



Actions to Mitigate Energy Poverty
in the Private Rented Sector

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LIST OF ACRONYMS

BTL – Buy to Let

BTR – Build to Rent

CME – Coordinated Market Economies

EPOV – EU Energy Poverty Observatory

GFC – Global Financial Crash

HEI – Higher Education Institution

IRS – Informal Rented Sector

LME – Liberal Market Economies

MOT – Multiple Occupancy Tenancies

PRS – Private Rented Sector

SPO – Second Property Ownership

EXECUTIVE SUMMARY

Energy poverty – a situation where a household cannot meet its domestic energy needs – is poorly understood in relation to the Private Rented Sector (PRS). Yet PRS tenants in Europe are more likely to be suffering from this condition than the general population, and PRS housing has generally been found to be the least energy-efficient and least well-maintained. Alleviating energy poverty is a key precondition for achieving just transitions towards sustainability, and is gaining increasing attention as part of EU-wide and individual member states' climate ambitions, such as the European Green New Deal.

This overview of the current literature and suggested framework of measures to tackle energy poverty in the PRS was undertaken as part of the ENPOR (Actions to Mitigate Energy Poverty in the Private Rented Sector) project, in order to establish the state-of-the-art in knowledge of PRS-specific energy poverty challenges.

The report consists of two core sections; the first is an in-depth review, which contextualizes and highlights specific challenges affecting the European PRS. This includes a historical overview, from 1970 to the present day, highlighting the increasing shift from homeownership and social renting to the PRS for a widening section of society. This part of the report also emphasizes the varieties of private renting, tenant-landlord relationships, and provides case studies from multiple European countries on the impact of financialization and deregulation of the PRS. Lastly, it examines experiences of inequality in the sector, particularly noting the experiences of young people and students.

In the second section – titled 'energy poverty in the PRS' – we use the understandings established in the first section, and apply the historical and political shifts we examined to illuminate how energy poverty arises and is experienced in the sector. We scrutinize the impacts of tenant and landlord agency, and the types of tenants most likely affected by energy poverty. We then assess the barriers and drivers for increasing energy efficiency in privately rented homes, where we find that improving the efficiency of the PRS is not just a question of technical efficiency; it also involves complex social, economic and political challenges. There is also a synthesis of the best practices, policies and solutions which are being carried out around the world to implement energy efficiency improvements in the PRS, culminating in a conceptual framework and recommendations. We stress that literature coverage is geographically uneven, concentrated in Western Europe, as are the drivers and effects of policies studied – to the extent that it is difficult to formulate universally generalizable findings. We conclude by highlighting the multiple pathways for energy poverty alleviation in the PRS, including regulatory, financial, and social measures, and argue in favour of the need for representation of different sector stakeholders involved in these pathways.

1. INTRODUCTION

The literature review aims to survey existing knowledge across a wide range of disciplines, so as to establish the state of art in energy poverty challenges associated with the private rented sector (PRS). The PRS is broadly defined as a classification of housing whereby a landlord, who is not a local authority, some types of housing association or registered social landlord, leases a property to a tenant, for a period of more than six months. The review starts from the premise that energy poverty is a situation in which a household cannot secure a socially- and materially-necessitated level of energy services in the home (Bouzarovski and Thomson 2018). This conceptualization locates the drivers of energy poverty across a combination of circumstances: low incomes, high energy prices, low energy efficiency, and energy-related practices more generally. The latter dimension includes household energy needs as well as the technical and regulatory context of the housing stock. As a result, our review both encompasses and extends beyond energy efficiency and energy affordability in conceptualizing the key drivers of energy poverty, exploring in particular issues of social participation and representation, as well as the demographic circumstances of rented sector stakeholders.

