

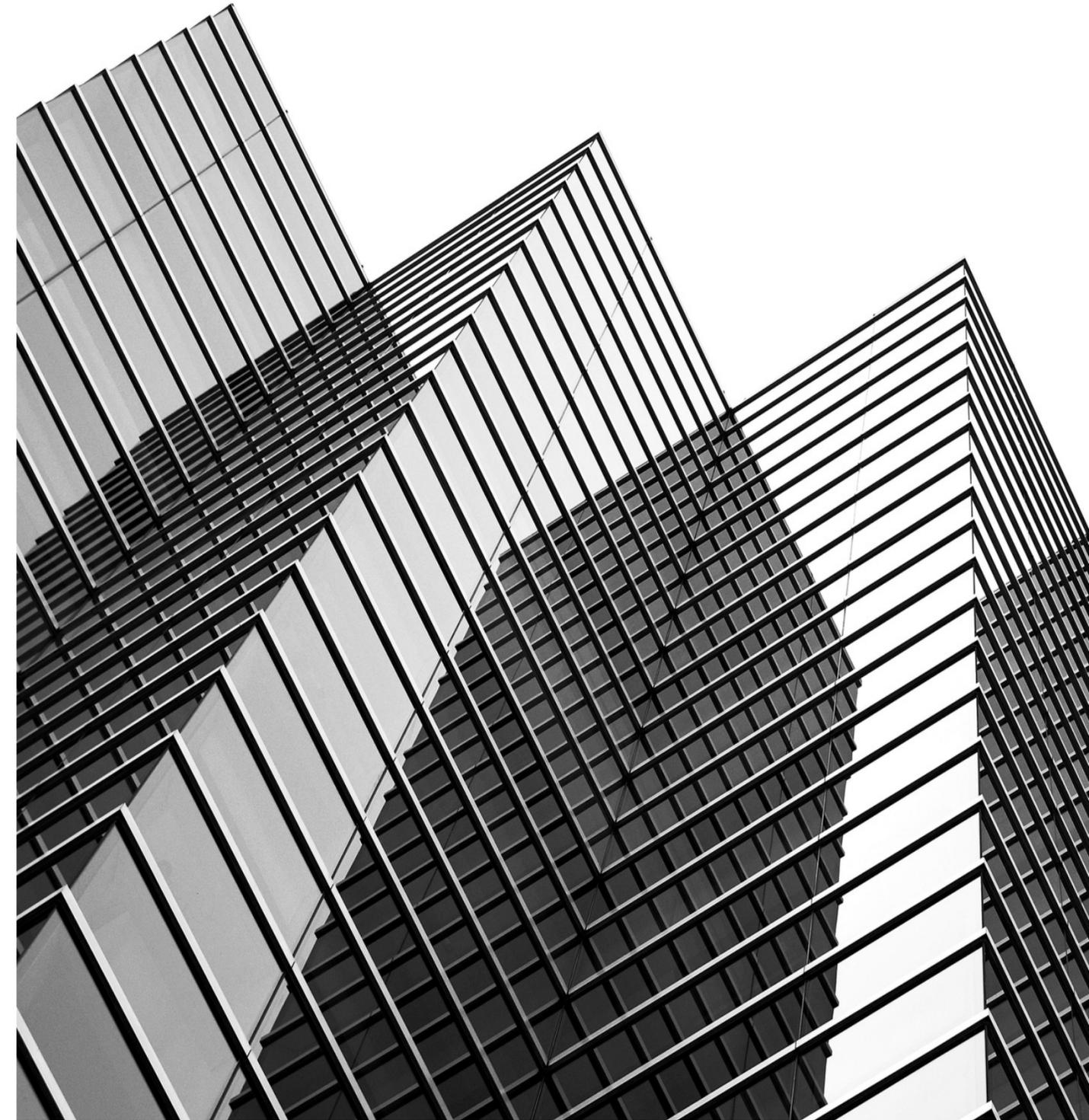


Building Renovation Strategy of the Federation of Bosnia and Herzegovina until 2050

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Content

1. Introduction
2. The existing condition of buildings stock in Federation of Bosnia and Herzegovina
3. Vision and goal of the Strategy
4. Defined strategic priorities and measures
5. Indicative financial framework
6. Recommendations for successful implementation of the Strategy



