SmartSPIN

Smart energy services to solve the **SP**lit **IN**centive problem in the commercial rented sector

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D3.3 – RECOMMENDATIONS TO ADDRESS THE SPLIT INCENTIVE ISSUE

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List of Abbreviations

Abbreviation	Meaning
BBP	Better Buildings Partnership
SMEs	Small and Medium Enterprises
EU	European Union
US	United States of America
EED	Energy Efficiency Directive
EU MS	European Union's Member State
NECP	National Energy and Climate Plan
EPBD	Energy Performance of Buildings Directive
ESCO	Energy Service Companies
EPC	Energy Performance Contract
OBF	On-bill Financing
OBR	On-bill repayment
IMT	Institute for Market Transformation
JLL	Jones Lang LaSalle Incorporated
OECD	Organisation for Economic Co-operation and Development
ESG	Environmental, Social, and Governance
LEED	Leadership in Energy and Environmental Design
BER	Building Energy Rating
MEETS	Metered Energy Efficiency Transaction Structure
PAYS	Pay as you save
OBS	On-bill (on-invoice) scheme
CSR	Corporate social responsibility
RES	Renewable energy sources
AMR	automatic meter reading
BMS	Building management system
PPA	Power Purchase Agreement
EEaS	Energy Efficiency as a Service
GRESB	Global Real Estate Sustainability Benchmark

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EXECUTIVE SUMMARY

The SmartSPIN project aims to bring smart energy services to solve the split incentive issues in the commercial rented sector. Before defining and developing the solution and the detailed services, it is essential to explore the existing solutions around the topic. Throughout this task of recommendations to address the split incentive issue, green leasing, on-bill financing, energy performance contracting and other related schemes such as metered energy efficiency transaction structure have been studied and evaluated. Throughout the project timeline so far, stakeholders' opinions have been gathered around different potential applications of smart energy services and solutions that address the split incentive issue. For this task, case studies have been gathered from all around the world, and these topics have been investigated beyond the EU.

Green leasing establishes rules between tenant and landlord for splitting the investment costs and benefits of energy efficiency projects and ensures that clauses in the lease or tenancy agreement meet the needs of both parties without resulting in wasted energy consumption (e.g. an entire building being heated overnight just in case one person wants to work in the building outside of normal working hours). On-Bill Finance allows for another party (such as the energy supplier or a third party) to assume the debt of the investment instead of the landlord or tenant, thereby increasing the uptake of measures with long payback times. Such a strategy aims to attach the debt to the structure rather than the landlord or tenant. Other mechanisms could be applied for improving the benefits and agreements, these include EPCs and MEETS. The agreement and balanced benefits are essential for bilateral contribution from landlord and tenant.

There have been discussions within the consortium, meetings with the advisory board members and further key stakeholders to investigate the approach and applications around the market, to gather opinions, feedback, best practices, and lessons learnt on managing and improving energy projects in the commercial built environment.

Based on all the input from the investigation conducted, cases and opinions gathered, a set of guidelines of recommendations has been drafted to have a more impactful approach for energy projects and agreements in the commercial rented sector where each stakeholder should see and consider varying levels of action.

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1 INTRODUCTION

1.1 ADDRESSING THE SPLIT INCENTIVE ISSUE

Throughout the implementation of energy efficiency measures, smart energy services, and innovative models for the commercial rented sector, it is essential to thoroughly address the split incentive issue. A split incentive issue occurs when the investment and direct benefit are not defined and balanced well between landlord and tenant for interventions around a property. Tenants are unwilling to make significant investments in areas, and landlords have no incentive to disrupt income.

Energy efficiency investments in a commercial building could be around:

- Building engineering (electrical, mechanical, heating, cooling, ventilation, machinery and equipment, storage, systems)
- Building fabric (walls, windows, insulation)
- On-site energy generation from renewables (photovoltaics, solar thermal panels)
- Demand response (consumption dynamics, user engagement, grid flexibility)

To overcome the issue, innovations around leases, business models and awareness of sustainability are essential. To address the topic, several scenarios are considered, and it is a subject open for innovation and development. Within this task, the purpose is to address this issue and propose solutions by analysing the existing alternatives, further discussions and presenting a set of recommendations accordingly. This report is planned to address recommendations, issues and solutions covered in the literature and global markets for the split incentive issue.

1.2 BACKGROUND INFORMATION

The commercial rental sector addresses a building scenario in which the landlord owns the building, and the tenant uses it for commercial purposes. A split incentive barrier may exist, in which the investment and benefit do not align well enough to control energy efficiency investment actions.

The Energy Efficiency Directive (Directive 2012/27/EU) recognizes the importance of addressing the barrier of split incentives in the building sector in Article 19(1)(a). It states: "The *Member States shall evaluate and if necessary take appropriate measures to remove regulatory and non-regulatory barriers to energy efficiency, without prejudice to the basic principles of the property and tenancy law of the Member States, in particular as regards:(a) the split of incentives between the owner and the tenant of a building or among owners, with a view to ensuring that these parties are not deterred from making efficiency-improving investments that they would otherwise have made by the fact that they will not individually obtain the full benefits or by the absence of rules for dividing the costs and benefits between them, including national rules and measures regulating decision-making processes in multi-owner properties"* [1]

Split incentives, in which incentives for landlords and tenants do not align, continue to be a significant barrier to the widespread adoption of green building practices in the commercial building industry. Case studies in Organization for Economic Cooperation and Development (OECD) countries found that split incentives affect up to 90% of the energy used in many major markets.[2]

[1] European Commission, JRC Science and Policy Reports, Overcoming the split incentive barrier in the building sector, 2014

[2] The evolution of green leases: towards inter-organizational environmental governance, Kathryn Janda, 2016

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1.3 OBJECTIVES OF THE TASK

After analysing the existing key initiatives and mechanisms such as green leases, on-bill financing, MEETS and EPCs, the objective is to present a set of guidelines to optimize the approach around the split incentive issue and smart energy services for the commercial rented sector.

Discussions around green leases, on-bill financing, MEETS and EPCs have been further presented in the following sections. Best practices and case studies have been studied and presented to better understand the approach around the energy efficiency agreements in commercial properties. Further feedback and frequently asked questions also have been reported as stakeholders' opinions to give a better representation of the current market and stakeholders.

By gathering best practices and lessons learnt from inside and outside of the EU, a set of guidelines for recommendations to address the split incentive issue can be presented accordingly. This set of guidelines can be taken as the preliminary approach while proposing a service definition and more detailed models.

1.4 METHODOLOGY

Throughout the preparation of this report, literature overview research, interviews with project stakeholders, advisory board members, and market experts and analysis of reports and best practices have been conducted to present a set of recommendations and aspects on the topic from the SmartSPIN project perspective.

Interviews and discussion sessions within the project consortium, external advisory board members and further market stakeholders have been included to get an enhanced perspective on the topic.

