

OFFICIAL EVENT OF THE
BERLIN ENERGY TRANSITION DIALOGUE.25

BUILDING RENOVATION FINANCING

GNE VENTURES

Energy Efficiency Hub
Energy Efficiency in Buildings Task Group
17 March 2025
Berlin, Germany

ABOUT GNE VENTURES

GNE Ventures is an **Energy Transition advisory & Infratech investment firm** specializing in the design, setup, fundraising, and management of industry-related investment solutions.

GNE VENTURES in numbers:

70+ years	of combined **team experience** in energy transition & off-balance sheet transactions
17 years	operating in **clean tech** since 2008
€120m+	**Energy Transition & infrastructure projects** orignated, managed and structured by our team
20+ projects	**Advisory** in initiatives led by the European Commission*, the World Bank, the EIB, and Sovereign Funds
2	Investment Vehicles: **GNE Invest I & RIF**
12	Investments executed in start-ups & SMEs

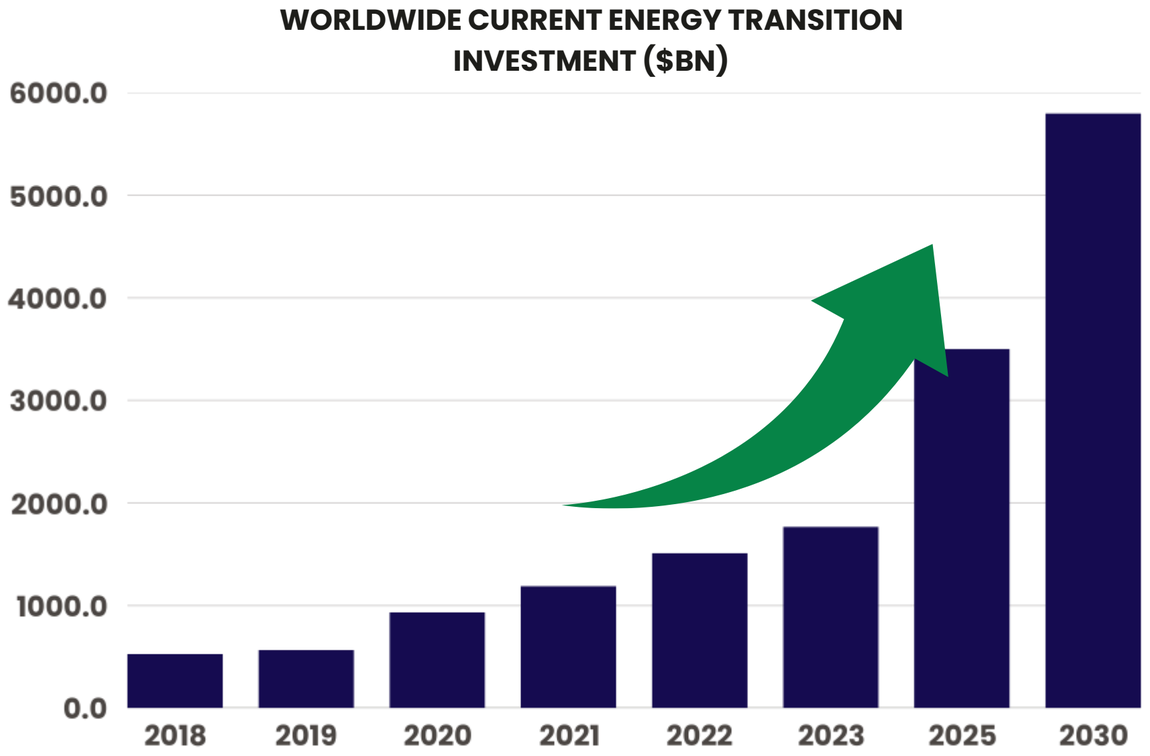


*Horizon 2020 & LIFE programs



Global Investment in Energy Transition

ENERGY TRANSITION INVESTMENTS HAVE GROWN **3X SINCE 2018**...



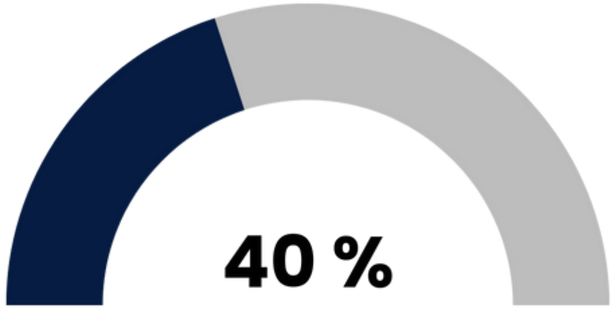
Global investment in energy transition hit **$1.8 trillion** in 2023**, up 17% YoY**— the 4th consecutive year of **record-breaking growth** across all regions.