Energy Community Treaty

Energy Performance of
Buildings Directive
2010/31/EU (EPBD)

Energy Efficiency Directive
2012/27/EU (EED)

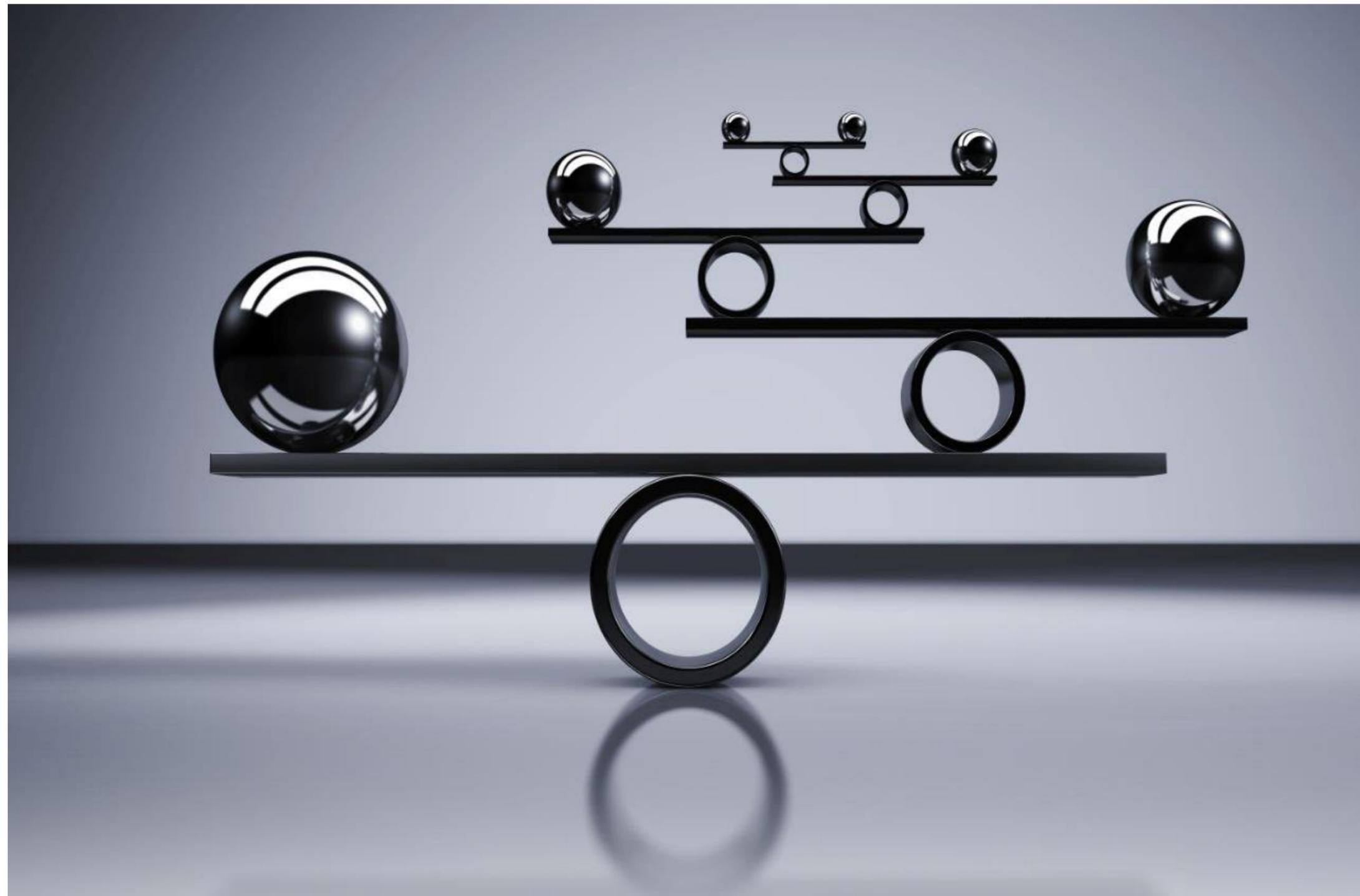
Regulation 2017/1369/EU
on determining the framework for
labeling energy efficiency

