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THE SUSTAINABLE BUILDINGS E-LEARNING PROGRAM

Module 7

FINANCING INSTRUMENTS FOR SUSTAINABLE BUILDINGS

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TÜRKİYE SUSTAINABLE BUILDINGS NETWORK

The Türkiye Sustainable Buildings Network was established as part of the “Türkiye Sustainable Buildings Network Project,” which is co-funded by the European Union under the Civil Society Action towards European Green Deal Grant Scheme. The project is coordinated by WRI Türkiye, in partnership with the Zero Energy and Passive House Association (SEPEV) and with the support of the Danish Green Growth Network (DGGN).

The network operates with the aim of supporting climate action in the building and construction sector, promoting green transformation, enhancing the technical knowledge and skills of sector stakeholders, and mainstreaming the concept of sustainable buildings.



As part of this effort, the Sustainable Buildings E-Learning Program has been developed to serve as a comprehensive knowledge resource for all stakeholders in the building sector. The program consists of 10 training modules designed to contribute to the sector's sustainability, energy efficiency, and low-carbon transition goals.

Module 1: Overview of Sustainable Buildings

Module 2: Decarbonization in the Building Sector and the Whole Life-Cycle Approach

Module 3: Sustainable Building Materials

Module 4: Sustainable Construction and Demolition Practices

Module 5: District Heating and Cooling Systems

Module 6: Innovative Building Technologies

Module 7: Financing Instruments for Sustainable Buildings

Module 8: Emissions Trading Systems and the Building Sector

Module 9: Energy-Efficient and Passive Building Design

Module 10: The European Green Deal and the Building Sector

For more information about the Türkiye Sustainable Buildings Network and to access other modules, please visit [the link](#).



MODULE OBJECTIVES

The Financing Instruments for Sustainable Buildings Training Module has been developed within the scope of the Türkiye Sustainable Buildings Network Project. It aims to enhance climate literacy among individuals and institutions, introduce financing mechanisms for sustainable building projects, and provide insights into strategies that can make a difference in this field.

By the end of the training, participants are expected to be able to identify financing sources aligned with sustainability goals in the building sector and acquire fundamental competencies to access these sources.

Upon completion of the module, participants will gain knowledge on the following topics:

- Concepts of Green Finance and Climate Finance
- The Relationship Between Sustainable Buildings and Climate Finance & Green Finance
- Taxonomies and Standards for Sustainable Building Finance
- Actors and Institutions Supporting Green Finance in the Building Sector
- Green-Labeled Products and Standards in the Sustainable Buildings Sector
- Performance Measurement and Evaluation in Sustainable Building Projects



TABLE OF CONTENTS

SECTION 1: Foundations of Green Finance and Climate Finance

- 1.1. Key Findings
- 1.2. Climate Finance
- 1.3. Green Finance
- 1.4. Climate Finance & Green Finance
- 1.5. Comparison of Green Finance and Traditional Finance
- 1.6. The Relationship Between Sustainable Buildings and Climate Finance & Green Finance

SECTION 2: Green Finance: The Driving Force Behind Sustainable Building Development

- 2.1. Defining Sustainability in the Building Sector

SECTION 3: Green Finance Transformation in the Sustainable Building Sector

- 3.1. Environmental, Social, and Economic Sustainability of Buildings
- 3.2. Environmental, Social, and Economic Sustainability of Buildings and the Applicability of Projects in Türkiye

SECTION 4: National and International Policy Frameworks and Regulations

- 4.1. National Policies Supporting Green Finance in the Building Sector
- 4.2. European Union Policies Supporting Green Finance in the Building Sector
- 4.3. International Actors and Organizations Supporting Green Finance in the Building Sector
- 4.4. Taxonomies and Standards for Green Building Finance – EU Taxonomy – Green Taxonomy
- 4.5. Taxonomies and Standards for Green Building Finance - Developments in Türkiye
- 4.6. The Role of the Paris Agreement and Sustainable Development Goals
- 4.7. Carbon Markets
- 4.8. Green Building Certifications and Assessment Systems

SECTION 5: Green-Labeled Products and Standards in the Sustainable Buildings Sector

- 5.1. Green Finance Instruments
- 5.2. Green Loan Markets, Products, and Standards
- 5.3. Green Bond Markets, Products, and Standards
- 5.4. The “Greenium” Effect in Markets
- 5.5. Green Mortgage
- 5.6. Property Assessed Clean Energy (PACE) Financing
- 5.7. Energy Performance Contracts (EPC) and ESCO Financing
- 5.8. Renewable Energy Financing and Power Purchase Agreements for Sustainable Buildings
- 5.9. Private Sector Financing Models for Sustainable Buildings Sector
- 5.10. Other Innovative Financing Mechanisms for Sustainable Buildings
- 5.11. Government Incentives and Policy Support

SECTION 6: Financial Due Diligence and Risk Mitigation Mechanisms

- 6.1. Expectations of Financial Institutions in the Context of Sustainable Building Projects
- 6.2. Expectations from Financial Institutions in the Context of Sustainable Building Projects
- 6.3. Risk Mitigation Mechanisms
- 6.4. Cash Flow Modeling
- 6.5. Monitoring, Reporting, and Verification of Green Finance

SECTION 7: Looking Ahead to the Future of Green Finance

- 7.1. New Opportunities in Green Finance for the Building Sector
- 7.2. Case Studies and International Best Practices

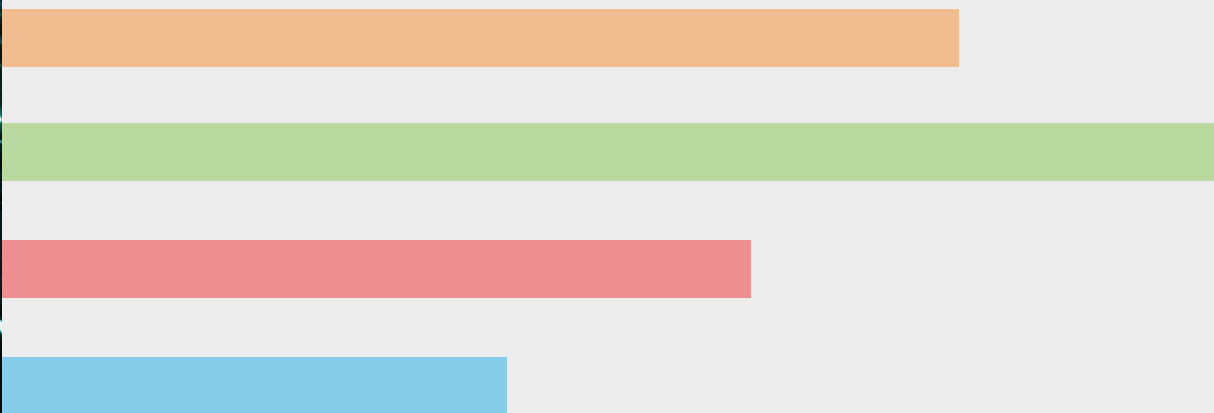
Continuous Learning

References



Section 1

FOUNDATIONS OF GREEN FINANCE AND CLIMATE FINANCE



1.1. Key Findings

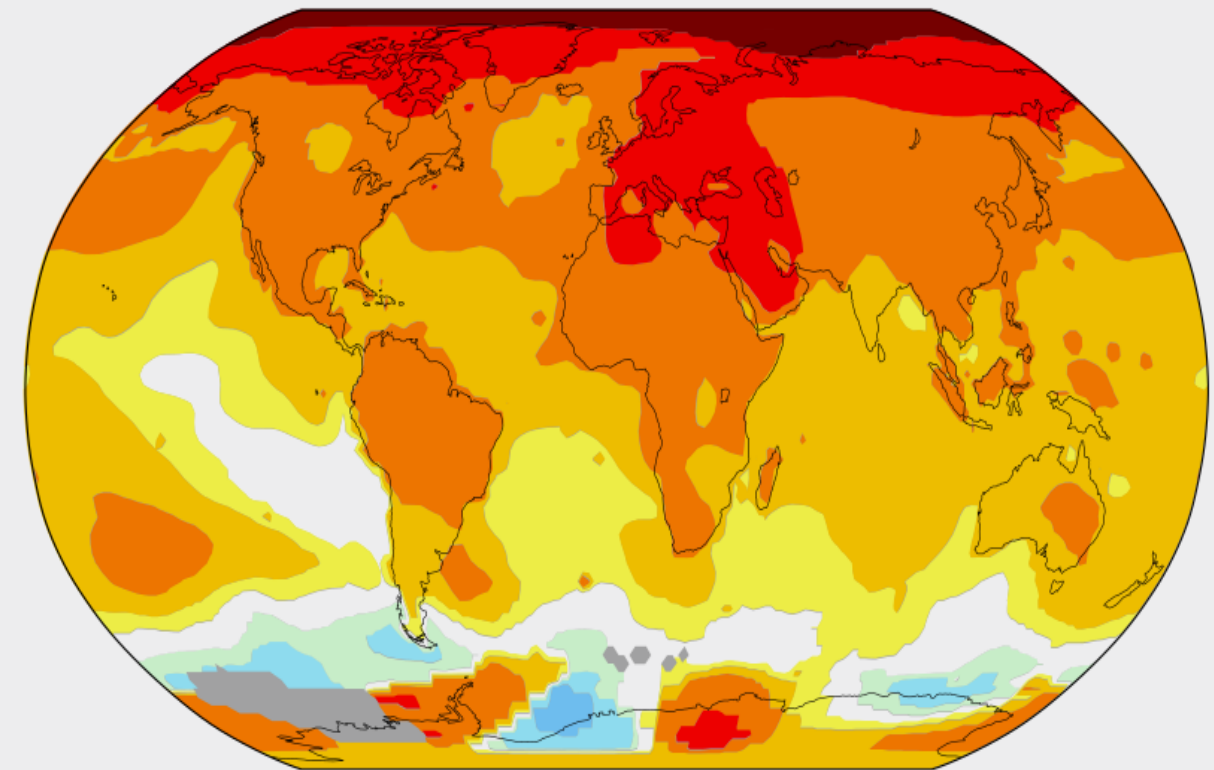
- Population growth and increasing average life expectancy
- Changes in energy demand and the rise of fossil fuels
- Focus on high economic growth
- Increase in per capita income (GDP/population)
- Carbon-intensive growth (tCO₂e/GDP)

These factors contribute to global temperature rise. Under the Paris Agreement and other international climate agreements, countries have set common goals to adapt to the impacts of climate change, including:

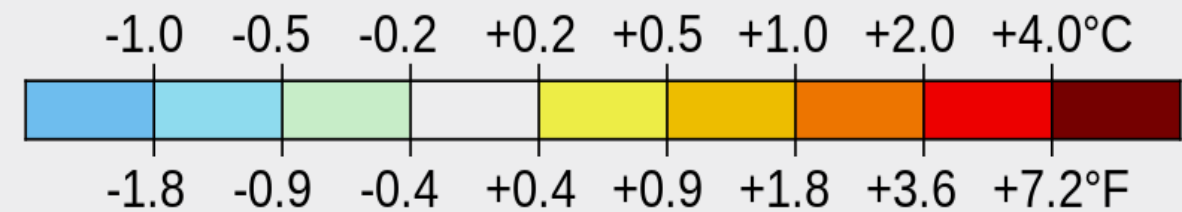
- Limiting global temperature rise through international cooperation,-
- Reducing greenhouse gas emissions,
- Decreasing investments with a negative carbon impact (such as fossil fuel-based power plants that increase carbon emissions and harm the environment),
- Increasing investments with a positive carbon impact (such as renewable energy projects and afforestation initiatives)

Achieving these targets requires substantial financial resources.

Financing mechanisms specifically aimed at combating and adapting to climate change are referred to as Climate Finance & Green Finance.



Trend from 1973 to 2023



Temperature change over the past 50 years

1.1. Key Findings



- The construction, housing, and building sector has traditionally been one of the industries with a high demand for financing sources. The sector's negative impacts on climate change and efforts to mitigate these impacts are crucial in the fight against climate change.
- Additional climate finance sources are needed to fund developments in the field of sustainability within the sector.
- Climate finance requires a nationally or internationally recognized definition that verifies an investment as green and sustainable.
- When deciding to utilize climate finance sources within the building sector, key criteria include the building's sustainability, energy consumption levels, and net carbon impact.
- In line with developments in Europe, the Turkish market is also evolving to meet financing and **decarbonization** needs within both sectoral practices and financing conditions.
- Financing examples from different regions of the world serve as references for both opportunities and future potential in this field.



1.2. Climate Finance

What is it?

The strategic use of financial resources to reduce greenhouse gas emissions and adapt to the impacts of climate change by supporting projects at local, national, and international levels that align with these objectives.

Purpose:

To provide financing for investments aimed at **reducing greenhouse gas emissions, minimizing carbon impact,** mitigating the adverse effects of climate change, and increasing community resilience to climate change.

Target Audience

Developing countries, regions most affected by climate change, governments, nations, and the private sector.

Outcome

Reducing climate risks, addressing climate-related disasters and damages, and supporting adaptation to the adverse effects of climate change through the financing of adaptation projects and resilient ecosystems. **For example, providing financing for the design and construction of buildings resilient to the impacts of climate change.**



1.3. Green Finance

What is it?

Financial resources provided for projects and activities aimed at supporting sustainable development and combating climate change, in line with the **reduction of greenhouse gas and carbon emissions**, the protection of ecosystems, and the sustainable use of natural resources.

Purpose

To ensure environmental sustainability, minimize environmental harm, contribute to the conservation of natural resources, and support sustainable development.

Target Audience

Developed countries, companies making green investments, investors, initiatives promoting environmental sustainability, and the private sector.