...BUT **$3T+ MORE** IS NEEDED ANNUALLY TO **REACH NET ZERO**

Sources: BloombergNEF Net Zero Insights

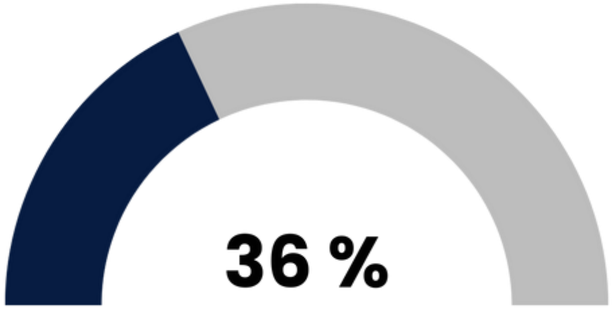
Why are we focusing on Built Environment?

The **building sector connects** climate policy, energy efficiency, and economic growth in cities.



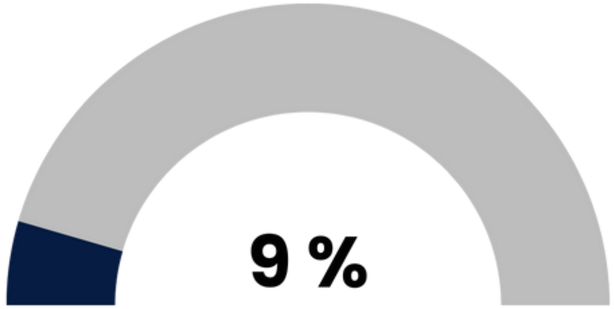
ENERGY CONSUMPTION

Buildings **waste energy** through **outdated** systems in heating and lighting



CO_2 EMISSIONS

Buildings emit carbon from **fossil heating** and **non-renewable electricity**.



EU GDP

Construction: 9% of EU GDP, 18M jobs, **key economic driver**

BUILDING RETROFITTING IS CRITICAL TO REACH NET ZERO GOALS

Global Housing Renovation Objectives

Key Targets and Strategic Agreements

Building renovation has emerged as a **principal climate strategy** since the Paris Agreement (COP21), with regions worldwide establishing **tailored targets** reflecting their unique contexts and challenges

PARIS AGREEMENT (COP21) & GLOBAL TARGETS

Emissions reduced by 2050

80-90%

Annual building renovation rate

3 - 4 %(1)

Energy intensity of buildings decrease by 2030

>30%

COP21 · CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE

Energy Performance Building Directive:
All buildings must be NetZero by 2050
Fit for 55 Package: 55% emissions reduced by 2030



North American Climate, Clean Energy, and Environment Partnership : Harmonized standards for building efficiency
Canada's Green Homes Grant: Target to retrofit 700,000 homes by 2028

China's 14th Five-Year Plan : 65% of urban buildings to meet green building standards by 2025
Japan's Green Growth Strategy: Carbon neutrality in the building sector by 2050
India's Energy Conservation Building Code: Mandatory for commercial buildings, extending to residential sector

These commitments aim to transform existing building stock while addressing energy efficiency, emissions reduction, and social equity concerns.

(1): Current is around 1%

Why should governments care about homes & buildings' renovation?



Sources: *Savills Research, and Savills Research using World Bank, Bank for International Settlements, World Federation of Exchanges, World Gold Council*

At $380 TN in 2022, Real estate is worth more than the global equity and bond markets combined and is almost **four times the size of global GDP**. Property remains the biggest store of global wealth by some margin.

The 2008 "subprime crisis" and other past shocks demonstrated that the soundness of the Real Estate market heavily affects capital markets and real economies.

That is why **aging buildings and climate change impact represent risks that must be managed at a systemic level**.

Key Challenges in Building Retrofitting

Market Fragmentation

Millions of buildings, each unique

Complex stakeholder landscape

Different priorities among owners, tenants, financiers, and policymakers.

High upfront costs

Retrofitting requires significant capital investment

Long payback periods

Different priorities among owners, tenants, financiers, and policymakers.

Types of Energy Efficiency (EE) Projects

Let’s break down the main types of energy efficiency projects that require financing.

Stand-alone retrofits

- Single upgrades like LED lighting, HVAC replacements.
- Quick payback (2-5 years) but limited overall impact

Embedded renovations

- Integrated into broader building refurbishments.
- More complex financing but higher impact.
- Example: Adding insulation and upgrading heating systems as part of a major renovation.

New build improvements

- Best financing options as they are part of overall construction.
- Opportunity to integrate deep energy efficiency at minimal additional cost.
- Not sufficient to achieve de-carbonization goals fast enough.

GREEN RENOVATION RISKS

Financing mechanisms need to address 3 main areas of risk:

Credit Risk

Financial Instruments

MITIGANTS:

- Loan **guarantees** & **risk-sharing** mechanisms.