For the best practices and optimum solutions, global examples from all around the world have been studied. The applications and developments are more common around the United States, and the United Kingdom, so for a balanced solution, the examples and approaches beyond the European Union have been analysed within this report to collect and bring recommendations around the split incentive issue.

2 GREEN LEASES

2.1 INTRODUCTION TO GREEN LEASES

A green lease is a standard form lease with additional clauses that provide for the management and improvement of a building's environmental performance by both the owner and the occupier (s). A document of this type is legally binding, and its provisions remain in effect for the term. Green leases are typically only relevant in the context of commercial building leases.[3]

Green leasing is the practice of realigning the financial incentives of sustainability or energy measures in lease documents. It is also known as energy-aligned, energy-efficient, or high-performance leasing. Common commercial leasing practices frequently suffer from the principal-agent problem, which occurs when one party performs tasks on behalf of another party (the principal), but the agent does not act in the best interests of the principal. For many commercial landlords and tenants, the lease's cost structures cause the principal-agent problem, discouraging landlords and tenants from investing in a more efficient building.

[3] Better Buildings Partnership Green Lease Toolkit

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A green lease is primarily a standard lease with certain clauses changed to better align a landlord's and tenant's financial incentives and sustainability goals. It is a modern approach to the traditional commercial lease that can benefit both landlord and tenant financially while also benefiting the environment. The landlord-tenant relationship is strengthened when an agreement that benefits both parties is reached.

As sustainability becomes more of a corporate priority, more occupiers are signing leases that include provisions for sourcing energy from renewable sources, lowering carbon emissions from building operations, and reducing waste and water use. According to JLL's Decarbonizing the Built Environment report, 34 percent of global occupiers already have green lease clauses in place, with another 40 percent planning to sign them by 2025. Green lease clauses are now in place for 42% of investors, with an additional 37% planning to implement them by 2025. "Green leases can be an excellent mechanism for increasing transparency and alignment between landlords and occupiers - while also making buildings as sustainable as possible," says Richa Walia, EMEA corporate research and strategy director at JLL. Tenants can save money by improving energy efficiency in building management, services, and utilities, which helps them meet their own sustainability goals.[4]

2.2 Discussion on Advantages and Disadvantages of Green Leases in Solving the Split Incentive Issue

A building operator can create a high-performing asset that minimizes the building's environmental impact by using the lease as a tool to improve energy efficiency, proving valuable to both the socially and fiscally responsible investor. Both owners and tenants can benefit from investing in energy efficiency measures by including a few new or modified clauses in a traditional commercial lease. Green lease clauses encourage the development of more valuable buildings for owners, who benefit from higher rents and lower vacancy.

Using a green lease, building owners and tenants can save money, conserve resources, and ensure the efficient operation of buildings. The principal-agent problem is also known as the split-incentive problem in the commercial office setting. In many commercial lease structures, the party investing in an energy efficiency upgrade does not reap the full benefits of the energy savings generated by the upgrade. This is most common in leases in which tenants pay for utilities, but the landlord is entirely responsible for capital improvements, as is common in many net leases. Property owners frequently cite the split-incentive barrier as a major impediment to energy efficiency projects. Green leases can remove significant impediments to energy and financial savings by addressing the split incentive and other energy issues.[5]

Green leases provide a robust set of features to the split incentive problem because the process generally consists of a few key lease amendments, even though leasing language varies significantly between landlords and tenants and the actual energy efficiency technologies that are implemented in individual buildings can be quite complex.

[4] How are green leases supporting real estate's decarbonization drive?, JLL, October 2011 Retrieved from https://www.jll.co.uk/en/trends-and-insights/workplace/how-are-green-leases-supporting-real-estates-decarbonization-drive

[5] What's in a Green Lease? Measuring the Potential Impact of Green Leases in the U.S. Office Sector, Andrew Feierman Institute for Market Transformation, April 2015

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As given in Table 1, Green leases provide benefits for financial and legal agreements, especially with clauses around energy, water, health, wellness and environment.

Energy	Water	Health and Wellness	Other
End-use monitoring	End-use monitoring	Access to views	Carbon pricing
Energy consumption	Irrigation and landscaping	Air quality	Compliance with regulations
Energy management	Submetering	Cleaning materials	Data Sharing
Energy performance certification integration	Water consumption	Lighting	Fit out requirements
Net-zero	Water fixtures and plumbing	Outdoor premises	Pass-through clauses
Purchasing of on-site renewables	Water management	Pest management	Recycling
Retro-commissioning	Building certification integration	Waste management	Sustainable practices
Submetering			Transportation

Table 1 Impact Areas of Green Leases[5]

A green lease cost recovery clause is intended to assist owners in justifying energy-saving improvements that improve overall building performance by overcoming the split-incentive barrier. When a building owner is required to pay capital expenses to improve a building (for example, the replacement of heating and cooling equipment), the split incentive appears in most common commercial lease types, while tenants benefit from lower utility bills. Because capital projects necessitate a significant investment, the split incentive frequently stymies projects with the greatest potential to reduce energy consumption and thus save money. Building owners, fortunately, have several options for overcoming the split incentive, and many commercial building owners already incorporate some form of capital expense recovery into their leases.

The final solution used is determined by the market, the sector, and the lease negotiation process. While lease language addressing the split incentive does not directly reduce energy costs in the same way that some other green clauses do, the more an owner can share the costs of sustainability measures with tenants, the greater the owner's return on investment for new equipment and programs implemented in the building—which increases the number of projects available (or the quality of equipment installed) for the building owner.

Cost recovery clauses enable landlords to pursue capital projects that improve energy performance with the assurance that capital costs will be amortized and recouped from tenants. Eliminating this barrier is an important first step in establishing a framework in which both parties can reap the long-term savings and other benefits that efficiency provides.[6]

Green leasing benefits both landlords and tenants in ways other than energy savings. Several green lease leaders point to their leases as important channels for engaging tenants, improving tenant

[6] New Leasing Languages - How Green Leasing Programs Can Help Overcome the Split Incentive, White A., et al, ACEEE, 2020 retrieved from https://www.imt.org/wp-content/uploads/2020/08/ACEEE-Summer-Study-2020-Final-Paper.pdf

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satisfaction and retention, and promoting sustainability initiatives. Building improvements that increase productivity, tenant satisfaction, and tenant retention benefit every occupant in a high-performance building. According to a study conducted by LLC, a sustainable real estate services firm, the quantified value added by high-performance buildings for increasing employee productivity, retention, and wellness outweighs the cost savings from energy upgrades. Building enhancements made possible by a green lease increase thermal comfort, ventilation, air quality, and movement.[7]

Many businesses are moving beyond energy efficiency and into the next phase of sustainability activity, whether it's carbon reduction, renewables integration, or health and wellness. As this modern lease structure addresses resilience to climate risks, green leasing supports the next phase of sustainability activity. Green lease provisions that allow for renewable integration can help it become financially viable.

