)

Figure 16: Credit financing - management efforts and transaction cost

The credit financing model is not a one-stop-shop, especially if the building owner is the one who takes on the credit. There is a considerable amount of paper work to be prepared, and not all is supported by the financial institutions today. In an ideal situation, all efforts and needed documentation could be handled



via the lender. A few banks are increasing their know-how and staff capacity regarding environmental projects, including energy. For smaller local banks this may not be feasible.

The amount of paperwork could be reduced and streamlined; currently the coordination efforts are still quite intense on the customer side. The amount of time needed from requesting to receiving a credit varies but is usually in the frame of one month, provided that the paperwork is complete.

Part of the problem, it is assumed here, lies with the EPC projects' complexity and understanding the business model behind it, especially on the side of the banks. The guaranteed savings, essentially a saved cash-flow on the side of the building owner is the key element. But as a risk mitigation instrument, it is not valued enough by banks so far.

Possible solutions may be to create energy service finance packages, for projects that follow standardised project development procedures. This could be applicable e.g. where loans from Development Banks are concerned or global loans are passed onto local banks for emission.

There are several initiatives running at the moment to improve the finance abilities of EE and RES measures:

The initiative "Investor Confidence Project - ICP" from the EDF - Environmental Defense Fund is working to make energy efficiency a more investable asset class to enable capital markets to invest in building renovations. ICP wants to reach this by standardizing and certifying the project development process. The project provides no-cost tools and assistance to any building energy retrofit market participant. On the website <http://europe.eepformance.org/> you can find deeper information.

A second initiative with similar goals is the EU project (Horizon 2020) -Trust-EPC-South. The focus of this project lies within the private tertiary sector. The objective of the project is to scale up investments on Energy Efficiency (EE) and Sustainable Energy technologies in the private tertiary sector of southern European countries, achieved through the development of an ad hoc investment assessment and benchmarking framework building upon an established real estate assessment tool (Green Rating™) and supported with the organization of tailored capacity building activities that will allow project developers (including ESCOs and other EPC providers). Learn more about the project on the website: <http://www.trustepc.eu/en/>

There is also a tool available



## 6. Leasing Financing for Energy-Contracting

### 6.1. Introduction to Leasing Financing

Leasing is a way of obtaining the **right to use an asset - not the possession of this asset**. Assets in our case mean investments into energy conservation measures or into energy supply plants. When leasing an investment, you do not buy it. You only pay for the exclusive right to use it.

Leasing is a contract between the owner of the asset (**lessor**) and the user (**lessee**), wherein the former grants exclusive rights to use the assets for a certain period (basic lease term), in return for payment of a lease. The lease is typically paid in annuities to the leasing finance institute (LFI). The lessee can be either an ESCo or the client (building owner) as displayed in Figure 1: and 0

Basically, there are two types of leases, which are relevant for Energy-Contracting: **operate** and **finance leasing**. Specific characteristics of both are described in chapters 6.3 and 6.3.7. Overall leasing characteristics are mentioned in this introductory chapter.

The basics contract relationships of a leasing agreement are displayed in the following figure. On the left side the ESCo is lessee, on the right side the client is it:

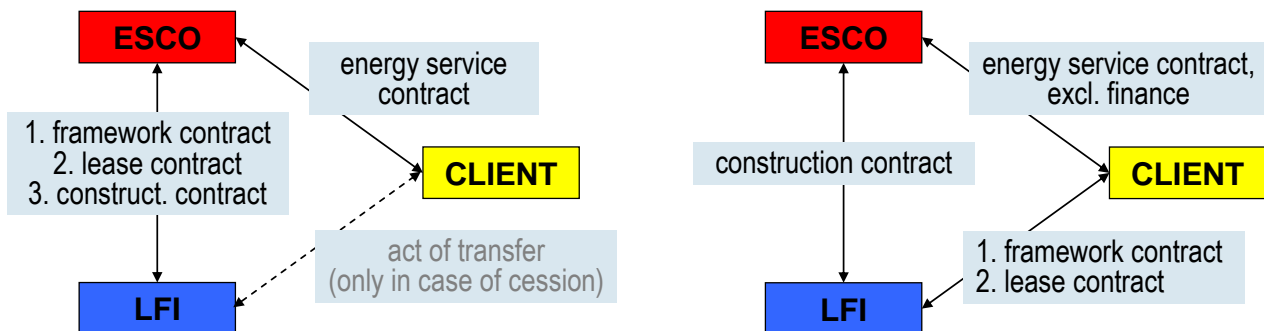


Figure 1: Contract relationships of a leasing agreement with ESCo (left) or Client (right)

Comments to the figures:

The ESCo implements the EE-measures and takes over technical, economical and organisational services and risks of the EC-contract and (in many cases) arranges for the financing.

The LFI takes over financial and administrative services and risks and concludes a framework and lease contract either with the ESCo (sometimes including a cession agreement for part of the contracting rate) or with the client.

The LFI signs a construction contract for the energy efficiency investments with the ESCo.

Furthermore leasing models distinguish between **full-** and **part-amortisation (with residual value)** contracts as well as contracts including advance payments or not, all of which are applicable to EC financing.

**Sale-and-lease-back** contracts are mainly used to finance overall building refurbishment projects, not just EPC-measures. In many cases the purpose is to cash "hidden reserves" e.g. in public buildings. If a Sale-and-lease-back financing is used for a building project, it is strongly recommended to write minimum performance standards for thermal refurbishment and require guarantees like maximum energy consumption in the terms of reference.

The typical cash flow relationships of a leasing agreement are displayed in the following figure. Again, on the left the ESCo is lessee, on the right it is the client:



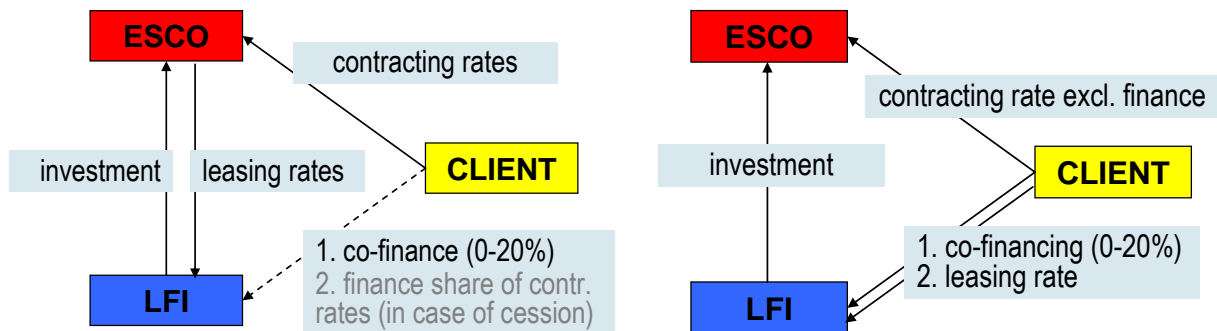


Figure 17: Cash flow relationships of a leasing agreement with ESCo (left) and Client (right)

Comments to the figures:

In both cases the LFI pays for and the ESCo builds the energy efficiency investments and arranges for the financing agreements

The LFI should handle Co-financing (e.g. subsidies)

In case of ESCo finance, the finance part of the ESCo's claims to the client can be ceded to the FI to directly repay the ESCo's debt (for more details on cession see chapter 7.2).

In case of customer finance, the (financing share) of the contracting rate is paid directly to the LFI as leasing rate. The rest of the contracting rate (operation & maintenance, assets ...) share should go directly to the ESCo.

## 6.2. Operate and Finance Leasing Common Features and Customer Demand

For both operate and finance leasing the following important properties is characteristic:

- **Direct financing cost** for leasing often exceed the costs of taking a loan, because the lessor usually has a broader range of consulting and services included, assumes higher risks and requires fewer securities compared to credit finance.
- **Direct financing cost:** LFI's often will include **subsidy acquisition** and handling in their port folio, thus providing a more comprehensive service to the client.
- **Direct financing cost:** The lessee is responsible for the **operation and maintenance** of the asset at his own expense. Typically the lessor will require the lessee complies with mandatory operation and maintenance regulations. The lessee also bears the economic risk if the asset becomes unusable or sinks. Typically the lessor will obligate the lessee to conclude an **insurance package** for his equipment. These features distinguish leasing from traditional renting.
- **Legally**, not all energy supply and conservation investments can be **leasing** financed though. The technical term is called **fungibility** or **interchangeability** required (by tax laws) of an asset to qualify for operate leasing: After the basic lease term the asset has to be re-utilizable without suffering substantial damage when being removed from its place of installation. In praxis many EPC-measures do not qualify, whereas Supply-Contracting measures do. Still there is room for interpretation and some LFI are more creative than others.
- **Legal aspects:** In the case of leasing it is important to differentiate between legal and economic ownership of the asset. **Legal ownership** secures the control over the asset and serves as a security for the lessor, which is stronger compared to a lien or a reservation of property rights as applied e.g. in a credit finance.