- First loss tranche
- Subsidies & grants
- Fiscal credits
- Fiscal deductions

Technical Risk

Technical Assistance Programs

MITIGANTS:

- **Project development support** (ELENA, e.g.): a dedicated facility to make projects bankable.

- **Performance insurance** (protects against underperformance).

Market Risk

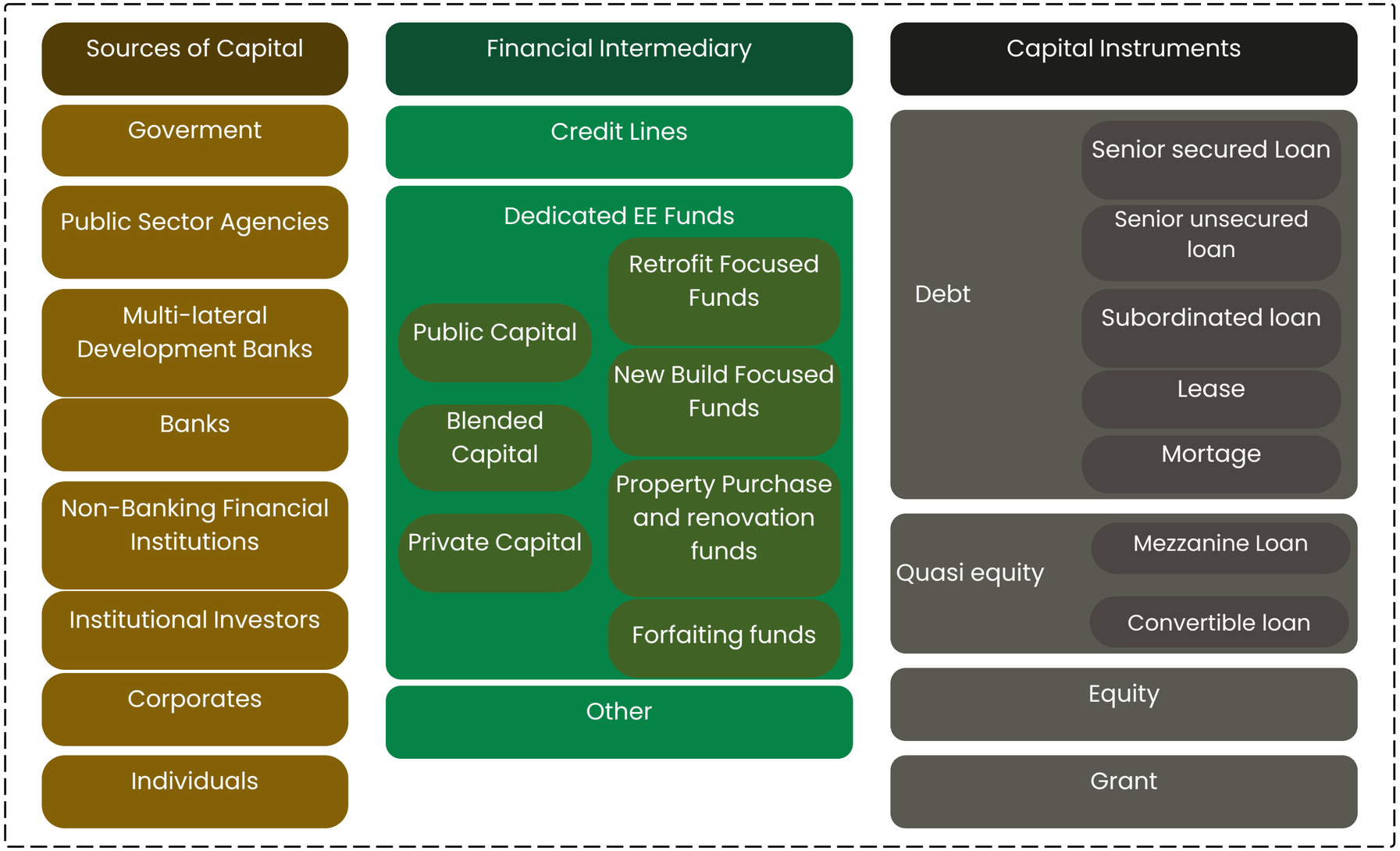
Policy Support

MITIGANTS:

- Minimum Energy Performance Standards (**MEPS**) to mandate EE improvements.

- **Raising awareness**
- Public funding & tax **incentives** for retrofits.