Outcome

Reduction of the environmental negative impacts of climate change, conservation of natural resources, environmental sustainability, improvement of ecosystems, management of environmental risks, and financing of sustainable environmental projects. **For example, financing energy-efficient buildings (passive houses, zero-energy buildings).**

1.4. Climate Finance & Green Finance

Climate finance and green finance are largely similar in terms of actors and the resources used. However, the main distinction between these two forms of financing can be found in their focus areas and the carbon impact of the target projects they finance.

Actors:

- **Public Sector:** Governments, Local Authorities, Public Institutions, Ministries
- **Private Sector:** Banks, Investment Funds, Insurance Companies, Private Companies
- **International Organizations:** Multilateral Development Banks, Development Agencies, Climate Fund Organizations
- **Non-Governmental Organizations (NGOs)**
- **Individuals**

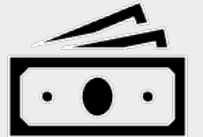
Sources:

- **Public Resources:** Country Resources (e.g., tax revenues), National Government Funds (e.g., Energy Efficiency Support), Green Government Bonds
- **Private Sector Resources Created from Public Sources:** Multilateral Development Banks (e.g., low-interest loans, grants), Development Agencies, Climate Funds (e.g., Green Climate Fund (GCF), Global Environment Facility (GEF))
- **Private Sector Resources Created from Private Sector Sources:** Commercial Bank/Company Green Loans, Commercial Bank/Company Green Bonds, Green Investment Funds, Private Sector Investments



1.5. Comparison of Green Finance and Traditional Finance

Green finance refers to financial activities that support the transition to a low-carbon and sustainable economy while also addressing global environmental challenges. Green finance can take various forms, including equity financing, debt financing, and other types of financial support. The key distinction from traditional finance lies in its environmental focus. For example, financing energy-efficient housing, real estate, and construction projects.



Green Finance
Sustainable Development
Financing with Environmental Sectors in Mind
Minimizing Environmental and Social Risks
Targeting Environmental Benefits and Long-Term Sustainable Returns
Measurement and Reporting Based on Environmental and Social Criteria
Green Finance Products – Green Loans, Green Bonds, etc.

VS.

Traditional Finance
Profit-Oriented Economic Growth
Providing Financing to All Sectors without Considering Environmental Impacts
Financial Risks
Focus on Short- and Medium-Term Financial Returns
Evaluation Focused on Financial Performance
Traditional Finance Products – Loans, Bonds, etc.

1.6. The Relationship Between Sustainable Buildings and Climate Finance & Green Finance



The building sector has a significant impact in terms of carbon emissions and is also highly vulnerable to the adverse effects of climate change.

- Building sector is one of the leading responsible sectors in our country in terms of final energy consumption and greenhouse gas emissions.
- These emissions primarily arise during the production of construction materials, as well as during the construction and operation of buildings.
- Construction and demolition activities generate large amounts of waste, leading to the release of greenhouse gases such as methane through storage.
- Regarding energy consumption in buildings, significant amounts of energy, mostly derived from fossil fuels, are consumed for processes such as lighting, heating, and cooling.

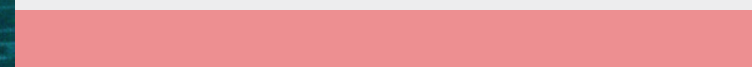
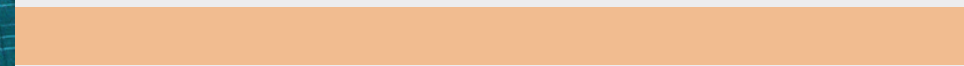
To minimize the negative effects of the building sector on climate change and eliminate the impact of climate change on the building sector, the concept of “Sustainable Buildings” is crucial in our lives. Considering the scale of the investments required for climate change, a substantial amount of investment is also needed for the sustainable transformation of the building sector.

To make these investments a reality, climate finance and green finance are of critical importance. For building sector project financing to benefit from climate finance and green finance, the buildings in question must possess sustainable features such as energy efficiency, renewable energy use, water conservation, and waste management.



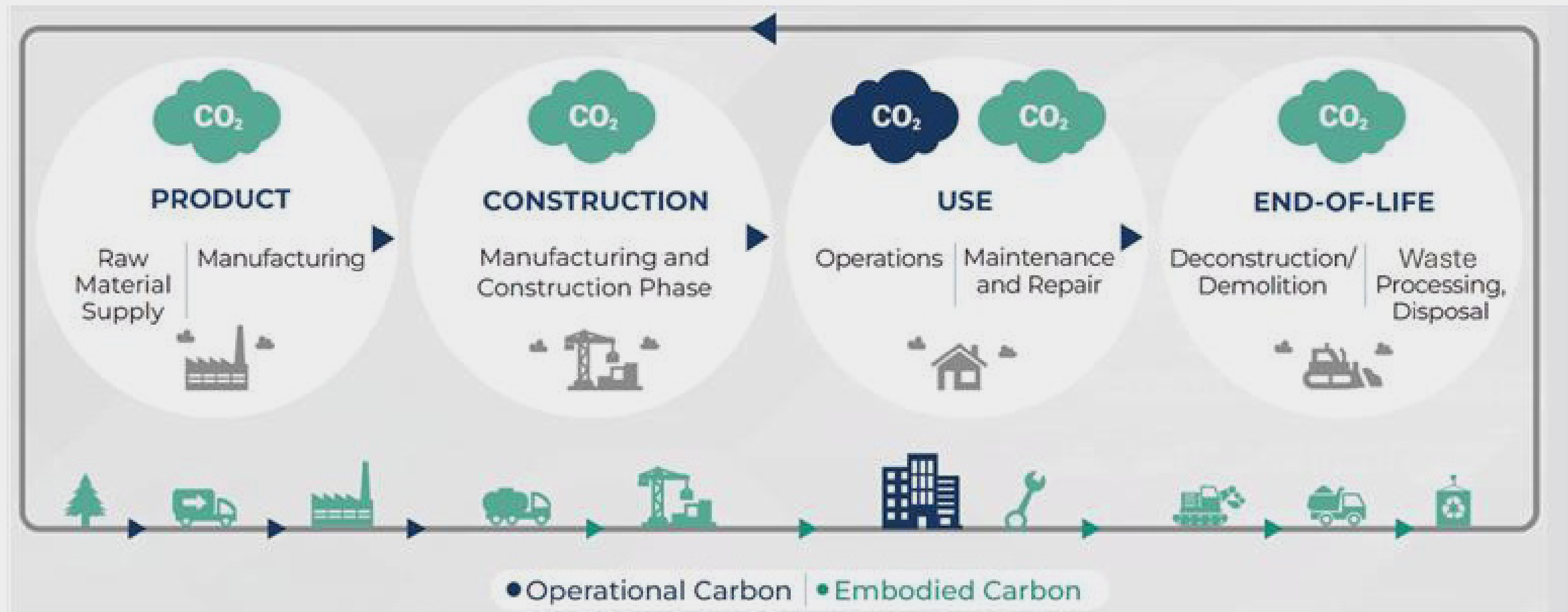
Section 2

GREEN FINANCE: THE DRIVING FORCE BEHIND SUSTAINABLE BUILDING DEVELOPMENT



2.1. Defining Sustainability in the Building Sector

- Buildings consume significant amounts of energy and natural resources throughout their whole life-cycle, contributing to climate change and environmental degradation.
- Globally, the building sector accounts for approximately 30% of total energy consumption due to building-related energy use, including heating, cooling, water heating, cooking, lighting, and electrical appliances. Additionally, it is responsible for around 27% of operational carbon emissions resulting from building usage.
- A building's whole life-cycle emissions, or carbon footprint, encompass emissions generated at various stages throughout its lifespan.
- These emissions arise from raw material extraction, building material production, transportation, construction activities, building operation, maintenance, repair, renovation, demolition, and the sorting and recovery of construction materials [1].



Source: Türkiye Building Sector Decarbonization Roadmap

2.1. Defining Sustainability in the Building Sector

A Sustainable Building is a structure designed, constructed, and operated with efficient use of natural resources, minimal environmental impact, high energy efficiency, and a focus on human health. Throughout its life cycle, it adheres to environmental, economic, and social sustainability principles, embracing an eco-conscious approach.

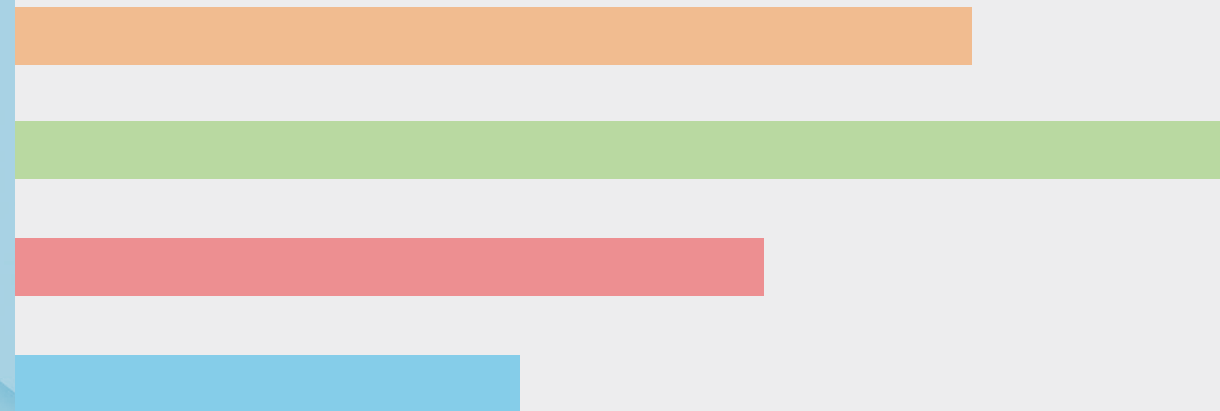
For more information on sustainable buildings, refer to Module 1: Overview of Sustainable Buildings.





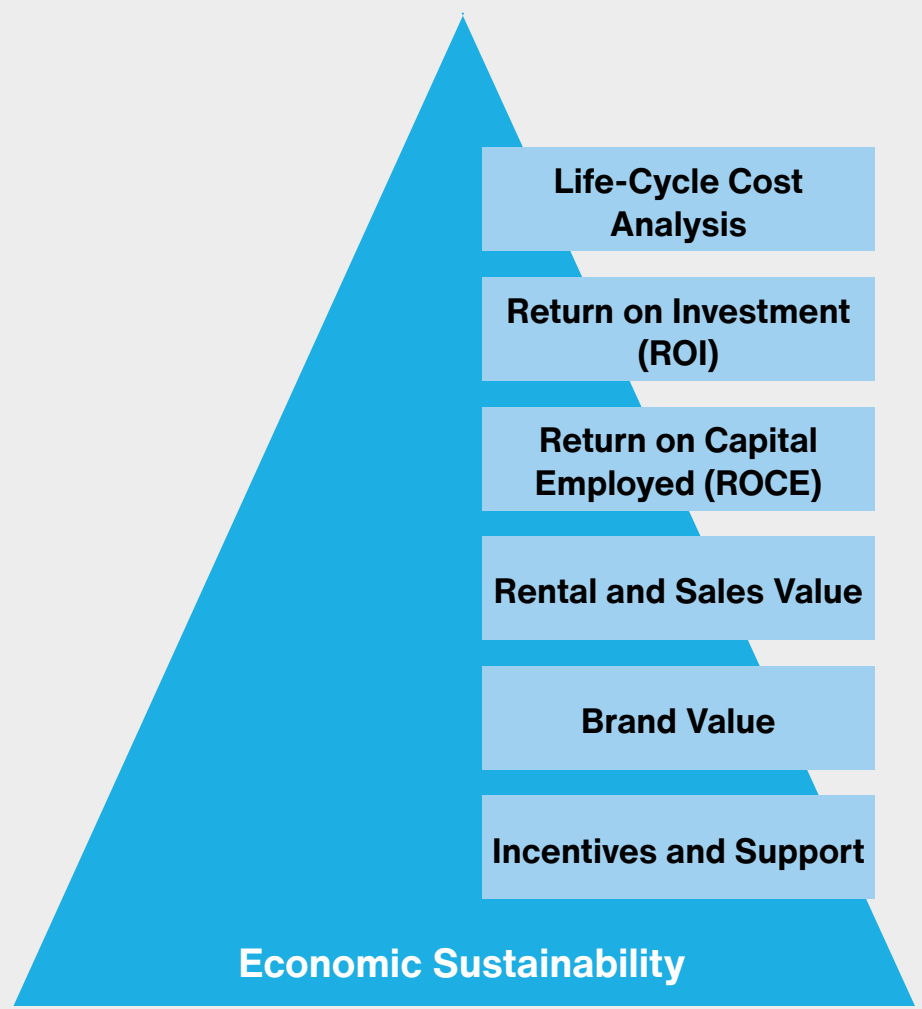
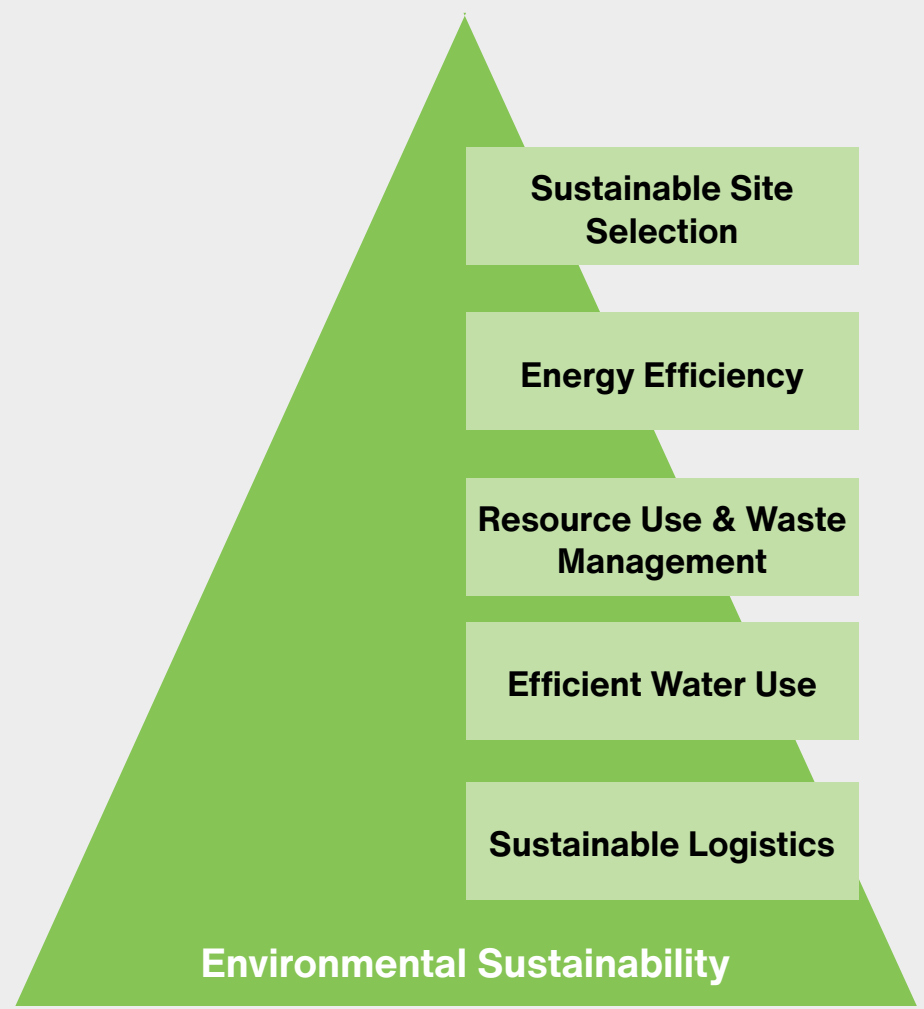
Section 3

