



High-performance energy efficiency standards in buildings in UNECE Region.

Topic 6. Brief overview of issues related to financing of buildings

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Brief overview of issues related to financing of buildings



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The main sources of building financing:

- State or municipal financing programs for EE modernization/capital repair of building
- Accumulation of own financing sources (in case of residential multi family buildings)
- Energy Service/Performance contract
- Loans

Brief overview of issues related to financing of buildings



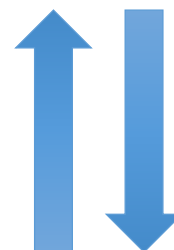
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Loans



Loans for EE modernization

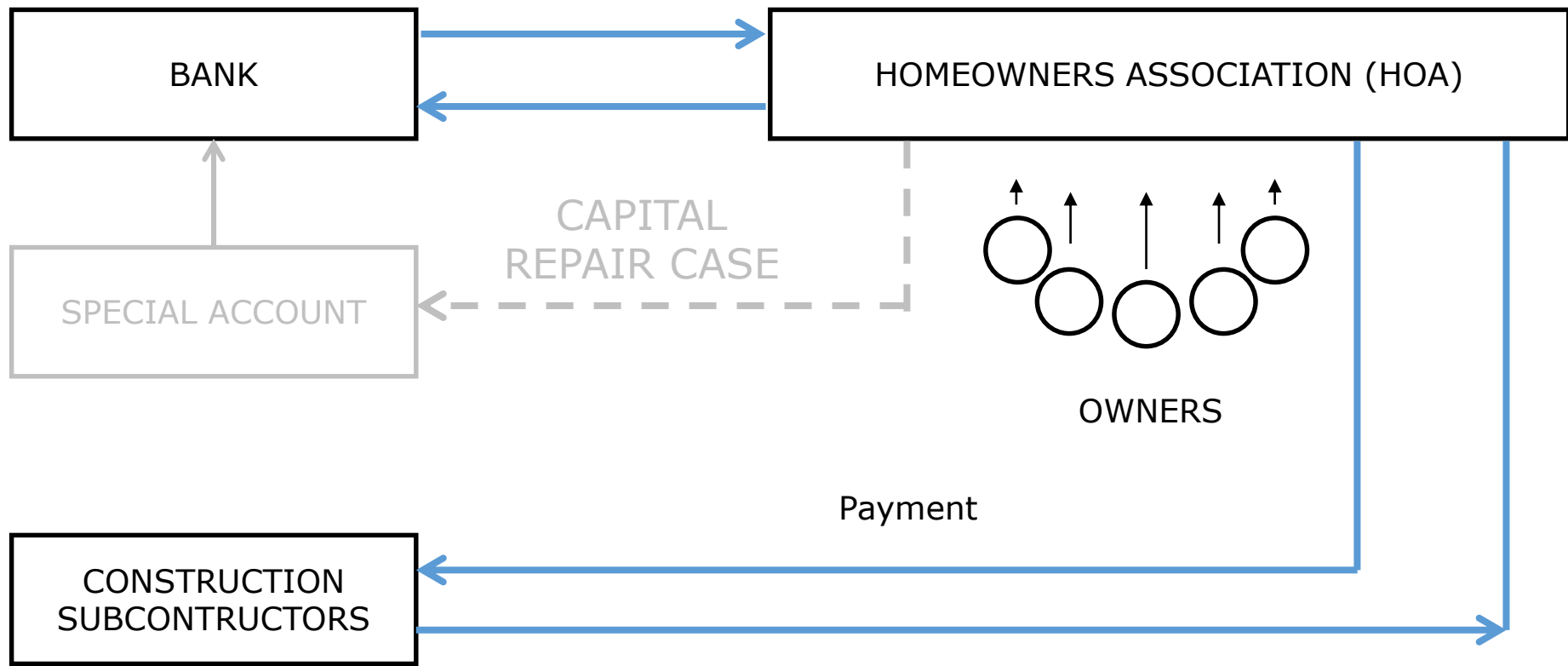
BANK



Typical steps of energy efficient modernization

Loans in Residential Sector

Loans in residential sector (Homeowners Association case)



Implementation of EE modernization/capital repair

Loans in Residential Sector



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The main bank requirements for the loan:

- Decision of raising a loan must be taken at the common meeting of owners
- The result of the meeting – a protocol, which includes the following information:
 - Record of common decision to raise a loan
 - List of planned works
 - Bill of quantities of prospective works
 - Terms and date of prospective works
 - Detailed information about subcontractors
 - Information about bank, terms and amount of the loan

Loans in Residential Sector



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Usually borrower must collect a package of necessary documents and submit it to the bank:

- This package includes:
 - Application form from the bank
 - A protocol of the owners meeting
 - Financial document confirming the collection of payments by owners
 - Documents confirming lack of debt to energy supply companies
 - Documents confirming the authority of person acting on behalf of HOA
- The borrower must calculate the monthly payment for each owner:
$$\text{Monthly payment} = \text{Total loan} * \text{Total area of apartment} / \text{Total area of all apartments}$$

Loans in Residential Sector



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Objects of collateral:

- Common premises in possession of HOA/ or authorized person acting on behalf of HOA
- Established reserve fund – must be established by the common decision of owners
- Savings as a result of implementation of EE modernization
- Income from business activities carried by HOA – must be approved by the common decision of owners
- Accumulation of mandatory monthly payments as per regional capital repair program

Loans in Residential Sector



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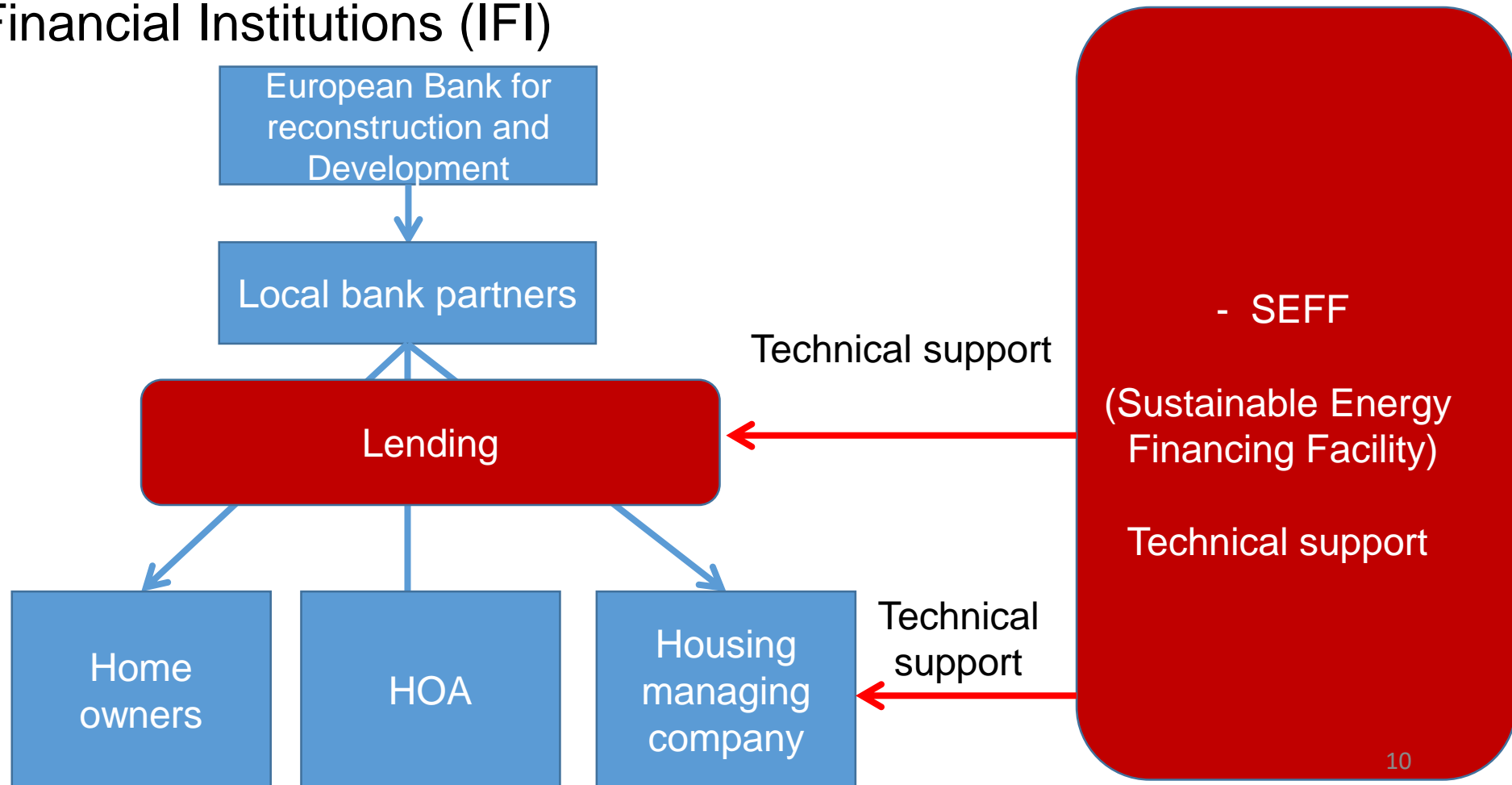
Risks and the main barriers

- Difficult mobilization of owners of apartments with a decision to take a loan
- The lack of collateral of HOA/Condominium
- Low awareness among inhabitants regarding ongoing work on energy-efficient modernization or capital repair
- Weak development of EE lending
- To reduce the bank's risks - very high requirements for the condominium. It is difficult to comply with all eligibility criteria
- Usually low amount of loans issued by the bank
- Inability to provide a low rate of interest