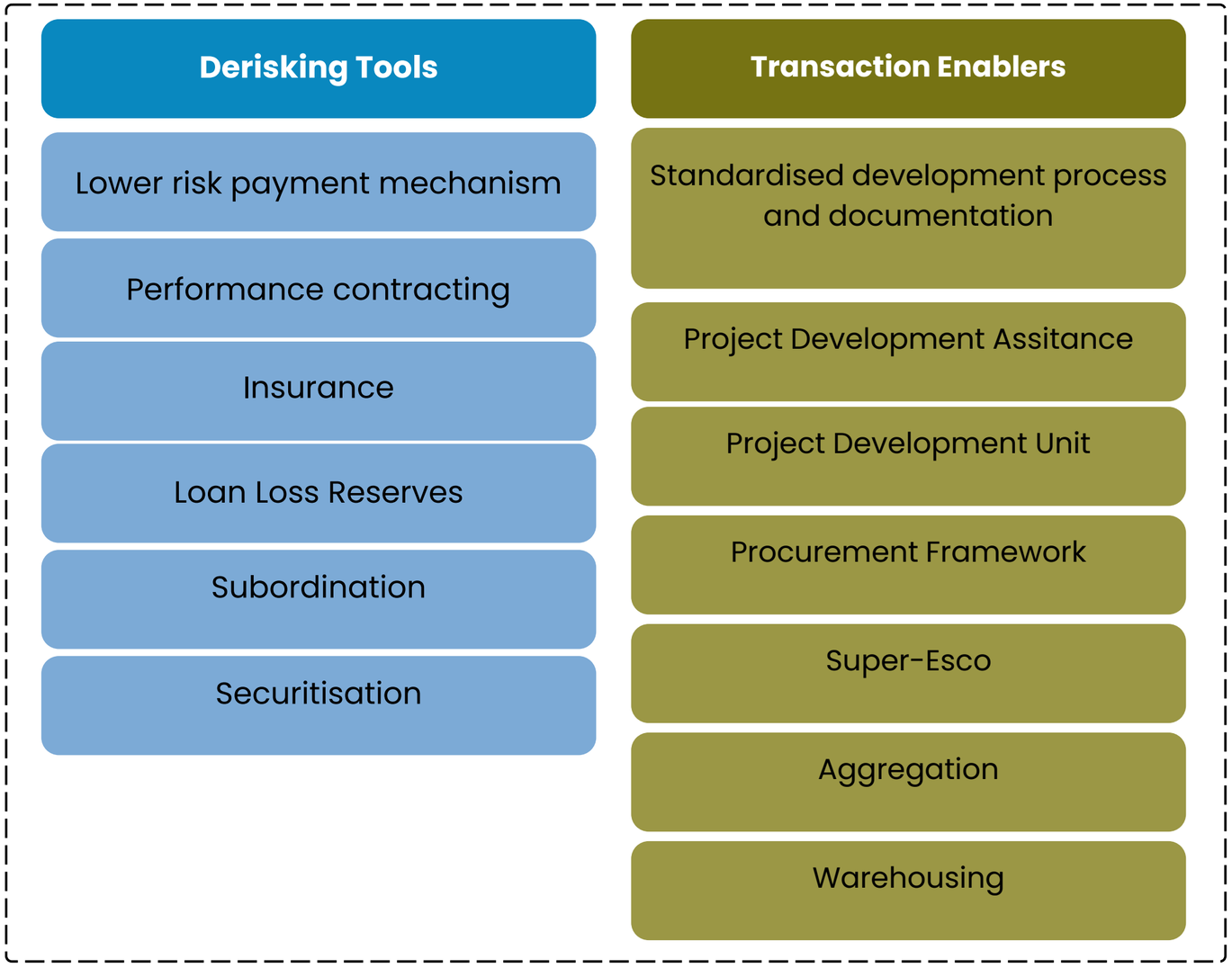
The components of Financing Instruments



The financial solutions provided by intermediaries are **necessary but not sufficient** to scale up building renovation

Source: Toolkit for Energy Efficiency Financing Instruments for Buildings in the Arab Region, 2021.

The components of Financing Instruments



To achieve scale, two additional elements are needed: **risk management tools and enablers.**

Source: Toolkit for Energy Efficiency Financing Instruments for Buildings in the Arab Region, 2021.

WE NEED **FINANCING SOLUTIONS** WHICH ENABLE

ENERGY EFFICIENT BUILDING RENOVATIONS

TECHNICAL ASSISTANCE IN BUILDING RENOVATION



European City Facility (EUCF)

The European City Facility (EUCF) provides financial and technical support to cities, municipalities, and their groupings to accelerate sustainable energy and climate action plans implementation. GNE Finance has played a key role in this initiative, which is expected to catalyze approximately €125 million in investments across municipalities around Europe