- **Legal aspects: Economic ownership** determines on whose books the asset is accounted for. In the case of finance lease it's the lessee, in the case of operate lease it's the lessor. This has important implications on balance sheet ratios and taxations issues.
- **Legal aspects:** Leasing financing legally requires that **no automatic transfer of ownership** at the end of the contract term (without reimbursement) is settled in the Energy-Contracting contract. Otherwise it will be considered as a variety of a sales contract. In other words: if a performance contract includes a definite transfer of ownership to the client at the end of the contract term, a leasing financing is not possible.  
Existing EPC model contracts often include a fixed transfer of ownership free of charge after contract termination. These have to be revised if you want to allow for a leasing finance option.
- **Collateral/Securities:** Some Leasing Finance Institutes (and hopefully other FI's as well) have **specialized and knowledgeable staff**, who have a good understanding of the nature of Energy-Contracting projects. Based on their analyses of the project, these LFI's are able to base the refinancing mainly on the project cash flow rather than on the borrower. These LFI may also perceive fewer risks and require less company collateral or accept project based securities like a cession of project revenues (e.g. feed in tariffs from renewable electricity production).
- **Management Expenditure:** LFI's generally offer a **comprehensive consultancy** comprehending taxation, balance sheet matters and legal aspects of the energy service project, which suits well with the proposed comprehensive look at all financing implications and should result in an overall cost optimisation. Leasing typically includes consultancy on contract design and management, insurances, commissioning of contractors, accounting, controlling and payout of invoices, VAT-clearing, to list the most important services. This should result in reduced overall transaction cost.

### 6.3. Operate Leasing Features and Customer Demand

Traditionally operate leasing is used for cars and mobile goods such as moveable machineries, but not limited to these kinds of assets. Operate lease is increasingly used to finance Energy Service investments with, however mostly investments to facilitate supply service contracts.

Applying the operate lease model to Energy-Contracting may offer a number advantages to the lessee like capitalization with lessor resulting in off balance financing, extension of credit lines or reduced transaction cost.

Possible disadvantages may be:

Only leasable goods qualify (see chapter 6.3.2)

Premature cancellation of contract at disproportionately high cost

Even if leasing obligations do not appear on the balance sheet, they have to be disclosed to potential creditors as pending transactions.

These and other implications will be reasoned in the next chapters. In order to facilitate the overview, the comments are compiled in tables, with some details explained further.

With respect to the criteria from the customer profile, the standard operate finance instruments offer the following properties (General leasing properties which apply to both operate and finance lease are described in the previous chapter 6.2).



### 6.3.1. Direct Financing Cost

<b>Direct financing cost</b>	<b>Costs as low as possible:</b>	
	✓ Interest rates, fees, ...	<ul style="list-style-type: none"> <li>✓ Lease payments (annuity)</li> <li>✓ Single payments:               <ul style="list-style-type: none"> <li>- Contract fee (1% of total lease payments)</li> <li>- Handling charge (negotiable)</li> </ul> </li> </ul>
	✓ Extent of financing	✓ Financing of total investment incl. soft cost (90 - 100% financing)
	✓ Subsidies: Compatibility, eligibility	<ul style="list-style-type: none"> <li>✓ Yes, reduces lease rate</li> <li>✓ Application by lessor (owner of investment)</li> <li>✓ special know how required – typically leasing banks have subsidy specialists</li> </ul>

Operate Leasing - direct financing costs

### 6.3.2. Legal Aspects

<b>Legal aspects</b>	<b>Legal implications</b>	
	✓ Financing term	✓ Object oriented: Basic lease term: 40 – 90% (mobile), < 90% (immobile) of useful life
	✓ What can be financed?	✓ Only leasable energy service investment incl. soft cost (e.g. project development)
	✓ Cancellation of contract	✓ Generally no cancellation during basic lease term possible
	✓ Legal and economic property aspects	✓ Lessor is legal and economic owner
	✓ Transfer of ownership at end of term	<ul style="list-style-type: none"> <li>✓ Lessor remains owner</li> <li>✓ EC contract must not include automatic transfer of ownership to client</li> </ul>
	✓ Responsibility for operation and maintenance	✓ Lessee has to perform o & m according to lessor's requirements and must insure the investment

Operate Leasing - legal aspects

Further Comments:

**Financing term:** In order to qualify as leasing, the lease term must not exceed a certain percentage of the asset's estimated useful life-time (90% according to Austrian and German law, 75% of the economic life according to US GAAP).

**What can be financed:** Not all energy supply and conservation investments can be **operate lease** financed though. The technical term is called **fungibility** or **interchangeability** required (by tax laws) of an asset to qualify for operate leasing: After the basic lease term the asset has to be re-utilizable without suffering substantial damage when being removed from its place of installation. As an example a container-combined heat and power plant counts as interchangeable, however a building insulation does not. A minimum of about 80 % of the total investment has to be fungible.

In praxis many EPC-measures do not qualify, whereas Supply-Contracting measures do. Still there is room for interpretation and some LFI are more creative than others.



**Ownership:** The lessor pays for and owns the asset legally as well as economically. The lessee exclusively uses the asset in exchange for a pre-determined leasing fee.

### 6.3.3. Collateral (Securities)

<b>Collateral</b>	<b>Reduce Collateral requested and own risks:</b>	<b>Lessor wishes to safeguard lease object. Generally securities are based on project with possibly some additional debtor liabilities</b>
	✓ Finance based on project cash flow	<ul style="list-style-type: none"> <li>✓ Project cash flow accepted as main security, (requires detailed project check and know how)</li> <li>✓ Cession of revenues e.g. from feed in tariffs and insurances.</li> </ul>
	✓ Financial Collateral	<ul style="list-style-type: none"> <li>✓ Equity capital required (0-20 %) (at least some client commitment required)</li> <li>✓ Lessor's often accept leased assets as main collateral</li> <li>✓ Insurances for project equipment, (elementary-, break down- and interruption of service insurance)</li> <li>✓ Additional Collateral like bonds (Hermes, ÖKB) and guarantees from parent companies depend on specific project</li> <li>✓ Public entities: non-appropriation-risk for lessor<sup>14</sup></li> </ul>
	✓ Tangible Collateral	<ul style="list-style-type: none"> <li>✓ No, because lessor holds property and economic title<sup>15</sup></li> </ul>
	✓ Personal securities	<ul style="list-style-type: none"> <li>✓ Applicable for small projects only</li> </ul>

Operate Leasing - Collateral required

### 6.3.4. Taxation Implications

<b>Taxation</b>	<b>Reduce taxable income:</b>	<b>Lessor can support customer to save taxes in order to offer the cheapest overall finance solution</b>
	✓ Tax deductible expenses	<ul style="list-style-type: none"> <li>✓ Complete leasing rate is tax deductible.</li> </ul>
	✓ Optimization of timing of deductible expenses	<ul style="list-style-type: none"> <li>✓ Depreciation can be accelerated through "Leasing effect" (shorter depreciation periods for lessors)</li> <li>✓ Constant rates (annuities) over contract period</li> </ul>
	✓ Value Added Tax (VAT)	<ul style="list-style-type: none"> <li>✓ VAT due per rate (pro rata temporis) =&gt; VAT is dispersed over project duration</li> </ul>
	✓ Benefits from tax exemptions	<ul style="list-style-type: none"> <li>✓ No examples known in Europe<sup>16</sup></li> </ul>

Operate Leasing - taxation implications

<sup>14</sup> In the US. leasing contracts with public lessees often include non-appropriation clauses. This means that municipalities or governments have to appropriate lease payments, e.g. each year anew. Since the possible non-appropriation of payments entails an increased risk for the lessor, contracts under such conditions usually have higher lease rates.

<sup>15</sup> Risk of loss of property rights: Assets that are inseparably linked to an object become integral part of it (in Germany: BGB § 946). E.g. new windows or facades

<sup>16</sup> US example for a tax exempt lease financing: <http://www.energystar.gov/ia/business/easyaccess.pdf>



Further Comments:

**Tax deductible expenses:** Operate Leasing allows to transfer tax benefits from those who use the asset to those (the LFI as owner of the asset) who can make best use of the benefits.

**Tax deductible expenses:** The LFI economically owns the asset and records all the tax deductions for depreciation and interest in his books.

**Tax deductible expenses:** Depreciation: Lessors may apply different depreciation tables with shorter depreciable life

**VAT:** Public entities, who can not deduct input tax (no pre-tax allowance) profit from paying VAT per rate and not for the total investment all at once. This requires, that legal ownership can be maintained with the lessor.

**VAT:** Interest payments are tax excluded.

**VAT:** For public entities there are tax savings from input tax correction after 10 years (Austrian law, other countries may differ).

