



Market and Financial Framework Conditions for Energy Efficiency Retrofit Investments in the Private Rental Housing Market Sector

(Summary of WP5)

KEY FINDINGS

The mainstream barriers to energy efficiency retrofit investment initiatives across all of the consortium countries were found to revolve around:

- High initial capital requirements of energy efficiency retrofit investments
- Accessibility to national financial support
- A lack of national incentive to undergo energy efficiency retrofits coupled with relatively low energy prices
- A lack of market competition to facilitate affordable prices of energy efficiency technology and services
- The split incentive problem resulting from the inability to share costs/benefits between landlords and tenants

As a result of the existing barriers, Government policy initiatives are required to spark action and produce well-designed policy initiatives to support issues in both the spatial and national context, whilst considering national economic circumstances. Investment in energy efficiency can provide multiple of benefits to different investors. However, more clarity and evidence on the capitalisation of energy efficiency in capital values are required to spark further action.

CROSS-COUNTRY FINDINGS

Barriers to Energy Efficiency Retrofit Investments

Tenant Related Barriers

Barriers associated with an unequal distribution of age within apartment accommodation and consequently limited spending ability of its residences were found to be most prominent in Spain, the United Kingdom and Denmark. Energy efficiency retrofits also seem to be perceived as a secondary priority by tenants in the majority of the countries, with the exception of Denmark. Low energy prices, which only consume a fraction of monthly disposable income, was indicated as a major tenant orientated market barrier across the majority of countries. Yet, it was found to be less of a barrier in Denmark and the Czech Republic.

Investor Related Barriers

A common issue, which is well documented in the literature, revolves around the inability of green value to be fully capitalised in property value. This barrier is consistently referred to as a significant barrier to green investment initiatives in the majority of countries.



However, it seems to be the least noticeable in the Netherlands, followed by the Czech Republic and France. With the exception of France, the high initial capital outlay is cited as a significant barrier across the majority of countries. Accessibility to financial support is further cited as a factor that reduces the likelihood of energy efficiency take-up.

In countries with high average population age, increase the likelihood of landlords being older and thereby less motivated to adapt to technological change and household modernisation. This seems to not be a significant barrier in the Czech Republic, Denmark and the Netherlands. A severe lack of incentive to undergo energy efficiency retrofits was cited by all of the countries as a significant barrier. This includes the fact that the primary incentive lies on the supply side of the market. In this regard, there is a more financial utility to structure and sell a financial product to finance green initiatives, relative to the perceived utility it creates for the investor.

Construction Related Barriers

The refurbishment process, to a moderate extent, was found to be labelled complex; emphasising the requirement of specialist knowledge to fully understand. Similarly, the lack of technological know-how was also cited in the majority of countries as a factor that dampens the incentive to undergo energy efficiency retrofits. There also seem to be a slow supply of construction materials and consequently a lack of capacity in the construction industry. This was mainly indicative of Denmark. In relation to this limited supply, a lack of competition between service providers was also cited as a mainstream barrier, which removes the incentive for suppliers to offer the service at affordable prices.

Institutional Barriers

A mainstream barrier across all of the countries revolves around the fact that tenants' energy bills do not reflect their actual energy consumption. There is, therefore, no incentive for tenants in apartment blocks to change their energy consumption behaviour to save energy, which would be the case if individual apartment metering was in place. This barrier was cited to be most prominent in Denmark and Spain.

In addition, the issue of cost sharing of energy efficiency retrofits was mostly indicated as a significant barrier in Denmark, France and the Netherlands. The role of institutions and Government revolves around the establishment of trust and initiatives to support energy efficiency retrofits. However, this seems to be a relatively more significant barrier in the UK, France and Poland, with a moderate indication of the issue in Spain. The process to undergo energy efficiency retrofits are therefore accompanied by a higher perceived cost and thereby further reduce the likelihood of green investment take-ups. The communication process is an integral part of establishing trust and customer satisfaction in any industry. Yet, this is cited as a significant institutional barrier in the Netherlands, Poland, Spain and the UK. The lack of communication further reduces the level of trust and a clear understanding of future plans initialised by government institutions.

Refurbishment Process and Housing Stock Barriers

Energy efficiency retrofits are commonly associated with a long and unattractive process, which increase the perceived transaction costs of the initiative. This is highlighted by the majority of countries, with the exception of the Czech Republic. Low demolition rates, relative to new modern developments, was indicated as the primary housing stock related barrier in the majority of countries and the national housing stock, therefore, remains old and energy inefficient. The lack of technological progress, in the provision of energy efficiency retrofits,



further hampers the take-up of green investment initiatives and thereby further postpones national modernisation activities.