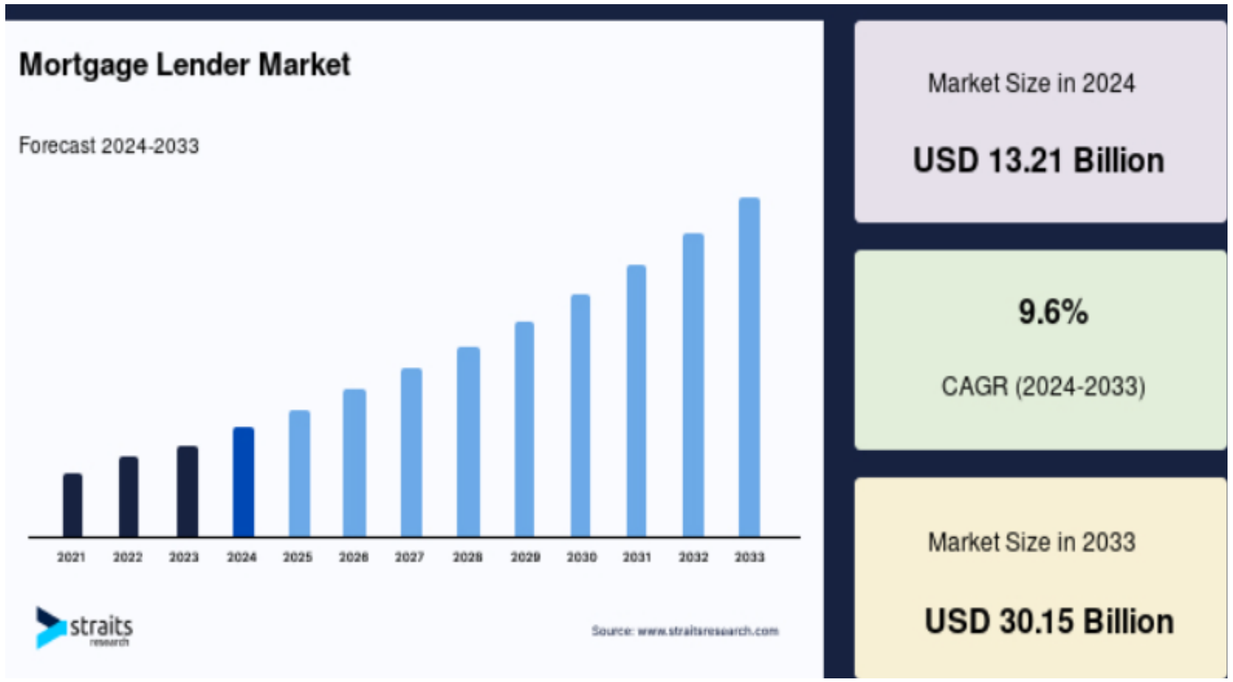
Capital Invested	Municipalities Selected	Training Sessions
€24m	**411**	**>400 activities**

Shape EU

SHAPE-EU supports SMEs, public authorities, and affordable housing providers in implementing **district-level renovation projects** with an emphasis on sustainable and social housing, developing a comprehensive **funding mapping tool** outlining available financing options and delivered tailored mentoring sessions to help secure funding

What about mortgages?