### 6.3.5. Balance Sheet and Accounting Implications

<b>Balance sheet &amp; accounting aspects</b>	<b>Optimize balance sheet indicators:</b>	<b>LFI supports customer with overall optimization</b>
	✓ Capitalization of investment	✓ Lessor is legal and economic owner => has to capitalize investment on his balance sheet => shortening of balance sheet (off balance) for lessee
	✓ Balance sheet performance indicators	✓ Assets and lease payment obligations are not capitalized in the balance sheet account => distortion of indicators, e.g. improvement of debt-equity ratio <sup>17</sup> ✓ Public sector: Maastricht neutral

Operate Leasing - balance sheet & accounting aspects

Further Comments:

**Capitalization:** The asset does not appear on the lessee's balance sheet.

**Capitalization:** Future liabilities from operate leasing agreements are not entered in the balance sheet of the client. Nevertheless these liabilities have to be accounted for in the amendment of the annual statement as pending transactions.

**Indicators:** Leasing enables the lessee to expand the credit range, because future leasing liabilities are not considered as debt.

<sup>17</sup> for further explanation, please refer to chapter 8.2



### 6.3.6. Management Expenditure and Transaction Cost

<b>Management expenditure / Transaction cost</b>	<b>As small as possible:</b>	<b>FI wants to reduce transaction cost, (standardized products, increase finance volume =&gt; larger projects)</b>
	✓ One face to the customer	✓ In principle yes (depends on LFI)
	✓ Knowledgeable financing partner	✓ Depends on LFI and requires special know how: some LFI have specialized project finance departments for EC
	✓ Consultancy for tax, accounting, legal optimisation and subsidies	✓ Service typically comprehends tax and legal advice => less effort for coordination on customer side ✓ Accounting of investment is done by lessor
	✓ Reduce paperwork	✓ Detailed project documentation (investment plan, project cash flow, profit and loss account) ✓ Credit report
	✓ Time to receive financing promise	✓ Typically 1 month after documentation is complete
	✓ Customer approval process	✓ Public entities: operate lease is legally not considered indebtedness which may make approval process easier. Approval is easier if funds are drawn from operative (not investment) budgets ✓ Some public authorities have adopted general approval for savings-cash-flow financed EPC-projects

Operate Leasing - Management expenditures and Transaction cost

### 6.3.7. Finance Leasing Features and Customer Demand

Finance lease can be seen as a mixture between a conventional credit and an operate lease. Many properties are closer to the credit, except the more project oriented approach for refinancing and securities required.

With respect to the criteria from the customer profile, the standard finance leasing instruments offer the following properties. In order to facilitate the overview, the comments are compiled in tables, with some comments in footnotes:

Criteria	Customer expectations	Finance Leasing
<b>Direct financing cost</b>	<b>Costs as low as possible:</b>	
	✓ Interest rates, fees, ...	✓ Lease payments (annuity) ✓ Single payments: - Handling charge (negotiable)
	✓ Extent of financing	✓ Financing of total investment incl. soft cost (90 - 100% financing)



Criteria	Customer expectations	Finance Leasing
	<ul style="list-style-type: none"> <li>✓ Subsidies: Compatibility, eligibility</li> </ul>	<ul style="list-style-type: none"> <li>✓ Yes, reduces lease rate</li> <li>✓ Application by lessee (economic owner of investment) or lessor on behalf of lessee.</li> <li>✓ Special know how required – typically leasing banks have subsidy specialists</li> </ul>
<b>Legal aspects</b>	<b>Legal implications</b>	
	<ul style="list-style-type: none"> <li>✓ Financing term</li> </ul>	<ul style="list-style-type: none"> <li>✓ Flexible: according to customer demand (no legal regulation). Below useful life time of asset</li> </ul>
	<ul style="list-style-type: none"> <li>✓ What can be financed?</li> </ul>	<ul style="list-style-type: none"> <li>✓ Complete energy service investment incl. soft cost (e.g. project development)</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Cancellation of contract</li> </ul>	<ul style="list-style-type: none"> <li>✓ Depends on contract type, usually fixed terms</li> <li>✓ Short rate penalties apply for premature cancellation</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Legal and economic property aspects</li> </ul>	<ul style="list-style-type: none"> <li>✓ Lessor is legal owner</li> <li>✓ Lessee is economic owner (lessor may hold retention of title)</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Transfer of ownership at end of term</li> </ul>	<ul style="list-style-type: none"> <li>✓ Lessor remains owner</li> <li>✓ EC contract must not include automatic transfer of ownership to client</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Responsibility for operation and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>✓ Lessee has to perform o &amp; m and must insure the investment according to lessors requirements</li> </ul>
<b>Securities</b>	<b>Reduce securities requested and own risks:</b>	<b>Lessor wishes to safeguard lease object. Generally securities are based on project with possibly some additional debtor liabilities</b>
	<ul style="list-style-type: none"> <li>✓ Finance based on project cash flow</li> </ul>	<ul style="list-style-type: none"> <li>✓ Project cash flow accepted as main security (requires detailed project check and know how)</li> <li>✓ Cession of revenues e.g. from feed in tariffs and insurances.</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Financial securities</li> </ul>	<ul style="list-style-type: none"> <li>✓ Equity capital required (0-30 %) (some client commitment required)</li> <li>✓ Insurances for project equipment (elementary-, break down- and interruption of service insurance)</li> <li>✓ Additional securities like bonds (Hermes, ÖKB) and guarantees from parent companies depend on specific project</li> <li>✓ Public entities: non-appropriation-risk for lessor</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Tangible securities</li> </ul>	<ul style="list-style-type: none"> <li>✓ No, because lessor holds property title until payment of last rate!<sup>18</sup></li> </ul>
	<ul style="list-style-type: none"> <li>✓ Personal securities</li> </ul>	<ul style="list-style-type: none"> <li>✓ Applicable for small projects only</li> </ul>
<b>Taxation</b>	<b>Reduce taxable income:</b>	<b>Lessor can support customer to save taxes in order to offer the cheapest overall finance solution</b>
	<ul style="list-style-type: none"> <li>✓ Tax deductible expenses</li> </ul>	<ul style="list-style-type: none"> <li>✓ Interest and depreciation (linear, AfA-tables) are tax deductible. Redemption payments are not tax deductible</li> </ul>

<sup>18</sup> Risk of loss of property rights: Assets that are inseparably linked to an object become integral part of it (in Germany: BGB § 946). E.g. new windows or facades



Criteria	Customer expectations	Finance Leasing
	<ul style="list-style-type: none"> <li>✓ Point in time of deductible expenses</li> <li>✓ Value Added Tax (VAT)</li> <li>✓ Benefits from tax exemptions</li> </ul>	<ul style="list-style-type: none"> <li>✓ Depreciation is linear (sometimes declining)</li> <li>✓ Interest payments decline over time</li> <li>✓ VAT due on sum of rates at the beginning of project =&gt; VAT also on bank margin<sup>19</sup></li> <li>✓ Public entities can not deduct input tax (additional initial cost)</li> <li>✓ "Similar-to-business-activities" can be made input VAT deductible, (e.g. renting out of advertisement boards on street lighting poles)</li> <li>✓ No examples known in Europe<sup>20</sup></li> </ul>
<b>Balance sheet &amp; accounting aspects</b>	<p><b>Optimize balance sheet ratios:</b></p> <ul style="list-style-type: none"> <li>✓ Capitalization of investment</li> <li>✓ Balance performance ratios</li> </ul>	<p><b>LFI supports customer with overall optimization</b></p> <ul style="list-style-type: none"> <li>✓ Lessor is legal owner</li> <li>✓ Lessee is economic owner =&gt; has to capitalize investment<sup>21</sup></li> <li>✓ Lease and assets have to be capitalized in the balance sheet account =&gt; negative effects on balance sheet performance figures</li> <li>✓ Public sector: Sometimes special regulations apply to avoid capitalization and Maastricht criteria</li> </ul>
<b>Management expenditure / Transaction cost</b>	<p><b>As small as possible:</b></p> <ul style="list-style-type: none"> <li>✓ One face to the customer</li> <li>✓ Knowledgeable financing partner</li> <li>✓ Consultancy for tax, accounting, legal optimisation and subsidies</li> <li>✓ Reduce paperwork</li> <li>✓ Time to receive financing promise</li> <li>✓ Customer approval process</li> </ul>	<p><b>FI wants to reduce transaction cost, (standardized products, increase finance volume =&gt; larger projects)</b></p> <ul style="list-style-type: none"> <li>✓ Generally yes (depends on LFI)</li> <li>✓ Depends on bank and requires special know how: some LFI have specialized project finance departments for ES</li> <li>✓ Service typically comprehends tax and legal advice =&gt; less effort for coordination on customer side</li> <li>✓ Accounting of investment has to be done by lessee</li> <li>✓ Documentation depends on project finance (=&gt;operate lease) or company finance (=&gt; credit)</li> <li>✓ Credit report</li> <li>✓ Typically 1 month after documentation is complete</li> <li>✓ Approval is easier if funds are drawn from operative (not investment) budgets</li> <li>✓ Some local authorities have adopted general approval for savings-cash-flow financed EPC-projects</li> </ul>

Matrix Finance Leasing

<sup>19</sup> Austria: no VAT on interest (UStG § 6 (2) 1994)

<sup>20</sup> US example for a tax exempt lease financing: <http://www.energystar.gov/ia/business/easyaccess.pdf>

<sup>21</sup> Lessee is economic proprietary and has to account for the investment in his balance sheet. Thus finance leasing is not Maastricht neutral.