Directive 2018/844/EU
on amendments to EED and
EPBD

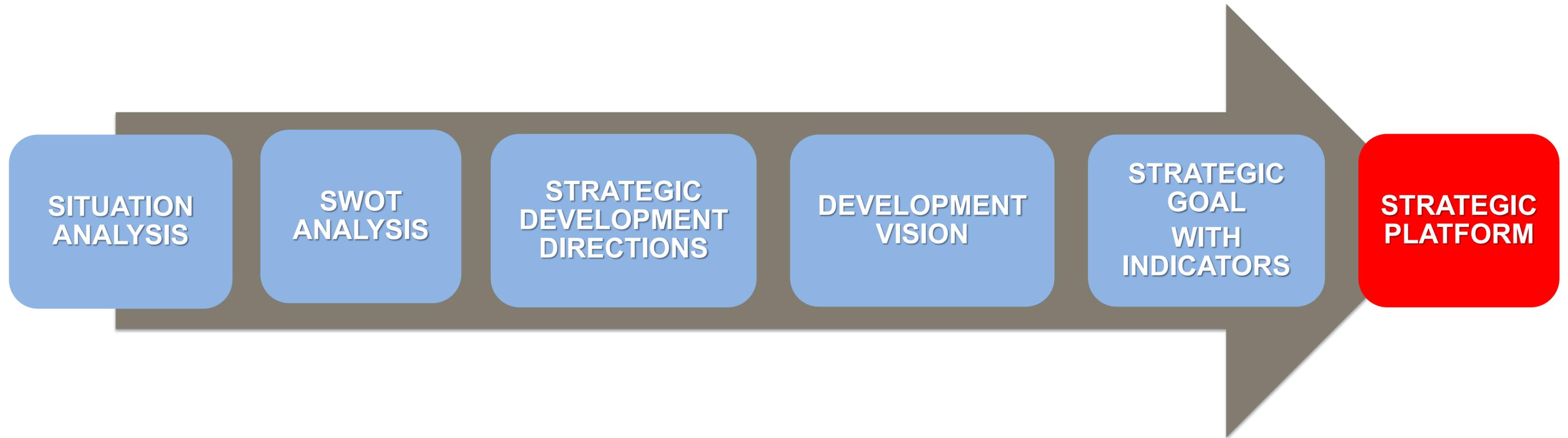
Directive 2018/2002/EU
on amendments to the EED

Regulation 2018/1999/EU
on the governance of the energy
union and action in the field of
climate

The **long-term building renovation strategy** presents a fulfilment of international obligations, but also an opportunity **for long-term and sustainable economic growth, and development of BiH**



Strategic Platform



Strategic challenges

1. How to reduce energy consumption in buildings and dependence on fossil fuels in the supply and consumption sector?
2. How to adapt to climate change and contribute to the low-emission development of FBiH?
3. How to ensure stable and safe energy supply?
4. How to ensure sustainable financing of EE measures in buildings?
5. How to use the large number of international funds to finance EE?
6. How to ensure smooth implementation of all activities in the field of EE and more efficient intersectoral cooperation at the FBiH level?
7. How to increase the efficiency of the existing information systems of records?
8. How to accelerate economic development?
9. How to achieve greater safety and a longer lifespan of buildings?
10. How to improve the quality of life of citizens?

Strategic Focuses

1. Reducing energy consumption and CO2 emissions through the implementation of EE measures and increasing the share of RES
2. Decarbonization of the building sector
3. Comprehensive renovation of the building sector using local resources
4. Establishment of long-term and sustainable revolving funds for EE in buildings
5. Financial inclusion through the development of a financing model for the implementation of EE measures for especially vulnerable categories
6. Development of project proposals and digital skills, and application of new technologies and smart solutions in the building sector
7. Comprehensive and integrated information system in the building sector
8. Complete transposition of EU directives related to EE into FBiH legislation
9. Harmonization of regulations relevant to EE at all levels of government in FBiH
10. Circular economy in the building sector

Vision

The building sector in the Federation of Bosnia and Herzegovina is highly efficient and sustainable with the primary function of protecting the health and improving the quality of life of all citizens and their economic prosperity



The strategic goal

Existing building stock in the Federation of Bosnia and Herzegovina transformed into energy efficient and decarbonized building stock by 2050

Consumption of final energy in the building sector, ktoe	EUROSTAT, 2020 1.728,5	BiH, 2050 1.257,3
CO ₂ emission of the residential sector, MtCO ₂ eq	BiH, 2020 7.937	BiH, 2050 2.075