Impacts on ESG Reporting and Green Building Certifications

Green leasing also has an impact on ESG reporting efforts in general. Real estate companies that report on sustainability are strongly encouraged to improve their operations and seek opportunities to reduce the environmental impact of their properties. A green lease can assist users to get LEED, BREEAM, WELL, ENERGY STAR, and other green building certifications. Green clauses are similar to these popular green rating systems in concept and can help speed up the process of obtaining the credits required for these certifications. Ensuring that the negotiated lease includes clauses requiring the landlord and tenant to share information such as sustainability goals, building performance, and consumption throughout occupancy can lead to advanced monitoring, reduction strategies, and improved thermal comfort; all of which align with credits associated with green building certifications or local requirements standards. Data sharing clauses that specify a request for tenant utility data make it easier to gain access to whole-building data, which is required for green building and energy certifications. Furthermore, incorporating energy, water, and waste management best practices into the lease guides landlords and tenants to conduct efficient and sustainable business operations that reduce consumption and cost and lead to high-performing and healthy buildings eligible for certification.

[7] Attema, J.E., W.C. 2018. The Financial Case For High Performance Buildings. stok, LLC.

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Adopting Green Lease

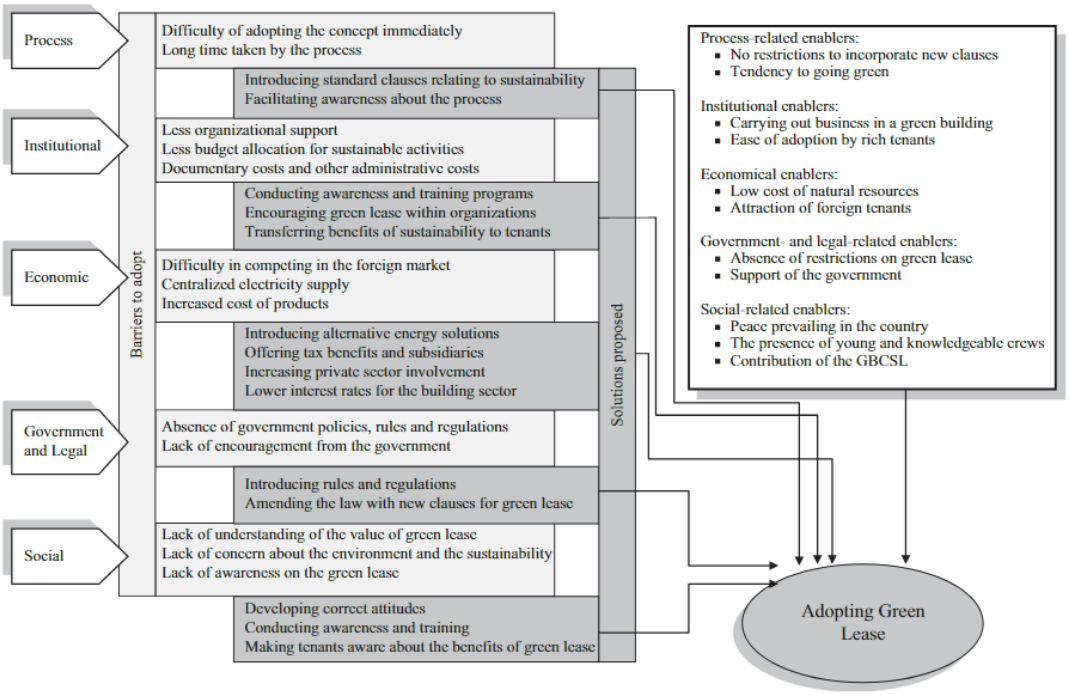

Figure 1 Green Lease Adoptability Framework[8]

The adoptability framework of green leases has been given in Figure 1, with challenges around process, institutional, economic, government and legal, and social approaches. While adopting green leases, there are also several types of enablers which are process-related, institutional, economical, government and legal-related, and social-related. Green leases can support users to address the barriers including green clauses with the help of the surrounding enablers.

According to the Better Buildings Partnership from the UK, for new and renewal leases, owners and occupiers try to include green clauses which are addressing cooperation obligations, building management group, data sharing and metering, extending the landlord's rights to do works, restrictions on the landlord's right to do works, changes to the tenant's freedom to make alterations, energy performance certificates, reinstatement of Tenant's alterations, rent review, disputing resolution, and green building certification schemes or regulations might be considered and included within a lease as green clauses. To support the assessment of the environmental performance of the premises and the building, the parties must agree to share all building data related to electricity consumption, gas consumption, other fuel consumption, water consumption, waste generation, management and recycling, and maintenance of plant and equipment used in connection with the consumption of energy and water or waste treatment. The approach is feasible for the European market to some extent.[9]

[8] A framework for adopting green leasing in developing countries: the case of Sri Lanka, Perera et al., 2017

[9] Better Buildings Partnership Green Lease Toolkit, retrieved from https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/bbp-gltk-2013_0.pdf

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3 ON BILL FINANCING

3.1 INTRODUCTION TO ON-BILL FINANCING

On-bill schemes are a type of financing for energy renovation projects in buildings that uses utility bills as a repayment vehicle. On-Bill Financing refers to a financing program in which a charge is added to a customer's utility bill. Because utility and regulatory structures vary by state, there are numerous types of on-bill programs. The program can be implemented as a loan, tariff, or service agreement for residential or commercial customers. Most programs require bill neutrality, which means that on-bill payments must be equal to or less than the amount saved by efficiency improvements. On-bill financing with bill neutrality lowers customers' upfront costs for energy efficiency improvements while also lowering utility bills due to lower energy consumption. On-bill financing allows utilities to assist customers in financing energy efficiency improvements such as HVAC system upgrades, furnace upgrades, lighting upgrades, or insulation upgrades. The utility or a third-party financer acts as the lender in on-bill, incurring the upfront costs of efficiency upgrades, which are then repaid through the customer's utility bill. Funds, grants, or similar dedicated programs, investments, commercial banks, or other sources may provide funding. [10]

There are many different types of on-bill programs throughout the US, including Pay As You Save®(PAYS) for instance. The PAYS model is an on-bill program where the loan is paid through a tariffed charge on the utility bill. The financing is attached to the meter, so if the unit sells, the charge and benefits remain for the new owner or tenant until all costs are recovered. Unlike other financing programs, PAYS offers some safeguards that end customer payments if an upgrade fails. On-bill financing allocates the financing responsibility to the utility and maintains the loan attached to the property. [11]

As characteristics of on-bill financing are considered, it may bring convenience to the customer, as it enables tenants to make efficiency improvements where building owners are not encouraged to do so, and a burden on administering utility on repayment through the utility bill. Through bill neutrality, customers will see a reduction or no change in their bill, loans will become an additional financial burden, and it may be difficult to ensure due to many variables that affect energy bills. If an approach tied to the meter is to be taken, that gives flexibility for residents who wish to move, renters, and temporary residents, it may be difficult to assess the creditworthiness of new customers. If utility disconnection occurs because of non-repayment, repayment is prioritized by customers, resulting in lower default rates, and it might raise issues of fairness and safety if the customer cannot pay the bill because energy savings were inaccurately projected.