## 7. Cession and Forfeiting of Contracting Rates

### 7.1. Introduction

**Cession** is a transfer of future receivables (here Contracting rates) from one party (the **cedent** or **cessionary** - in our case an ESCo) to another (the **buyer** - in our case a FI). The original creditor (the ESCo) cedes his claims and the new creditor (the FI) gains the right to claim future contracting rates from the debtor (the client).

Two basically varieties of cession are used:

**Cession:** A **cession** can be used in **addition to a credit or lease financing agreement**. The ceded contracting rates serve as (additional) security for the FI and the clients pays the rates (or parts of them) directly to the FI. (For more details see chapter 7.2). Sometimes this variety is being labelled as forfeiting. For clarification we propose to distinguish between “Cession” and “Forfeiting” as stated here.

**“Pure” forfeiting:** If a cession is applied without an underlying financing agreement (credit or leasing), it is called (pure) **forfeiting**. The FI buys the future contracting rates and pays a discounted present value directly to the ESCo (see chapter 7.3).

**Forfeiting** is common for export financing. Generally, the ceded receivables must be from investment-, goods- or service-deliveries with a mid-term duration of 6 months to 5 years or longer, which is applicable to contracting rates. A precondition is that the receivables are legal rightful and undisputed. This means the ESCo have performed successfully the implementation of the Energy-Contracting measures and the amount of the ceded Contracting rates is fixed.

The financing of EC-projects with (pure) forfeiting is little known but interesting when the project cash flow (guaranteed energy savings) could serve as main collateral. Forfeiting is economical advantageous, if the client’s creditworthiness is better than the ESCo’s.

A similar form of cession is called **Factoring**<sup>22</sup>, which is used for short term receivables and/or the cession of single invoices. Factoring mainly transfers the collection of payments and in the case of non-recourse also of financial risks to a specialized FI. Factoring is not applicable for EC because of the shorter duration of its receivables.

### 7.2. Cession of Contracting Rates as Security for Credit- or Lease-Finance

A cession of contracting rates in this sense is **not a stand alone financing option** but can serve as (additional) collateral for the FI. And it may simplify cash flows.

The ESCo’s claims to the client are legally transferred to the FI (cession). The client pays the (finance share of the) contracting rates directly to the FI, which are used to amortize the ESCo’s debt. This kind of cession is also known as a **garnishee agreement**<sup>23</sup>.

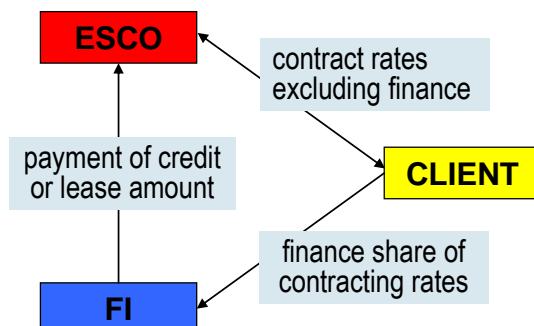
---

<sup>22</sup> Factoring: cession of a bundle of receivables of goods- and service-deliveries with a short-term payment target (6 months)

<sup>23</sup> in Austria called “Drittschuldnererklärung”



The following graph illustrates the cash flows:



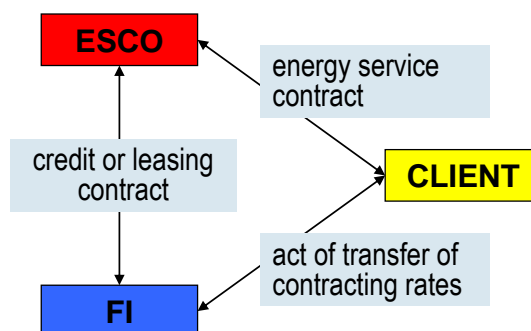
Cash flows in case of cession as security for credit- or leasing finance

The garnishee agreement is an (additional) security to the FI, especially if the ceded contracting rates must be settled by the client independently of the fulfilment of the Energy-Contracting contract (non recourse or waiver of objection).

Clients cannot cede the complete contracting rate. The model is typically limited to the investment costs without financing costs. The remaining share (for operation & maintenance, service, risk ...) is paid to the ESCo.

From the ESCo’s perspective it is desirable, that the FI assumes certain risks with the garnishee agreement, such as the **financial performance risk** of the client. In this context “non-recourse” means, that FI waives the right to resort back to the ESCo, provided that the ESCo has fulfilled the contractual obligations including the savings guarantees of the EPC (**technical performance risks**).

The contract relationships of the three partners are displayed in the following graph:



Contractual relationships in case of cession as security for credit- or leasing finance

Different types of cessions are the open, half open and hidden cession of the receivables, differentiating between a known and agreed cession of the client’s liabilities and a quiet agreement between ESCo and FI without the client’s accordance or knowledge.

If you take forfaiting into account you have to fulfil the following aspects in the EPC-project:

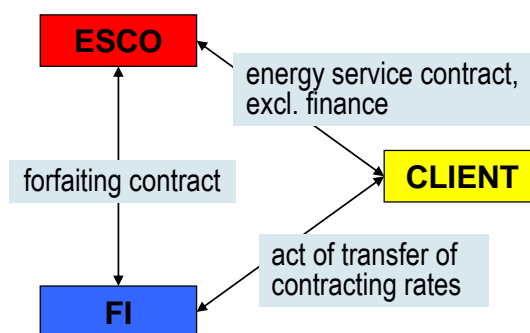
- Opposition Free invoice for the volume of investment
- Prohibition of offsetting
- Inspection report for the investments made - Transfer of ownership
- To separate payment flows for operating costs and investment repayments
- Sub-savings in a separate payment stream



No commitments for funding which reduces the investment costs

### 7.3. Forfeiting - An Innovative Option

A (pure) forfeiting contracting means, that - without an additional financing agreement - the ESCo sells the future contracting rates to a financial institution in return for a discounted one time payment. The contractual relationships of forfeiting are described by the following graphic:



Forfeiting - contractual relationships

Client, ESCo and Financial Institution usually sign a “**Notice and Acknowledgment of Assignment**”. The client acknowledges herein the continued payment obligations to the financial institution regardless of any disputes between Client and ESCo. A hidden cession without an assignment between all partners is also possible within this model, but is not common.

The most important precondition is that the receivables are legally rightful and undisputed. On the basis of successfully implemented Energy-Contracting measures - like building insulation, boiler installation or energy monitoring systems- the Client has to confirm the performance by different quality securing instruments so that the ceded share of the Contracting-rate is legally accepted from both sides. Additionally the ceded receivables must be undisputed, meaning that the payment of the ceded Contracting-rates must be settled independently from the further performance of the ESCo regarding operation & maintenance or EC-guarantees. The integration of a bonus malus system as incentive for the performance of the ESCo is possible, but has to be billed extra (see above).

As mentioned before, the amount forfeited should be limited to the investment without capital cost share of the contracting rate. The remaining share (for operation & maintenance, end energy supply, risk ...) is paid to the ESCo over the contract term.

#### 7.3.1. Financial Aspects

Criteria	Customer expectations	Forfeiting
financing	Costs as low as possible:	

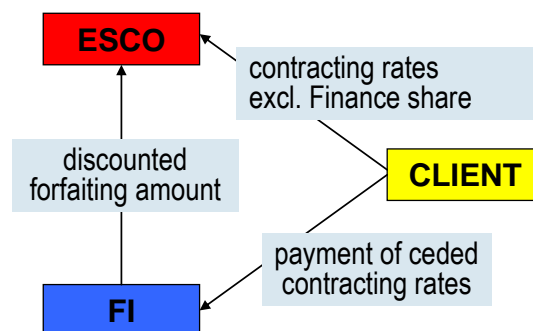


Criteria	Customer expectations	Forfaiting
	<ul style="list-style-type: none"> <li>✓ Interest rates, fees, ...</li> </ul>	<ul style="list-style-type: none"> <li>✓ A fixed part of the contracting rate will be ceded to a FI</li> <li>✓ FI pays the sum of the receivables reduced by a discount to the ESCo</li> <li>✓ Discount consists of:                             <ul style="list-style-type: none"> <li>- Re-financing costs for whole duration (interest, risks)</li> <li>- Provision and administration fee</li> <li>- Profit margin</li> </ul> </li> <li>✓ Repayment from client according to an instalment plan</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Extent of financing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Flexible: financing of total investment or parts of it (0 – 100%)</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Subsidies: Compatibility, eligibility</li> </ul>	<ul style="list-style-type: none"> <li>✓ Yes, reduces finance volume and contracting rates</li> </ul>

**Forfaiting - Financial Aspects**

For repayment of the amount forfeited, the FI charges the client according to a fixed instalment plan. This means that the financial institution gets back the whole purchase amount including the re-financing costs and fees.