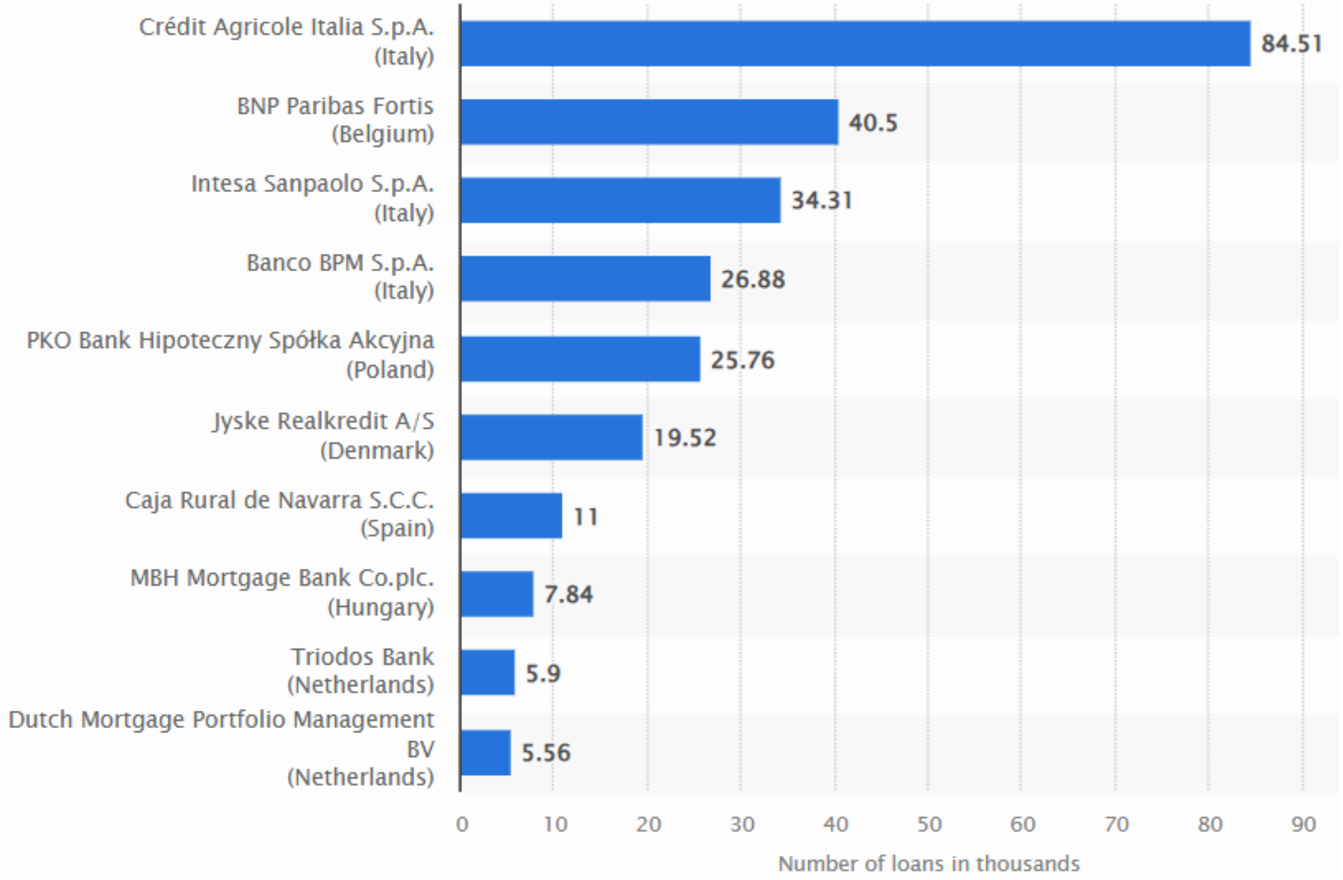
The global mortgage lender market size was valued at **USD 13.21 trillion in 2024** and is projected to reach USD 30.15 trillion by 2033. The problem is that in most cases, **mortgages are under-used for buildings' renovations**.



GREEN/ENERGY EFFICIENT MORTGAGES

What is a green mortgage?

Under a green mortgage, a bank or mortgage lender offers a house buyer **preferential terms** if they can demonstrate that the property for which they are borrowing meets certain **environmental standards**. This could perhaps be a new build home with an existing sustainability rating, or where the **borrower will commit to invest in renovating an existing building to improve its environmental performance**.



Efficient Mortgage (EEM) originations in Europe as of 2nd quarter 2023, by lender

- Around 250k green mortgages
- Estimated volume of 20-30B€
- No data about the split between new builts and renovations
- No data about the impact (saved Ton CO2, etc.
- Fragmented results by country
- To be seen the uptake for the coming years
- It doesn't address the split-incetive between owner and renter

Financing Mechanisms



Risk-sharing facilities

Risk-sharing facilities **distribute** renovation **costs and liabilities** between **multiple stakeholders**.

OPENGELA

Opengela aims to provide affordable energy-efficient building upgrades in vulnerable districts of the Basque Country through **tailored financial solutions** and technical support.

Buildings Rehabilitated	Home Rehabilitated	Investment Mobilized
2 8	42 5	€15.16 m

Secondary Market Instruments (Refinancing)

Forfaiting

Forfaiting **transfers** energy renovation loans to investors, **providing upfront capital while sharing repayment risks**

eeef
EUROPEAN ENERGY EFFICIENCY FUND

EEEF financed, through a **Forfaiting**, an energy efficiency project at UPM Madrid, demonstrating how alternative investment funds can successfully support university sustainability initiatives

Boilers Retrofited	CO2 Saved	Investment Mobilized
63	45%	€7.2 m

Financing Mechanism



Specialized financing solutions

Public-Private Energy Eficiency Funds

Public-Private Energy Efficiency Funds **enable affordable** home renovations – a relevant case is the **on-tax financing.**

PACE programs enable home rehabilitation financing through **property-secured loans**, allowing **repayment through property tax assessments** over extended terms. Brilliant solutions with significant hurdles for implementation.