POLITICAL IMPLICATIONS

Government policy initiatives are fundamental to spark action, where well designed and targeted policy initiatives will aid problems within a national and spatial context. The consideration of national economic circumstances is fundamental for policy accuracy. These programs need to be planned to ensure (i) that contracts are designed to guarantee that the actual energy users face the energy charges, (ii) the regulation of energy efficiency of appliances and buildings and (iii) the improvement of accessibility to information with regards to energy performance. The first step in encouraging energy efficiency by the government is the reduction of uncertainty and risk associated with energy efficiency initiatives by communicating a long-term price signal to the market and reducing the financial barrier of energy efficiency investment initiatives (BPIE, 2011; Lewis & Smith, 2013).

Further, by strengthening the existing EU level legislation, a roadmap of building stock renovation should be established as well as long-term binding contracts associated with monitoring and reporting plans (BPIE, 2011). It is fundamental to communicate detailed and deep renovation plans, at the member state level, by clearly outlining renovation targets based on national funding and technological potential. Given the necessity for energy efficiency to be reflected in property value, the move towards building energy certification is imperative. Energy Performance Certificates are a necessary step to ensure that energy efficiency value is capitalised into property prices over the long run, which will stimulate green investment (Lewis & Smith, 2013). However, to ensure investment, funding alternatives need to be in place. The establishment of EU Deep Renovation Fund can potentially support national funding initiatives and diversify risk to ensure more flexibility to investors. Innovative financial mechanisms at the member state level can also spur more private investment, promote best practice and encourage member state cooperation (BPIE, 2011).

Externalities associated energy efficiency can be addressed by adequate implementation of economic instruments that adjust the cost and benefits linked to energy efficiency measures and thereby including the social cost to society of inefficient behaviour. Economic instruments can also aid in addressing the split incentive problem by ensuring that the benefits associated with refurbishments are also experienced by the investing agent. Alternatively, it can also be used to pass the investment cost onto the tenant that is experiencing the benefit of reduced energy bills, thereby removing the “free rider” problem. Energy taxes and price subsidies are the two main fiscal mechanisms that can be used to directly manipulate energy prices. A fundamental step in encouraging energy efficiency, however, revolves around the importance of government to remove energy subsidies as far as possible (BPIE, 2011). Energy taxes, on the other hand, take many forms and can be used to reduce tax liabilities when energy efficiency improvements are made. Tax deductions and tax credits allow eligible investments to deduct energy efficiency costs from taxes payable. Similarly, tax deductions and rebates deduct the taxes associated with eligible equipment or services. Alternatively, tax relief can be used to reduce the tax payable on particular goods or by particular regions (Lewis & Smith, 2013). It is usually used to correct market failures and can be used to overcome barriers to energy efficiency investments.



Taxes, as a mechanism to reduce barriers and spur refurbishment incentives, however, are not appropriate for low-income households.

This is where the government needs to introduce special programs to aid the low-income segment of the population as rising energy prices might have regressive implications. Other economic instruments include grants, loan programs and concessional loans, guarantees and accelerated depreciation. Grants can be effective in the sense that it can bridge the financial gap towards refurbishments which would otherwise not occur. Loan programs and lending institutions need to effectively translate the lower risk and higher returns of green investments into lower interest rates, probably representing the most significant measure to motivate energy efficiency retrofits. Similarly, concessional loans, by incorporating subsidies, can significantly reduce the cost associated with retrofit investments. Accelerated depreciation allowances are a financial measure that reduces the after-tax total cost of equipment and therefore allowing purchasers to write-off the cost of depreciation. Guarantees can serve as a measure to significantly reduce the perceived risk associated with the retrofit investment and at the same time increase the leverage of private debt finance (Hilke & Ryan, 2012).

In this regard, removing market barriers for Energy Savings Company (ESCOs) and establishing an innovative guarantee system will enhance confidence for consumers and investors (BPIE, 2011). The goal of these economic instruments is to kick-start private financial markets and motivating investors to fund energy efficiency measures. Long-term research and development (R&D) programs could be brought forward by the government, which would ultimately provide incentives for supply driven technological development and change and lead to continuous innovation. The efficiency of R&D should be evaluated by the number of patents filed (Lewis & Smith, 2013). This will ensure continuous improvement in energy efficiency over the long run (Hilke & Ryan, 2012). This can be supported by the establishment of national data collection systems, relating to energy efficiency performance, to ensure long-term data availability for reliable policymaking. Policy initiatives should be subjected to proper evaluation coupled with stringent enforcement. This is only possible if adequate monitoring systems of compliance are in place, managed by a high-quality workforce. These systems should be led by the public sector to kick-start a renovation revolution in the market, thereby reducing the costs for private households. Integration of training and education within the established systems will enhance skills in the construction industry, improving resource efficiency, environmental performance and facilitating continuous innovation of construction enterprises (BPIE, 2011; Lewis & Smith, 2013).