GREEN FINANCE TRANSFORMATION IN THE SUSTAINABLE BUILDING SECTOR



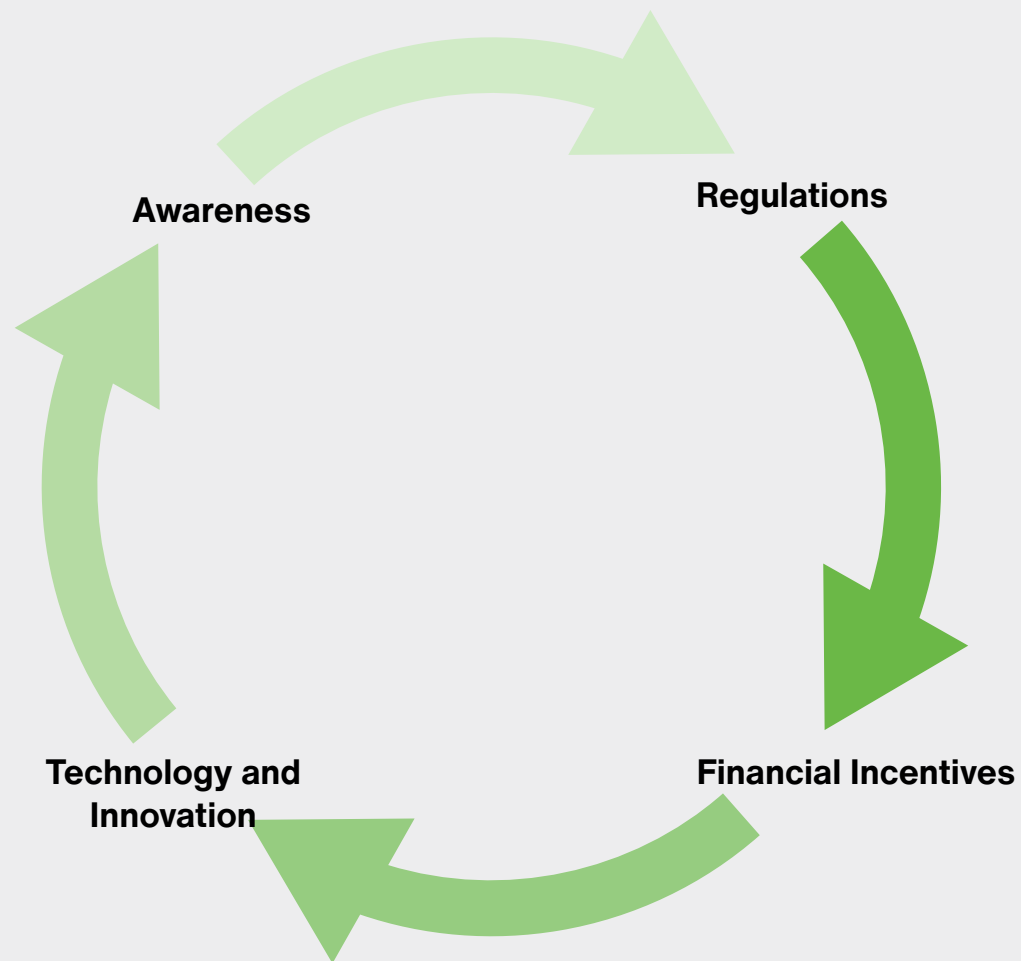
3.1. Environmental, Social, and Economic Sustainability of Buildings

KEY ASSESSMENT CRITERIA



3.2. Environmental, Social, and Economic Sustainability of Buildings and the Applicability of Projects in Türkiye

The applicability of sustainable building projects depends on certain key factors:



The sustainable building sector in Türkiye is still developing. In this context:

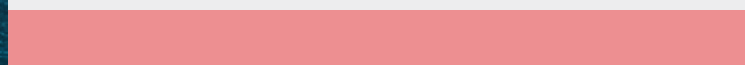
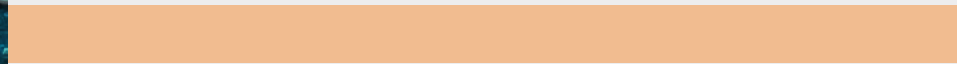
- Policies and regulations are being developed in line with international standards.
- As public awareness increases, the applicability of projects improves.
- Taxonomy alignment efforts are ongoing.
- Financing for the sustainable building sector and innovative financial practices are expanding.





Section 4

NATIONAL AND INTERNATIONAL POLICY FRAMEWORKS AND REGULATIONS



4.1. National Policies Supporting Green Finance in the Building Sector

- **Energy Efficiency Law:** The Energy Efficiency Law No. 5627 was published in the Official Gazette No. 26510 on May 2, 2007, and entered into force. This law regulates the principles and procedures for increasing energy efficiency in the use of energy resources and energy to ensure their efficient use, prevent waste, reduce the economic burden of energy costs, and protect the environment.
- **Regulation on Energy Performance in Buildings:** The Regulation on Energy Performance in Buildings entered into force on December 5, 2009. It promotes thermal insulation, the use of energy-efficient equipment, and the integration of renewable energy systems in buildings, while encouraging the minimization of carbon emissions in newly constructed buildings and supporting sustainable building practices. Under this regulation, the Energy Performance Certificate (EPC) has been made mandatory* for all buildings. The EPC aims to raise awareness of energy efficiency and encourage the development of energy-efficient buildings.
- **National Energy Efficiency Action Plan:** To enhance energy efficiency in the building sector, the National Energy Efficiency Action Plan supports the promotion of energy-efficient technologies and encourages energy-efficient building projects to improve the energy performance of both new and existing buildings.
- **Regulation on Green Certificates for Buildings and Settlements:** The regulation was published in the Official Gazette No. 31864 on June 12, 2022, and entered into force. It aims to establish assessment and certification systems to reduce the negative environmental impact of buildings and settlements by efficiently using natural resources and energy. Additionally, it sets out the qualifications for green certification experts, green certification assessment experts, and training institutions, as well as the principles and procedures for evaluating green buildings and green settlements.
- **Green Building Certificate – Türkiye, YeS-TR:** Developed by the Ministry of Environment, Urbanization, and Climate Change, this certification includes sustainability-focused criteria such as energy efficiency, water conservation, waste management, and material selection. It aims to enhance the environmental, social, and economic sustainability performance of buildings in Türkiye.
- **Türkiye Building Sector Decarbonization Roadmap:** The Ministry of Environment, Urbanization, and Climate Change, World Resources Institute (WRI), and the United Nations Environment Programme (UNEP) collaborated on the Zero Carbon Building Accelerator project, supported by the Global Environment Facility (GEF). As the primary beneficiary of the project, Türkiye developed short-, medium-, and long-term strategies and actions for the decarbonization of the building sector, leading to the preparation of the Türkiye Building Sector Decarbonization Roadmap. The strategies outlined in the report aim to support Türkiye's sustainability goals and contribute to achieving net-zero emissions by 2053 [1].

**For the implementation of the "Energy Performance Certificate" (EPC), according to the first paragraph of the Provisional Article 4 of the Regulation on Energy Performance in Buildings, buildings that obtained a construction permit after January 1, 2011, are considered new buildings, while those that received a construction permit before this date are classified as existing buildings. For existing buildings and those that obtained a construction permit before January 1, 2011, but are still under construction and have not yet received an occupancy permit, an Energy Performance Certificate must be issued within ten years from the publication date of the Energy Efficiency Law. In summary, as of May 2, 2017, existing buildings are legally required to obtain an Energy Performance Certificate. <https://www.enerjikimlikbelgesi.com/>*

4.2. European Union Policies Supporting Green Finance in the Building Sector



- **Energy Performance of Buildings Directive (EPBD):** The revised directive (EU/2024/1275), which sets the energy efficiency standards for both new and existing buildings, came into force across all European Union countries on May 28, 2024. The directive supports improved air quality, the digitalization of energy systems for buildings, and the widespread development of infrastructure for sustainable mobility.
- **Renovation Wave Strategy:** This strategy aims to modernize old and energy-inefficient buildings in both the public and private sectors in the EU, creating lower-carbon, energy-efficient, and livable buildings. The Renovation Wave targets the renovation of 35 million buildings by 2030, intending to double the annual renovation rate in the EU. In addition to reducing energy consumption and greenhouse gas emissions, the initiative plans to improve living standards by creating green jobs in the construction sector, which is predominantly composed of local businesses.
- **The European Green Deal:** This is a broad policy framework supporting the EU's goal of achieving carbon neutrality by 2050. It includes various practices and strategies to promote the sustainable building sector.
- **EU Taxonomy for Sustainable Activities:** The relevant regulation officially came into force on July 12, 2020. It establishes technical criteria to promote the financing of sustainable buildings.

4.3. International Actors and Organizations Supporting Green Finance in the Building Sector

- **World Green Building Council (WGBC):** Established in 1999, the WGBC is a global coalition aimed at promoting and accelerating sustainable building practices.
 - The council advocates for sustainable building certification systems on a global scale.
 - One of its key initiatives is the Net Zero Carbon Buildings Commitment, which seeks to reduce carbon emissions from buildings to zero.
 - The council also aims to standardize sustainable building policies among member countries [2].
- **Net Zero Carbon Buildings Commitment:** This initiative is designed to recognize and encourage advanced climate leadership actions by organizations, cities, and local governments in decarbonizing the global building sector. It aims to inspire others to undertake similar actions and remove implementation barriers. The initiative collaborates with countries, cities, and companies to ensure the global building sector reaches its carbon-neutral goals [3].
- **Global Alliance for Buildings and Construction (GlobalABC):** Established under the leadership of the United Nations Environment Programme (UNEP), GlobalABC has 330 members across 42 countries. It supports the widespread adoption of sustainable building policies and the increase of financing sources to accelerate the decarbonization of the building sector [4].
- **Market Accelerator for Green Construction Program (MAGC):** This program is a UK-International Finance Corporation bilateral partnership established to accelerate the construction of certified green buildings and reduce the impacts of climate change. It aims to mobilize \$2 billion in investments to mitigate climate change effects and reduce greenhouse gas (GHG) emissions directly associated with the construction sector [5].
- **Energy Efficient Mortgages Initiative (EEMI):** Since its inception in 2015, the Energy Efficient Mortgages Initiative (EEMI) has worked to effectively direct climate change-related financing and remove investment barriers. It engages in a systematic research process to identify necessary actions for the efficient allocation of resources [6].
- **The Sustainable Housing Initiative (Shi) to Promote Access to Affordable Homes:** Launched by the French Development Agency (AFD), this multi-country program aims to support the implementation of affordable and sustainable housing policies by providing technical assistance to public authorities responsible for housing at the national and local levels [7].

4.4. Taxonomies and Standards for Green Building Finance – EU Taxonomy – Green Taxonomy

What is a Taxonomy?:

A taxonomy is a classification system and a set of standards that determines which economic activities and projects climate finance and green finance sources can be directed towards.