Boilers Retrofited	CO2 Saved	Investment Mobilized
63	45%	€7.2 m

Energy Service Models: Performance-Based Financing

Energy Performance Contracts (EPCs)

- **Guarantee Savings** -> ESCo takes the risk
- **Shared savings** -> Cost and benefits split

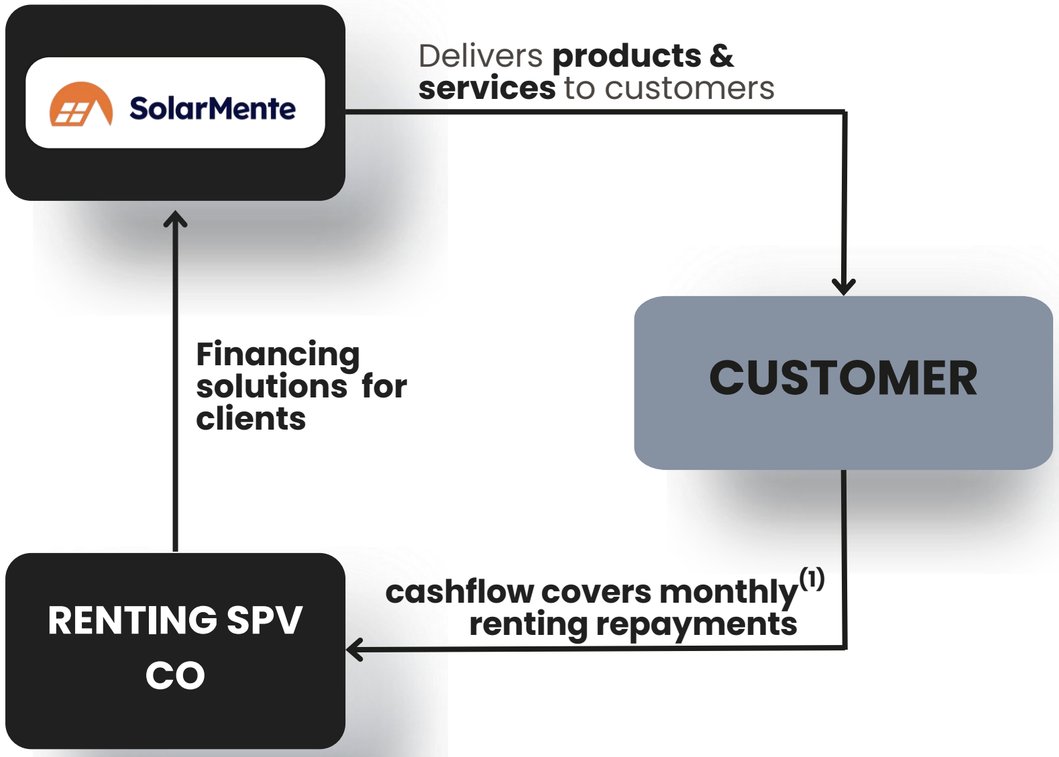
Tarshid is the **Super ESCO** created in 2017 by the Ministry of Finance, the Ministry of Energy, Industry and Mineral Resources, and the Saudi Energy Efficiency Center, taking buildings or sets of buildings and tenders them to ESCOs that are contracted to implement the retrofit measures

Total AUM	Real State AUM	Projects Executed
$507m	$213m	>120 projects

CASE STUDY - SOLARMENTE

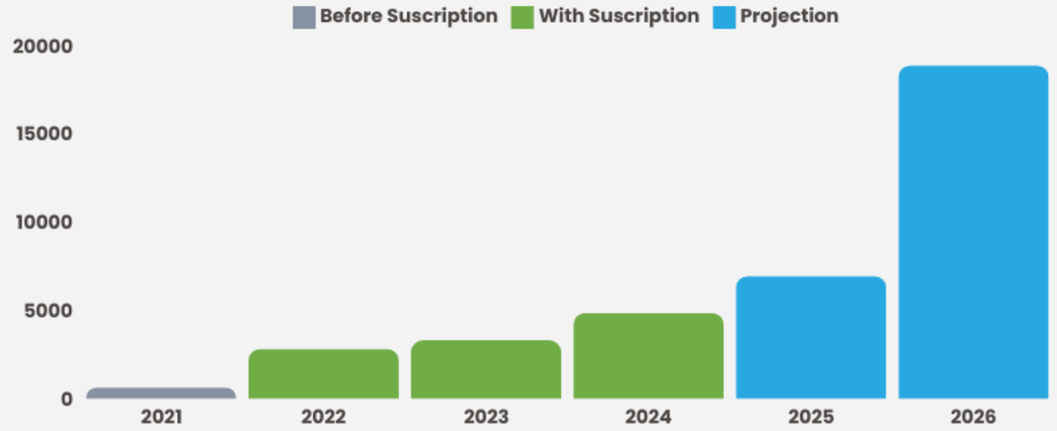
Solarmente is a Spanish company pioneering sustainable renewable energy & HVAC solutions for a greener future. With our investment, a parallel structure was created that **allows offering rental solutions to B2C** customers for both photovoltaic projects and heat pumps.