For example, On-bill financing (OBF) schemes are financed through power utilities through the usage of personal assets or targeted budgets. Usually, the utility manages all the systems, from the purchase of the client to the tracking of the performance of the power performance interventions. Energy audits are advanced by the utility selling this system to perceive the most suitable interventions.

[10] On-Bill Financing 101, Helping Homeowners and Businesses Fund Energy Projects, Midwest Energy Efficiency Alliance, Chicago, US, retrieved from https://www.mwalliance.org/sites/default/files/meea-research/on-bill-fact-sheet-11.5.18.pdf

[11] On-Bill Financing: Encouraging Energy Efficiency, US Policy, Center for Climate and Energy Solutions, Slyvia Zhang, 2013

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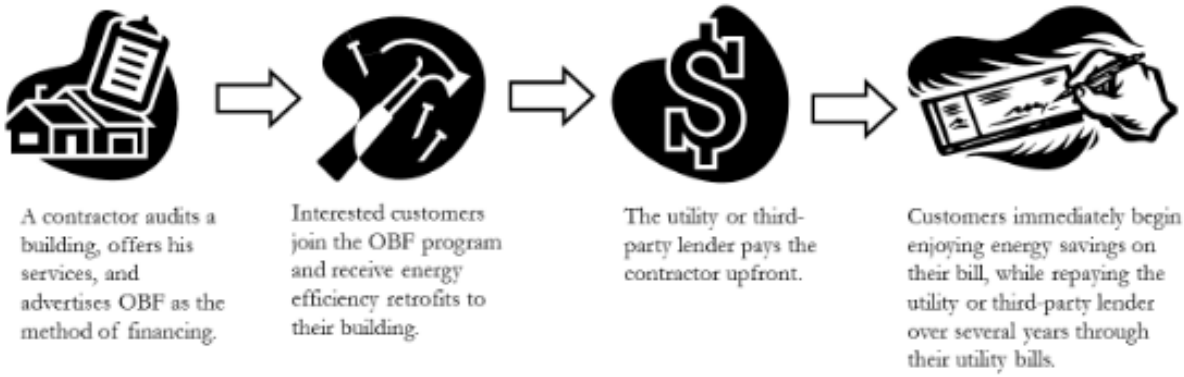

Figure 2 A Typical OBF Program[12]

3.2 Discussion on Advantages and Disadvantages of On Bill Financing in solving the split incentive issue

A successful on-bill finance programme should create incentives for all stakeholders: tenants (savings), landlords (savings/investment), utilities (protection) and by extension banks.

Most of the on-bill financing programs examples could be found in the US, however, it should be taken into account that the standards and regulations are different in the US than in Europe. For example, in the US, a utility can provide the investment capital directly to its customers, whereas in Europe it must have a banking license to do so.

On-bill schemes have proven to be a successful tool for promoting energy efficiency measures in North American building projects. On the other hand, it is necessary to determine whether North American market conditions are comparable to those of Europe. For example, there may be concerns about the social acceptance of certain clauses of on-bill contracts, such as disconnection in the event of non-payment. To determine whether on-bill schemes can be successfully implemented in the European context, a detailed replicability analysis must be developed with the participation of all relevant stakeholders, namely utilities, financial institutions, and public authorities. Understanding which aspects of North American programs can be replicated and which must be drastically altered to design successful schemes for the European context is critical[13].

4 ENERGY PERFORMANCE CONTRACTING

Energy Performance Contracting (EPC) is a type of alternative capital improvement financing that allows energy upgrades to be funded through cost savings. Under an EPC agreement, an ESCO implements an energy efficiency or renewable energy project and uses the stream of income from cost savings or renewable energy produced to repay the project's costs, including the investment costs. Essentially, the ESCO will not be paid unless the project achieves the expected energy savings[14].

[12] On-Bill Financing: Encouraging Energy Efficiency, US Policy, Center for Climate and Energy Solutions, Slyvia Zhang, 2013

[13] Overview of On-Bill Building Energy Renovation Schemes, RenOnBill, more on www.renonbill.eu

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The major types of contracting are guaranteed and shared savings. The important difference between these models is that in the guaranteed case the performance guarantee is the level of energy saved, while in the shared model this is the cost of energy saved. The chauffage contract is also frequently used in Europe, where an ESCO takes full responsibility to provide an agreed set of energy services, typically very long 20-30 years, and the ESCO provides all related operations and maintenance for it as well, also works as outsourcing facility services. There is also the Build-Own-Operate-Transfer Model where ESCO provides Turnkey plant design and build, performance guarantees, fuel procurement and operations and maintenance. The service charge includes capital and operating costs.

These varying models might work well under different scenarios, but for the commercial rental sector, with landlords, tenants and more stakeholders involved in many cases, these alternatives cannot be feasible. With divided ownership, responsibility and an unbalanced distribution of potentially gained benefits, ESCOs need further solutions to make guaranteed contracts with building managers and/or owners.[15]

In commercial rentals, ESCOs might have a contract with the owner or the tenant depending on the scenarios and requirements of the investments. Throughout the years, there have been several approach models proposed for such, also including but not limited to the EU-funded projects such as GuarantEE, LEMON and NOVICE. Enhanced EPC approaches are presented with further additional contracts and/or approval from other parties. For such cases, ESCO can create a contract with the landlord, with the tenant, or with both parties.

5 THE METERED ENERGY EFFICIENCY TRANSACTION STRUCTURE (MEETS)

For the Metered Energy Efficiency Transaction Structure (MEETS)[16], which has been proposed as an alternative to promote energy efficiency in the rented sector, the arrangement shown in Figure 1 works according to the following steps:

1. The building's owner stipulates an "Energy Lease" contract with an energy efficiency financier or promoter, who agrees to finance and undertake 100% of the energy efficient retrofit of a building or group of buildings.
2. The energy tenant acts as a financial promoter and takes full responsibility and all the risks of the interventions to improve energy efficiency in the building.
3. The tenants of the building will enjoy the benefits related to the building's retrofit with energy efficiency measures and its modernization.
4. The electricity company (utility) bills the building's owner for (i) the energy consumed based on the meter readings, and (ii) the energy saved, billed at the price agreed between the owner and the energy tenant. The electricity company ensures that the owner and the tenants will not pay more for their energy bill than they would pay if the energy efficiency project had not been carried out.
5. The electricity company signs a long-term Power Purchase Agreement (typically 20 years) with the energy tenant to acquire the energy efficiency generated in the building at the price that the owner and energy tenant agreed for the efficiency service. This would require some new regulations in the EU so that utilities have the incentive to purchase energy efficiency. Otherwise, there is no PPA, the utility exists in the scheme only for on-bill repayment. The

[16] EL VALOR REAL (Y POR DESCUBRIR) DE LA EFICIENCIA ENERGÉTICA, https://greenwardpartners.com/wp-content/uploads/2020/12/GW-Papers-3-Valor-real-de-la-eficiencia-1.pdf

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amount of energy efficiency generated is measured through a dynamic baseline counter, compliant with IPMVP and enterprise standards. The Efficiency Service charged to the building owner is then transferred as operating expenses to its tenants thus overcoming the split incentive problem.