Loans in Residential Sector



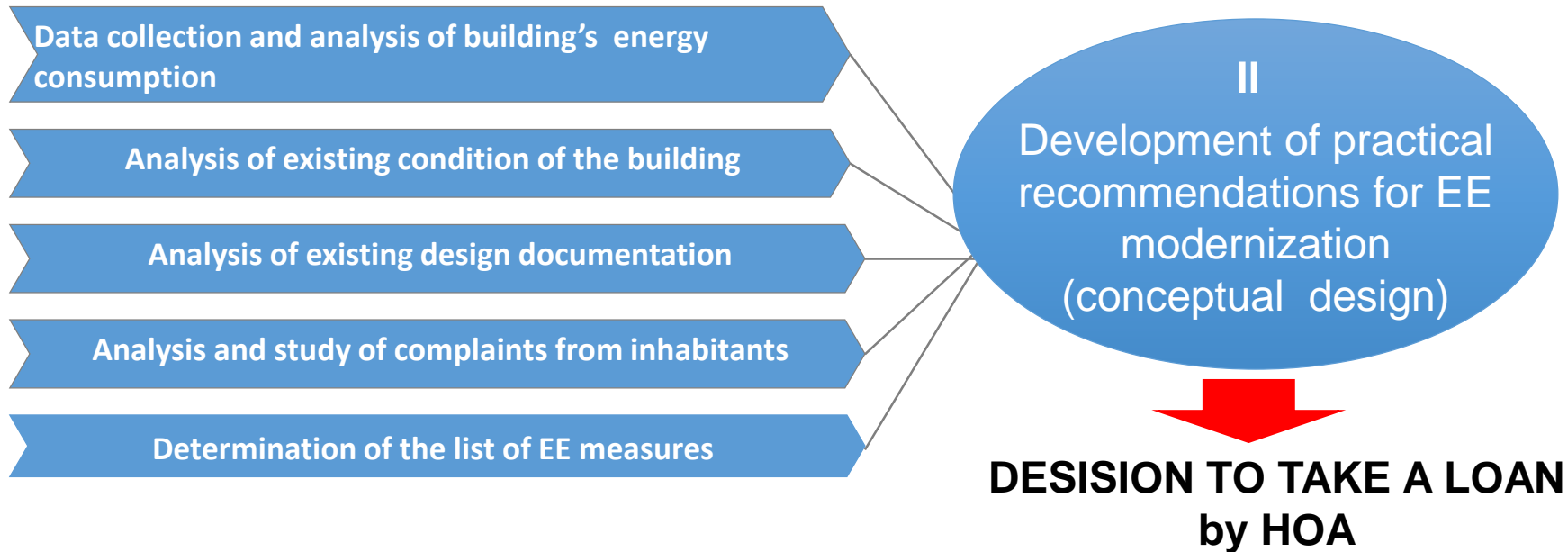
Example of financing scheme for buildings of International Financial Institutions (IFI)



Example of technical support (RuSEFF)



I Energy assessment on site (Visual and instrumental inspection of the building)



Brief overview of issues related to financing of buildings



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Loans with Micro Financing Institutions

Loans in Residential Sector



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Asian Credit Fund

- Microfinance organization
- 5 regions in Kazakhstan, 21 offices spread out the country, 4 branches
- USAID support – guarantee 1mln \$, technical assistance for REEL development by ICF



Residential Energy Efficient Loan (REEL)

REEL loans are designed to provide homeowners in rural areas with the funds necessary for energy-efficient renovation and construction works.

Loans in Residential Sector



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The REEL loans can be used for the following purposes:

- Repair and reconstruction of residential/commercial buildings:
 - Replacement of windows, doors, roofing and flooring
 - Insulation of window and door openings, roofing, attics, basements, flooring, and external and internal walls
- Installation and replacement of heating systems:
 - Replacement of radiators
 - Installation of energy efficient boilers
 - Access to gas pipelines and heating
- Installation of renewable energy sources



Loans in Residential Sector



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Lending criteria

Loan amount—maximum KZT 1,000,000

Loan term—maximum 36 months

Annual effective and nominal interest rate from 40%

Documentation required

Personal Identification

Proof of Address

Construction authorization documents

Real estate ownership documents

Marriage certificate (if applicable)

Business registration documents

Benefits

Zero collateral required

Flexible repayment

Fast loan request review

Free repair and construction works advice

Long-term financial partnership

Loans in Residential Sector



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Free repair and construction works advice



Brief overview of issues related to financing of buildings



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Energy Service Company /Performance Contract



Well known advantages of ESCO (Energy Service Companies)

- ESCOs guarantee energy savings and /or the provision of the same level of energy service at a lower cost by implementing an energy efficiency project
- The remuneration of ESCOs is directly tied to the energy savings achieved
- ESCOs typically finance, or assist in arranging financing, for the installation of an energy project
- ESCOs retain an ongoing operational role in measuring and verifying the savings over the financing terms.
- Off-budget financing – „No“ capital investment
- More professional **planning, maintenance energy saving measures**
- Savings and quality guarantee
- Outsourcing installation and operation risks

Main barriers to energy efficiency investments



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Main barriers

1. Lack of awareness of EE investments and technology
2. Lack of capacity in EE project development
3. Perceived risks and lack of understanding among financial institutions.