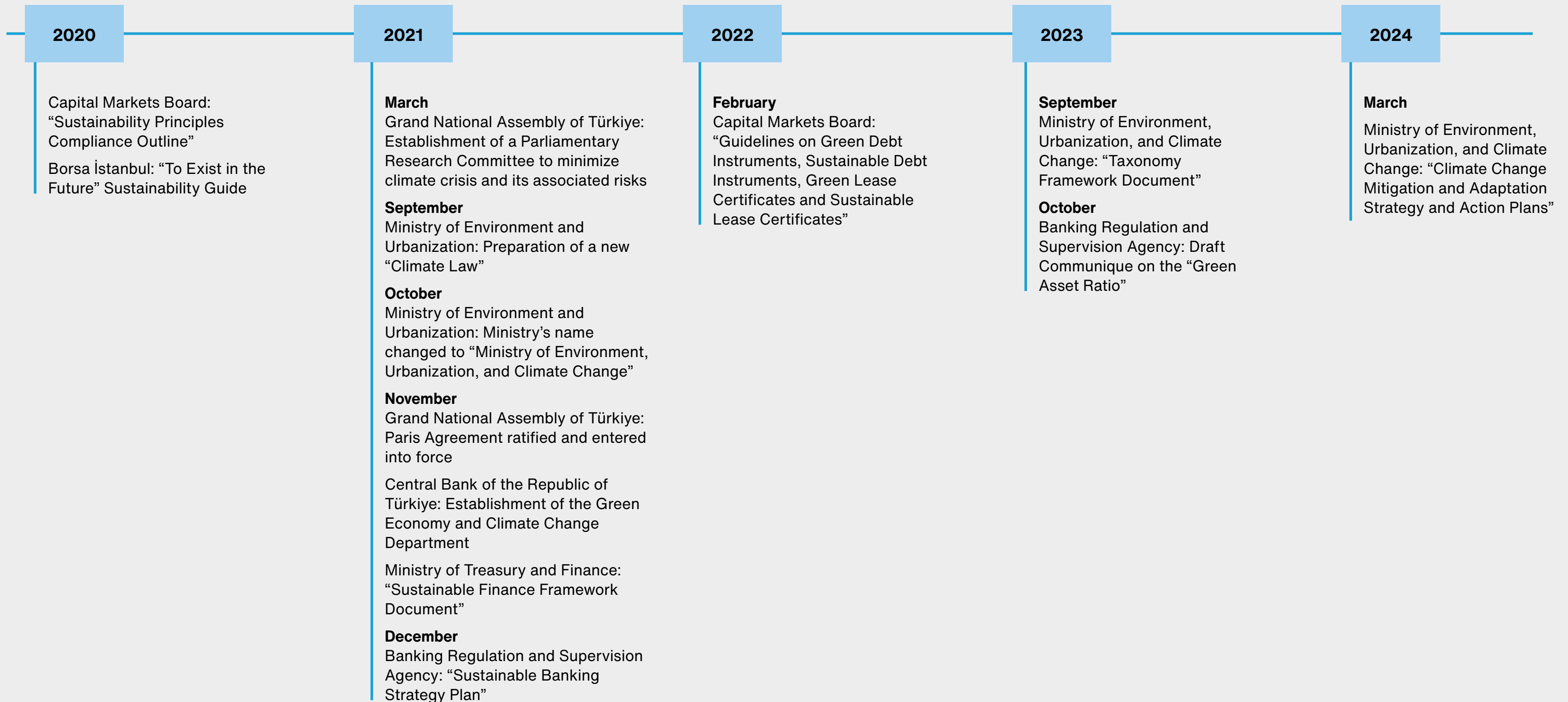
- The EU Taxonomy is a classification system that lists environmentally sustainable economic activities.
- It officially came into force on July 12, 2020.
- The basis of the EU Taxonomy Regulation is the definition of a sustainable economic activity. This definition is based on four criteria:
 - Contributing to at least one of the six environmental objectives listed in the taxonomy:
 1. Mitigation
 2. Adaptation
 3. Sustainable use and protection of water and marine resources
 4. Transition to Circular Economy
 5. Pollution Prevention and Control
 6. Protection and Restoration of Biodiversity and Ecosystems
 - Respect for fundamental human rights and labor standards.
 - Not causing significant harm to other objectives.
 - Complying with the defined technical screening criteria.

- The EU Taxonomy aims to increase sustainable investment and create clear, practical, and easily applicable definitions regarding which economic activities can be considered environmentally sustainable.
- With the definitions and criteria established by the EU Taxonomy, the goal is to protect private investors from greenwashing. This allows for investments in genuinely sustainable activities by preventing the misleading presentation of environmental benefits.
- The EU Taxonomy increases the transparency of activities through standardized definitions and criteria, enabling a better understanding of environmental risks.
- The EU Taxonomy helps investors understand and compare sustainability performance, assisting them in making more informed and sustainable decisions.
- Under climate finance, activities that align with the EU Taxonomy can obtain lower interest rates and more favorable loan conditions to support and increase sustainable financing.
- Investors and companies engaged in activities in line with the EU Taxonomy can gain a sustainable competitive advantage over other players.

Within the framework of the EU Taxonomy, the green building category has defined these activities by establishing financing and investment standards.

4.5. Taxonomies and Standards for Green Building Finance - Developments in Türkiye

DEVELOPMENTS IN SUSTAINABLE FINANCE IN TÜRKİYE



4.5. Taxonomies and Standards for Green Building Finance - Developments in Türkiye

DEVELOPMENTS IN SUSTAINABLE FINANCE IN TÜRKİYE - GREEN DEAL ACTION PLAN

- In order to facilitate Türkiye's transition to a sustainable and resource-efficient economy and align with the European Green Deal, the Green Deal Action Plan has been published. The plan includes the following:
 - (1) Carbon border adjustment,
 - (2) Green and circular economy,
 - (3) Green finance,
 - (4) Clean, economic, and secure energy supply,
 - (5) Sustainable agriculture,
 - (6) Sustainable smart transportation,
 - (7) Combating climate change,
 - (8) Diplomacy, and
 - (9) Information and awareness-raising activities on the European Green Deal.A total of 32 goals and 81 actions have been defined under these headings to achieve the set targets.
- The Action Plan aims to determine the needs in line with the priorities for green transformation, taking into account the incentives provided by the European Union, and to review the national incentive system.
- Under the green finance heading in the Action Plan, the Ministry of Environment, Urbanization, and Climate Change has been designated as the coordinating institution for the preparation of legislation aimed at determining the sustainability of investments in Türkiye, taking into account the taxonomy regulations of the European Union and international organizations.



4.5. Taxonomies and Standards for Green Building Finance - Developments in Türkiye

DEVELOPMENTS IN SUSTAINABLE FINANCE IN TÜRKİYE - TAXONOMY FRAMEWORK DOCUMENT

Within the scope of taxonomies, definitions and criteria for the sustainable building sector that are aligned with climate and green finance are being established.

- On September 7, 2023, the Ministry of Environment, Urbanization and Climate Change published the “Taxonomy Framework Document” to contribute to the preparation of Türkiye’s national taxonomy and to establish the general framework.
- The Taxonomy Framework Document provides information on Türkiye’s national and international activities within the scope of combating climate change, as well as the international context of taxonomies and the priorities regarding the taxonomy development process. The regulatory work related to the green taxonomy under the relevant taxonomy is ongoing.
- The project titled “Preparation of Guidelines for Reporting and Identification of Users and Beneficiaries of Green Taxonomy in Türkiye” aims to strengthen the technical capacity related to the national taxonomy that will guide the necessary economic and financial activities for Türkiye to meet its climate goals, and to create reporting guidelines for identifying activities aligned with the green taxonomy.
- The financial sector holds a critical position due to the direct and indirect risks and opportunities it faces in the processes of climate change and the transition to a low-carbon economy, as well as its guiding and incentivizing role as a financier during the transition.

4.5. Taxonomies and Standards for Green Building Finance - Developments in Türkiye

DEVELOPMENTS IN SUSTAINABLE FINANCE IN TÜRKİYE - DRAFT COMMUNIQUE ON GREEN ASSET RATIO - GREEN BUILDING CERTIFICATIONS AND STANDARDS

The **Draft Communique on Green Asset Ratio** is a regulation established to measure and report the contribution of banks in Türkiye to environmentally sustainable economic activities. The EU Taxonomy provides an important reference framework in the development of the Green Asset Ratio. Banks are able to classify their loans as “green” if they comply with these definitions. Under

the Draft Communique on Green Asset Ratio, various criteria are presented under the Construction and Real Estate category. The accepted certifications and levels, subject to additional conditions, are listed below.



Construction and Real Estate

Construction of New Buildings and Purchase of Existing Buildings

For commercial real estate:

- LEED (Gold and above)
- BREEAM (Very Good and above)
- B.E.S.T. (Very Good and above)
- DGNB (Gold and above)
- HQE (Excellent and above)
- EDGE (Certificate, advanced and zero carbon)

For individual real estate:

- “Energy Performance Certificate” indicating an energy performance class of “B” or higher

4.5. Taxonomies and Standards for Green Building Finance - Developments in Türkiye

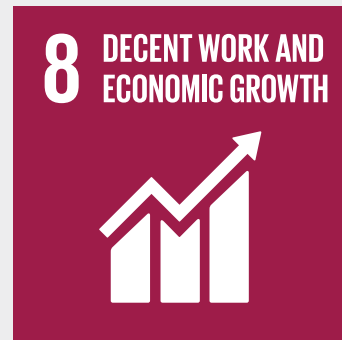


- Sustainable finance in Türkiye is rapidly developing both in terms of legislation and market dynamics.
- With the introduction of the Communique on Green Asset Ratio, it is expected that financial institutions will allocate more resources to green projects, and the share of loans supporting environmental sustainability will increase.
- Along with the standardized definitions and criteria under the Communique on Green Asset Ratio framework, it is also anticipated that the credit processes will become more transparent.
- Green finance is expected to facilitate companies' compliance with environmental standards, thereby providing them with a competitive advantage in international markets.
- The impact of sustainable building projects' access to financing is spreading across a broader scope and, at the same time;:
 - It promotes investments in technology and innovation in the sustainable building sector,
 - Encourages the use of energy-efficient materials (materials that reduce energy consumption, provide thermal insulation, and enhance energy efficiency),
 - Fosters the use of environmentally friendly construction methods.
 - By reducing carbon emissions through energy efficiency and renewable energy use, it contributes to the fight against climate change.
 - By creating healthier and more comfortable living spaces, it increases social benefits.

4.6. The Role of the Paris Agreement and Sustainable Development Goals

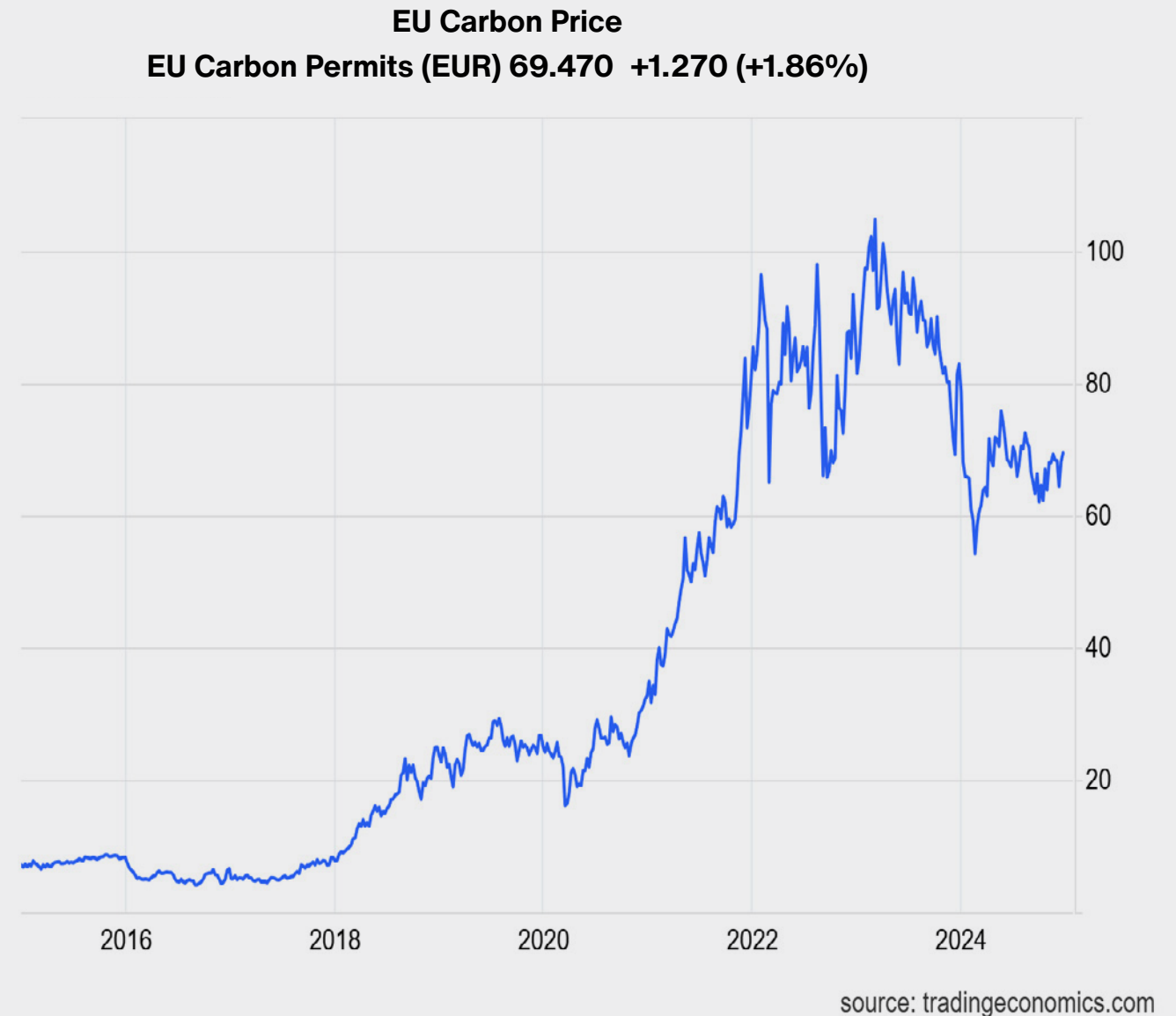
The Paris Agreement, an international treaty aimed at limiting global temperature rise to 1.5°C, encourages countries to take carbon-reducing measures in the building sector as part of their Nationally Determined Contributions (NDCs).