Strategic goal by decades



2030

- Create an environment for efficient strategy implementation
- Renovation of 1.5% of the usable area of residential buildings
- Renovation of 2.5% of the usable area of residential buildings
- 30% of buildings to use district heating
- 30% of buildings to use RES
- Savings of 1,204 GWh
- Reduction of CO2 in the amount of 1,321,000 t

2040

- The energy characteristics of renovated residential buildings and thermotechnical systems are highly efficient
- All new nZEB public buildings
- 70% of buildings use RES
- A total of 12% of residential buildings were renovated
- 47.24% of public buildings were renovated
- Savings in the amount of 2708GWh
- Reduction of CO2 emissions in the amount of 1,780,000 t

2050

- All new public buildings built to the standard in the amount of nZEB as well as all renovated public buildings
- 100% of buildings use RES
- 17.9% of residential buildings were renovated
- 65.50% of public buildings have been renovated
- Savings in the amount of 4,373 GWh
- Reduction of CO2 in the amount of 1,913,000 t

Why is the set goal realistic?

Why are the expected results/indicators achievable?

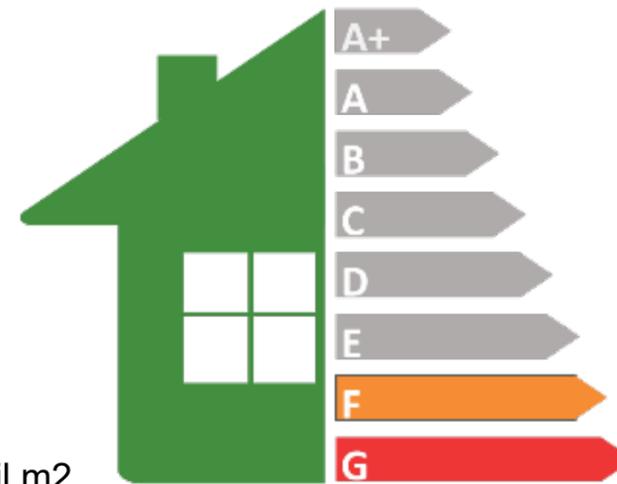


Buildings in the Federation of Bosnia and Herzegovina

Residential buildings: 688,864
50.5 mil m2

Public buildings: 4,608
5.4 mil m2

Commercial buildings: 6,757
7.9 mil m2

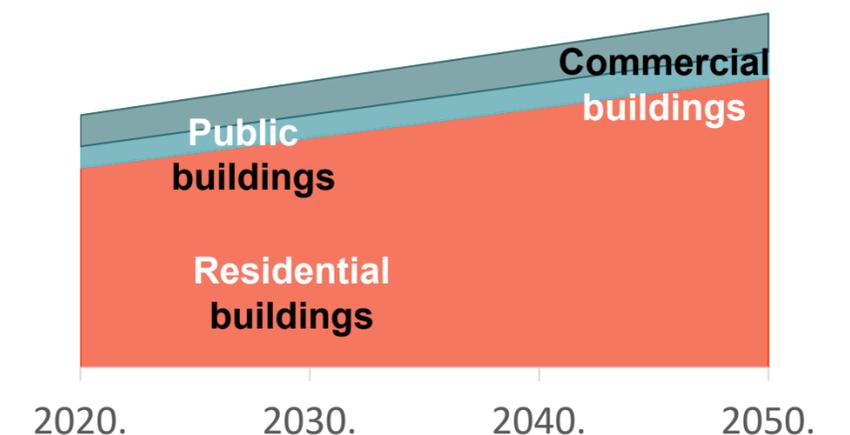
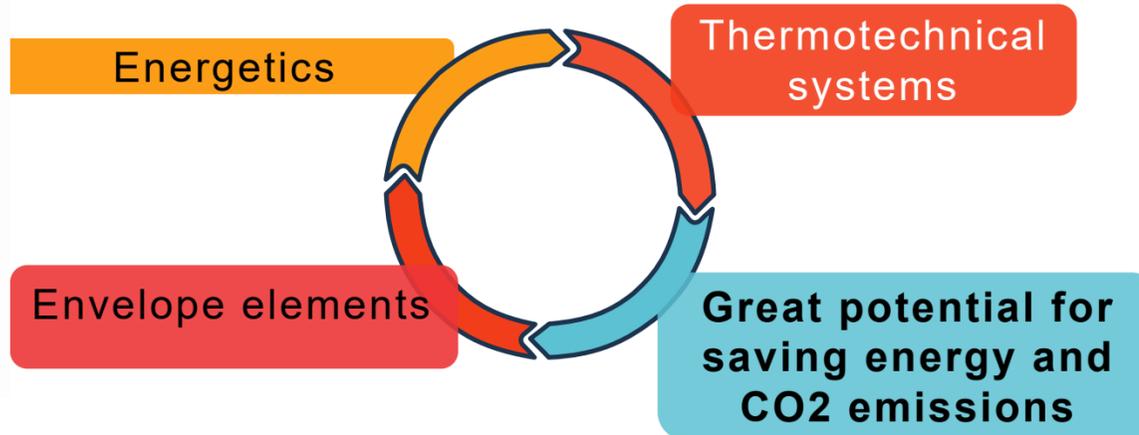


