

LAUNCH

Sustainable Energy Assets as tradable securities

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D6.9 Regulatory Barriers and Enablers to Sustainable Energy Finance



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D6.9 Regulatory Barriers and Enablers to Sustainable Energy Finance – Public Document

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ABBREVIATIONS

DD	Due Diligence
EaaS	Energy as a Service
EE	Energy Efficiency
EPC	Energy Performance Contract
ESCO	Energy Service Company
RAP	Risk Assessment Protocol
SEA	Sustainable Energy Assets
SEAD	Sustainable Energy Asset Developer

EXECUTIVE SUMMARY

This document describes the regulatory barriers and enablers for the widespread uptake and implementation of sustainable energy finance, identified during the LAUNCH project. The deliverable provides an overview of the European regulatory framework on Sustainable Energy Finance and the key challenges and opportunities the project partners see as relevant to be addressed by the European Commission.

Large-scale finance of SEA projects is necessary in order to reach Europe's 2030 energy efficiency and carbon reduction targets. The European Union (EU) must move beyond improved eco-standards for technologies for everything from household appliances to industrial processes and enable market growth of the full range of sustainable energy projects.

This is why since May 2019, Joule Assets Europe, EnerSave Capital, TNO, BNP and New Energy Group have been working together to develop some key tools that would accelerate the scaling of project finance. If on one side we can say that during these past 2,5 years the groundwork has been laid, on the other side we recognize that there is still a lot of work to be done to actively contribute to the achievement of the European climate and energy targets.

Key conclusions of this review deal with the practices of the regulated entities such as the EIB and other institutions as well as Member States. In particular, the consortium concludes that improvements around credit supports, contract and process aggregation, project standardisation and improved signals from government are all key reachable enablers through which the Commission and governments would be able to effectively increase finance in energy efficiency projects across Europe.

Beyond this, a key challenge today, is that while standardized risk assessment, contracts and processes have been developed and implemented successfully, there are no parties close to consumers and project developers to support their continued market rollout in the long term. As a result, as soon as market participants start to understand the materials and use them, the party making these materials available and keeping them up to date, disappears. This creates dissonance in the market and means that neither funds, banks, project developers or clients can ever fully implement a standardised process or document. Banks do not have the resources to train individual small clients, EU projects come and go, and no institution is taking on this role. Considering the amount of resources, and the success of pilots establishing an entity or entities with lasting power to maintain and deliver, and train practitioners to use the materials would be a highly effective measure in proportion to the cost. This could be backed by the European Commission and supported through the EIB at least 5 to 10 years at a time to allow for genuine market uptake to take place.

1 INTRODUCTION

There is robust interest on the part of financial institutions to finance Sustainable Energy Assets projects in Europe.

However, for these institutions to provide funding at scale, increased volume, replicability, and standardisation of projects are critical. The shift in focus from individual projects to a portfolio approach has been successful in recent years with large renewable energy projects, and now the challenge is to extend this approach to smaller Sustainable Energy Assets (SEA) projects.

Today the SEA market is splintered over many project and contract types, small portfolios, and many methods for assessing project risk. This smothers market growth today and will continue to do so in the future. Contracts and risk assessment must become standardised, to encourage market growth in a manner which will lay the groundwork for and accelerate the scaling of project finance in the future. Indeed, for the sustainable energy market to reach its full potential, we must lay the groundwork required to accelerate the development of Sustainable Energy Assets (SEA) as tradable securities. This was the aim of LAUNCH.

In the past 2,5 years, the project partners have developed a set of standardised tools that includes: a standardised project developer-end client's energy-as-a-service agreement, standardised risk assessment protocol, standardised company presentation and financial spreadsheet for equity finance and standardised value propositions and tools to support sales processes.

These materials have been tested with a group of investors and project developers to gather feedback and ideas on how to improve it and make it accessible in real-life projects. This gave us the opportunity to understand what some key barriers are preventing the market growth.

1.1 AIMS AND OBJECTIVES

The aim of this deliverable is to share an overview of the regulatory status of the European energy efficiency finance market and to highlight the key challenges and opportunities we have identified in the past two years by engaging project developers, investors, and other industry players.