Main barriers to energy efficiency investments



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Lack of information

- Technical know-how
- Economic know-how
- Effects on operation procedures
- Know-how of grants and consultancy possibilities
- Adequate potential for energy savings
- Measurement of savings
- Legal background and legal framework
- Skills of staff on contracting
- Procurement process

Lack of motivation

- Lack of interest for energy savings
- Investor-user problem
- Staff cuts
- Lack of proven experience along all process
- Decision makers do not fully understand contract due to very complex agreements

Main barriers to energy efficiency investments



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Market distortion

- Bad market conditions for ESCOs
- Lack of finance possibilities
- Lack of competition
- Lack of funding
- Lack of well educated and trained staff
- Limited creditworthiness of ESCOs
- Limited resources to fund project development
- High project development and transaction costs for bankable projects

Financial barriers

- Limited financial means
- Relatively long pay back times possible
- Trend of energy prices
- Availability of financing
- Availability of guarantees

Main barriers to energy efficiency investments



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- Cherry picking - buildings with high investment needs may stay untouched
- Only short term investment by ESCO, long term is up to public financing (e.g. replace of window or new insulation of walls is not)
- Windfall profits (e.g. legal requirements)
- Legal responsibilities (e.g. in apartment buildings)
- Consumer protection
- Limited influence in users behavior (energy savings will increase profit of ESCO)
- Lack of ESCO wide standards

Energy Service Company



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Building owner's annual costs

Baseline – actual costs

Total costs (old):

- Fuel
- Electricity
- Maintenance Reinvestment
- Personell costs
- Miscellaneous

Contracting rate for ESCO:

- Refinancing
- Service and maintenance
- Risk assumption
- Comfort and value inhancement

Consumption costs (new):

Accounting monitoring through:

- Price adjustment (reference price baseline)
- Outside temperature adjustment (number of heating degree days)
- Usage adjustment