The review covers, in particular, the context and varieties of private renting across different countries, the role of housing financialization in the process, the positions of different stakeholders – particularly the attitudes, intentions, experiences, and behaviours of tenants and landlords – as well as extant inequalities in the private rented sector. We then turn to the driving forces and practices of PRS renovation more generally, the reasons for energy efficiency retrofits in the PRS, the economic and regulatory context, associated justice implications and inequalities, as well as the financial and social implications – including contestations, conflicts, and resistance.

For the purposes of the review, over 120 academic articles and policy papers – as well as information from the EU Energy Poverty Observatory – were analysed through two key entry points. First, we searched for broader contributions about the PRS that were then more tightly focused on social inequality issues, challenges and policies. Second, we searched for work on energy poverty, energy efficiency and retrofits, and this body of literature was refined for the PRS only. Special attention was given to articles about the social, economic, and political dimensions of energy interventions in the PRS. Most of the literature is embedded in the Western context, generally referring to European experiences. The structure of the report follows the points listed above, while highlighting the main discussions present in the literature.

The material is divided into two parts, first highlighting the general context of PRS development, and then focusing on energy poverty issues more specifically. The summative conclusion identifies key trends and framings in the state of the art, and recommendations for onward work.

2.

CONTEXTUALIZING PRIVATE RENTING IN EUROPE

This part of the deliverable first examines the expansion of the PRS in Europe (in geographic and historical terms), subsequently turning to varieties of private renting, the issue of financialization, as well as general tenant and landlord positions. Two dedicated sections illuminate inequalities with regard to young people and students.

2.1. The private rented sector: An historical overview

In 1945, around 70% of Western European and other advanced capitalist countries' households were living in privately rented housing. By the 1970s, the opposite was true, a result of increased home ownership from suburban development and the growth of mortgage finance, alongside the expansion of government social housing programmes in the form of subsidized, secure-tenure rental housing (Gilbert 2016). The global recession of 1973-75 saw unemployment and poverty soar across Europe; social housing became increasingly costly to maintain, leading to the living conditions in many estates deteriorating significantly. The 1980s saw a shift in public policy away from social rented housing towards neoliberalism and a preference for private home ownership, supported by tax relief and new banking systems. Home ownership was politically preferred as it was associated with social benefits such as a lower crime-rate, better educational attainment and increased involvement in the community (Bentzen *et al.* 2012). It was promoted by governments to such an extent that it became a key cultural indicator of social position.

The shift from private renting to ownership was most dramatic in Spain – from 51% in 1960 to 91% in 2002 – and Portugal, in part due to subprime mortgages and debt-financed homeownership. With respect to Eastern Europe and former Soviet states, governments built public rental housing on a large scale, with rents set at very low levels and with private renting constrained. Although evictions were extremely rare, the housing was of low standard, constructed from cheap materials and often overcrowded. The high levels of public rental fell dramatically with the breakup of the USSR in the 1990s, with public housing sold off and privatized – in Bulgaria, Estonia and others, owner-occupation rose to 80%, whilst in Romania, private owner-occupation was as high as 96%, with only 1% of housing stock remaining as social housing.

By the late 1980s, in the UK, private renters mainly consisted of low-income non-family households and the elderly, with housing stock often in disrepair and poorly managed by landlords with a bad reputation (Crook and Kemp 1996). Rent controls meant that returns were uncompetitive in comparison with other investments, inhibiting new investment in the sector and making it uneconomic for landlords to improve or refurbish properties. Thus, in order to stimulate the PRS, the government provided temporary tax incentives, extending grounds for property repossession, with generous tax relief and deregulating all new private lettings to let at market rates. Local authority house building was reduced to its lowest level since 1920, and council house tenants were offered a 50% discount on the price of purchase of their home, all leading to growth in the PRS throughout the 1990s and 2000s. The allowance for eligibility for housing benefit was reduced for under 25s, and the rate at which benefit is withdrawn as income rises

was increased for all recipients. Further exacerbating the situation was the fact that local authority and housing association subsidies were reduced, raising rents and increasing tenants' dependence on benefits – higher rent and portability of benefits better enabled the deregulated PRS to compete with the social rented sector for tenants. Rent officers vetted the market rents of housing benefit claimants and reimbursed local authorities only on the amount judged to be reasonable – tenants thus had to find the difference, persuade their landlords to reduce rent, or move. As a result, by 2007, 1/3 of private tenants in England lived in income poverty, with the number of families who traditionally relied on social housing accounting for a large share of the PRS' growth between 2005-10. In 2017, 40% of state housing benefits went to the private rental sector.