These two perspectives will give a more realistic idea of what is working and what is not, providing actionable insights for the European Commission and national regulators concerning bankability of sustainable energy.

1.2 DELIVERABLE OUTLINE

This deliverable is structured as follows:

Chapter 1 is an introduction to the deliverable and has the objective to set the scope and purposes of the document.

Chapter 2 provides an overview of the current regulatory environment in the Sustainable Energy Finance market in Europe, taking into consideration the main directives and initiatives different bodies have put in place.

Chapter 3 is dedicated to the LAUNCH experience and takes into consideration the challenges and opportunities the Consortium see as relevant, based on 2,5 years of exchange with project developers, investors, industry representatives and other relevant stakeholders.

Chapter 4 summarizes the action points and suggestions to the European Commission. Finally, the document concludes highlighting the key takeaways and next steps to be taken by the LAUNCH Consortium.

2 THE SUSTAINABLE ENERGY FINANCE MARKET IN EUROPE

Today, one of the biggest world challenges is to stop the climate change that is affecting our planet at all levels. The side effects are already impacting our daily life and the entire ecosystem. More and more frequently we hear of huge fires destroying forests and animal life, and rising sea levels. This is becoming unbearable and requires governments from all over the world to take concrete and stronger actions.

Towards this end, last year the European Commission launched the European Green Deal, a set of policy initiatives with the aim of making Europe climate neutral (zero net emissions of greenhouse gases) by 2050. These policies touch a wide range of activities from energy to agriculture and industry, to transport, research, and innovation, as well as the whole financial and regional development to ensure an equal change across all European countries.

According to the European Commission, “the production and use of energy account for more than 75% of the EU’s greenhouse gas emissions. Decarbonising the EU’s energy system is therefore critical to reach our 2030 climate objectives and the EU’s long-term strategy of achieving carbon neutrality by 2050.”¹ Prioritising energy efficiency, improving the energy performance of our buildings and developing a power sector based largely on renewable sources are, therefore, key objectives to achieve a clean energy transition.

In particular, buildings are one of the largest sources of energy consumption in Europe, responsible for over a third of EU emissions. According to the European Commission, roughly 75% of buildings in the EU are not energy efficient and only 1% of buildings undergo energy-efficient renovation every year². This explains the need to prioritize both public and private investments in this market segment.

2.1 EUROPEAN REGULATIONS

2.1.1 FIT FOR 55 PACKAGE

Following the objectives established by the European Green Deal, in 2020 the European Commission adopted the *Fit for 55 Package*, a set of proposals fit for reducing net greenhouse gas emissions by at least 55% by 2030.

This package includes, among others, the Directive on Energy Efficiency and the Renewables Directive, as well as other important policies such as the EU Emissions Trading System (ETS)³

¹ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/energy-and-green-deal_en

² https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en

³ https://ec.europa.eu/clima/policies/ets_en

– which puts a price on carbon – and a revision of the Energy Taxation Directive⁴ - to align the taxation of energy products with EU energy and climate policies.

To support Member States achieving national targets, the Commission established a new Social Climate Fund. This will help citizens finance investments in energy efficiency, new heating and cooling systems, and cleaner mobility by providing €72,2 billion of funding to Member States, for the period 2025-2032, based on a targeted amendment to the multiannual financial framework.

2.1.1.1 DIRECTIVE ON ENERGY EFFICIENCY

The Directive on Energy Efficiency (2018/2002) is the amended version of the original Directive 2012/27/EU setting the standard for Energy Efficiency across Europe.

The amended version increases the standard required to meet the target set for 2030. This year, the European Commission is evaluating the possibility to amend it a third time in line with the new objectives for 2050.

The Energy Efficiency Directive is a cornerstone of the *Clean energy for all Europeans package*⁵, where the EU has set binding targets of increasing energy efficiency over current levels by at least 32.5% by 2030. Together with energy efficiency, this package gives an important role to the energy performance of buildings and renewable energy.

The Directive establishes an annual energy savings percentage of 0.8 of final energy consumption for all EU countries for the 2021-2030 period, with the exception of Cyprus and Malta that will have to achieve 0.24% per year.