Financial benefits for the facility owner

Costs after renovation

Actual state

Investment

End of contract

Investment life cycle

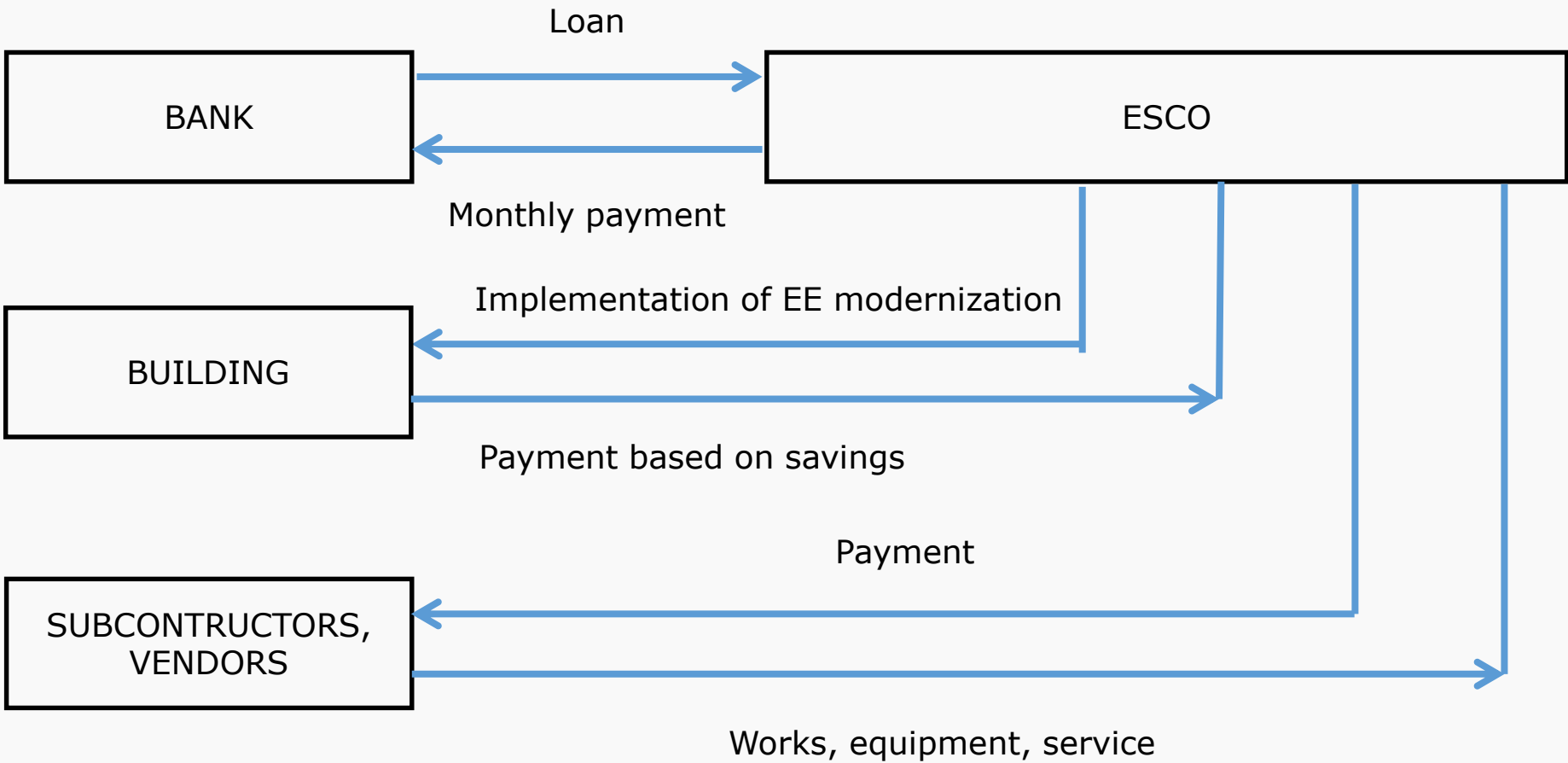
Time

Contracting agreement

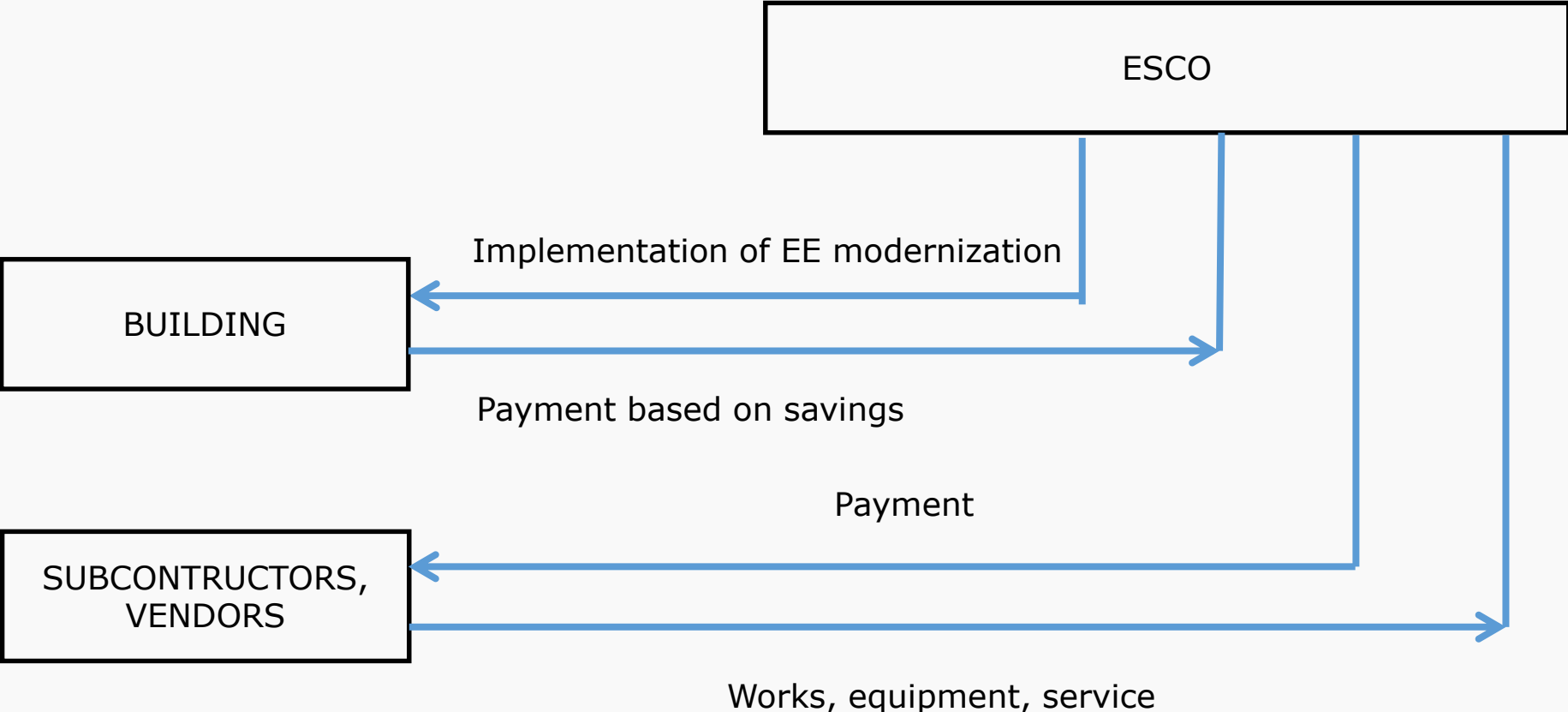
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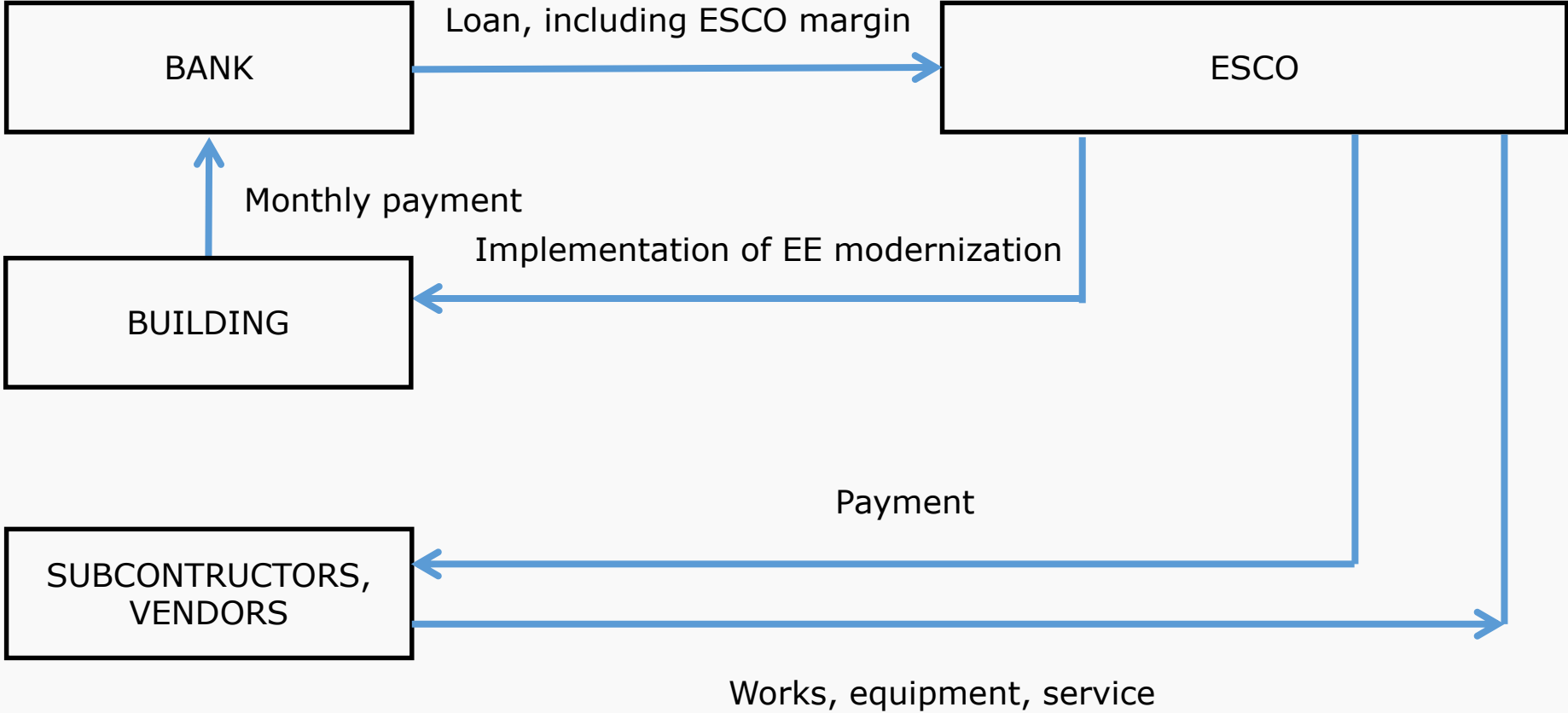
Energy Service Company