Spain has also seen significant PRS deregulation following the 2013 Urban Letting Act, shortening eviction notices and tenancy periods, the creation of a punitive register of rent defaulters and the allowing of negotiation of rent between landlord and tenant. There are now few protections for tenants, with a preference for creating more favourable conditions for landlord-investors and thus encouraging growth in the PRS (Byrne 2020).

Notable exceptions to the trend of homeownership which characterized much of Europe are Switzerland and Germany, where today, only 34% and 42% respectively of households are homeowners. This is due to tenure-neutral policies, which have reduced incentives for purchasing, as well as extremely stable house prices, meaning ownership is not as financially rewarding, with the PRS also supplemented by a large social housing sector. These countries also have a much broader range of tenants than other countries' PRS, including middle-aged and older households. Nevertheless, studies such as that carried out by Bentzien et al. (2012) suggest that a lack of affordable housing is a key contributor to the high rates of renting in Germany, whereby owning a home would only be feasible to single income families if they cut back significantly on non-housing consumption.

In the years leading up to and following the Global Financial Crash (GFC) in 2008, real estate became increasingly financialized, a new asset class targeted by financial corporations for trading on the global stock market, investing in new and existing housing and transforming it into rental properties for multiple occupancy and single-family units. Europe and the Global North have seen the growth of so-called 'Generation Rent', characterized by a sharp fall in the share of households owning their home and an increase in the number of private renters. In part, this has been driven by an increase in the proportion of <35s in the general population, the proportion of young people in higher education, and in economic migration. More broadly, it is largely due to the increasing unaffordability of homeownership, wage stagnation and job precarity.

In the UK, the reduction in the rate of first-time buyers among 25-34 year olds is partially due to demographic factors, such as later marriage and parenthood, however, is also a result of the increase in student fees and interest on loans, delaying house purchase by graduates, alongside a boom in house prices causing these to rise much faster than average earnings. Low inflation and slow wage growth mean that mortgage repayments make up a larger share of income than in the 1970-1990 period. Furthermore, post-GFC fiscal austerity led to funding for social housing has been slashed, which corresponding with demand for social housing continuing to exceed current stock, has increased the shift to the PRS among low-income households.

The Netherlands, in particular Amsterdam, has also seen similar trends as the UK in the increase in private renting in the years leading up to and following the GFC. This occurred through active promotion of the PRS through rent liberalization by municipal and national governments as a response to the increasing demand for and cost of social renting and home ownership (Hochstenbach and Ronald 2020). Urban house price booms since 2013 and the introduction of stricter mortgage lending practices meant that ownership has become out of reach for many households, coincided with spiralling rent costs due to the market liberalization policies enacted by the Dutch government. This is a particularly salient issue for middle-income groups who earn above the social-rent qualification threshold and have thus increasingly found rent costs untenable.

A key driver of issues surrounding affordability is the process of gentrification, whereby well-located and attractive inner-city areas become populated with higher-income households, or property is purchased by Buy-to-Let (BTL) investors (Haffner and Hulse 2019). As a result, lower-income households are pushed out in favour of increasingly high-income, wealthy residents, and to the profit of existing landowners who benefit from skyrocketing rents. Quality of housing is also a serious issue; in the UK, with regards to the number of homes not meeting the Decent Homes Standard, the PRS is the worst performing tenure type. In 2018, 1.35m homes did not meet this standard, with 45% of failed PRS dwellings not meeting thermal comfort standards, and 56% containing a serious hazard to tenants (Rugg and Rhodes 2018).