INVESTOR'S PERSPECTIVE

Green Premiums and Value Drivers of Energy Efficiency Investments

Demand structure in the market based rental housing sector

In many European countries, there is an increasing interest in developing a more sustainable private rented sector. Particularly, as in recent years, increased migration and labour mobility across EU and within member states have reversed the post-war trend of increased owner-occupation and social housing. Considering the distribution of household composition in the private rented sector of the countries in the RentalCal consortium, the most common households' type in these countries is households with dependent children.



The second most common household type is single person household in Denmark, France, Germany and Netherlands, multi-family households in Poland and Spain and working-age couples in the Czech Republic and the UK. Considering the housing tenure in 2014 for the same countries, an interesting pattern emerges.

A first set is formed by Poland and Spain, in which a low percentage of households live in private rental housing (facing the market rent), 4% and 12% of the housing stock, respectively. A second group includes France, Czech Republic and the UK, where 19% of the housing stock in France is private rented, and 17% in the Czech Republic and 17% in the UK, respectively. The third set is countries with traditionally large private rented sector such as Germany (40%), Denmark (37%) and Netherlands (33%). Turning to the average duration of residence in the private rented sector; UK households have traditionally had short-term tenure duration, while households in Germany and Spain tend to have long-term average tenure duration.

Rents and operating cost issues in the market based rental housing sector

Europe's property market has been insipid since the financial Crisis of 2008. In the past few years, some European economies have emerged from the crisis; others are still struggling to achieve desired levels of economic activities (PWC, 2015). Consequently, the countries in the RentalCal consortium have experienced different growth rates. Germany and the UK appeared to have emerged from the dip and have on average experienced a high growth in property prices over the past 5 years. This may suggest that domestic investors and Pan-European investors may have opted to invest in these large and stable markets due to their depth and liquidity. This is in stark contrast to Czech Republic, Poland and Spain in which price growth has been very low or negative in the past few years. Over the same period, France and Denmark, on average, experienced low or moderate growth in house prices. Considering rental price dynamics, across Europe rental growth remains elusive. While on average, Denmark, Germany and the Netherlands have experienced medium or high rental price growth, other countries in the consortium have experienced negative or low rental growth. Furthermore, gross rental returns (or rental yields) figures reveal that the cycles of recovery across Europe can bring longer-term high yield rental investments. Particularly, the rental returns are relatively high in the Netherlands. Yields are also high in Poland, Denmark, Spain and UK, but relatively moderate in France and Germany.

“Green” premiums, benefits and risks of energy efficiency refurbishments

While there is no complete consensus on the capitalisation of energy efficiency into residential prices and rents, the majority of studies points to a 'green premium'. This premium appears to be more significant in the owner-occupied market segment than in the private rental market. These findings indicate that the retrofitting targets in the EU Member States may not be achievable purely based on prevailing market mechanisms but may require support from suitable policy measures. Investment in energy efficiency can provide multiple of benefits to different investors. Whether by directly reducing energy demand and associated costs or facilitating other co-benefits, the enormous potential of energy efficiency is highlighted. It was found that high sales premiums exist in the majority of the countries in the consortium, except Czech Republic, Poland and Spain in which no studies exist to date. Likewise, in some countries, France, Germany, Netherlands and the UK, favourable rental price and reduced void periods premiums are reported. Other financial benefits of energy efficiency investments common for all countries are energy cost reduction, hedging against energy price volatility and extended building life cycle.



Energy Efficiency Retrofit Grants and Subsidies

Support programs in the Czech Republic were found to be successful in generating widespread knowledge and information. However, the Program 150 initiative had a limited impact, which is ascribed to the fact that the initiative is limited to a specific demographic group. Information on the implications and evaluation of support initiatives were found to be rather limited in Denmark.

Yet, the *Urban Renewal Scheme* proved to have a significant impact on which its success is ascribed to the change in focus towards energy efficiency. In France, many of the existing initiatives are associated with financial support, the majority of which were found to have a valuable impact on the movement towards energy efficiency. The success of the initiatives can be ascribed to the affordability of financial support nationally available, which takes the form of zero percent interest loans and cash allowances that covers roughly the average cost of green investments.