The cash flows between these three partners are shown in the following graphic:



**Forfaiting - cash flows**

Forfaiting will be economical advantageous, if the client’s creditworthiness is better than the ESCo’s. Or if the project cash flow could serve as main collateral.

In the case of public clients the good creditworthiness is a mostly given, but in all other cases the situation should be discussed with a bank whether forfaiting allows lower interest rates.

**7.3.2. Legal Aspects**

Criteria	Customer expectations	Forfaiting
<b>Legal aspects</b>	<b>Legal implications</b>	
	<ul style="list-style-type: none"> <li>✓ Financing term</li> </ul>	<ul style="list-style-type: none"> <li>✓ Fixed period according to customer demand, minimum 6 months to 5 years or longer.</li> <li>✓ Usually below useful life time.</li> </ul>
	<ul style="list-style-type: none"> <li>✓ What can be financed?</li> </ul>	<ul style="list-style-type: none"> <li>✓ Complete energy service investment incl. soft costs</li> </ul>



✓ Cancellation of contract	✓ Generally no cancellation during contract term possible
✓ Legal and economic property aspects	✓ ESCo realizes the investments at his own name and risk and remains the owner during the contracting time.
✓ Transfer of ownership at end of term	✓ EC contract should not include transfer of ownership.
✓ Responsibility for operation and maintenance	✓ O&M will usually be included in the energy service contract and done by the ESCo. It will be financed by the contracting rate.

#### Forfeiting - legal aspects

The ESCo remains to be reliable for the contractual accomplishment of the energy service agreement (technical performance risks, savings guarantees ...). The client's legal obligation for the contracting rates begins after the installation of the efficiency measures, with the start of savings guarantee phase.

After the fulfilment of the efficiency measures and the signing of the "Takeover Certificate" the **customer gets the legal and economic owner** of the investment and the ESCo supplies the service of (e.g.) energy consumption reduction to the client. It can also use the assets as securities for the forfeiting financing.

The ceded contracting rate can be documented with a bill of exchange or with book claims. Through the cession of the contracting rates the rights in connection with the receivables pass over to the FI, which takes over the credit risks (e.g. currency moving, delcredere or political risks).

The FI has **no right of recourse** on the ESCo as long as the ESCo delivers the savings guarantees. At the same time, the client waives his right of objection against the FI's claims. In case of an insufficient performance of the ESCo, the client must claim compensation payments from the ESCo, because the **technical performance risks** (e.g. the savings guarantee or warranty) remains with the ESCo.

### 7.3.3. Securities

Criteria	Customer expectations	Forfeiting
<b>Collateral/Securities</b>	<b>Reduce securities requested and own risks:</b>	<b>FI wishes to safeguard contracting rates. Securities are based on debtor, only partly on project.</b>
	✓ Finance based on project cash flow	✓ In reality client based finance and not project finance. Repayment based on client's creditworthiness. ✓ Theoretically (and desirable) project cash flow should serve as project financing.
	✓ Financial securities	✓ Guarantees or aval from client's bank or irrevocable confirmed letter of credit. ✓ Creditworthiness of client and risks is the basis for calculation.
	✓ Tangible assets	✓ Pledge on assets ✓ Liens on equipment
	✓ Personal securities	✓ No

#### Forfeiting - securities

Generally not every receivable will be bought by the financial institution. Before accomplishment of the forfeiting-contract the creditworthiness of the client and the risks will be checked. Due on these variables



the financial institution calculates the costs for re-financing. As long as the project cash flow cannot serve as the main collateral, forfeiting must be categorised as a client based finance model.



### 7.3.4. Taxation

Criteria	Customer expectations	Forfeiting
<b>Taxation</b>	<b>Reduce taxable income:</b>	
	✓ Tax deductible expenses	✓ Forfeiting financing costs and depreciation are tax deductible for the owner of the investment, the ESCo. ✓ For the client the contracting rates are tax deductible expenses
	✓ Point in time of deductible expenses	✓ Client: Spread over contract duration. ✓ ESCo: At time of settlement of the forfeiting-contract.
	✓ Value Added Tax (VAT)	✓ Client: VAT is charged with the contracting rates over the contracting duration (pro rata temporis). ✓ VAT, which occurs during the construction phase, is tax deductible for the ESCo. ✓ Public entities cannot deduct tax
	✓ Benefits from tax exemptions	✓ Not known

#### Forfeiting - taxation

The forfeiting costs (interest rates) increase the project sum required for financing, but they are tax deductible for the ESCo as well as the depreciation is. The VAT, which occurs during the construction phase, is also tax deductible for the ESCo, but the ESCo has to charge the VAT in the contracting rates to the client during the operation phase. From the client's perspective the contracting rates including the VAT are - dependent from the national tax laws - normally tax deductible expenses.

### 7.3.5. Balance Sheet & Accounting Aspects

Criteria	Customer expectations	Forfeiting
<b>Balance sheet &amp; accounting aspects</b>	<b>Optimize balance sheet performance indicators:</b>	
	✓ Capitalization of investment	✓ The client, as the legal and economic owner, has to capitalize the investment.
	✓ Balance sheet indicators	✓ Positive balance effects for ESCo, because receivables and own liabilities are settled with the forfeiting payment at once.



### 7.3.6. Management Expenditure and Transaction cost

Criteria	Customer expectations	Forfaiting
<b>Management expenditure / Transaction cost</b>	<b>As small as possible:</b>	<b>High transaction cost (no standardized product, securities accomplishment problematic)</b>
	✓ One face to the customer	✓ Generally no (ESCO + FI)
	✓ Knowledgeable financing partner	✓ Depends on FI and requires special know how: Energy-Contracting is not a typical core competence of FI
	✓ Consultancy for tax, accounting, legal optimisation and subsidies	✓ Service is limited to financing. Additional tax and legal service are typically not included. ✓ Low efforts for coordination on client's side, but considerable efforts for coordination on ESCo's side.
	✓ Reduce paperwork	✓ Client's company documentation: last three annual accounts => creditworthiness ✓ ESCo: Project documentation (investment plan, project cash flow, profit and loss account, ...) ✓ Credit report
	✓ Time to receive financing promise	✓ Typically 1 month after documentation is complete (documentation required depends on security concept)
	✓ Customer approval process	✓ Approval would be easier if funds are drawn from operative (not investment) budget ✓ Some local authorities have adopted general approval for savings-cash-flow financed EPC-projects (third party financing)

Forfaiting - management expenditure and transaction costs

(Pure) forfaiting has been introduced to the market in several projects in Austria but is not a standard product for EC. Accordingly transaction cost to set up a forfaiting contract will be high. Nevertheless advantages of the model may justify the effort.





## 8. Comparison and Conclusions

### 8.1. Comparison and Evaluation of Financing Offers with Customer Needs

Comparisons are drawn **between a typical customer demand profile and standard credit, operate, finance lease and forfaiting offers**. Of course all comparisons are of a general nature and may vary with specific projects, borrowers, financing institutions and their products.

Major properties and distinctions between these financing alternatives are listed here. For a more detailed description and explanation of the demand side and the different financing tools, please refer to the respective chapters. The comprehensive **matrix** in the Annex compiles typical properties with regard to financing costs and fees, integration of subsidies, legal aspects, securities required, tax implications, balance sheet effects, management and transaction costs suitable for comparison.

Since credit finance is more common, the conclusions will focus on the main differences compared to other financing options:

- **Direct financing costs** have to be compared on an individual bases, taking all factors into account. Interest rates and fees tend to be higher for leasing than for credits. This is because of additional services offered by the LFI and the assumption of higher risks on the lessor's part. Also, LFI's extent of financing typically is higher for leasing allowing for up to 100 % external financing. This compares to a typical maximum of 70 - 90% for credits.

Direct financing costs can be compared by way of a **cost comparison calculation**: All financing expenses (including equity capital and opportunity cost) over the contract period of the different financing offers should be recorded and discounted to a net present value to find the lowest direct financing costs.
- **Subsidies** can be integrated into all financing options. LFI's often will include subsidy acquisition and handling in their portfolio, thus providing a more comprehensive service to the client.
- Not all energy supply and conservation investments can be **operate lease** financed. The technical term is called **fungibility** or **interchangeability** required (by tax laws) of an asset to qualify for operate leasing: After the basic lease term the asset has to be re-utilizable without suffering substantial damage when being removed from its place of installation. In praxis this leaves room for interpretation and is still under discussion.
- A Lessor will generally require a **comprehensive insurance package** as well as **operation and maintenance guarantees** for his equipment which may result in additional costs for the lessee.
- Some Leasing Finance Institutes (and hopefully more other FI's than to date is the case as well) have **specialized and knowledgeable staff**, who have a good understanding of the nature of energy service projects. Depending on their analyses of the project, these LFI's are more likely to accept refinancing mainly on the project cash flow rather than on the borrower. These LFI may also accept project based securities like a cession of project revenues (e.g. feed in tariffs from renewable electricity production on site).
- Main distinctions with regard to securities, taxation and accounting between credit and leasing financing derive from the differentiation between **legal and economic ownership** of the asset. **Economic ownership** implicates recording the asset in the owner's books. In other words: Off balance financing with all its implications (e.g. balance sheet performance ratios like credit lines, balance sheet contraction, ...) requires, that a third party is willing and able to account



for the asset. This is possible with operate lease financing only<sup>24</sup> and under circumstances with forfeiting.