Energy Service Company



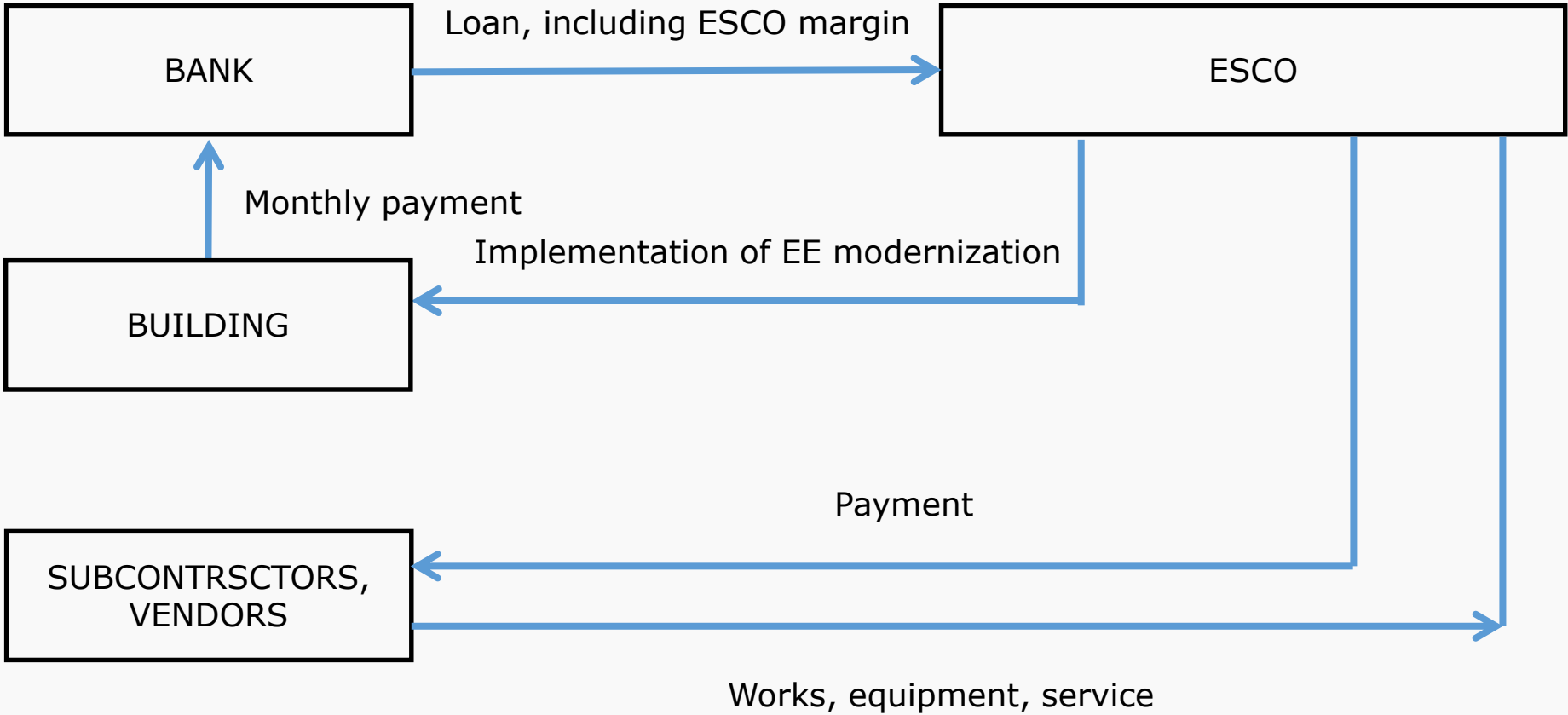
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Energy Service Company