Residential: 688,864
Public: 4,608
Commercial: 6,757

Residential: 990,286
Public: 5,632
Commercial: 8,259

Residential: 50.5 million m2
Public: 5.4 million m2
Commercial: 7.9 million m2

Residential: 73.2 million m2
Public: 6.6 million m2
Commercial: 9.7 million m2



Structure of existing buildings

Energy characteristics of buildings

Estimates of growth until 2050

Concept of energy renovation of buildings

Phase 1

Defining the renewal level

Residential sector
10 levels of renovation
Public buildings
BEEP renewal program
>2030 NZEB

- Reconstruction of the building envelope
- Installation of highly efficient systems
- Use of renewable energy sources
- High efficiency buildings



Phase 2

Cost estimates

Residential sector

- **detailed cost sheet**
- Public and commercial buildings
- harmonized with the BEEP program cost list



Centralization and modernization of district heating systems
Modernization of the electricity supply system



Phase 3

Indicators

- Energy savings
- Savings in CO2 emissions
- Number of renovated buildings
- Renovated usable area
- Engaged workforce
- Number of nZEB buildings

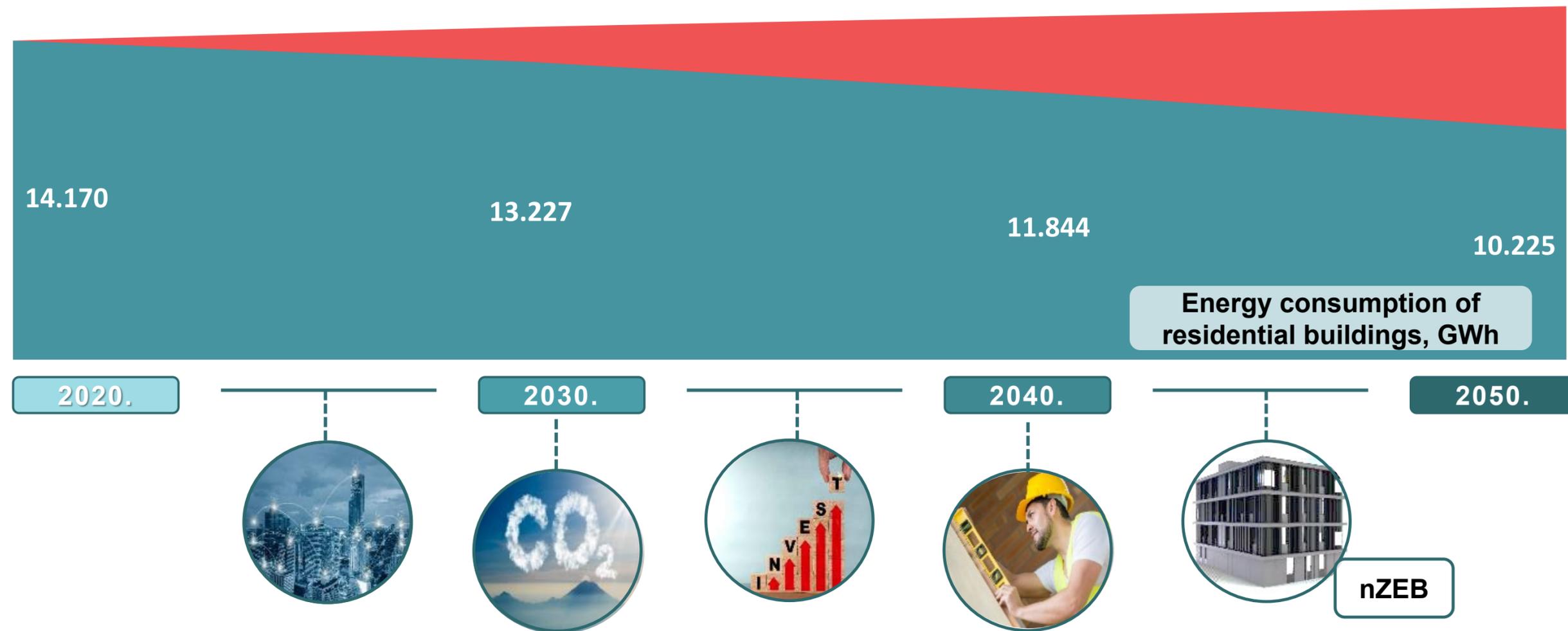
Phase 4

Comprehensive renovation

Residential sector

- **annual renovation rate 1.5% of usable area**
- **Public and commercial buildings**
- **annual renewal rate of 2.5% of the usable area**

Results of implementation of energy renovation of buildings





**STRATEGIC
PRIORITIES**

Transform the existing stock of buildings in F BiH into highly energy-efficient ones

Decarbonize the buildings in F BiH



Encourage the construction of residential and non-residential buildings in the nZEB standard and reduce energy poverty

Carry out construction works and encourage the application of new technologies

Establish a sustainable financial framework for continuous co-financing of renovation

Strengthen institutional capacities and ensure the transposition of EU regulations

1 PRIORITY

Transform the existing buildings stock in FBiH into highly energy-efficient ones



Increase the share of renewable energy sources and security of energy supply in the building sector

2 **PRIORITY**

Develop systems of district heating (centralization with modernization of the heating system), cooling and ventilation, as well as DHW preparation, with the use of RES