Maintaining **legal ownership** of the investments - apart from implying legal responsibilities - allows LFIs to require fewer securities from the lessee compared to credit financing. This is true for both finance and operate leases.

- **Finance lease** can be seen as a mixture between a conventional credit and an operate lease. Many properties are closer to the credit, except the more project oriented approach for refinancing, securities required and the appropriate consulting of the LFI.
- LFIs generally offer a **comprehensive consultancy** comprehending taxation, balance sheet matters and legal aspects of the energy service project, which suits well with the proposed comprehensive look at all financing implications. For FIs this is still the exception. Leasing typically includes consultancy on contract design and management, insurances, commissioning of contractors, accounting, controlling and payout of invoices, VAT-clearing, to list the most important services. This may result in reduced overall transaction cost. Of course consultancy for taxation, accounting and legal issues can also be sought for separately, as long as all implications are considered.
- For suitable **project sizes**, no concrete figures can be given. To justify transaction cost of setting up an external financing a minimum financing volume is required. Concrete minimum figures vary between € 50.000 and € 500.000 depending on the individual FI.

The more a project can be standardized, the smaller the financing volume may be. A well prepared project prognoses and documentation (see below) provided by the project developer also reduces transaction cost. Compared to credit based financing through FI's, LFI's tend to have a somewhat higher involvement resulting in larger financing volumes required.

- In many cases what is being called **forfeiting** is in fact just a **Cession** of part of the contracting rates (interest rates of the investment) from the ESCo to the FI. The ceded receivables serve as (additional) collateral for a credit or leasing finance contract. In return the creditor or lessor should take over financial performance risks of the client.
- (Pure) **forfeiting** would be a cession of receivables without an underlying financing agreement (credit or leasing). The FI buys the financing share of the future contracting rates and pays a discounted present value directly to the ESCo. Forfeiting finance in this sense was attempted by some ESCOs in Austria, but it is only known a bit in praxis and often not possible to arrange because of contractual arrangements. Which are e.g. the precondition that the receivables are legal rightful and undisputed. This means the Client has to approve the implemented EC-measures and the amount of the ceded Contracting rates must be fixed.

## 8.2. Conclusions and Recommendations

We keep the customer perspective and describe the conclusions and recommendations primarily from the point of the party who seeks financing.

- Generally, **all financing options described are suitable** for financing energy supply and conservation investments. It is not possible to recommend any particular financing option or

<sup>24</sup> For the public sector special regulations apply to avoid capitalization of finance leases.



product as best suited for energy service financing. Each option has its advantages and disadvantages as shown in the broad range of implications in the customer demand profile.

- Finding the best available financing requires a **comprehensive look at all implications of any financing option** including securities required, transaction cost, taxation and balance sheet effects. The best financing option cannot be recognized by a simple look at the lowest interest rate or annuities offered. It depends on the borrower's background as well as the specific project. This requires the integration of bookkeeping and tax consultancy into the financing decision.

The **customer demand profile** from chapter 4.2 can be used as a **checklist** to make sure that all important implications of the project financing have been considered.

For large projects, a comparison of the broad range of implications from the five categories could be accomplished by way of cost-benefit-analyses<sup>25</sup>, allowing integrating monetary and other criteria into one evaluation system.

- The proposed **customer demand profile** offers this comprehensive perspective and may serve as a checklist to be adapted to the specific situation of the customer. Likewise, the attached evaluation matrix of the different finance options allows to take a comprehensive look and can be adapted to compare concrete finance offers.
- A prognosis of the **profit and loss accounts will best reveal the total effect of all quantifiable cost** for each financing option. In addition the indirect cost like management expenditure or a decline in balance sheet performance ratios need to be taken into consideration to find the best finance option.
- From a customer perspective, it is desirable to **base debt service on the project cash flow** as opposed to basing it on the customer's creditworthiness alone. Debt should be repayable from future project income like energy cost savings (performance contracting) or delivered energy (delivery contracting)<sup>26</sup>. This concept requires a better understanding of the nature of energy service projects respectively of the ESCo's business models on the side of the financing institutions.
- Generally speaking, the loan commitment for a **credit financing** is mostly based on the debtor's creditworthiness and not on the cash flow of the project invested in. Banks tend to view themselves as pure money lenders, not being concerned with the project, the funds were borrowed for. In contrary LFI's own the assets and make money by leasing it out. They are much closer to the actual usage of the investment and generally have a better knowledge and judgement of the market of the investment and the expected return on it.
- Leasing financing legally requires that **no automatic transfer of ownership** (without reimbursement) is settled in the Energy-Contracting contract. Otherwise it is considered as a equipment supply contract. In other words: if a performance contract includes a definite transfer of ownership to the client at the end of the contract term, a leasing financing is not possible.

**Existing EPC model contracts** often include a fixed transfer of ownership free of charge after

---

<sup>25</sup> This kind of analyses is also applied to evaluate ESCo-proposals to functional specifications/ tenders

<sup>26</sup> Progress of the "Energy Efficiency Financing Protocol"-initiative will hopefully help in supporting this case.



contract termination. These have to be revised if you want to allow for a leasing finance option.

- Not accounted for leasing finance agreements can have a **substantial influence on the balance sheet performance ratios** and confine their explanatory power. The reader of the financial statement, who does not possess additional information, will receive a distorted image of the assets and financial situation of the enterprise, e.g.
- Creditworthiness performance ratios like debt ratio or equity-to-fixed-assets ratio will be positively distorted.
- Cash flow and derived ratios like debt-redemption-duration are misleading.
- Profitability ratios like total-capital-profitability are not heavily influenced by not accounted for lease agreements.
- We recommend differentiating **between financing** on the one hand side and **technical+economic services** on the other. ESCo's are experts in technical, economic, and organisational matters of Energy-Contracting, which is what they should be commissioned for. Financing is not necessarily their core business. ESCo's can be considered as a vehicle and facilitator for financing. In many cases including a financing institution (FI) as a third party to take over financing matters and risks makes good sense.
- Financing is a service which can be tendered for the best offer and conditions. Make it a **competition between different financing alternatives**.
- It is possible to **combine operate und finance lease** in one project, to make use of the tax or balance sheet accounting advantages, for the leasable portion of the investment. Due to higher transaction costs for the LFI, this requires a higher project volume.
- To allow FI's (and yourself) a solid basis for decision, it is important to **prepare a meaningful and comprehensive project description**, including a cash flow and profit and loss prognosis over the complete term of the project. This also requires a sensitivity analyses for the most critical parameters of the project. (More details and templates in chapter 8.3.3).
- **Sale-and-lease-back** contracts are mainly used to finance overall building projects, not just EPC-measures. In many cases the purpose is to realize "hidden reserves" e.g. in public buildings. If a Sale-and-lease-back financing is used for a building project, it is strongly recommended to write minimum performance standards and guarantees e.g. for thermal refurbishment or maximum energy consumption into the terms of reference.
- **Forfeiting:** This kind of finance model would also help to overcome some of the balance sheet problems of ESCos and share project risks according to the project partner's strength and capabilities.

To meet the precondition that the receivables must be legal rightful and undisputed, the standard EC-contracts must be adapted by the Client's approval of the EC-measures and by a fixation of the Contracting-rate (especially as finance share). Additionally the integration of a bonus malus system as an incentive for the performance of the ESCo is possible, e.g. in form of a payment obligation.



## 8.3. Recommendations for Preparation of Financing

### 8.3.1. How to Determine Your Specific Financing Demand Profile?

In order to help determining your specific financing demand profile, we recommend using the customer demand profile from chapter 4.2 as a template. Go through each of the six categories and subcategories and determine your individual financing needs and framework conditions. And what kind of securities you can provide in return. This may serve as good a preparation for the negotiations with the financing institutions.