Turning to the Global South, the growth of the informal rental sector (IRS) is playing a key role in the provision of housing in many rapidly expanding urban centres. This expansion is a consequence of a critical housing shortage in cities, where formal property markets cannot keep up, with the alternative being squatting, which is fraught with its own issues (Scheba and Turok 2020). With millions depending on its affordability and flexibility, the variety of accommodation available in the IRS can range from ‘an inner city building to a backyard shack’, and is one of the few housing options open to marginalized groups, female-headed households and informal workers. In South Africa for example, the practice of ‘backyarding’ – the provision of accommodation in shacks in backyards – is widespread, with over 1m households living in such accommodation in 2016. Governments and financial institutions thus far have largely ignored the potential of the IRS to improve the quantity of affordable housing for these groups. The IRS therefore largely operates outside of formal regulatory frameworks, creating several risks such as health and safety, unfair landlord-tenant relations, and pressure on infrastructure, but is considered by Scheba & Turok (2020) to be ‘a viable and thriving sub-market providing necessary and affordable accommodation for households across the low income spectrum’. They argue for a ‘developmental approach’, to work with, rather than against informal housing providers and structures to encourage investment in housing and practices and to improve conditions for renters. The IRS is not constrained to the Global South however. Palomera’s (2014) ethnographic research into Spanish informal housing practices in Barcelona found that low-income households, particularly migrants, who had been able to purchase homes through sub-prime mortgages prior to the GFC, met repayments beyond their incomes through renting rooms to relatives or friends. As such, behind the outward image of a ‘buoyant society of middle-class homeowners, lay a world of informal renting and poverty’.

In summary, in 2016, it was estimated that globally, 1.2bn people lived in rented accommodation, particularly in urban areas, where affordability and quality of housing remains a key issue. The growth of the PRS over the past three decades does not necessarily reflect an increasing societal preference for renting. The flexibility of short leases, which is attractive for students and younger households, instead creates insecurity and precarity for low-income families and tenants (2015). The sector is complex; a result of decreasing social housing expenditure, government interventions and changing regulations, with a blend of sub-markets and types of renters, and large geographical nonuniformity across local, regional and national scales. These ideas will be further expanded on in the subsequent sections. The PRS comprises multiple sub-markets which intersect and overlap, catering for an array of social groups, from students, young professionals, elderly tenants, housing benefit recipients, migrants, asylum seekers and refugees, right through to criminal and slum rentals (Rugg and Rhodes 2018). There are many varieties and contexts of private renting; as Whitehead et al. (2019) state, the PRS is ‘one sector in name only’.

2.2. Varieties of private renting: The importance of context

Housing provision is highly path-contingent and any comparisons of variations between nations must account for past legacies and present conditions. This is exemplified by Kemp & Kofner’s 2010 comparison of the UK and German PRS. They posit that in the UK, free market rents and weak tenure security are seen to be necessary for a viable and successful PRS – its revival since the late 1980s is often attributed to such legislation, while Germany’s much larger and more stable PRS has had softer rent regulation and strong tenure security since the 1970s. Like many coordinated market economies (CME), Germany has low levels of home ownership, whilst the UK, a liberal market economy (LME) has high rates of ownership – 39% and 68% in 2007 respectively. With regards to renting, Kemeny (2006) outlines a dichotomy between the two countries – Germany has what is known as a unitary rental housing market, with social housing not confined to the poor, exposed to competition with private landlords, and with little difference between the quality and cost of rent in the PRS or social housing. Conversely, the UK context has stark quality and rent cost differences, with social housing being ‘highly stigmatized’ (Kemp and Kofner 2010, 382). Other highlighted differences are volatile vs stable house prices, liberalized market finance vs regulated, and home purchase attitudes of ‘property ladder’ vs ‘once in a lifetime’ in the UK and Germany respectively.