Decarbonize the existing building stock in FBiH

Improve the sustainability of urban areas

INDICATIVE FINANCIAL FRAMEWORK
Building renovation strategy in FBiH until 2050

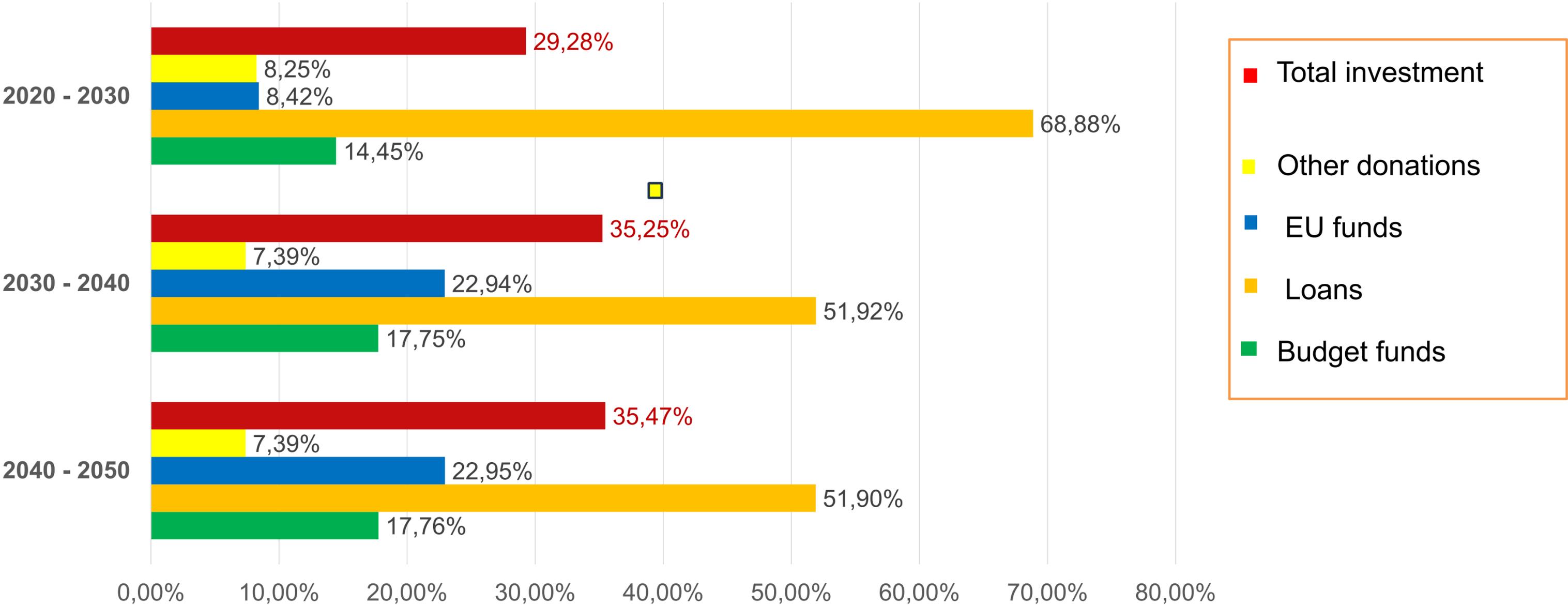
Strategic goal - The existing FBiH building stock transformed into an energy-efficient and decarbonized building stock by 2050		Financing structure (%) [*]	In total (mil. BAM)	Budget of the institution (mil. BAM)	Other sources (mil. BAM)
PRIORITIES AND MEASURES					
1.1. Transform the existing FBiH building stock into an energy-efficient one		78,62%	16.757,04	3.019,83	13.737,21
1.1.1.	Improve the regulatory framework in order to achieve complete harmonization with the EU acquis in the field of EE, which will enable the energy renovation of buildings		1,80	0,90	0,90
1.1.2.	Strengthen institutional capacities at all levels of government and intersectoral cooperation with the goal of energy renovation of buildings		77,40	13,93	63,47
1.1.3.	Establish a sustainable financial framework that will enable the incentive and continuous financing of the renovation of the building sector		49,00	9,80	39,20
1.1.4.	Renovate the existing stock of buildings energetically		16.528,64	2.975,16	13.553,48
1.1.5.	Promote the construction of new residential and non-residential buildings according to the standards prescribed for nZEB		1,00	0,20	0,80
1.1.6.	Encourage the application of new technologies and smart solutions in the building sector		98,80	19,76	79,04
1.1.7.	Reduce energy poverty by increasing EE and using RES in residential buildings		0,40	0,08	0,32
1.2. Decarbonize the existing FBiH building stock		21,38%	4.556,50	544,58	4.011,92
1.2.1.	Increase the share of RES and security of energy supply in the building sector		5,00	1,00	4,00
1.2.2.	Develop systems of district heating (centralization and modernization of heating systems), cooling and ventilation, as well as DHW preparation with the use of RES		4.421,50	530,58	3.890,92