### 8.3.2. Standardized Financing Project Flow

The following key steps will have to be accomplished to achieve a financing commitment for a successful EC project:

1. Approach and **inform Financing Institute (FI)** as early as possible about EC project planned.
2. Preparation of necessary **financing documentation** (for template see chapter 8.3.3)
3. **Preliminary assessment** of the potential borrower and the project through FI
4. At this point the FI either refuses to finance the project or issues an “**Indicative Term sheet**”. Such an indicative Term sheet states - without any commitment of the FI - the main terms and conditions of a possible financing. This could also include some additional requirements to the project structure.
5. The Term-sheets of **different FI should be compared and ranked**. Based on this ranking it is advisable to enter into detailed negotiations with only 2-3 banks in parallel.
6. The **detailed negotiations** primarily deal with conditions of the proposed loan-contract. Each bank will insist on their individual draft of a loan-contract. Loan contracts are much more extensive than indicative Term-Sheets. It could be advisable to consult a lawyer regarding specific legal questions out of the loan contract.
7. The **final decision** which FI to choose should involve the whole range of financing implications as listed in chapter 4, encompassing financing cost and terms, legal implications, tax and balance sheet effects as well as management expenditure and of course the “chemistry” between the persons and institutions involved.

An early involvement of the financing institution is also advisable recommended in order to be able to consider particular regulations and requirements e.g. eliminate automatic transfer of ownership regulations at the end of a contract term from model contracts. Otherwise a particular finance option - like in the latter case leasing - is not feasible.

### 8.3.3. Description of Project Documentation to be provided by Customer

The following documentation has to be provided to a Financing Institute in order to receive a financing offer:

- Project description of real estate (and EC-project) to be financed
- Schedule of Investment costs of EC-measures with short technical description (specifications)
- (EC-Project-)profit and loss forecast over project term (at least over financing term)



- (EC-Project-)cash flow forecast over project term (at least over financing term) including
- Sensitivity analysis of relevant project parameters
- Risks and Opportunities analysis
- Information about borrower, especially if a commercial entity:
  - Audited annual financial statements (last three years)
  - Current administrative documents like company registration, insurance policies, ...

The FI will use this documentation to assess creditworthiness and financing conditions.

#### 8.3.4. FI's Wish List for Securities

Securities typically asked for by FI's are (in order of preference):

- Mortgages - considered as high security value
- Other collateral securities like project assets (if reusable) - only percentage of investment cost considered
- Loan guarantees especially from public bodies or parent companies - high security value (depending on credibility of guarantor)
- Project cash flow, especially if FI can take over (or contract another ESCo) project - unfortunately considered as a risky security



Criteria	Customer expectations	Credits/Loans	Finance-Leasing	Operate-Leasing	Forfeiting
<b>Direct financing cost</b>	<b>Costs as low as possible:</b>				
	<ul style="list-style-type: none"> <li>✓ Interest rates, fees, ...</li> </ul>	<ul style="list-style-type: none"> <li>✓ Repayment + interest (declining)</li> <li>✓ Single payments<sup>27</sup>:               <ul style="list-style-type: none"> <li>- Credit fee (0,8% of volume)</li> <li>- Handling charge (negotiable)</li> <li>- Notary fee</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>✓ Lease payments (annuity)</li> <li>✓ Single payments<sup>2</sup>:               <ul style="list-style-type: none"> <li>- Handling charge (negotiable)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>✓ Lease payments (annuity)</li> <li>✓ Single payments<sup>2</sup>:               <ul style="list-style-type: none"> <li>- Contract fee (1% of total lease payments)<sup>28</sup></li> <li>- Handling charge (negotiable)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>✓ A fixed part of the contracting rate will be ceded to a FI</li> <li>✓ FI pays the sum of the receivables reduced by a discount to the ESCo</li> <li>✓ Discount consists of:               <ul style="list-style-type: none"> <li>- Re-financing costs for whole duration (interest, risks)</li> <li>- Provision and administration fee</li> <li>- Profit margin</li> </ul> </li> <li>✓ Repayment from client according to an instalment plan</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Extent of financing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Part financing only (typically 70 - 80%)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Financing of total investment incl. soft cost (90 - 100% financing)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Financing of total investment incl. soft cost (90 - 100% financing)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Flexible: financing of total investment or parts of it (0 – 100%)</li> </ul>
<ul style="list-style-type: none"> <li>✓ Subsidies: Compatibility, eligibility</li> </ul>	<ul style="list-style-type: none"> <li>✓ Yes, reduces loan or interest rate<sup>29</sup></li> <li>✓ Application by debtor (owner of investment). Typically no support from bank</li> </ul>	<ul style="list-style-type: none"> <li>✓ Yes, reduces lease rate</li> <li>✓ Application by lessee economic (owner of investment) or lessor on behalf of lessee.</li> <li>✓ special know how required – typically leasing banks have subsidy specialists</li> </ul>	<ul style="list-style-type: none"> <li>✓ Yes, reduces lease rate</li> <li>✓ Application by lessor (owner of investment)</li> <li>✓ special know how required – typically leasing banks have subsidy specialists</li> </ul>	<ul style="list-style-type: none"> <li>✓ Yes, reduces finance volume of the ESCO and contracting rates</li> </ul>	

<sup>27</sup> Values applicable in Austria

<sup>28</sup> by unlimited useful life, cancellation possibility after 10 years (1% of gross 36 monthly payments)

<sup>29</sup> Some subsidy programmes support interest rates rather than direct investment subsidies



Criteria	Customer expectations	Credits/Loans	Finance-Leasing	Operate-Leasing	Forfeiting
<b>Legal aspects</b>	<b>Legal implications</b>				
	✓ Financing term	✓ Flexible: according to customer demand. Usually below useful life time	✓ Flexible: according to customer demand (no legal regulation). Below useful life time of asset	✓ Object oriented: Basic lease term: 40 – 90% (mobile), < 90% (immobile) of useful life	✓ Fixed period according to customer demand, minimum 6 months to 5 years or longer. ✓ Usually below useful life time.
	✓ What can be financed?	✓ Complete energy service hardware	✓ Complete energy service investment incl. soft cost (e.g. project development)	✓ Only leasable energy service investment incl. soft cost (e.g. project development)	✓ investment without financing and service costs
	✓ Cancellation of contract	✓ Depends on contract type, usually fixed terms. ✓ Short rate penalties apply for premature cancellation	✓ Depends on contract type, usually fixed terms. ✓ Short rate penalties apply for premature cancellation	✓ Generally no cancellation during basic lease term possible	✓ Generally no cancellation during contract term possible
	✓ Legal and economic property aspects	✓ Debtor is legal and economic owner (bank may put retention of title or lien)	✓ Lessor is legal owner ✓ Lessee is economic owner (lessor may hold retention of title)	✓ Lessor is legal and economic owner	✓ ESCo realizes the investments ownership is transferred at the beginning of the EPC-contract.
	✓ Transfer of ownership at end of term	✓ Debtor remains owner ✓ EC contract may include transfer of ownership	✓	✓ Lessor remains owner ✓ EC contract must not include automatic transfer of ownership to client	✓ EC contract should not include transfer of ownership at the beginning.
✓ Responsibility for operation and maintenance	✓ Debtor is responsible for o & m at his own risk	✓ Lessee has to perform o & m and to insure the investment according to lessors requirements	✓ Lessee has to perform o & m and to insure the investment according to lessors requirements	✓ O&M will usually be included in the energy service contract and done by the ESCo. It will be financed by the contracting rate.	





Criteria	Customer expectations	Credits/Loans	Finance-Leasing	Operate-Leasing	Forfeiting
<b>Collateral/ Securities</b>	Reduce securities requested and own risks:	Bank wishes to safeguard loan. Generally securities are based on debtor, not on project. Securities ~ 100 %	Lessor wishes to safeguard lease object. Generally securities are based on project with some additional debtor liabilities	Lessor wishes to safeguard lease object. Generally securities are based on project with some additional debtor liabilities	FI wishes to safeguard contracting rates. Securities are based on debtor, only partly on project.
	✓ Finance based on project cash flow	✓ No project finance but client finance. Repayment based on company cash flow and economic key figures, not project cash flow	✓ Project cash flow accepted as main security (requires detailed project check and know how) ✓ Cession of revenues e.g. from feed in tariffs and insurances.	✓ Project cash flow accepted as main security, (requires detailed project check and know how) ✓ Cession of revenues e.g. from feed in tariffs and insurances.	✓ In reality client based finance and not project finance. Repayment based on client's creditworthiness. ✓ Theoretically (and desirable) project cash flow should serve as project financing.
	✓ Financial securities	✓ Typically equity capital required (> 20 %) ✓ Additional securities like bonds (Hermes, ÖKB) and guarantees from parent companies depend on specific project	✓ Equity capital required (0-30 %) (some client commitment required) ✓ Insurances for project equipment (elementary-, break down- and interruption of service insurance) ✓ Additional securities like bonds and guarantees from parent companies depend on specific project ✓ Public entities: non-appropriation-risk for lessor	✓ Equity capital required (0-20 %) (some client commitment required) ✓ Insurances for project equipment, (elementary-, break down- and interruption of service insurance) ✓ Additional securities like bonds (Hermes, ÖKB) and guarantees from parent companies depend on specific project ✓ Public entities: non-appropriation-risk for lessor	✓ Guarantees or aval from client's bank or irrevocable confirmed letter of credit. ✓ Creditworthiness of client and country risks is the basis for calculation.