Additional key points are the need for a clear communication concerning energy consumption to all consumers and ensuring that all national rules on the allocation of the cost of heating, cooling and hot water consumption in multi-apartment and multi-purpose buildings are made publicly available.

2.1.1.2 RENEWABLES DIRECTIVE

As the energy sector is responsible for more than 75% of the EU's greenhouse gas emissions, increasing the share of renewable energy across the different sectors of the economy is key to achieving the climate and energy objectives.

⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32003L0096>

⁵ https://op.europa.eu/en/publication-detail/-/publication/b4e46873-7528-11e9-9f05-01aa75ed71a1/language-en?WT.mc_id=Searchresult&WT.ria_c=null&WT.ria_f=3608&WT.ria_ev=search

As for the EED above mentioned, in 2021 the European Commission proposed an amendment of the 2018's Directive which updates the targets set in the first version of 2001.

The proposed version aims to increase the 2018's renewables target from 32% to 40% by 2030. The Commission is also aiming at a more energy efficient and circular energy system that facilitates renewables-based electrification and promotes the use of renewable and low-carbon fuels, including hydrogen, in sectors where electrification is not yet a feasible option, such as transport⁶.

2.1.2 RENOVATION WAVE

Given the important role buildings play in both the European energy consumption and economic growth, the European Green Deal includes a dedicated a specific strategy to boost renovation in both public and private buildings.

The Renovation Wave aims to double annual energy renovation rates in the next 10 years, improving citizens' quality of life, creating additional green jobs in the construction sector and tackling energy poverty. According to the European Commission, in fact, today nearly 34 million Europeans unable to afford to heat their homes properly⁷, making it essential to address the well-being of vulnerable people while reducing their energy bills.

The renovation wave initiative takes into consideration the measures agreed under the *Clean energy for all Europeans package*, refers to building-related aspects of each EU country's national energy and climate plans as well as other aspects of the Directive on Energy Performance of Buildings, a key regulatory piece concerning European buildings.

2.1.2.1 ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE

Together with the Energy Efficiency Directive (2012/27/EU), the Energy Performance of Buildings Directive 2010/31/EU (EPBD) was established by the European Commission to help decarbonising building stock by 2050 and making public and private buildings highly energy efficient. The directive also promotes the use of ICT and smart technologies to improve their efficiency.

The first version of the Directive required all new buildings to be nearly zero-energy buildings (NZEB) by the end of 2020, and all new public buildings to be nearly zero-energy by 2018. Moreover, the Directive required the energy performance certificates to indicate the minimum energy performance requirements of buildings and include recommendations for cost-optimal improvements of the building.

⁶ https://ec.europa.eu/energy/topics/renewable-energy/directive-targets-and-rules/renewable-energy-directive_en#2021-revision-of-the-directive-

⁷ https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en

The Directive has been amended in 2018 introducing additional measures such as an optional European scheme for rating the ‘smart readiness’ of buildings.

To support this regulation, the *Smart Financing for Smart Buildings* initiative focuses on the better use of public money and on de-risking and aggregating projects to make them more accessible to private finance.

2.1.3 NEW EUROPEAN BAUHAUS

Last year, the European Commission launched the New European Bauhaus, an environmental, economic, and cultural project that aims to combine design, sustainability, accessibility, affordability and investment in order to help deliver the European Green Deal.

The programme launched its first phase, which includes a co-creation process to shape the concept by exploring ideas, identifying the most urgent needs and challenges, and to connect interested parties. The winning projects will have the opportunity to be developed through pilot programmes funded by the EU.

2.2 FINANCING SCHEMES AND MECHANISMS

*To achieve the goals set by the European Green Deal, the Commission has pledged to mobilise at least €1 trillion in sustainable investments over the next decade.*⁸

With this purpose, the Commission has designed several initiatives and financing schemes that aim to boost sustainable finance across all European countries and re-orient investments towards more sustainable technologies and businesses.

In particular, the InvestEU Programme⁹ gives a substantial contribution by allocating 30% of the total fund to climate and energy objectives over the period 2021-27. Additional support will come from the Just Transition Fund, expected to mobilise close to €30 billion in investments.