The United Nations Sustainable Development Goals (UN SDGs) present an urgent call for action, urging all countries—both developed and developing—to unite in a global partnership. The World Green Building Council prioritizes 11 goals under Sustainable Buildings among the Sustainable Development Goals [8].



4.7. Carbon Markets

- **Carbon markets** are economic and environmental mechanisms established to incentivize the reduction of carbon emissions.
- Through carbon markets, the carbon impact can be quantified and considered as a factor in financing.
- These markets function as market-based mechanisms that enable the buying and selling of carbon credits to limit or offset greenhouse gas emissions.
- Carbon markets are divided into Voluntary Carbon Markets and Compliance (Mandatory) Carbon Markets.
- Türkiye is not yet part of compliance carbon markets; however, it actively participates in **Voluntary Carbon Markets**.
- Voluntary Carbon Markets operate independently of government climate change policies and targets, functioning on a voluntary basis. These markets facilitate the trading of voluntary carbon credits through buying and selling transactions.
- In **Compliance Carbon Markets**, the European Union Emissions Trading System (ETS) is in operation. The Emissions Trading System (ETS) is a cap-and-trade mechanism that allows companies to trade emission allowances granted to them.



4.8. Green Building Certifications and Assessment Systems

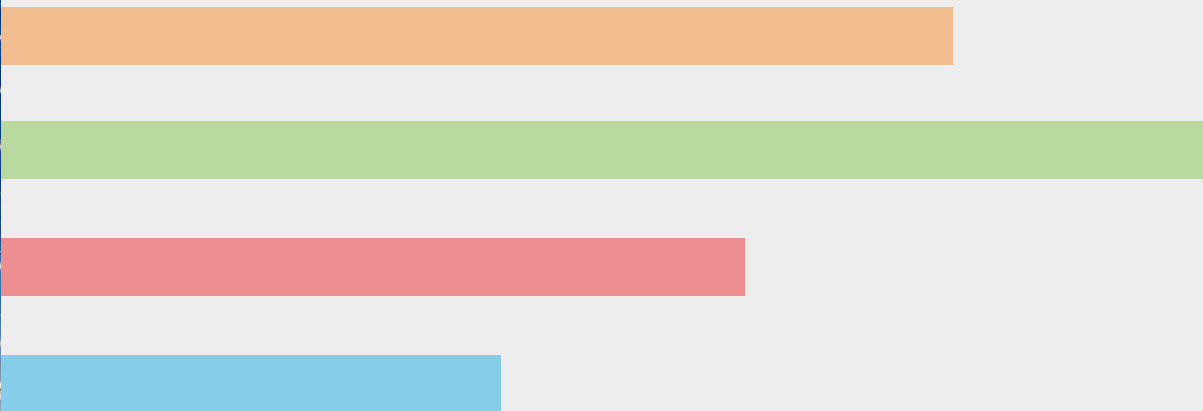
Green building certification systems provide a framework for financial incentives and financing standardization by awarding certifications to buildings that meet criteria such as energy efficiency, environmental sustainability, and healthy and comfortable living conditions. Assessment systems, on the other hand, are used to evaluate and certify the environmental performance of buildings.





Section 5

GREEN-LABELED PRODUCTS AND STANDARDS IN THE SUSTAINABLE BUILDINGS SECTOR



5.1. Green Finance Instruments

Green finance instruments are financial products and services specifically designed to support and accelerate sustainable operations while funding projects and initiatives that benefit the environment and promote a more sustainable economy.

Green Loans:

Any loan instrument provided specifically to finance or refinance, in whole or in part, new and/or existing eligible Green Projects. Green loans must align with the four key components of the Green Loan Principles.

Green Bonds:

Any bond instrument where the proceeds or an equivalent amount are exclusively used to finance or refinance, in whole or in part, new and/or existing eligible Green Projects. Green bonds must comply with the four core components of the Green Bond Principles.

Green Insurance:

Products and services designed to support and promote environmental sustainability, address climate-related risks, and exclude specific risks based on environmental criteria aligned with green finance and sustainability principles.

Carbon Markets:

Trading systems for carbon credits. Companies or individuals can use carbon markets to offset their greenhouse gas emissions by purchasing carbon credits from organizations that remove or reduce emissions.

Green Grants:

Financial grants dedicated to projects that promote environmental sustainability.



5.1. Green Finance Instruments

GREEN LOAN PRINCIPLES (GLP)

- The **Green Loan Principles** (GLP) provide a market standard and guidance framework designed to support the development of green loan products within the green loan market.
- GLP aims to support institutions and individuals seeking to finance environmentally sustainable projects.
- These projects contribute to a net-zero emissions economy, protect and enhance the environment, enable climate change adaptation, and provide other environmental benefits.
- According to GLP, green loans refer to any loan instrument and/or secured facility—whether fully or partially allocated—to finance, refinance, or secure eligible Green Projects. These may include credit lines, guarantee lines, or letters of credit, and they must comply with GLP’s four core components.
- The key organizations involved in the development of GLP include the Loan Market Association (LMA), the Loan Syndications and Trading Association (LSTA), and the Asia Pacific Loan Market Association (APLMA) [9].

GREEN BOND PRINCIPLES (GBP)

- The **Green Bond Principles** (GBP) aim to support issuers in financing environmentally sustainable projects.
- These projects contribute to a net-zero emissions economy and environmental protection.
- A green bond issuance under GBP must offer transparent green attributes and an attractive investment opportunity.
- According to GBP, green bonds refer to any bond instrument where proceeds (or an equivalent amount) are allocated—fully or partially—to finance or refinance eligible Green Projects. These bonds must comply with GBP’s four core components.
- The Green Bond Principles were developed by the International Capital Market Association (ICMA) [10].

5.2. Green Loan Markets, Products, and Standards

Green Loans:

Financing provided by banks and financial institutions to support environmentally friendly projects and investments, aimed at promoting sustainable development.

Sustainability-Linked Loans:

Financing designed to encourage companies to achieve their sustainability goals, dependent on their performance in meeting specific environmental, social, and governance (ESG) objectives.

Transition Loans:

Financing designed for customers in carbon-intensive sectors, aimed at reducing Scope 1-2-3 emissions in line with the targets of the Paris Agreement and facilitating the transition to low-carbon, environmentally friendly, and sustainable business models.

Blue Loans:

Financing for projects that involve marine ecosystems, aimed at ensuring the sustainability of marine and ocean ecosystems, supporting the blue economy, and conserving water resources.



5.2. Green Loan Markets, Products, and Standards

Four Components of Green Loan Products (Green Loan Principles)

Investment Scope and Project Definition

The scope of projects deemed eligible for green loans and their expected environmental benefits should be clearly defined. *For example, in sustainable building projects, the extent to which annual energy consumption and associated greenhouse gas emissions will be reduced by constructing a building that meets energy efficiency standards should be explicitly stated.*

Project Evaluation

The alignment of the project with the **sustainability strategy** of the sponsor or shareholder and the project development process should be explained.

Loan Allocation Process

The loan disbursement processes of the project should be monitored, along with any potential changes in the project definition..

Reporting

The qualitative and quantitative reporting criteria should be clearly specified.

GREEN PROJECT CATEGORIES (GREEN LOAN PRINCIPLES):

- **Renewable Energy:** Investments in production, transmission, and related technologies
- **Energy Efficiency:** Buildings, energy storage, smart grids, district heating systems
- **Pollution Prevention and Control:** Reduction of air pollution, greenhouse gas emissions control, waste management, waste-to-energy projects
- **Natural Resources and Land Use:** Agriculture, livestock, smart farming solutions such as drip irrigation, forest conservation
- **Biodiversity Conservation:** Protection of marine and terrestrial ecosystems
- **Clean Transportation:** Investments in electric or hybrid public transport and railway infrastructure, as well as infrastructure compatible with clean vehicles
- **Green Technologies:** Carbon capture technologies and energy storage systems
- **Sustainable Water Management:** Investments in irrigation and drinking water, wastewater management, flood prevention
- **Climate Change Adaptation:** Monitoring and early warning systems
- **Circular Economy:** Products, production technologies, and processes adapted to the circular economy (e.g., design and commercialization of reusable, recyclable materials, components, and products)
- **Green Buildings:** Investments aligned with regional, national, or international certification standards

These categories are continuously updated and expanded in line with market trends.

5.3. Green Bond Markets, Products, and Standards

- A bond is a debt instrument issued by governments or certain private entities.
- When an investor purchases a bond, they are essentially lending money to the issuing entity.
- The bond issuer commits to repaying this debt with a predetermined interest rate.
- Interest payments are typically made at scheduled intervals.
- At maturity, the principal amount is repaid to investors.
- The entity issuing the bond can use the proceeds for various purposes, such as making investments, supporting growth strategies, or—if issued by a government—funding public services.
- Green Bonds refer to any type of bond instrument where the proceeds are fully or partially used to finance or refinance new and/or existing eligible Green Projects and are aligned with the four core components of the Green Bond Principles.
- **By issuing Green Bonds, banks and/or companies create a source of financing for green projects.**

Green bonds are debt instruments issued to finance environmental projects.

Four Components of Green Bond Products (Green Bond Principles)	
Fund Allocation Criteria	<p>The scope of the project and its net positive environmental impact must be defined in alignment with the green loan definition. The list of projects eligible under the taxonomy remains the same.</p> <p>It aims to support issuers in financing projects that contribute to a net-zero emissions economy, protect the environment, and have strong sustainability and environmental attributes.</p>
Project Evaluation and Selection Process	<p>The compliance of the project scope with net positive green impact and project definition must be disclosed. The issuer's sustainability strategy and the management of social and environmental risks must be identified.</p>
Fund Management	<p>It is recommended that proceeds be tracked in a dedicated sub-account within a sub-portfolio. Multiple green bonds can be tracked within a single portfolio account.</p>
Reporting	<p>The annual report must include a list of projects to which green bond proceeds have been allocated, along with a brief description of the projects, the allocated amounts, and the estimated impacts of these projects.</p>

5.4. The “Greenium” Effect in Markets



The term **Greenium** was introduced by **Climate Bonds** in **2017**.

- It is defined as the yield difference between thematic bonds with similar maturities and conventional bonds.
- The concept is based on the idea that investors are willing to pay a premium for a bond with a sustainable impact or accept lower returns.
- The general trend in the yield difference between green and traditional bonds is negative.
- All other factors being equal, this suggests that investors are willing to forgo a small portion of returns in exchange for environmental benefits, thereby enabling more affordable financing for the economy.

5.5. Green Mortgage

A green mortgage is a type of financing provided for the purchase, construction, or making existing buildings “green” in order to enhance their energy efficiency and environmental friendliness.

Compared to standard home loans, green mortgage financing offers a more favorable repayment system. It supports the purchase of energy-efficient buildings or the renovation of existing properties to enhance energy efficiency, integrate renewable energy, promote water conservation, and incorporate energy-efficient technologies.

One key advantage of a green mortgage over conventional home loans is its typically long-term nature, with repayment periods ranging from 15 to 30 years.

Example:

Garanti Green Mortgage

It is provided for homes built by developers with an Energy Performance Certificate rating of A or B, or within housing projects that the bank is involved in.



5.6. Property Assessed Clean Energy (PACE) Financing

PACE financing (Property Assessed Clean Energy) is a method used in the United States to finance energy efficiency improvements, disaster resilience measures, water conservation measures, or renewable energy installations for residential, commercial, and industrial property owners, whether the properties are existing or under construction. Depending on state legislation, PACE financing can also be used to fund water efficiency products, seismic reinforcements, resilience-enhancing measures, and other measures that provide social benefits.

In regions where PACE legislation is applied, governments offer specific bonds to investors, or in an open market model, private capital providers purchase a tax lien from the tax authority and provide financing for energy retrofits to property owners. These financings are repaid annually

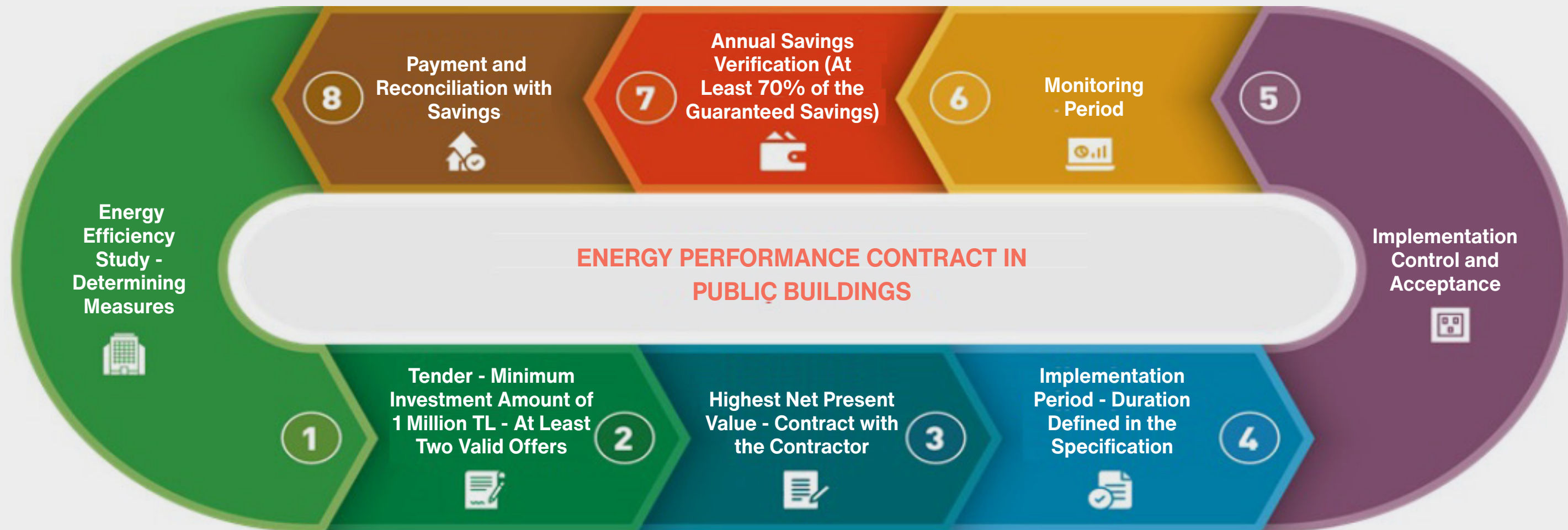
through the property tax bill over the selected term. PACE bonds can be issued by municipal finance districts, state agencies, or financial institutions, and the proceeds can be used for energy retrofits of both commercial and residential properties. One of the most notable features of PACE programs is that it is not a loan but a special property tax assessment, and the financing is tied to the property, not the individual. PACE lenders finance all material and service costs of eligible projects with a fixed interest rate and a fully amortized financing model for up to 30 years. PACE assessments are secured by a voluntary assessment on the property and automatically transfer when the property is sold. Property owners also have the option to prepay the PACE assessment early [11].