Criteria	Customer expectations	Credits/Loans	Finance-Leasing	Operate-Leasing	Forfeiting
	<ul style="list-style-type: none"> <li>✓ Tangible securities</li> </ul>	<ul style="list-style-type: none"> <li>✓ Desired/required,</li> <li>✓ Entry in land register, lien on movable objects, reservation of property rights</li> </ul>	<ul style="list-style-type: none"> <li>✓ No, because lessor holds property title until payment of last rate!<sup>30</sup></li> </ul>	<ul style="list-style-type: none"> <li>✓ No, because lessor holds property and economic title</li> </ul>	<ul style="list-style-type: none"> <li>✓ Pledge on assets</li> <li>✓ Liens on equipment</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Personal securities</li> </ul>	<ul style="list-style-type: none"> <li>✓ Applicable for small projects only</li> </ul>	<ul style="list-style-type: none"> <li>✓ Applicable for small projects only</li> </ul>	<ul style="list-style-type: none"> <li>✓ Applicable for small projects only</li> </ul>	<ul style="list-style-type: none"> <li>✓ No</li> </ul>

<sup>30</sup> Assets connected to object become part of it (ABGB § YYY). This risk has to be mitigated



Criteria	Customer expectations	Credits/Loans	Finance-Leasing	Operate-Leasing	Forfeiting
<b>✓ Taxation</b>	<b>Reduce taxable income:</b>		<b>Lessor can support customer to save taxes in order to offer the cheapest overall finance solution</b>	<b>Lessor can support customer to save taxes in order to offer the cheapest overall finance solution</b>	
	✓ Tax deductible expenses	✓ Interest and depreciation (linear AfA-tables) are tax deductible. Redemption payments are not tax deductible	✓ Interest and depreciation (linear, AfA-tables) are tax deductible. Redemption payments are not tax deductible	✓ Complete leasing rate is tax deductible.	✓ Forfeiting financing costs and depreciation are tax deductible for the owner of the investment ✓ For the client the contracting rates are tax deductible expenses depending on national tax laws
	✓ Point in time of deductible expenses	✓ Depreciation is linear (sometimes declining) ✓ Interest payments decline over time, declining	✓ Depreciation is linear (sometimes declining) ✓ Interest payments decline over time	✓ Depreciation can be accelerated through "Leasing effect" (shorter depreciation periods for lessors) <sup>31</sup> ✓ Constant rates (annuities) over contract period	✓ Client: Spread over contract duration. ✓ ESCo: At time of settlement of the forfeiting-contract.

<sup>31</sup> VAT law ...



Criteria	Customer expectations	Credits/Loans	Finance-Leasing	Operate-Leasing	Forfeiting
	<ul style="list-style-type: none"> <li>✓ Value Added Tax (VAT)</li> </ul>	<ul style="list-style-type: none"> <li>✓ VAT due on total investment at the beginning of project</li> <li>✓ Public entities can not deduct input tax (additional initial cost)</li> </ul>	<ul style="list-style-type: none"> <li>✓ VAT due on sum of rates at the beginning of project =&gt; VAT also on bank margin<sup>32</sup></li> <li>✓ Public entities can not deduct input tax (additional initial cost)</li> <li>✓ "Similar-to-business-activities" can be made input VAT deductible, (e.g. renting out of advertisement boards)</li> </ul>	<ul style="list-style-type: none"> <li>✓ VAT due per rate (pro rata temporis) =&gt; VAT is dispersed over project duration</li> </ul>	<ul style="list-style-type: none"> <li>✓ Client: VAT is charged with the contracting rates over the contracting duration (pro rata temporis).</li> <li>✓ VAT, which occurs during the construction phase, is tax deductible for the ESCo.</li> <li>✓ Public entities cannot deduct tax</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Benefits from tax exemptions</li> </ul>	<ul style="list-style-type: none"> <li>✓ Not known</li> </ul>	<ul style="list-style-type: none"> <li>✓ Not known</li> </ul>	<ul style="list-style-type: none"> <li>✓ Not known<sup>33</sup></li> </ul>	<ul style="list-style-type: none"> <li>✓ Not known</li> </ul>

<sup>32</sup> no VAT on interest (UStG § 6 (2) 1994)

<sup>33</sup> tax exempt lease financing US-link energy star paper



Criteria	Customer expectations	Credits/Loans	Finance-Leasing	Operate-Leasing	Forfeiting
<b>Balance sheet &amp; accounting aspects</b>	<b>Optimize balance sheet ratios:</b>				
	<ul style="list-style-type: none"> <li>✓ Capitalization of investment</li> </ul>	<ul style="list-style-type: none"> <li>✓ Debtor is legal and economic owner =&gt; Debtor has to capitalize investment</li> </ul>	<ul style="list-style-type: none"> <li>✓ Lessor is legal owner</li> <li>✓ Lessee is economic owner =&gt; has to capitalize investment</li> </ul>	<ul style="list-style-type: none"> <li>✓ Lessor is legal and economic owner =&gt; has to capitalize investment on his balance sheet =&gt; shortening of balance sheet for lessee</li> </ul>	<ul style="list-style-type: none"> <li>✓ Depends on the legal and economic owner of the investment, he has to capitalize the investment.</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Balance performance ratios</li> </ul>	<ul style="list-style-type: none"> <li>✓ Loan and assets have to be capitalized in the balance sheet account =&gt; negative effects on balance sheet performance figures</li> <li>✓ Public sector: Treated as additional debt =&gt; Maastricht criteria apply</li> </ul>	<ul style="list-style-type: none"> <li>✓ Lease and assets have to be capitalized in the balance sheet account =&gt; negative effects on balance sheet performance figures</li> <li>✓ Public sector: special regulations apply to avoid capitalization of lease</li> </ul>	<ul style="list-style-type: none"> <li>✓ Assets and lease payment obligations are not capitalized in the balance sheet account =&gt; distortion of ratios, e.g. improvement of debt-equity ratio<sup>34</sup></li> <li>✓ Public sector: Maastricht neutral</li> </ul>	<ul style="list-style-type: none"> <li>✓ Positive balance effects for ESCo, because receivables and own liabilities are settled with the forfeiting payment at once.</li> <li>✓ Positive balance effects for client, because he has to settle only the contracting rates and account them as expenses.</li> </ul>

<sup>34</sup> for further explanation, please refer to chapter 8.2



Criteria	Customer expectations	Credits/Loans	Finance-Leasing	Operate-Leasing	Forfeiting
<b>Management expenditure / Transaction cost</b>	<b>As small as possible:</b>	<b>FI wants to reduce transaction cost, (standardized products, increase finance volume =&gt; larger projects)</b>	<b>FI wants to reduce transaction cost, (standardized products, increase finance volume =&gt; larger projects)</b>	<b>FI wants to reduce transaction cost, (standardized products, increase finance volume =&gt; larger projects)</b>	<b>High transaction cost (no standardized product, securities accomplishment problematic)</b>
	✓ One face to the customer	✓ Generally no (ESCO + FI)	✓ Yes, depends on LFI	✓ Yes, depends on LFI	✓ Generally no (ESCO + FI)
	✓ Knowledgeable financing partner	✓ Depends on bank and requires special know how: Energy-Contracting is not a typical core competence of banks	✓ Depends on bank and requires special know how: some LFI have specialized project finance departments for ES	✓ Depends on bank and requires special know how: some LFI have specialized project finance departments for ES	✓ Depends on FI and requires special know how: Energy-Contracting is not a typical core competence of FI
	✓ Consultancy for tax, accounting, legal optimisation and subsidies	✓ Service is limited to financing. Additional tax, legal service typically not included ✓ => higher effort for coordination on customer side ✓ Accounting of investment is done by debtor	✓ Service typically comprehends tax and legal advice => less effort for coordination on customer side ✓ Accounting of investment is done by lessee	✓ Service typically comprehends tax and legal advice => less effort for coordination on customer side ✓ Accounting of investment is done by lessor	✓ Service is limited to financing. Additional tax and legal service are typically not included. ✓ Low efforts for coordination on client's side, but considerable efforts for coordination on ESCo's side.
	✓ Reduce paperwork	✓ Company documentation: last three annual accounts ✓ Some project documentation required: investment plan ✓ Credit report	✓ Documentation depends on project finance (=>operate lease) or company finance (=> credit) ✓ Credit report	✓ Detailed project documentation (investment plan, project cash flow, profit and loss account) ✓ Credit report	✓ Client's company documentation: last three annual accounts => creditworthiness ✓ ESCo: Project documentation (investment plan, project cash flow, profit and loss account, ...) ✓ Credit report
✓ Time to receive financing promise	✓ Typically 1 month after documentation is complete (documentation required depends on security concept)	✓ Typically 1 month after documentation is complete (documentation required depends on security concept)	✓ Typically 1 month after documentation is complete (documentation required depends on security concept)	✓ Typically 1 month after documentation is complete (documentation required depends on security concept)	✓ Typically 1 month after documentation is complete (documentation required depends on security concept)

Table 20: Matrix Financing Schemes - overview