2.2.1 SUSTAINABLE FINANCE TAXONOMY

To redirect money towards sustainable projects in an efficient manner, it became essential to define a common language and a clear definition of “sustainable” as well as develop a system for measuring success. This is why the action plan on financing sustainable growth called for the creation of the EU taxonomy, a common classification system for sustainable economic

⁸ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/finance-and-green-deal_en

⁹ https://europa.eu/investeu/home_en

activities to support companies, investors, and policymakers in the shift towards climate-friendly investments.

The taxonomy will be developed thanks to the technical recommendations of the technical expert group on sustainable finance (TEG)¹⁰, a group of 35 entities from civil society, academia, business and the finance sector, EU and international public bodies. The same group will work on the development of the EU Green Bond Standard.

The Platform on Sustainable Finance¹¹ will support the work developed, facilitating the cooperation and sharing of best expertise on sustainability from the corporate and public sectors.

2.2.2 EU GREEN BOND STANDARD (EUGBS)

The EU Green Bond Standard sets the standard for how companies and public authorities can use green bonds to raise funds on capital markets to finance sustainable energy projects.

The EUGBS will benefit both issuers and investors: on one side, issuers will have a robust tool to demonstrate that they are funding legitimate green projects aligned with the EU taxonomy, and on the other side, investors buying the bonds will be able to assess, compare and trust that their investments are sustainable, avoiding the greenwashing risk more easily.

This framework will work hand in hand with the EU taxonomy, as the funds raised by the bond should be allocated fully only to projects that are identified in the classification. This will require full transparency on how the bonds are allocated through detailed reporting requirements and an external review to ensure compliance with the Regulation and taxonomy alignment. External reviewers providing services to issuers of European green bonds must be registered with and supervised by the European Securities Market Authority (ESMA).

2.2.3 PRIVATE FINANCE FOR ENERGY EFFICIENCY (PF4EE)

Private Finance for Energy Efficiency (PF4EE) instrument is a joint agreement between the EIB and the European Commission which aims to address the limited access to adequate and affordable commercial financing for energy efficiency investments.¹²

¹⁰ https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en

¹¹ https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance/platform-sustainable-finance_en

¹² <https://www.eib.org/en/products/mandates-partnerships/pf4ee/index.htm>

The PF4EE instrument provides a portfolio-based credit risk protection provided by means of cash-collateral (Risk Sharing Facility), together with long-term financing from the EIB (EIB Loan for Energy Efficiency) and expert support services for the Financial Intermediaries (Expert Support Facility).

The instrument is managed by the EIB and funded by the Programme for the Environment and Climate Action (LIFE programme), which committed 80M euros to fund the credit risk protection and expert support services. The EIB will leverage this amount, making a minimum of € 480m available in long-term financing. Nonetheless, the programme is difficult to access and has only had limited success.

3 BARRIERS AND ENABLERS, THE EXPERIENCES FROM THE LAUNCH CONSORTIUM

As highlighted in the latest EEFIG report¹³, energy efficiency investments in buildings are significantly below the levels required by the Renovation Wave. The European Commission states that an additional € 275 billion per year will be needed over the period 2021-2030 in order to reach the EU's energy and climate objectives for 2030.¹⁴

Through working with both project developers and end clients on pilot projects across Europe, LAUNCH has developed significant insight into the pitfalls of project scaling, development and finance, and other requirements for success. This chapter details some of the main findings of the findings concerning the financing of projects¹⁵.

During the last 5 years, financial funds and banks have set up special purpose vehicles to meet public and government pressure to service energy efficiency investments in buildings. However, the volumes of invested capital remain relatively small, in the range of hundreds of millions of euros rather than billions, compared to other markets, such as renewables¹⁶. Substantial volumes of capital have been and continue to be invested in renewable energy generation assets. These investments have generated predictable, stable cash flows offering attractive yields to investors in a low interest rate environment. Recent progress around contract and risk assessment standardisation for energy efficiency projects are structured to deliver similar risk-adjusted yielding returns in the future. Investors are beginning to see that energy efficiency investments can offer useful risk diversification. European Taxonomy and ESG investing have also started to spur better analysis and some limited volumes.