As briefly mentioned in Section 2.1, there has been a sharp increase in BTL investors in the UK since 2000 due to the pre-GFC credit boom, taking out mortgages at high loan-to-value ratios, focused on capital gains. This has occurred to the extent that BTL is seen as an ‘everyday investment’, with renting enjoying a much more positive image than in the 1980s. Some of the other key features of the UK PRS are the high rate of tenant turnover, and the high numbers of small-scale private landlords. In contrast, in Germany, as the sector is not focused on niche markets, like students or young professionals; it serves a wider gamut of society and is a ‘cornerstone of housing provision for all parts of the population’. Households with subprime credit status are not encouraged to take out mortgages for homeownership, meaning that mortgage borrowers are less vulnerable in recessions, and makes the real estate market more stable. Private landlords are less motivated by short-term capital gains or investment, generally having much longer investment horizons than in the UK – instead tax reasons play a larger role in renting out properties due to substantial depreciation allowance. Tenures are much more secure,

as landlords have no rights to arbitrarily end contracts unless there is proof of breach of contract for example, and rents cannot be raised by more than 20% in three years. There is widespread availability of good quality housing, investment in stock by landlords and low residential mobility, in contrast with the UK's lower end, where poor quality is pervasive.

Comparing past trends in the UK and Germany thus reveals the contrast in the types, security and attractiveness of the PRS for various social groups and the consequences of regulation by national governments. It also highlights that considerations of a country's PRS history must be accounted for when implementing policy across a pan-European context.

2.3. Private renting and financialization

Byrne (2020) states that the process of financialization and associated neoliberal policy regimes have been a key mechanism in the decline of homeownership experienced by European countries. Financialization is defined by Hulse et al. (2020) as a 'shift in capitalist accumulation from commodity production to financial activity', the increasing importance of 'shareholder value above other corporate objectives', and the 'extension of financial activity into everyday life'. As economic growth 'revolves increasingly around financial markets', financial institutions are gaining greater influence on social and cultural domains (Nethercote 2020). With respect to the PRS, financialization is the conversion of housing into financial assets, the dominance of financial activities as the driving force behind changes to national housing systems, and the increasing reach of financial activity into what were previously non- or less-financialized actors and systems. It also highlights the PRS' move from the local to the global and its exposure to broader international trends (Byrne 2020).

The acquisition of distressed property assets following the GFC have created an environment ripe for financial actors to expand into the PRS market, particularly in liberal Anglophone welfare states. This is reflected in the development of Build-to-Rent (BTR) housing and the conversion of existing housing stock to rental units (Nethercote 2020). Institutional investors can range from Real Estate Investment Trusts, large pension funds and private equity funds, to local firms and actors. Even housing associations, which were traditionally set up in the UK to provide not-for-profit housing to low income households at below market rents (Crook and Kemp 2019), are responsible for 25% of BTR home construction, which are then let for-profit to better-off households than their classical social housing provision. Elsewhere in Europe, such as in the Netherlands, Housing Associations have also entered the private market and become more market-orientated, following the decline of state funding.

Post GFC, some noted trends of financialization are the purchasing of PRS housing in cities to 'liberate unused value in real estate', developing the buy low, sell high mantra into a 'new phase of longer-term rent extraction', and the increased reliance of non-profit housing providers on private finance. The coinciding of the post-GFC market with digital innovations, such as optimization and automation of rent collection and property maintenance, has also made the acquisition and operation of large volumes of housing possible. In the UK, BTR pipelines have grown by 478% since 2013, with 52% of units concentrated in London, supported by public subsidies and government capital market financing guarantees. Although a little later than the UK, BTR has since 2018 become more established in Ireland, seeing a strong demand for sites for

large BTR developments and a ten year high for volume of land traded in Dublin. BTR in Ireland has been strongly targeted at high-earning millennials and has set objectives of increasing the supply of private rental stock.