1.2.3.	Improve the sustainability of urban areas		130,00	13,00	117,00
TOTAL:		100,00%	21.313,54	3.564,41	17.749,13

REVIEW BY SOURCES OF FINANCE

Budget	Credit	EU finance	Other donations
3.564,41	12.241,65	3.896,96	1.610,52
16,72%	57,44%	18,28%	7,56%



Indicative financial framework by decades



Recommendations for efficient implementation of the Strategy

- Establish an executive and coordinating interdepartmental body responsible for the implementation of the Strategy.
- Ensure understanding of the role and responsibilities of the Strategy implementation bearer at all levels of government (municipalities, cantons, FBiH).
- To prepare a **"Guide for the successful implementation of the Strategy for the renovation of buildings in the FBiH"**, with a clearly defined hierarchical structure, holders of renovation and their obligations at all levels of government.
- Prepare energy renovation programs and plans.
- Involve all interested parties (citizens/tenants, public sector, policy makers at all levels, scientific-academic community, energy service providers, managers, FI, NGO, IT sector, construction sector, ...) through the formation of working groups.
- Ensure continuous communication and coordination of all participants in the renovation process.
- Promote cooperation and consensus building of all interested parties.
- Promote the development benefits of the Strategy (social, environmental, economic) with the aim of ensuring the support of the general public for the implementation of building renovation.
- To gain trust in reconstruction, by promoting successful examples of reconstruction and participants (the public sector as the leader of reconstruction).
- Improve statistics in FBiH by modernizing statistical processes using modern technologies and using advanced IT solutions.
- Ensure an efficient and permanent system of monitoring and reporting on the dynamics and effects of the implementation of the Strategy.



Thanks for your attention!