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Typical procedures for contracting

- Defining the rights and obligations
- Specifying penalties
- Methods of payment
- Building a pool of buildings
- Risk sharing, risk management
- Guarantees und obligations
- Target setting according to proven methodology
- Potential analysis based on independent audit
- Selecting suitable facilities
- Calculating the energy cost baseline based on proven data
- Calculating the amount saved by metering system
- Determination of contract period

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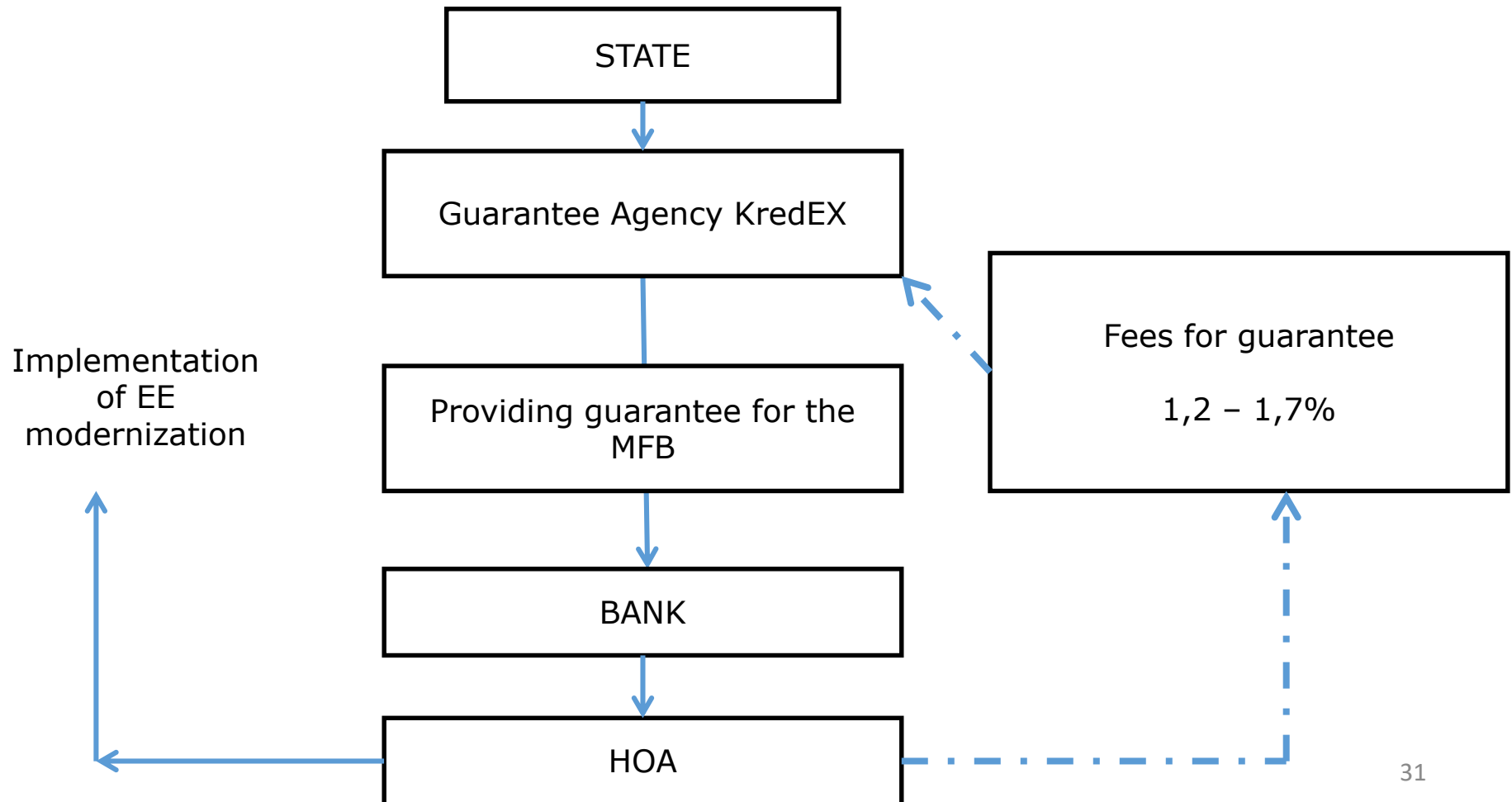