Importance of education:

The LAUNCH experience has demonstrated that successful financing instruments blend different sources of finance and incentives **with** technical assistance and financial training to target specific market segments. Without direct training on the use of standardised materials and risk assessment, as well as education concerning financial concepts (often necessary), most project developers in the SME sector are unable to engage any other capital resource than their own banks or self-financing on the part of the client. The fact that the likes of the European Investment Bank and PF4EE have been left with substantial unused funds is a

¹³ EEFIG3SR7

¹⁴ European Commission (2021) Financing Energy Efficiency. See:

https://ec.europa.eu/energy/topics/energy-efficiency/financing-energy-efficiency_en

¹⁵ This text combines the learning from Chapter 2 of the EEFIG3SR7 report (which was led by Joule Assets) and the LAUNCH consortium's own experiences during the lifetime of the project.

¹⁶ One confusion here is that most capital providers combine building renovation and upgrades and behind the meter generation investments into the same instrument. This is due to the fact that the building renovation volumes are too small to support a financing structure. While behind the meter generation lowers the amount of energy that is required from a grid – it does not improve the efficiency of the building.

testament to the major shortcomings of European institutions thus far in trying to reach this market segment. This is particularly true of projects below 15 million euros of which there are very few successful examples from European institutions in the LAUNCH consortium's experience.

Credit guarantees: Another consortium experience is that credit guarantees, marketed as helping to expand the range of entities who can access financing, are in fact most often used to shore up already viable projects. Those that would benefit from the mechanism due to actual security related issues are rarely accepted. The local banks simply use the funds to improve the returns of their standard investments. This creates diminished returns for Europe and a lowered benefit from these support structures, as well as shutting small companies and customers out of the market.

Market drivers for building retrofits:

Commercial buildings use 13% of the energy consumed in EU buildings and are typically 40% more energy intensive than residential buildings. Buildings in this market segment are often owned in portfolios and managed as financial assets, and have their own facilities managers. LAUNCH has noticed that these have little direct incentive to improve the efficiency of buildings without requirements placed on performance through taxonomy and ESG. These are slowly proving to be effective as they put pressure on the funds and managers which own or manage the portfolios. Within larger corporates in particular, the “Green Premium” is growing as a secondary driver (after short pay-back times) for acceptance of energy efficiency investments as many businesses position themselves as sustainable and market their green credentials. As stated, demand is also being driven by increased ESG backed regulation and reporting requirements as part of public disclosures.

Though it is still early days, this is a positive development which has taken place during the lifetime of the project.

As of today, efficiency projects rarely address the building envelope, rather they will usually address technical upgrades only, such as lighting or thermal investments and have short payback times or 1 to 5 years. This market has been expanding rapidly and is now supported by a range of specialised funds, ESCOs, as well as technology providers.

Impact of lack of clear market signal from national governments:

Commercial building stock is often managed by large building management firms and owned by investment funds. These parties focus on short-term returns and are not incentivised to upgrade their buildings at scale. Those leasing the buildings rarely have either the means or the access rights to perform upgrades, even if they were motivated to do so.

Given this context, off-balance sheet financing, dedicated credit lines and returns on investment through improved re-sale and property value would allow governments to justify requiring commercial buildings owned by financial funds and managed by management firms to reach a minimum efficiency standard in order to continue leasing the properties.

If this were combined with appropriate and clear **tax incentives**, the upgrades could be achieved without financial pain to existing entities, create local jobs, stimulate local economies and avoid harming any of the commercial parties involved. Building upgrades themselves, generate significant taxes through job creation and regional commercial growth.

Self-finance:

The standard form of financing for energy efficiency improvements is for business owners to upgrade their building stock (assuming they own it) using their own credit lines or working capital, rather than specialized credit lines. Multiple LAUNCH projects have been financed in this way. Indeed, LAUNCH contractors have told us that preparing a project for third party finance often helps them close the deal and gives their client the confidence to pay for the project themselves. Here the measurement and verification procedures and service contract are of the most benefit. There is also the psychological effect of having a fund or bank taking a project seriously and the confidence this brings to the client.