The four KfW programs in Germany were found to be very popular and remain available to residential properties. The attractiveness of the initiatives is mainly financial; characterised by significant cash allowances, low-interest rates and the subsidisation of professional support services available to consumers. Initiatives in the Netherlands provide a range of alternatives that improve the financial attractiveness of energy efficiency retrofits. This range from, investment allowances for sustainable energy initiatives to tax incentivised home improvement works and energy saving loans primarily directed at the rental sector. However, the implications of the support practices proved to be relatively average. However, with the Investment Allowance for Sustainable Energy (ISDE) initiative still in its infancy (starting in 2016), a significant portion of the available budget (5.5 million EUR) has already been allocated to 1758 applicants, which shows significant interest.

Similar to Denmark, information about the evaluation and effectiveness of financial support practices in Poland are limited. Yet, the initiative available via the Thermo-modernization and Renovation fund (TM&RF) and provided by the Bank of national Economy (BGK), distributed over 2 billion PLN in subsidies until the end of 2015, which reduced energy costs to up to 0.8 billion PLN. This initiative was found to have the most significant impact. The initiatives in Spain were all expected to have a significant impact on restoration, yet evaluations suggest a marginal effect due to the deprived national economic situation. Finally, financial support in the UK is still in its infancy. However, a commendable take-up is associated with the Renewable Heat Incentive from which the government confirmed the extension of the program to 2020/2021 and a budget increase from £430 million to £1.15 billion by that time (IEA, 2016).

Financing Energy Efficiency Retrofit Investments

In the Czech Republic, a few government-backed financing options are available to investors but market-based financing options are limited. Similarly, in Spain, Government-supported financing schemes are available via the Official Credit Institute and through the JESSI-CA-FIDAE programme. Despite this, in partnership with the national government, private banks such as Santander, Banco de Bilbao offer certain credits/loans devoted to energy efficiency projects with a relatively low-interest rate. Some private banks also provide Green mortgages “eco-hipotecas” in which the interest rate is linked to the energy efficiency rating of the property. While in France, the most widespread financing option for energy efficiency retrofit



for private landlords is the 0% interest rate on eco-loans and in Denmark, energy efficiency retrofits are normally financed by either real estate mortgages (Realkredit lån) or private mortgages (bank loans). In Germany, financing of retrofit investments is at an advanced and is perhaps one of the most developed in the EU.

The KfW loans are available for up to 100 % of investment costs, depending on the scale of the retrofit. State's banks such as the L-Bank Baden-Württemberg also provide energy efficiency loans based on the KfW terms. Some private banks such as Umweltbank and ethikbank also offer favourable financing schemes to their customers. In the Netherlands, the Enterprise Agency of the government (RVO) provides generous green loans with low-interest rates. Furthermore, De Energiebespaarlening (the SVn), a combination of a public-and-private-led model, provides loans from the National Energy Savings Fund and via private banks such as Rabobank and ASN Bank. Private Banks provide their own financing instruments. For example, the Triodos Bank offers interest rate discounts in relation to the efficiency level of the dwelling. Similarly, in the UK, private Banks such as the Ecology Building Society offers a range of green mortgage products and related renovation loans to its customers.

SUMMARY

The findings of this report highlight significant gaps in financial support initiatives across the eight consortium countries. The ability to evaluate and compare national support practices are hampered by a lack of information available on best practice. Continuous evaluation of existing programs is essential to establish a framework for future policy considerations. This is in line with the suggestions of the Building Performance Institute Europe (BPIE). From the acquired national information, suggestions include increased the stringency of the existing EU legislation, continuously evaluating achievements of national objectives and the establishment of a national roadmap which is tailored towards demographic specific capabilities. Effective policy initiatives will favourably affect demand, but take-up will be ineffective if national affordability issues are not considered.

Sound financial incentives will spark action, which is evident from national findings in France (the availability of the zero percent eco loans) and Germany (very low-interest rates for green investment initiatives). The structuring of green financial products and the demand for energy efficiency retrofits will gain traction if all EU countries obtain EPC certification for all buildings. This will ensure that green value is capitalised into property value and improve the negative perception of green investments by reducing uncertainty. It is fundamental for policy and regulatory measures to communicate the intention and long-term outlook of the initiative to further combat uncertainty. In addition, policies should be directed towards mandatory whole house retrofits, but remain affordable for all national income groups. Finally, the establishment of EU Deep Renovation Fund can potentially support national funding initiatives and diversify risk to ensure more flexibility to investors (BPIE, 2011).

FURTHER READING & SOURCES

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