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Funding mechanisms using guarantees

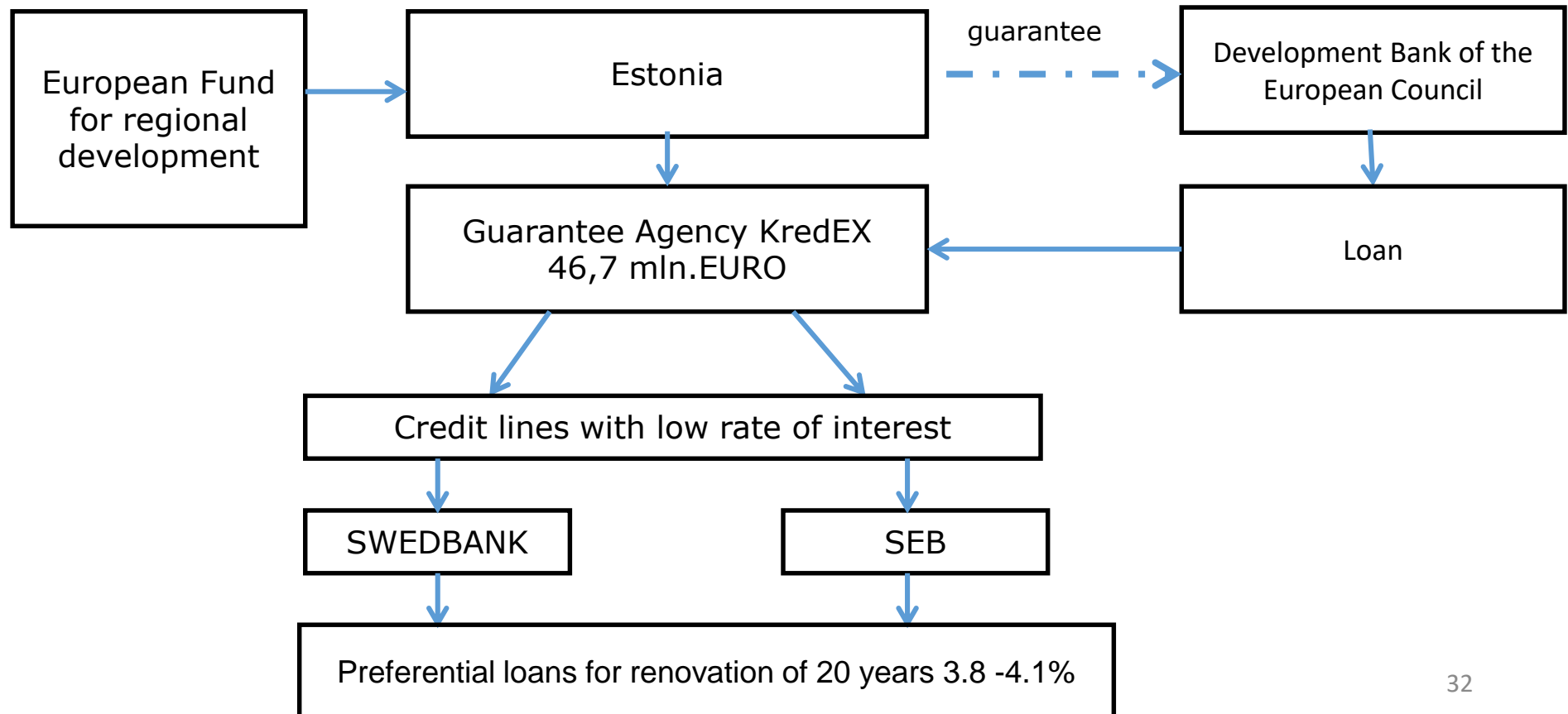
Funding mechanisms using guarantees

Guarantee of loans for capital repairs (Estonia)



Funding mechanisms using guarantees

Attraction of financial resources on external market for loans for the renovation of housing (Estonia)



Funding mechanisms using guarantees



Subsidies for the renovation of apartment buildings (Estonia)

- Complex reconstruction of the house includes works recommended by energy audit
- The amount of benefits depends on the result achieved

The level of subsidies	Savings	EE Class achieved
15	up to 30%	E (less than 250 KW*h/m ²)
25	up to 40%	D (less than 200 KW*h/m ²)
35	up to 50%	C (less than 150 KW*h/m ²)