For these investments to be made, the business manager must: need or prioritize a technology for existing business purposes, own or have a long-term lease and access to the building infrastructure, be in a sufficiently financially healthy state to make the investment, have access to working capital or credit lines.

Investments are generally limited to improved heating, cooling, lighting and building controls. During building renovations, efficient solutions may also be chosen assuming they make sense in the larger business context – for example, a hotel is more likely to install highly efficient windows when they also require noise insulations for the comfort of their guests.

Energy Performance Contracting (EPC):

Energy performance contracting or EPCs are interesting to commercial (industrial or public) entities as a means of investing in buildings off balance sheet. This allows a company with a good credit rating to keep its capital for the purpose of growing its core business rather than investing in building upgrades.

A less financially robust company will benefit in particular from off balance sheet financing but will likely have difficulty in passing the credit checks of the financing party. Here it would be valuable if credit risk mechanisms could be used as intended and directed towards this use of companies. In the LAUNCH consortium's experience this has yet to happen at scale. Rather the mechanism is simply used to increase the profits of local banks from their standard

investments. This means that the potential benefits of EPC to scaling energy efficiency projects is lower than necessary.

Under an EPC contract, an energy services company (ESCO) undertakes a project to deliver energy efficiency improvements in the premises of the client. The project is then paid back partially through the stream of income from the cost savings. Following the end of the contract all energy savings are transferred to the client – though to ensure the contract is off balance sheet – it is necessary that the client does not automatically own the technologies installed. These will need to be purchased for an agreed upon (low) sum. While EPC contracting is possible for lighting, thermal upgrades... it is not easily applied for deep retrofits of buildings in the private sector, as accounting rules will not allow these types of measures to remain off balance sheet.

LAUNCH case:

Contract standardization and risk assessment protocol have proven successful in enabling the bundling and sale of EPC projects. An example of is the bundling and sale of lighting as a service portfolio in the UK and Ireland. In this case, the use of standardised contracts and risk assessment has allowed for this bundle of some 6 lighting projects to be sold along with access to future pipeline to a secondary fund based in Germany. The initial volume of refinanced project investment was just around 700k€, with visibility on another 2-3M€ of future pipeline – providing an example of the ability of standardised contracts to enable even small investments as well as the small size of many portfolios and their importance for improving energy efficiency in Europe’s building stock.

Dedicated EE credit lines:

To scale up energy efficiency investments, commercial banks could play a prominent role in tapping into the energy efficiency market. Energy efficiency credit lines¹⁷ established by banks (and supported by international financial institutions or IFIs) can help mitigate the perceived high financial risk of energy efficiency projects and lower transaction costs through the establishment of standardised project appraisal and loan processing processes. For this support to be effective however, contractors need to understand and be prepared for the loan application process itself, which can be different than their requirements from their local banks. Within the LAUNCH consortium, an important need has been identified to develop a standardised loan application process which support project developers in accessing this form of finance.¹⁸

¹⁷ Energy efficiency credit lines make funds available to participating financial institutions (local banks). Typically, credit lines are extended to financial institutions by an international financial institution or by government. The recipient financial institution then on-lends the funds to borrowers (private or legal persons) to invest in energy efficiency projects.

¹⁸ The PROPEL H2020 project will establish a standardized loan application guideline for energy efficiency project developers in early 2022.

The LAUNCH consortium's experience has been that local bank personnel require training and the long-term dedication of the international institution providing the funds. Therefore, though this mechanism is promising, it has had limited success, due to the disconnect between branch bank representatives and the international financial institutions who have the funds for energy efficiency projects but not the resources to train local representatives or the ability to make their credit line access requirements realistic for the small to medium market participants most in need of them.

Beyond this, banks need to see a clear business case in the provision of green credit and the EE credit line products need to be carefully designed around accessibility. Due to the need for added engagement and personnel training, this does not always seem to be clear, and the local branches will often not engage. On the primary bank's level, personnel for training and outreach are missing as well. In the consortium's experience, this was a challenge within the PF4EE structure, where an option could be available in theory but not in practice.