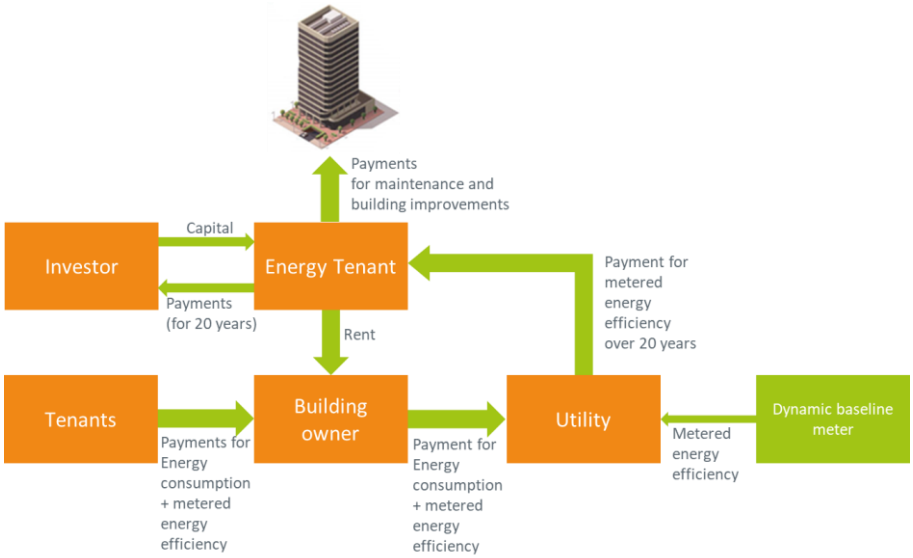

Figure 3 The Metered Energy Efficiency Transaction Structure (MEETS)

The MEETS allows a fair distribution of the benefits between the parties such as:

1. The financial risk of the energy efficiency project is transferred from the owner of the building to the counterpart in the PPA, which is a company with a better credit rating and solvency.
2. The energy efficiency developer is reimbursed for his investment in the energy efficiency project through the PPA, which is considered a trusted contractual agreement and easy to refinance.
3. The building owner may receive a portion of the PPA payments for energy lease income, which represents a new revenue stream related to the management of the building, and that revaluates it as well.
4. The electricity company provides an added-value service to its customers, thereby increasing its potential for retention and penetration in the market (instead of losing billing volume).
5. Tenants get a healthier and more efficient space, without additional costs compared to before the renovation took place.
6. Energy efficiency reduces the demand for the electricity grid and can delay or eliminate the need for new investments in grid infrastructures while at the same time contributing to making the electricity grid more reliable and resilient[17]
7. Possible benefits for local communities are a more decarbonized environment, savings for the public health system, promotion of activities related to energy efficiency, creation of local jobs, and higher tax collection.

[17] https://www.resource-innovations.com/resources/benefits-energy-efficiency-go-beyond-saving-energy-and-money

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Possible disadvantages of MEETS are related to the fact that it is a complex contractual agreement between four parties: building owner, tenant, energy efficiency financier and electricity company where each party's benefit may conflict with the benefits of the other parties.

1. The electricity company will likely make a profit out of the commercialization of the efficiency service and therefore the rate of the PPA payment to the energy tenant might be lower than the energy efficiency costs billed to the building owner.
2. The energy efficiency financier might be discouraged in engaging with some projects due to foreseen low-profit margins and scarce bankability. In relation to that, the repayment capability of the building owner must be adequate for the considered energy efficiency project.
3. The energy efficiency financier needs a reasonably accurate estimation of the metered energy efficiency to estimate the profitability of a project, which may be difficult to obtain.
4. The building owner's ability to negotiate with the tenants a payment for the delivery of energy efficiency may be low if the tenant has limited interest in energy efficiency and building renovation

The MEETS arrangement works according to the following steps:

1. The building's owner stipulates an "Energy Lease" contract with an energy efficiency financier or promoter, who agrees to finance and undertake 100% of the energy efficient retrofit of a building or group of buildings.
2. The energy tenant acts as a financial promoter and takes full responsibility and all the risks of the interventions to improve energy efficiency in the building.
3. The tenants of the building will enjoy the benefits related to the building's retrofit with energy efficiency measures and its modernization.
4. The electricity company (utility) bills the building's owner for (i) the energy consumed based on the meter readings, and (ii) the energy saved, billed at the price agreed between the owner and the energy tenant. The electricity company ensures that the owner and the tenants will not pay more for their energy bill than they would pay if the energy efficiency project had not been carried out.

6 STAKEHOLDERS' OPINIONS

Frequently asked questions, comments, case quotes and feedback from the tenant, landlord and market expert profiles covering key concerns that need to be addressed are given as follows:

Why should I consider building upgrades which will disrupt rent roll & also my tenants? There are financial, environmental, and social benefits of the upgrades around the building, raising the building value, such an upgrade can be integrated within the leasing and rent roll and it can be formulated within the financial streams.
What Does a Full Pass-Through Clause Look Like? "Capital expenditures and capital repairs and replacements shall be included as Operating Expenses provided such capital repairs or replacements were necessitated by a change in Law occurring after the date of this Lease or were intended to have cost-saving benefits over the Term