5.7. Energy Performance Contracts (EPC) and ESCO Financing

An Energy Performance Contract (EPC) is a financing mechanism based on the repayment of initial investment costs for energy efficiency or renewable energy projects through the savings achieved in subsequent years. According to the Energy Efficiency Law No. 5627, energy performance contracts are defined

as “contracts based on the guarantee of energy savings to be achieved after the implementation project and the repayment of the expenditures through the savings generated as a result of the implementation” [12].



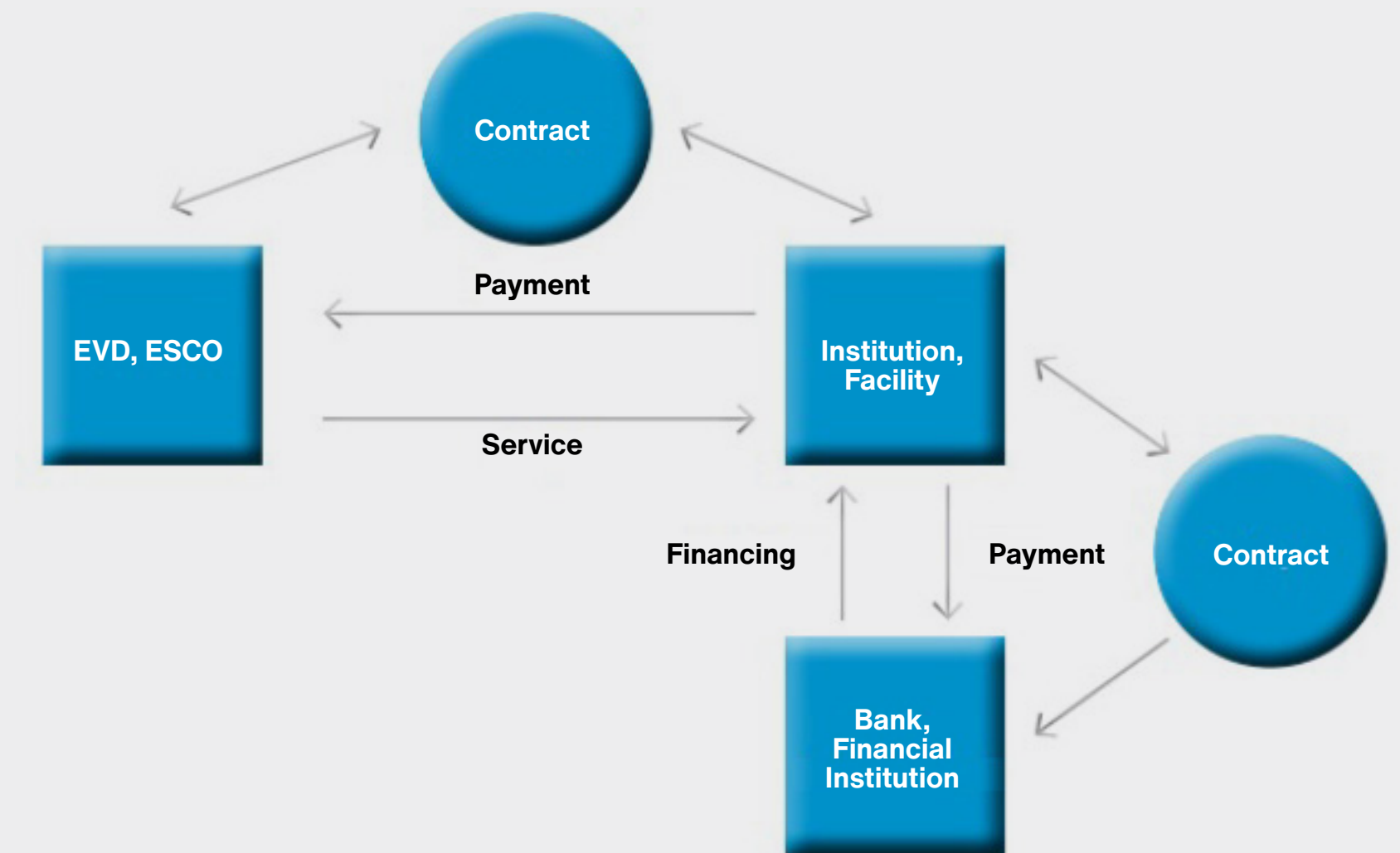
Energy Performance Contracts Workflow

Source: Ministry of Energy and Natural Resources of the Republic of Türkiye

5.8. Renewable Energy Financing and Power Purchase Agreements for Sustainable Buildings

ENERGY SERVICE COMPANY (ESCO) – SAVINGS GUARANTEED PERFORMANCE CONTRACTS

- Financing and investment are typically provided either by the facility or organization owners using their own funds or through third-party financial institutions.
- The financial risk lies with the facility or organization, while the technical performance risk is with the ESCO.
- Under the savings guarantee, the ESCO guarantees the minimum savings it will provide.
- This model is particularly preferred in public buildings and in countries where the ESCO structure is still developing.
- In this model, where the investment and financing are undertaken by the customer and a fixed service fee is paid to the ESCO, the ESCO may not be sufficiently incentivized to achieve maximum savings from the project [13].



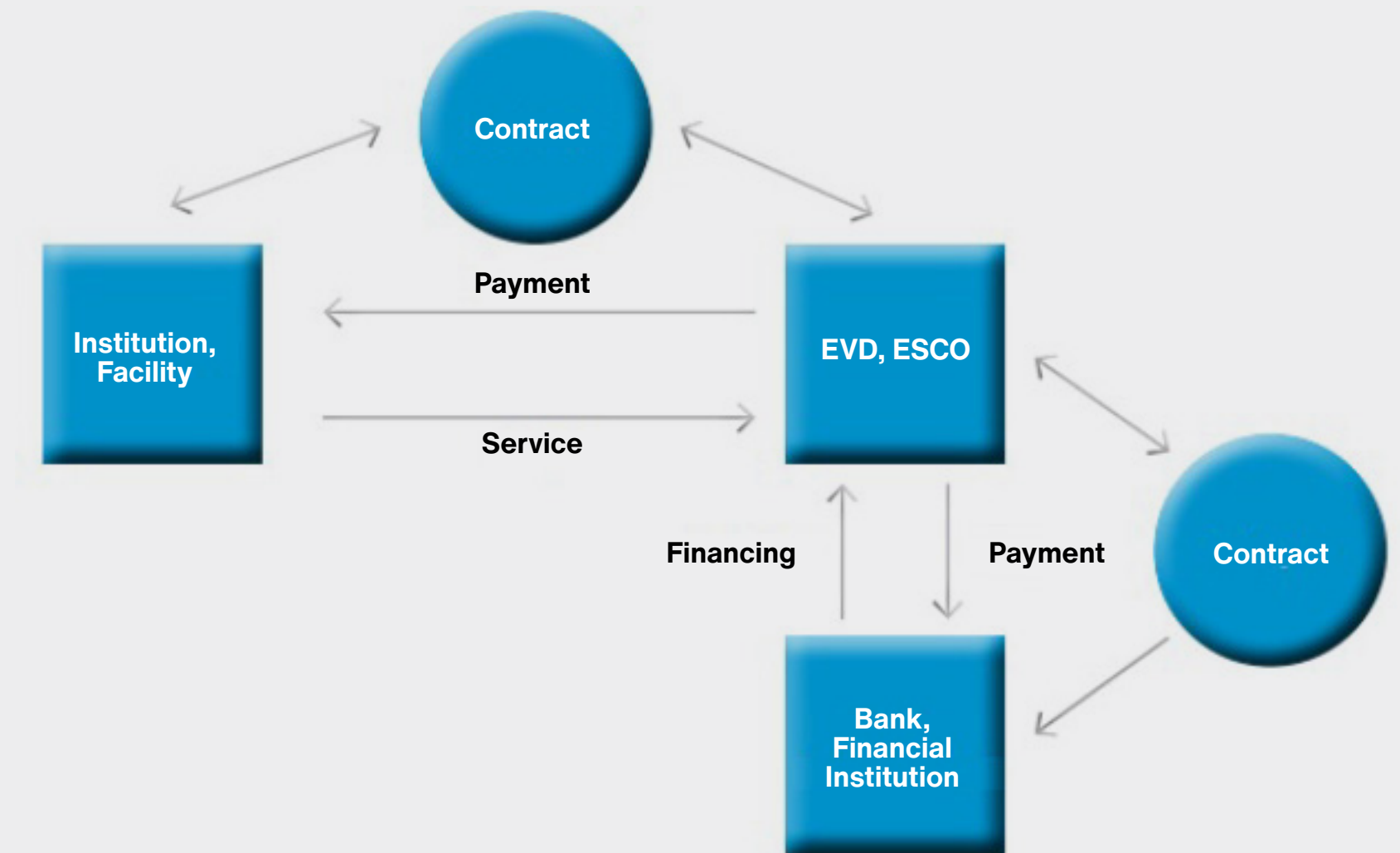
Source: SHURA, Energy Efficiency Solution: Financing Mechanisms

5.8. Renewable Energy Financing and Power Purchase Agreements for Sustainable Buildings

ENERGY SERVICE COMPANY (ESCO) – SHARED SAVINGS PERFORMANCE CONTRACTS

- In this type of contract, both the investment and the technical implementation and savings performance risk belong to the ESCO.
- Since the ESCO also makes the investment, the savings achieved during the contract term are shared.
- In this model, the ESCO also manages the operation and maintenance services of the project for which it guarantees performance throughout the contract term.
- This way, the ESCO can minimize performance risks and increase savings, and consequently, its revenue.
- This model, where both financial and technical/operational risks are assumed by the ESCO, is a good solution for increasing energy efficiency projects in both the public and private sectors.
- The main advantages of this model are that it is preferred by ESCOs with strong financial and engineering structures, as well as by the private sector, and it is suitable for customers with limited access to finance [13].

*In the Turkish model, ESCOs also act as Energy Efficiency Consultancy Companies (EVD) by managing measurement and evaluation processes [13].



Source: SHURA, Energy Efficiency Solution: Financing Mechanisms

5.9. Private Sector Financing Models for Sustainable Buildings Sector

- **Renewable energy financing** covers the financial support provided for the installation and operation of renewable energy systems used in sustainable buildings. Financial instruments such as green loans, green bonds, grants, energy performance contracts, etc., can be used as financing methods.
- **Power Purchase Agreements (PPAs)** refer to a long-term energy purchasing agreement made by a building or business with a renewable energy supplier.

- **Advantages of PPAs:**

Long-Term Fixed Energy Price

Carbon Reduction

Energy Efficiency

Environmental Sustainability

- **Contributions of Renewable Energy Financing and PPAs to Sustainable Buildings**

Energy Efficiency

Energy Independence

Minimization of Carbon Emissions

Cost Savings

5.10. Other Innovative Financing Mechanisms for Sustainable Buildings

Leasing:

Renting renewable energy equipment and energy efficiency equipment through leasing

Private Equity Funds:

Investment of private investment funds in sustainable building projects.

Public-Private Partnerships (PPP):

Collaboration between the public and private sectors to finance projects within sustainable building initiatives, such as social housing projects or improving energy efficiency in public buildings.

Carbon Financing:

Financing of sustainable building projects through the sale of carbon credits generated from carbon reduction efforts.

Crowdfunding:

A new generation investment and funding system based on the small contributions of many individuals.

BLENDED FINANCE

- **Strategic financial structuring opportunity:** It combines public, private, and philanthropic financing sources to fund projects that provide social or environmental benefits.
- **Opportunity to support projects that are not feasible with traditional financing:** It provides resources for projects of a scale that cannot be supported by conventional financing methods.
- **Opportunity to mobilize larger amounts of private investment for social and environmental projects using concessional finance:** This strategy creates the potential to attract significantly larger private investments in social and environmental projects by utilizing concessional finance.

5.11. Government Incentives and Policy Support

Many countries provide financial support such as tax reductions, incentives, and grant programs to enhance energy efficiency, reduce carbon emissions, and promote the use of renewable energy. These incentives lower the costs of energy-efficient building projects and increase returns on investment, thereby boosting interest in energy-efficient, green, and net-zero carbon buildings.