4 KEY LEARNINGS AND CONCLUSIONS

The past 5 years have marked significant progress in energy efficiency investment levels across Europe and to understand this fact better, it is important to put the statement into context. Five years ago, Energy Efficiency was not categorized as an asset class within the majority of capital sources, nor was it widely seen as a set of measures which necessarily added value to a building.

Today, financial institutions have made significant efforts to develop viable financing mechanisms and the first Green Bonds which include energy efficiency projects within their bundles, are on the market. The minimum ticket size for investment has gone from 5-10 M€ to around 1M€ and below – allowing a wider range of projects to reach capital. Project bundling and aggregation, which was only a theory 5 years ago, is now a widely accepted concept and implementation is underway. Against this backdrop, the market remains small in relation to its potential size, fragmented and challenging to scale. However, to label this fact as a sign of ‘failure’ would be to ignore the foundational structures which have been created, such as improved investment criteria, standardized risk assessment, contract standardization (such as the work undertaken in LAUNCH), and innovative financing mechanisms which have been developed and launched during this timeframe. This is tremendous progress for a sector dominated by banks and financial funds with multiyear decision-making processes.

Still, given the necessarily slow pace of market development and the need for at-scale growth against an ambitious timeline, further substantive innovation is required. These innovations must challenge both policy makers, building owners and financial institutions to improve performance still further.

4.1 KEY REQUIRED DEVELOPMENTS

Increase market demand:

Within commercial and public buildings, the low demand for energy efficiency investments (even with positive returns) remains the most critical missing element preventing the greater allocation of resources from financial institutions towards this sector. Efficiently addressing the scale of investment required to reach Europe’s 2030 energy efficiency and carbon reduction targets will require stimulating demand to match financial institutions’ appetite to invest in these areas.

Minimum standards for local governments and for leasing:

The ‘split incentive’ dilemma between owner and occupier is only a ‘dilemma’ as long as clear regulatory signals and incentive do not exist. When these are created, this dilemma will disappear and the renovation sector in commercial real estate would scale. The financial instruments to achieve this are in place and well understood.

Mandated building performance:

Creating demand in the form of government-mandated building performance requirements on the part of local governments or to rent or lease a property is a highly effective means of increasing renovation rates, as has been seen in the UK. Upgrades of public buildings have a positive return on investment over time and private as well as public funds are available. This is therefore a viable requirement to make of local governments, while commercial building stock is often managed by large building management firms and owned by investment funds. These parties focus on short-term returns and are not incentivised to upgrade their buildings at scale. Those leasing the buildings rarely have either the means or the access rights to perform upgrades, even if they were motivated to do so.

Off-balance sheet financing, dedicated credit lines and returns on investment through improved re-sale and property value would allow governments to justify requiring commercial buildings owned by financial funds and managed by management firms to reach a minimum efficiency standard in order to continue leasing out the properties.

Requirements coupled with tax incentives:

If these requirements were combined with appropriate and clear tax incentives, the upgrades could be achieved without financial pain to existing entities, create local jobs, stimulate local economies and avoid harming any of the commercial parties involved. Building upgrades themselves generate significant taxes through job creation and regional commercial growth. Indeed, according to the authors' modelling, 110% of the actual renovation costs could be deducted and governments would still see a net **increase** in total tax revenue from the projects, due to the sizeable increase in economic activity, spending and job creation.¹⁹

4.2 INCREASE ACCESS TO FUNDING

A key factor driving changes in investor behaviour are the positive returns being experienced and increased regulation, such as the EU's Sustainable Finance Disclosure Regulations, which came into effect earlier this year. Further the continued establishment of specialised financial players who know the market well and can create long term relationships with innovative project developers, strengthens market growth. The funds have specialized staff on hand who are able to support the development of building renovation, street lighting upgrades, and the like. They also create a known source of capital for such projects, and this supports the education and development of dedicated service providers.