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and amortized costs of the same over the useful life of the improvement by generally accepted accounting principles or concerning cost savings, over the payback period of such improvement."[18]
What does lease language about submetering look like? "Landlord is hereby authorized to request and obtain, on behalf of Tenant, Tenant's electric consumption data from the applicable utility provider." "Notwithstanding anything herein to the contrary, if Landlord reasonably determines that Tenant's use of electricity is excessive, Tenant agrees to pay for the installation of a separate electric meter to measure electrical usage over normal office use and to pay Landlord for all such excess electricity registered in such submeter."[19]
Is an On-Bill Payment a debt for the customer? Some have argued that on-bill payments are not debt for the customer but, instead, are part of the utility service fees and therefore "off-balance sheet." The question is relevant to some customers. For example, many companies have obligations under financing agreements triggered by undertaking a new debt obligation, and many lenders assess a company's ability to borrow by looking at its debt load. The determination of whether a charge is a debt will likely be based upon the nature of the obligation itself and whether, for the customer, it has the attributes of debt. It is not likely to be affected by whether the utility or others label it a loan payment, debt, service charge, or tariff, but rather how it functions.[16] The determination might also vary depending on the customer type, the terms of the on-bill program, and the terms of any agreement between the building owner and other vendors involved. The standards on this subject are in flux and could change at any time.
"While not necessarily the main driver for tenants, sustainability is one more tool in your toolbox when it comes to getting a lease signed." — Brenna Walraven, Corporate Sustainability Strategies
"Green leasing is a promising tool that tenants and landlords can use to develop joint environmental actions, with little or no involvement from the government." Dr Kathryn Janda, Environmental Change Institute at Oxford University
"At the end of the day, the split incentive has less to do with lease structure and more to do with the expertise of the owner in having a conversation about sustainability opportunities. We've found success coaching property management teams on how to engage tenants, including putting together scripts and showing them how to develop action plans. Engaging tenants through this approach has worked (getting [approximately] 80% of tenants to share data). Educating the 'frontline' folks who engage with tenants is one of the best ways to get everyone on board with sustainability opportunities." — Brenna Walraven, BOMA Fellow, Corporate Sustainability Strat.
"We have found our green lease guidelines to be a useful tool that helps us to better engage and educate tenants, design and construction teams, brokers, attorneys, and others from the beginning of the relationship. Our goal is to provide standards that add clear value for all stakeholders and are not difficult to follow, which in turn helps our team meet short- and long-term energy efficiency goals." — Eugenia Gregorio, The Tower Companies
"Across our portfolio, we've converted leases to green leases and have been finding that incorporating pass-throughs for energy-saving projects does not meet much resistance because tenants generally don't want to object to smart investments that conserve energy and save the

[18] From a Brandywine Realty Trust case study
[19] Brandywine Realty Trust Better Buildings Case Study

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property money. If there's real pushback, we know they aren't the right fit for our property. We need our relationships to be win-win or there's no deal." Sheldon Oppermann, Compass Property

7 CASE STUDIES

UK	PRIM: Hollywood House

PRUPIMally is a top 20 global real estate investment manager. Through its membership of the Better Building Partnership, PRUPIM worked with the Office of Government Commerce to agree on an MoU for guiding owner/occupier relations in reducing carbon emissions through better management of resources. At Hollywood House in Woking, PRUPIM worked in partnership with Skanska as both occupier and contractor to deliver a sustainable refurbishment. The green enhancements enabled PRUPIM to retain Skanska as an occupier, providing a building that lives up to the company's green aspirations.

As a result, Skanska was one of the first occupiers to sign PRUPIM's standard lease incorporating "green" clauses and a Green Memorandum of Understanding. Under the terms of the Green Lease, an environmental management plan has been put in place, which sets out targets for the building that both PRUPIM and occupiers are working towards. To support the implementation of this plan, a Green Building Management Group has been established, providing opportunities for PRUPIM, occupiers and the building manager to work together to understand the building's performance and drive environmental improvements.

According to PRUPIM, the major benefits of collaboration include:

- Better owner and occupier relations
- More efficient management of resources (energy, water, and recycling)
- Efficiencies that could potentially lead to lower service charges for tenants
- Improved building ratings (energy ratings and environmental certification)
- Strengthening PRUPIM's credentials as Landlord of Choice"
- Maintaining and improving investment returns

US Energy Audit to Save Costs and Increase Tenant Comfort

In January 2017, WashREIT commissioned an energy audit to review current equipment and operations at 1776 G Street, a 270,000-square-foot Class B office building originally constructed in 1978. Recommendations from the audit included replacing common area lighting with LED bulbs, installing two VFDs, implementing a more efficient warm-up and cooldown process, reprogramming the air handlers, and programming the building automation controls to optimize cooling tower operations. Within 18 months after these measures were implemented, the building experienced a reduction in energy use, $ in annual electricity cost savings, and a 50% decrease in tenant comfort complaints. The building's ENERGY STAR score also rose.

US	Equipment Maintenance and Retrocommissioning Saved Energy

When Akridge acquired a building that was built in 1963, the number one complaint from tenants was regarding the induction units that provided heating. Instead of replacing the systems, building engineers walked through the property and cleaned and retro-commissioned each unit. Building system tune-ups were a lower-cost option than completely replacing the heating units, and this

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shows the importance of routine maintenance because the improvements to this system reduced tenant complaints by 90%.

UK Green Leasing Development

Evidence of inexperienced leases inside the UK Using a qualitative document evaluation approach, Bright and Dixie (2014) examined the content material of 26 UK business leases in detail to develop a categorization of 'green clauses. Sampling relied on rentals to be had on the public land sign-in plus 7 retail rentals furnished directly by a tenant. Sampling becomes also restricted to rentals registered in 2008 or later given the primary recognized use of an inexperienced hire in 2007. The sampling aimed for a mixture of locations, landlords, and tenants, however, focused on BREEAM (Building Research Establishment Environmental Assessment Method) residences and on events with public green commitments (which includes inexperienced hire policies), to be able to increase the danger of figuring out green rentals inside this sort of relatively small sample.[20]

The UK and Australia	**Green Lease Schedule**

UK and Australia in Australia, the Australian commonwealth, and national governments have supplied important early management for inexperienced rentals. Under the Energy Efficiency in Government Operations (EEGO), coverage standards were set in 2006 for all new government rentals of more than 2000 m2 through the use of a 'Green Lease Schedule' (GLS). In addition, in the United Kingdom and Australia, industry management has been crucial to the emergence of greener leasing. The UK Better Buildings Partnership (BBP) and the Sydney BBP were established (in 2007 and 2011 respectively) to act collaboratively with leading landlords 'to develop answers to enhance the sustainability of present commercial constructing inventory and achieve significant CO_2 financial savings. Both BBPs developed toolkits providing a menu of 'inexperienced clauses' that parties can opt for to include in rentals and that offer a framework 'for sustainable operations and collaboration during the life of business rentals proper from the on-set, Sydney, BBP, 2013[21].

UK British Land York House

At York House, British Land controlled energy use reduced by 38% between 2009 and 2011, and occupiers' energy use in their areas is 11% lower as a result of close collaboration with occupiers and a new automatic meter reading (AMR) system. A well-established Green Building Management Group, with occupiers and the building management team, provided a forum for all parties to discuss the new metering system, as well as to agree on initiatives and monitor progress on an ongoing basis. Roles and responsibilities were discussed at Green Building Management Group meetings and formalised through an MoU.