In Ireland, Greece and Spain, in the midst of crisis-stricken property markets, institutional investors bought detached multifamily rental homes in large volumes for conversion into single-family homes, often involving ‘gentrifying-by-upgrading’, as these luxury rentals can fetch higher rents than multi-family occupancies, displacing existing lower-income residents. Nethercote (2020) also describes the process of ‘hotelization’ of rental homes, offering luxury services and amenities to attract more clients and respond to competition in the upper-end of the rental sector, including fitness, recreation, concierge services and even pet-care. Hotelization can also refer to the conversions of rental housing by platform technologies such as Airbnb, which can lead to house-price inflation and displacement in tourist-attractive neighbourhoods. The potential income from these platforms has led to a large increase in Airbnb landlords, as well as attempts by large corporations to enter the platform-rental market (Aalbers 2019).

Dewilde’s (2018) research found a general positive correlation trend between the financialization of homeownership and renting, and the worsening of affordability of housing for low-income private renters across Western European countries. Factors which have undermined homeownership have included the house-price-growth to income-growth ratio prior to the GFC, the growth of BTL mortgages, the decline in social housing, the deregulation of the PRS, increasingly restricted access to mortgage credit since 2008, and declining employment opportunities. In the UK and Ireland, poor sector regulation, rapid capital gains and the availability of finance products for landlords such as BTL mortgages, meant that the sizeable affordability gap created in the home-owner property market, and the demand for the PRS this created could be met by small-scale landlord investment (Byrne 2020). This has resulted in a narrowing of the proportion of society who are able to access homeownership, concentrating property ownership among the wealthier classes, particularly those who are able to acquire additional properties (Forrest and Hirayama 2015). Credit for mortgages has become significantly harder to obtain for lower income and first-time buyers, and house prices increases have rapidly outstripped wage and income growth. Dewilde (2018) notes that particularly in Ireland, Spain, Portugal and the Netherlands that declining affordability has been due to increases in the costs of private renting insufficiently compensated for by poor income growth.

The PRS is also increasingly being used as an ‘asset-based welfare strategy’, whereby individuals invest in property to ensure future welfare for themselves in older age as a supplement to pensions, and for their families. This phenomenon is particularly acute in corporatist-conservative and liberal-welfare economies, where it is a ‘manifestation of the concentration of housing wealth and limited access to homeownership’ (Wind *et al.* 2020). Second property ownership (SPO) can broadly be separated into two categories: as wealth investments for extracting capital gains, or as rental investments, for second homes, pieds-a-terres and non-commercial purposes. The Nordic countries have the highest share of SPO, with 30% of households owning second properties, with the Netherlands and Slovenia with the lowest rates of around 14.5% median average. The incidence of landlordism in second properties however is highest in Ireland, Belgium, Germany, France and Luxembourg, with more than 50% of SPs being let, and nearly 80% in Germany. This provides a form of protection for middle class households against a backdrop of

wage stagnation, privatization of state services and reduced welfare provision. Popular property investment discourse tracks the investor's journey, from the 'mundane world of work to financial freedom' (Hulse *et al.* 2020). Recent literature has uncovered tensions between renters and shareholder interests in institutional investor-owned properties, with landlord accountability being problematic, especially if headquartered in different cities or even abroad (Nethercote 2020). Other issues found include rent hikes tied to property upgrades, sub-metering of utilities including energy, poor property management, ancillary charges, and increased illegal inspections and evictions.