Credit support:

There are continued challenges, however, in dispersing capital successfully. Introducing structures to enhance the creditworthiness of energy efficiency investments will drive the

¹⁹ EFIG3SR7

supply of such investments since in many cases this is **the** critical investment risk. Energy efficiency investments typically utilize well-proven technologies and have maturities less than the warranted lifetime of the equipment utilized. For example, LED lighting can last around ten years while paybacks can be achieved within two years. Furthermore, savings can be calculated and in energy efficiency investments are often deemed to be achieved with the result that there can be limited requirements for measurement and verification of savings during the life of an investment. Using proven technologies and agreeing savings at the outset can address issues identified in the 2015 report as drivers affecting the supply of energy efficiency investments in buildings, including:

- Increased investor confidence
- Measurement, Reporting & Verification (MRV) and Quality Assurance
- Energy Performance Certificates
- Definition and common understanding of the value of energy cost savings

Accordingly, the key issue for an energy efficiency investment is the ability of the occupier of the building to pay contractual sums due over maturities of more than five years. It is self-evident that many occupiers of buildings do not have strong creditworthiness and there are no independent credit ratings available since most credit rating is focused on short-term trade credit as opposed to long-term creditworthiness. Investors and banks will not be prepared to invest in or lend to long-term investments with poor or inexistent credit ratings. It may be necessary for Government finance institutions to underwrite part or all of this risk until insurance products may become available to enable investments to be structured with sufficient creditworthiness to attract investment capital at an economic cost.

Hence, in order to grow the market, these instruments must primarily benefit the end consumer rather than the local or regional bank. Today, credit guarantees can be used to shore up local banks (increasing their returns) and the investment criteria for local projects remain the same. This must change in order for this to prove effective.

Aggregation and bundling:

Overcoming small project size through supporting the deployment of standardized materials. An issue which has increased in importance is the aggregation challenge. The individual size of energy efficiency investments in buildings remains the same and from a financial market's perspective relatively small, defined by the size of the individual building. Standardisation, transaction costs and risk return targets, all identified as significant drivers of supply in the 2015 report, relate to the need for aggregation and overall scale of investment. Standardising investment assessment processes, contract terms and investment structures are starting to support the aggregation of projects, while larger total investment values enable transaction costs to be a lower percentage of the overall investment. Furthermore, investors in larger scale, more liquid investments typically require lower rates of return for the same risk while

aggregating large volumes of projects can reduce the overall risk with diversification benefits. At the same time, pilots have demonstrated that contract standardisation even for projects of € 50'000, coupled with standardised terms and underlying processes allow financial funds to sell portfolios of projects to each other, slowly increasing liquidity in the market²⁰.

Standardisation:

Standardisation of processes is as crucial as project aggregation to reduce the transaction cost of EE finance (though good practice is available: EFIG under-writing tool, SFSB, etc). Standardisation is also necessary in order to develop securitisation for energy efficiency-based financial products. Standardisation can cover labelling schemes, project rating methodologies and risk assessment tools, standardised legal and financial structures of assets (loans, guarantees, energy performance contracts etc.). However, it has to be acknowledged that standardization is difficult to deliver, and the various national market characteristics can limit the feasibility of this process.

As funds gain more experience within the energy efficiency markets, they are decreasing minimum project size and supporting the aggregation of smaller projects with increased success. Gradually project developers are also beginning to understand what is required in order to meet the risk appetite and limitations of these financiers. It is therefore expected that more funds will be established and that their performance will continue to improve.

Long term education and support entity:

The call for standardisation and project aggregation is consistent and strong. However, a key challenge today is that while standardized risk assessment protocol, contracts and processes have been developed and implemented successfully, there are no parties close to consumers and project developers to support their continued market rollout in the long term.

As a result, as soon as market participants start to understand the materials and use them, the party making these materials available and keeping them up to date, disappears. This creates dissonance in the market and means that neither funds, banks, project developers or clients can ever fully implement a standardised process or document. Banks do not have the resources to train individual small clients, EU projects come and go, and no institution is taking on this role. Considering the amount of resources, and the success of pilots establishing an entity or entities with lasting power to maintain and deliver, and train practitioners to use the materials would be a highly effective measure in proportion to the cost. This could be backed by the European Commission and supported through the EIB at least 5 to 10 years at a time to allow for genuine market uptake to take place.

²⁰ LAUNCH project (2021): Deliverable D5.4