UK British Land 10 Exchange Square

At 10 Exchange Square, British Land brought together all parties involved in the building to work collaboratively on sustainability initiatives. Between 2000 and 2012, this collaborative approach saved 1,530 tonnes of CO_2, diverted over 220 tonnes of waste from landfill, and saved £235,000 on occupiers' energy and water bills. A well-established Green Building Management Group provides a forum for all parties to agree on energy-saving initiatives and monitor progress, notably through

[20] The evolution of green leases: towards inter-organizational environmental governance, Kathryn Janda, 2016

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data provided from the new metering system and optimisation process. All members are asked to sign an MoU and meet at least twice a year.

AUSTRALIA The Sydney BBP Office Leasing Study

The Sydney BBP Office Leasing Study: In December 2014, the Sydney BBP published the primary "BBP Leasing Index," which covers the workplace leasing market in Sydney's primary business district (CBD). This index suggests how Sydney's office leasing market is being transformed: over 60% of all rentals signed in Sydney CBD in the last years include inexperienced clauses, in comparison to fifteen% before the monetary year 2008/09. The BBP analysed leases from the general public sign in New South Wales (Thomas and Dawson 2014), using Sydney BBP's Model Lease Clauses (recognized as an industry pleasant exercise) to define what constitutes a "green" period (Sydney BBP 2013).

The study sampled over 500 of the 7000 business workplace leases throughout Sydney CBD. Premises were sampled randomly within six segments determined through the length of tenancy (small, medium, huge) and the quality of the construction (non-high and high grades), with a goal sample size of 100 for every segment. The sample leases were analysed for the presence of 1 of 22 BBP Model Lease Clauses and a grading device was used to calculate a 'Model Lease Score'. Grading's have been assigned primarily based on clause breadth and clause strength.

US Prioritizing Energy Efficiency Measures Compass Properties

To overcome the challenges of older buildings and the costs to implement energy efficiency, Compass Properties follows the 80/20 rule, where 80% of the performance will generally come from about 20% of the work or investment. Compass recognizes that it can't do all things all the time, but when it does, it must focus on the most impactful. At Compass, the 20% of initiatives that achieve the maximum amount of value are LED lighting replacements, but only on the lights that are on for more than eight hours a day; timers on all the rest; HVAC setbacks; leases that charge for overtime tenant HVAC use; and separately metered lights and outlets in tenant spaces, which encourage tenants to turn off their equipment before they go home.

IRELAND Building Energy Investments

Buildings are directly chargeable for 40% of power use in Ireland and are major emitters of carbon. With the nearly Zero Energy Building standards gradually getting under pressure this year, the newest buildings developed these days are surprisingly power green. Yet, as many as one million Irish homes are considered significantly energy inefficient and required to upgrade work between now and 2050, upgrading our buildings so that they use less power is one of the maximum fee-effective methods to reduce Ireland's greenhouse-fuel line emissions. Building maintenance also has several aspect effects, regularly yielding significant advantages – environmental, financial, and social. These co-advantages can accrue to the constructing customers (e.g., improved comfort and higher health) but also to society (e.g., process introduction and power security).

Although progress has been made in accelerating strength preservation in Ireland, it's far widely popular that there is a huge hole in the real and required degree of funding. The breakup incentive among tenants and landlords is one of the maximum acute and persistent limitations to unlocking the capacity of energy performance in buildings. This is a common scenario whereby a landlord is liable for assembly of the cost of improvement paintings, however most effective gets an advantage while the work will increase the rental or resale value of the assets. The tenant, who is usually responsible for paying the energy payments and would therefore benefit from lower energy charges,

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is unlikely to invest in the paintings without the fact that they will stay inside the assets long enough that the financial savings will outweigh the investment.

In this context, this report aims to provide an overview of worldwide excellent practices to mitigate the breakup incentive issue inside the private rental marketplace and to open discussion on capacity moves that may be taken in Ireland to address this issue. The implications of those findings for Ireland could be further discussed at a workshop in Dublin on Friday 1st March 2019. The introduction provides an overview of existing tasks to address the breakup incentive issue in Ireland, as well as an overview of Ireland's rental assets marketplace (business and residential). Sections 2, 3, and four present some of the regulatory and contractual strategies that have been taken in other jurisdictions to tackle the break-up incentive issue inside the residential and commercial sectors, and the way they could probably be implemented in Ireland.

Existing Initiatives in Ireland Tackling this issue has been high on the EU timetable for the final 15 years. Both the Energy Efficiency Directive and the Energy Performance of Building Directive 2018 recast directly deal with the barrier of break-up incentives inside the building quarter.

The creation of mandatory Building Energy Rating (BER) for properties offered for rental or for sale in January 2009, accompanied by the obligation to the nation it in the commercial of a property for rent or sale in 2013 aimed at growing transparency in the marketplace for constructing occupiers, investors, and tenants. With a power efficiency rating device, dealers looking to lease can identify the power performance of buildings that could otherwise be unknown. Provided consumers cost energy performance, for comfort gains, financial savings via reduced power usage, environmental concerns, or otherwise, this should increase demand for more power green[22].

SWEDEN	**Swedish Energy Agency's new office building in Eskilstuna**

As a tenant, the Swedish Energy Agency has expressed the wish to sign an appropriate "Green Lease Agreement" (GLA) for its new office in Eskilstuna. The property owner (Ladingen) also has a high level of ambition regarding energy efficiency and sustainable solutions, so the conditions for success were promising. The Swedish Association of property owners' "Green Lease" has become an industry standard and was included in the original discussion between the parties. However, this lease does not contain models for controlling investments and savings. Furthermore, it is unclear whether it is legally binding. Discussions during Task 24 workshops showed that the potential for "greenwashing" was high.

The ambition is for the adapted lease to be tested so it can contribute to improved insights for interested stakeholders. The lease, version 1.0, can be found in Appendix 1a. Appendix 1b contains names of designated people for various responsibilities. A major retrofit of the premises was undertaken before the Agency moved in, and several energy-efficiency measures have been implemented. Therefore, there is less potential for technological, large investments for energy efficiency.

SPAIN	**Shopping Centre Splau in Llobregat, Spain**

The second case study considered is the Shopping Centre Splau[23] in the Llobregat area near Barcelona. Splau covers an area of 55,000 m^2 and has more than 144 shops, including a multi-screen cinema and several restaurants. It is an important meeting location for the local community

[22] IGBC, Overcoming the split incentive barrier in the private rental market, International Case Studies, February 2019.

[23] https://www.breeam.com/case-studies/retail/shopping-centre-splau-spain/

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of residents as well as for international travellers who use the close El Prat airport and for people attending the nearby FC Español football ground.

Shopping Centre Splau is owned by Unibail-Rodamco-Westfield (the same company that owns the Shopping Centre Bonaire in Valencia) and follows the company's CSR including the "Better Places 2030" initiative and the adoption of green leases. It appears that also, in this case, the green leases have been an effective tool to overcome the split incentive issue and to set a target of 25% energy consumption reduction by 2030 with respect to 2012 consumption.