Below are examples of the existing incentives available in Türkiye's building sector:

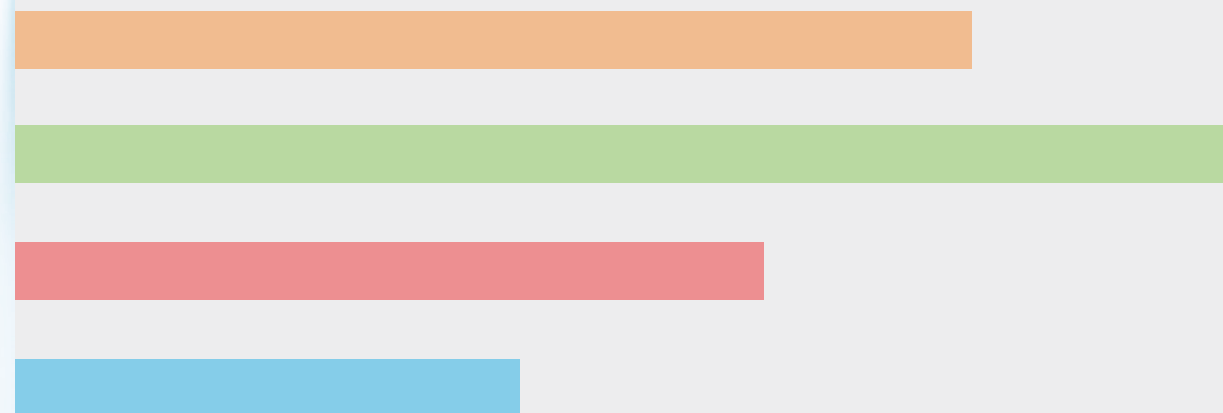
- **Efficiency Increasing Project Supports:** A program that supports the investment costs of energy efficiency implementation projects for both individuals and legal entities across all sectors, from energy production to final consumption.
- **Energy and Carbon Reduction Support Program:** A program that provides financial support for energy expenses in a given year, provided that applicants reduce either energy intensity, carbon intensity, or specific energy consumption according to the criteria set by the Ministry of Energy and Natural Resources.
- **Renewable Energy Resources Support Scheme (YEKDEM):** A program that supports buildings generating energy from renewable sources—such as rooftop solar power plants—by offering guaranteed energy purchase prices.
- The Ministry of Trade has included the LEED green building certification within the scope of “Market Entry Documents,” which facilitate access to foreign markets and promote exports. In this context, if obtaining a LEED certification for a company's building provides an advantage in entering international markets or exports, the company can benefit from the Market Entry Grant Support, with 50% of the LEED certification costs covered by the Ministry.
- **Regional Development Agencies** provide incentives for sustainable building projects.



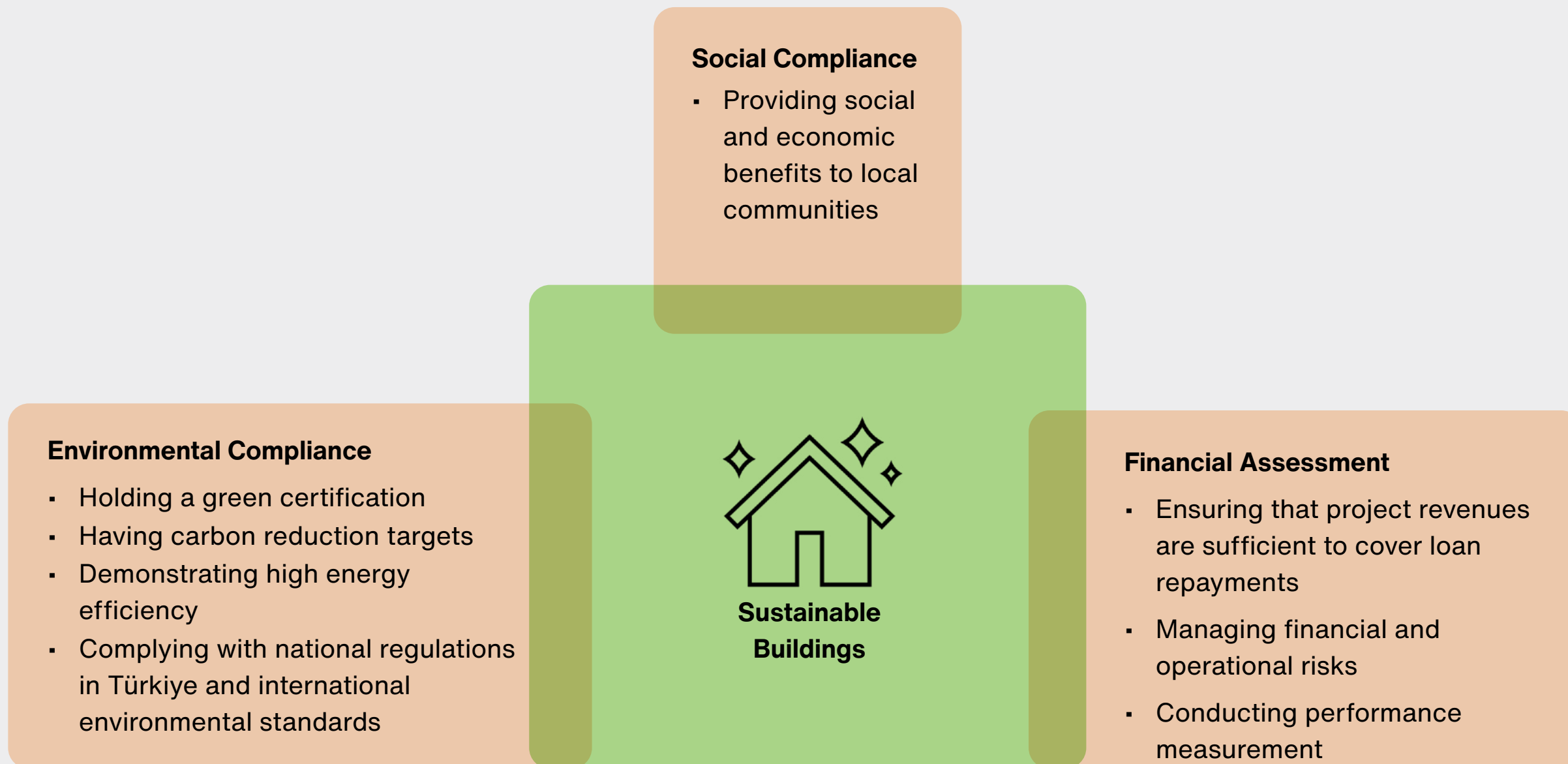


Section 6

FINANCIAL DUE DILIGENCE AND RISK MITIGATION MECHANISMS



6.1. Expectations of Financial Institutions in the Context of Sustainable Building Projects



6.2. Expectations from Financial Institutions in the Context of Sustainable Building Projects

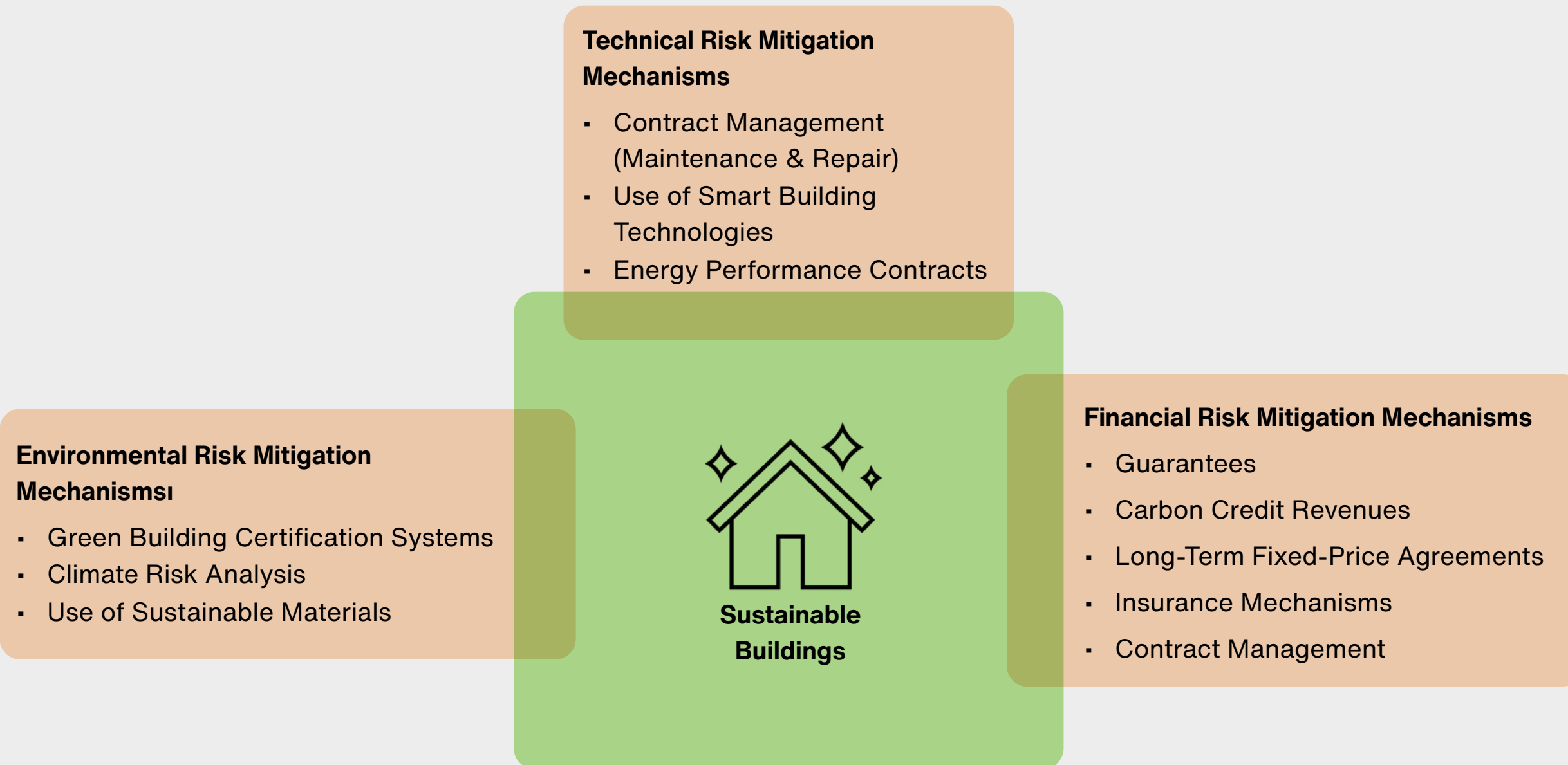


TÜRKİYE BUILDING SECTOR DECARBONIZATION ROADMAP

- The Roadmap aims to enhance financing opportunities for net-zero buildings and support their implementation while decarbonizing lending and investment portfolios.
- The financial sector plays a crucial role in combating climate change by promoting environmental sustainability and striving to achieve net-zero targets. The targets have been set for the short (2033), medium (2043), and long (2053) terms.
 - A goal has been established to transform all operational and attributable greenhouse gas emissions from lending and investment portfolios to achieve net zero no later than 2050.
 - It is targeted that financial instruments for net-zero buildings will gradually transition by 2050, ensuring accessibility to green finance [1].

6.3. Risk Mitigation Mechanisms

Risk Mitigation Mechanisms enhance financing opportunities by reducing the perceived risk level in project assessments conducted by banks.



6.4. Financial Analysis and Cash Flow Modeling

Banks assess certain criteria when evaluating financing decisions for projects.

DSCR

For Sustainable Building Investments, the **Debt Service Coverage Ratio (DSCR)** indicates how much of the debt repayments can be covered by the building's net income, such as energy efficiency, renewable energy production, or rental income.

LCC

Life Cycle Costing (LCC) considers all costs throughout a building's life cycle: investment costs, maintenance and renovation costs, operational costs, and end-of-life costs.

NPV

Net Present Value (NPV) represents the net value of an investment made in a building, calculated in today's terms, taking into account the time value of money.

IRR

Internal Rate of Return (IRR) is a key indicator for decision-making by investors. It is the rate at which the present value of future cash flows equals zero.

ROI

Return on Investment (ROI) is a ratio used to measure the profitability of an investment.

6.5. Monitoring, Reporting, and Verification of Green Finance

KEY PERFORMANCE INDICATORS (KPIs)

Key performance indicators provide concrete data to measure progress toward sustainability goals, evaluate financial performance, and identify areas for improvement within a project or activity's financing framework.

The **Debt Service Coverage Ratio (DSCR)** is typically expected to be greater than 1.2.