ENERGY AS A SERVICE (EAAS)



INCREASE OF REVENUES

Solarmente's revenues have experienced **significant growth** f**rom €628k in 2022 to €6m in 2024**, with a projection of **€18m for 2025**



(1) SPV takes ownership of the hardware and uses it as collateral to raise debt financing. This keeps heavy CAPEX off the startup's balance sheet

CASE STUDY - REAL ESTATE CO

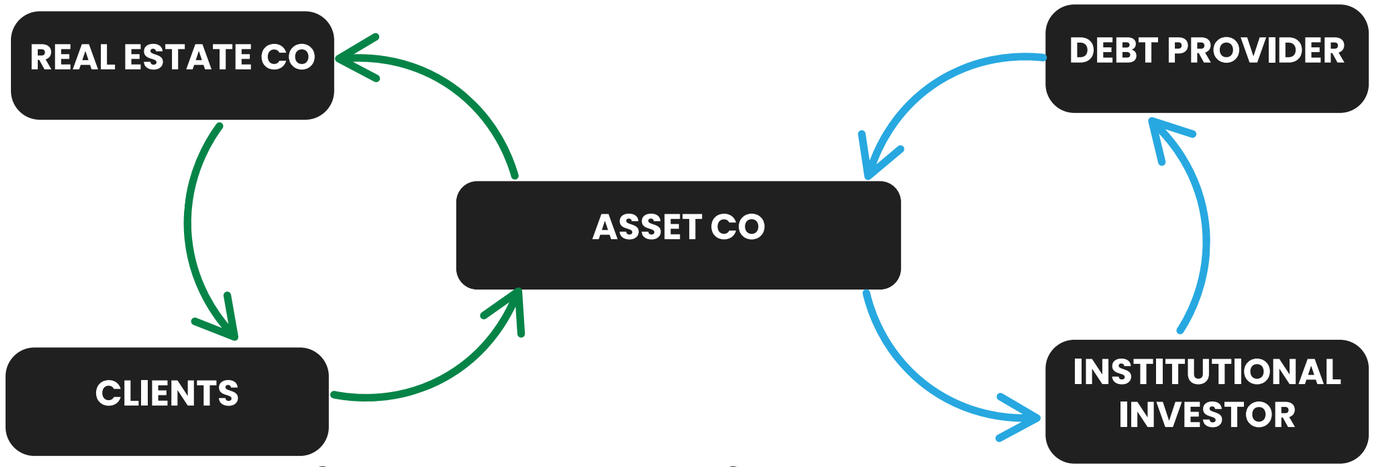
Real Estate Co offers renovation and management services to clients in commercial real estate. More and more clients demand energy-efficient renovation and sustainable buildings. Real Estate Co needs financial solutions to be able to promote efficient renovations at scale without upfront investments from its clients..

GNE Ventures' **Financing for Equity (F4E)** solves both Real Estate Co and its clients needs while promoting renovations at scale.

MARKET-AS-USUAL



NEW BUSINESS APPROACH



Step 1
REQUIREMENT SPECIFICATION

Client requests Real Estate Co to locate premises meeting specific criteria.

Step 2
MARKET RESEARCH & DESIGN

Real Estate Co identifies suitable property and presents renovation project for approval.

Step 3
LEASE AGREEMENT

Client approves project and commits to long-term lease upon completion.

Step 4
SPV ENGAGEMENT

Asset Co SPV finances project execution and mandate the renovation to construction co.

Step 5
ACQUISITION & RENOVATION

SPV might purchase property and completes renovation

Step 6
LONG-TERM LEASE EXECUTION

Client signs formal long-term lease agreement with SPV.

Step 7
PORTFOLIO DEVELOPMENT

SPV manages assets and secures debt financing to build €30-100M portfolio.

Step 8
PORTFOLIO SALE

Upon reaching target volume, portfolio is sold and SPV process restarts in a revolving fashion



Success Factors & Conclusions

THE **RENOVATION CHALLENGE IS SIGNIFICANT—BUT SOLVABLE**.
WE HAVE THE FINANCING TOOLS AND POLICIES AVAILABLE.

01. Strong Policy Frameworks

1. **Stable, long-term regulations** create investor confidence and market certainty.
2. **Mandatory performance standards** drive renovation demand and establish clear market signals
3. **Clear enforcement mechanisms** ensure compliance and accelerate market transformation

02. Robust Market Infrastructure

1. **Standardized processes** significantly reduce transaction costs and streamline implementation
2. **Public-private partnerships** combine government credibility with private capital efficiency
3. **Scalable funding mechanisms** enable widespread deployment of energy efficiency solutions

03. Capacity Building

1. **Technical expertise development** for financial institutions, developers, and city officials.
2. **Implementation capacity** to assess, design, and execute complex renovation projects.
3. **Bankable project** pipelines that attract investment and scale renovation activities

NOW WE NEED ACTION

Thank You

For Your Attention

GNE VENTURES

Davide Cannarozzi
dc@gne-ventures.com
Barcelona