Impact of green lease: green leases enabled to implement of several energy-saving measures at Splau such as a full LED relighting programme, smart lighting controls based on daylight and presence detection, natural ventilation and advanced monitoring and regulation of cooling and heating systems. As a result of implementing these energy efficiency measures, energy consumption has been reduced by more than 5% in 2012 and the CO_2 emissions were reduced by 71 tons. Moreover, a roof-integrated photovoltaic plant with 170 kWp has been installed supplying the 6% of the annual total energy consumption and enabling it to save additional 87 tons of CO_2. Also, in this case, green leases do not show clearly disadvantages. However, it can be noticed that the pathway toward the 25% energy consumption reduction in 2012 is rather slow and one of the possible reasons could be a too modest reward received by the landlord through the green leases.

GREECE	**Potential of Green Leases in Greece:**

In Greece, no institutional/legislative framework has been developed to share/facilitate the benefits of energy upgrades between landlords and tenants that will eventually solve the split incentive issue.

Based on the literature (Feierman 2015) the potential energy savings of 11-22% in commercial office space can be facilitated through green leasing, which translates to 0.26-0.51 $ in savings per square foot. In the Greek case demo, no useful results can be conducted, as the green leasing scheme for solving the split incentive issue is not yet applicable. These outcomes strongly dictate the need of advancing the SmartSPIN business model in the Greek Demo site, as it is the first initiative in Greece funded by the European Commission.

Case Study 1: The programme «ΕΞΟΙΚΟΝΟΜΩ» is an initiative of the Greek Government to overcome energy poverty by improving the building's energy class and promoting energy savings. ΕΞΟΙΚΟΝΟΜΩ funds 60%-70% of an intervention and building owners provide the remaining capital. It has scalable funding rates according to certain criteria, given to owners to reduce the energy consumption by 30% in their properties by applying energy class updates (minimum requirement upgrade by 3 grades).

Case Study 2: An independent energy provider in Greece has adopted the scheme of virtual net metering for bill financing to promote energy autonomy, electricity cost reduction and prosumer logic. The tenants «gain» virtually a segment of energy produced by the photovoltaic parks of the provider leading to discounts on the energy bills. The higher the segment invested by the tenant the higher the energy bill reduction is. In this way, the tenant gains the benefits of a green RES production (PV park) without having to install one.

8 THE SET OF GUIDELINES TO ADDRESS THE SPLIT INCENTIVE ISSUE

Set of Guidelines (Recommendations to address split incentive):

1. Optimize the integrated building design for construction.

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2. Follow the EU and local legislations around minimum energy ratings (i.e., Energy Performance Building Directive)
3. To better understand the energy efficiency opportunities available, tap into local educational and professional networks, lean on experienced property managers, and start benchmarking building energy data.
4. Prioritize actions that don't require much staff effort or investment—for example, retro commission to fine-tune equipment, engage an energy audit to identify cost-effective upgrades, and focus on the range of fast-payback measures.
5. Review Tenancy agreements & introduce:
    a. Mechanisms for collaboration between landlord and tenant
    b. Move from solely commercial agreement to one that facilitates building upgrade works
    c. Pay for use & incentivise efficiency among tenants
    d. Introduce collaborative environmental targets – science-based targets, operational energy/carbon targets
    e. Tracking use & savings
    f. Agreeing on a methodology and/or a tool to monitor, verify, track, calculate Investments, savings, billing
    g. In terms of the fit-out of tenancies environmental considerations such as passive cooling & embodied carbon should be mentioned in agreements
6. Create greater awareness amongst landlords of asset/value risk to their property through lack of investment in engineering & fabric upgrades
7. Develop transparent business models that facilitate deep renovation beyond lease contractual timelines that will be attractive to tenants as they will get proportional accrual of benefits for their tenancy duration.
8. A matrix of business models to be developed for different building typographies & landlord/tenant scenarios building off the SmartSPIN concept to look at scenarios which may differ somewhat. Landlords who operate funds that may form sharing funding model for upgrades. Tenants who are independent of the landlord in terms of engineering & utility services. Cost recovery clause on a green lease for sharing the cost of capital expenses
9. For more capital-intensive projects, first offset up-front costs through utility incentives, then spread the balance through options like on-bill financing, C-PACE, or energy performance contracts; where possible, bundle efficiency into broader renovations.
10. Modernize standard lease forms: improve the economics of efficiency projects and engage tenants by adding three key provisions to lease forms and renewal amendments: documenting efficient operations practices, efficiency standards for tenant fit outs, and efficiency cost recovery mechanisms.

9 DISCUSSION & CONCLUSIONS

Several current practices tackling split incentive issues between landlords and tenants across Europe and beyond have been discussed as part of this task and report. While a one-size-fits-all solution does not exist due to particularities across various segments of the building sector and different national conditions, a few findings can be highlighted.

Based on best practices from case studies in countries with the accessibility of evidence from mostly outside of the EU, from USA, UK, and Australia, a few important parameters must be considered concerning green leases. The first one is a cost recovery clause for both tenants and landlords and the other one is transparency, ensuring that landlords and tenants provide one another sustainable contact person respectively. For instance, tenants could share utility consumption data for their space with landlords. Moreover, landlords could share whole-building performance indicators with the tenants. Finally, beyond lease clauses and transparency, there is also the technical issue of ensuring that a building's equipment and systems are efficient. Based on the literature green leases

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are more prevalent in offices than in the retail sector, when the commercial rental sector is considered.

A successful approach to overcoming misaligned incentives between tenants and owners should consider splitting costs and benefits in a balanced way. A share of energy cost savings should be allowed to be used for investment repayments. While this means that tenants could be subject to a repayment fee on their utility bills, landlords should also take part of the investment cost given the property's value increase because of the energy efficiency upgrade.

Traditional forms of leases do not set the ground for energy efficiency investments. In the commercial sector, green leases can bridge these differences by splitting costs and benefits between the parties in such a way that both parties can benefit from an energy retrofit. Despite their potential, green leases are not currently widely used in Europe. Sharing standard green lease guidelines can increase awareness among key interest groups.

Split incentives can be addressed through a packaged solution consisting of mandatory energy savings, revised rent act, green leases, improved energy labels and actions to further facilitate ESCO activities. A shift towards the consideration of inclusive rent can support cost-recovery models based on a rent increase or fee on utility bills. This, however, should be considered together with feedback mechanisms to avoid reverse-split incentives. Individual metering, in cases where this is cost-effective, can be of great added value.

By pursuing a combination of low-cost, high-impact strategies, owners can see increases in property net operating income and value increases and other benefits like improved tenant retention, easier compliance with regulations, and upside from repositioning opportunities. With this streamlined approach of energy efficiency and green leasing solutions, there is an opportunity for owners in this sector to start capitalizing on the untapped potential of their buildings.

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