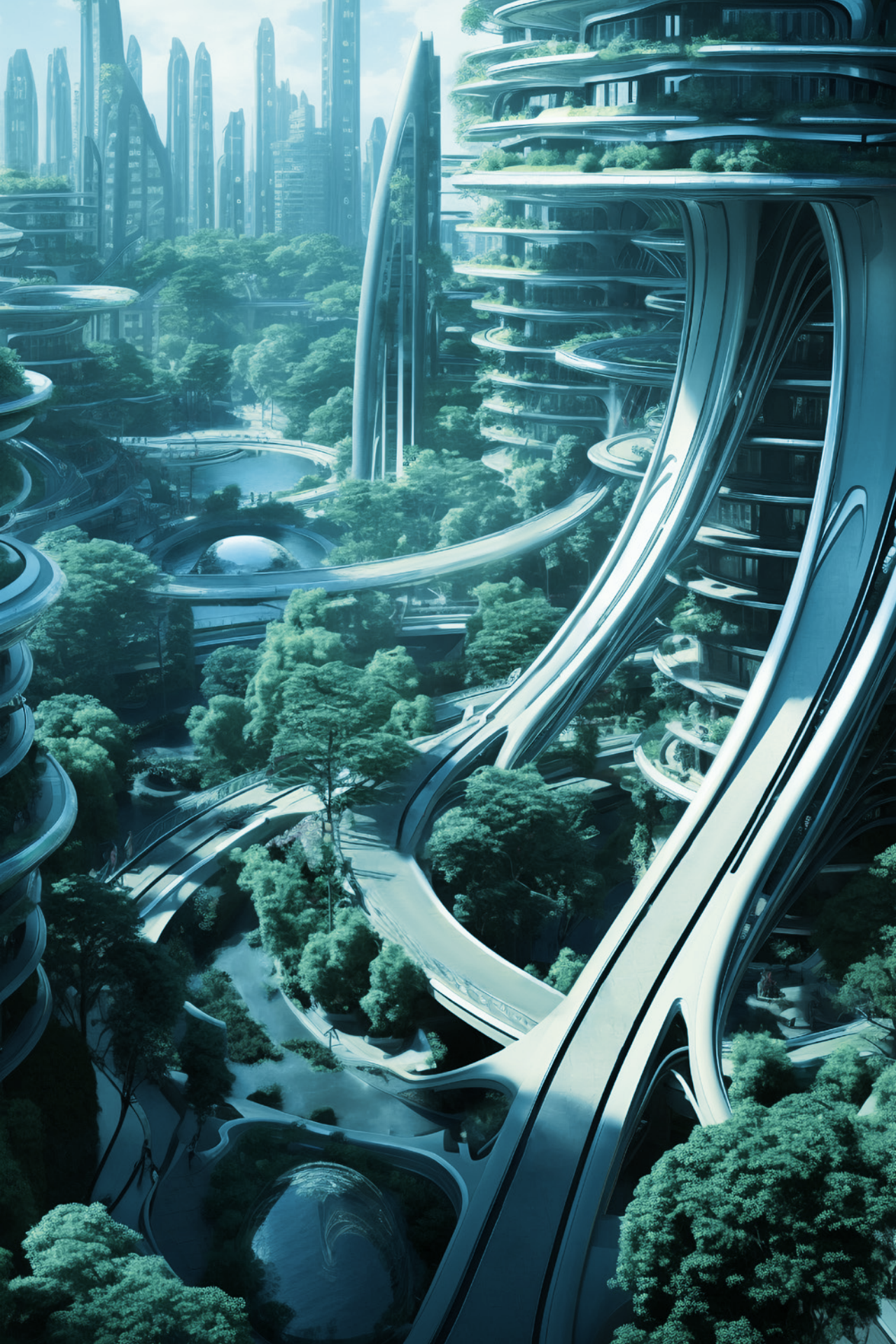
The **Internal Rate of Return (IRR)** is expected to exceed the project's financing costs.

The **Net Present Value (NPV)** is expected to be positive.

The **Carbon Reduction Ratio** indicates how much the project has reduced its carbon footprint. Typically, a 20-30% improvement is targeted in line with global climate frameworks (a specific analysis should be conducted for individual projects and contexts).

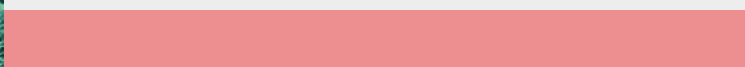
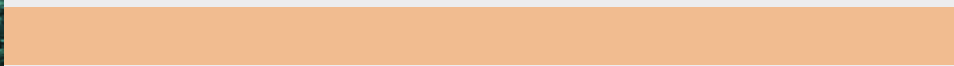
The **Energy Efficiency Ratio** measures the project's success in achieving its energy efficiency goals, usually set at 20-30%.





Section 7

LOOKING AHEAD TO THE FUTURE OF GREEN FINANCE



7.1. . New Opportunities in Green Finance for the Building Sector

Smart Building Technologies

- Reducing operational costs and carbon footprint by optimizing energy consumption and improving efficiency in heating, cooling, and lighting systems.
- Easier access to green finance under Smart Building Technologies.

Incentives and Grants

- Reducing investment costs.
- Making projects financially more attractive.
- Tax Advantages.

Low-Cost Financing

- Low-interest and favorable green loans for green building projects.

Green Insurance Products

- Providing protection against risks such as climate change and natural disasters, thus reducing financial risks for building owners.

Access to Climate Finance

- Access to international funds.
- Financing of sustainable building projects through public and private sector cooperation.

Carbon Credits

- Reducing carbon emissions by improving energy efficiency and using renewable energy, and obtaining carbon credits.
- Generating additional income by trading carbon credits in carbon markets.

7.2 Case Studies and International Best Practices



GREENOX RESIDENCE

As part of urban transformation, the Greenox Residence Sustainable Green Housing Project, completed in the Çeliktepe neighborhood of the Kağıthane district in Istanbul and designed with **Türkiye's first and only vertical forest concept**, became **the country's first post-construction EDGE Green Building certified pilot project under the EDGE Green Building Sector Development Program by the International Finance Corporation (IFC)** last November.

From the design phase, the project was planned with the goal of achieving LEED-GOLD certification. The use of high COP VRF systems for cooling, efficient boilers for heating and hot water, energy-efficient LED fixtures for both indoor and outdoor areas, and motion sensors in common area and exterior lighting systems resulted in a **35% energy efficiency gain**.

Water efficiency of 42% was achieved through the selection of low-flow showerheads, faucets in bathrooms and kitchens, and the installation of dual-flush (2.5/4L) toilets in all apartments. The use of low-embodied-energy materials in flooring, interior and exterior walls, roofing, and window frames contributed to achieving a **41% efficiency rating in the materials category** [14].

Certifications: EDGE Certificate, LEED NC v3 – LEED Gold



35%

Energy Savings



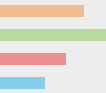
42%

Water Savings



41%

Resource Efficiency



7.2 Case Studies and International Best Practices

PROMIGAS - The First Social Bond Issued by a Company Operating in the Real Economy Sector

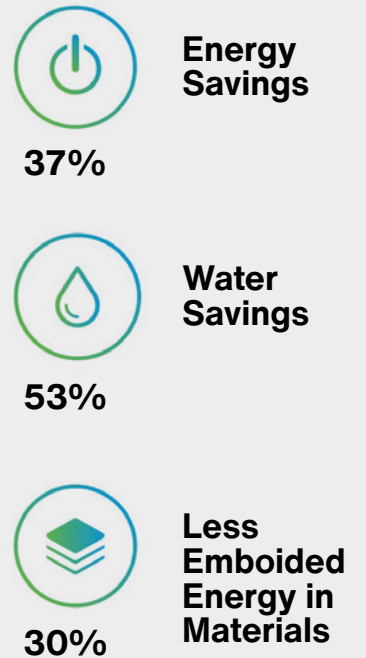
The Colombian liquefied natural gas (LNG) company Promigas has signed an agreement to issue a social bond worth 540 billion Colombian Pesos (USD 122 million). Jointly issued by Promigas and its subsidiaries, Surtigas S.A. E.S.P. and Gases de Occidente S.A. E.S.P. (GdO), the bond will be used to finance the company's "Brilla" program. Additionally, the International Finance Corporation (IFC) has agreed to invest in the bond issuance.

The project will support the expansion of Brilla's credit program, which targets low-income populations or those living below the poverty line. The primary outcome of the project includes increased access to consumer credit.

The loans provided under Brilla's program enhance access to essential goods and services, helping individuals improve their living conditions. Beyond Brilla's impact, the project is also expected to contribute to the development of Colombia's capital markets and foster market competition.

Under the program, economically vulnerable segments of society receive vouchers that they can use with selected commercial partners to purchase essential goods and services, such as home repairs or education. In 2023, 45% of total Brilla loans were used for household appliances, 21% for construction materials, 18% for motorcycles, and 8% for education [15].

7.2 Case Studies and International Best Practices



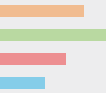
KAUFLAND – HRISTO SMIMENSKI, EDGE AMBASSADOR

Kaufland, a retail company operating under the German Schwarz Gruppe, is a hypermarket chain in Eastern Europe. Primarily focused on food retail, Kaufland ranks among the top ten companies in Bulgaria and employs 8,500 people.

Between 2006 and 2014, Kaufland certified all its newly constructed stores with the **EDGE certification**. Each of these stores was built at an **additional cost of approximately USD 100,000** compared to

a conventional retail building. However, Kaufland projects that this investment will be recovered within an average of two years, as **each store's monthly energy bill is reduced by over USD 4,000**.

Kaufland stands out as an **ambassador** of the EDGE brand in Bulgaria's retail sector. In parallel with the certification process, key assumptions within the EDGE framework were revised following the Bulgarian government's implementation of stricter regulations [16].



7.2 Case Studies and International Best Practices

SPAIN, FINANCING ENERGY EFFICIENCY PROJECTS

The European Investment Bank (EIB) and Kutxabank have signed an agreement under Kutxabank's €300 million bond issuance, enabling the Kutxabank to provide up to €600 million in financing.

This transaction will boost investment in **green projects linked to energy-efficient construction** in Spain. The investments will cover energy-efficient construction and renovation projects that meet sustainability criteria.

These projects will be facilitated through financial instruments such as **green mortgage loans**, consumer loans, and project developer loans offered by Kutxabank. The initiative will make a significant contribution to combating climate change.

Additionally, the project will support Spain's 2021–2030 Integrated National Energy and Climate Plan by helping to reduce primary energy consumption and renovate buildings.

A portion of the funds will be allocated to Spanish regions classified as less developed, where per capita income is below 75% of the EU average. This highlights the European Investment Bank's commitment to strengthening economic, social, and regional cohesion within the European Union [17].

7.2 Case Studies and International Best Practices



SUPER-I PUBLIC-PRIVATE PARTNERSHIP (PPP)

The SUPER-i project will facilitate substantial investments in energy efficiency within the social housing sector by fostering direct dialogue among financial institutions, private investors, and social housing managers. Additionally, Energy Service Companies (ESCOs) will be involved in this process.

While supporting the financing of **energy-efficient renovations of social housing** stock across Europe, SUPER-i aims to increase the share of renewable energy in final energy consumption.

The projects will be implemented under three main Public-Private Partnership (PPP) models:

- 1. Loans:** Credit lines established by public entities to enable private sector organizations (banks or financial institutions) to finance energy efficiency projects. Financial institutions typically provide additional co-financing for these projects.
- 2. Risk-Sharing Mechanisms:** Partial risk or credit guarantee programs set up by public entities to reduce financing risks for the private sector in energy efficiency projects. By sharing risks through guarantees, this mechanism encourages private sector lending for such projects.
- 3. Energy Savings Performance Contracts (ESPCs):** Public sector initiatives launched through legislation or regulations to facilitate the implementation of performance-based energy contracts by one or more public entities [18].





7.2 Case Studies and International Best Practices

EUROPEAN INVESTMENT BANK – GREEN BOND

The green bond issued by the European Investment Bank aims to finance **green investments in affordable housing**. This initiative aligns with the European Union’s Urban Development and Renewal Framework, the Europe 2020: A Strategy for Smart, Sustainable, and Inclusive Growth, and the Energy Performance of Buildings Directive.

The affordable green housing units will be located in the Paris metropolitan area (Île-de-France) and will contribute to reducing the current housing shortage of approximately 160,000 to 280,000 units in Greater Paris. These homes will be rented to middle-income households at below-market rates compared to similar properties.

The projects financed through the purchase of these green bonds aim to alleviate the existing housing deficit in areas of Paris where housing supply is limited, provide support to an underfunded sector, and **support an institution issuing green bonds for the first time in the affordable housing sector**.

- All new buildings are expected to be consistent with the goals and principles of the Paris Agreement and meet the requirements for “**Nearly Zero Energy Buildings**.”
- It is anticipated that renovated buildings will reduce primary energy demand by more than 30%.
- Approximately 80% of the selected projects are expected to achieve at least 10% better energy performance than the specified thresholds [19].

7.2 Case Studies and International Best Practices



BRUSSELS EXEMPLARY BUILDINGS PROGRAM & PASSIVE HOUSE LAW

- **As of 2015, Brussels became the first region in the world to mandate the passive house standard for all new buildings.**
- The BatEx or “Exemplary Buildings” program, which offers incentives for 243 very low-energy projects, has demonstrated that this standard can be applied with minimal cost increase by stimulating the market.
- **The program has been a remarkable example by subsidizing hundreds of Passive House projects and proving the financial viability of very low-energy buildings.**
- This has led to a rapid increase in passive house buildings, the creation of thousands of new jobs, and a sharp reduction in carbon emissions.
- **In just 10 years, Brussels transformed from the region with the poorest building energy performance in Europe to a global leader [20].**

Policy Title	Purpose of the Policy
2011 Passive House Law	Any residential, office, or school construction or major renovation that takes place after January 1, 2015, must obtain planning permission in compliance with the relevant standards.
Energy Performance of Buildings Regulations 2007	This regulation is designed to reduce primary energy consumption and CO ₂ emissions in the operation of buildings while ensuring the comfort of building occupants.

Continuous Learning Resources



- **EU Taxonomy Navigator**, <https://ec.europa.eu/sustainable-finance-taxonomy/>
- **The Passive House Research, Passipedia**, <https://passipedia.org/start>
- **Edge Certification**, <https://edgebuildings.com/>
- **BREEAM Certification**, <https://breeam.com/>
- **US Green Building Council - LEED Certification**, <https://www.usgbc.org/leed>
- **BUILD UP Initiative, a portal for sharing knowledge on how to make buildings more energy efficient**, <https://build-up.ec.europa.eu/en/home>
- **Energy Performance of Buildings Directive**, https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/energy-performance-buildings-directive_en
- **World Green Building Council**, <https://worldgbc.org/>
- **Turkish Green Building Council (ÇEDBİK)**, <https://www.cedbik.org/>
- **Green Finance Platform**, <https://www.greenfinanceplatform.org/>
- **EIB, Sustainable cities and regions** <https://www.eib.org/en/projects/topics/sustainable-cities-regions/index>

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