Aigner focuses their research on the growth of the Austrian market of financialized residential investment products, whereby property is treated purely as a financial asset and valued for the capital that can be extracted from it (Aigner 2020). Vienna, a city with a large social housing sector and high rate of rental tenancy, is experiencing a phenomenon, whereby *Vorsorgewohnung*, or 'provision for pension apartments', are being transformed into a submarket asset class for small-scale private investors. These apartments are usually newly built and are BTL. The phenomenon has been so pervasive, that by 2015, every tenth building project was sold only to investors rather than owner-occupiers. At the macro-level, the rise in PRS investments and subsequent numbers of tenants living in private rentals as a result of *Vorsorgewohnung* BTL purchases has created a house price boom in Austria unequalled elsewhere in the EU between 2007-19, with a 124% increase in per square metre sales price. However, as elsewhere, this is creating increasing difficulties in purchasing a home among low-middle income groups. At a micro-level, this highlights a growing issue of what is known as a 'disembedded letting practice', whereby the owners are distanced from the property from the outset, which is planned 'solely for the purpose of generating income'. The dwelling is sold prior to completion through the use of photo-realistic images, owners have no input into the furnishings, and no contact with tenants, since dealings are taken over by service providers. This removes the social relations between tenant and landlord, encouraging indifference and disconnect – owning a housing unit is no different to owning any other investment share. Although Austria is used as a case study in this research, it is by no means the only country where such shifts in the BTL and financialization of housing have occurred in Europe, where acquisition of residential property for capital investment has become 'an essential part of the self-understanding of Western middle classes' and where housing has increasingly become intertwined with the global financial market.

Nevertheless, research is now starting to show that the trend towards PRS deregulation, which has featured in the UK and many other European countries, is starting to reverse, in that the sector is becoming more regulated once more, to provide longer term tenancies for a broader range of household types and more affordable homes, as a result of spiralling rent costs and limited opportunities to get onto the housing ladder. The increasing demand for additional controls on the market is likely due to the increasing political significance of the renting population. Some examples from Europe are as follows. Ireland, a country which historically has had one of the most lightly regulated PRS, has seen since the GFC rent costs becoming more politicized, particularly in high demand areas. The government responded by introducing rent cap increases in 2016 at 4% per year for three years in certain 'pressure zones', which has now been extended until 2021. In Spain, the government proposed changes to increase tenancy length to five years and to limit deposits to two months' rent in 2018, but failed to implement rent controls in cities where rents are rapidly increasing, due to a need to 'study what the factors are that are

pushing rent prices up'. With regards to France, lease length is 3 years, and rent cannot rise by more than a national index. In 2019, legislation was brought into force that granted cities the rights to impose rent controls to new tenancies, in order to create more affordable housing and in areas with housing shortages, with local authorities able to set their own rules and caps.

Whitehead & Williams (2019) argue that despite these actions, there have been mixed results for the stabilization of rent, due to a need for better data, more sophisticated enforcements and appeals systems, and a need for greater transparency of rights and responsibilities for both landlords and tenants. What remains poorly understood is how these new rent controls impact on new investments, the extent to which tenants actually benefit, and the willingness of landlords to remain in or enter the PRS.

2.4. Tenant and landlord framings, aspirations and experiences in the PRS

A private landlord is defined as someone other than a social landlord, who owns a property which is subject to a lease or occupancy arrangement which someone other than a family member can use as a place of dwelling. As mentioned in Section 2.3, small scale landlords continue to make up the majority of the PRS in many European countries and have been the driver of most recent growth, although since the GFC, some countries have started to see an emergence of global corporate landlords and institutionally backed build to rent sectors, which are becoming an increasingly important component of the PRS (Hulse *et al.* 2020). The rise of small-scale landlords has in some countries led to a reframing of the 'landlord', to the 'Everyman', or 'mum and dad rental investors', connecting so-called normal people, who claim to be crucial housing providers for others, reducing the burden on government housing provision and an important political group (*ibid*).

Roberts & Satsangi (2020) suggest that a good landlord has the following characteristics;

- 1) They are local authority registered
- 2) Deposits are paid into an approved scheme and carry out maintenance and repairs when needed
- 3) Are aware of responsibilities and tenants are aware of their rights
- 4) Use a registered letting agent
- 5) Members of an association and
- 6) Invest profits into improvements and repairs to look after the property and meet standards.

Nonetheless, the stereotype of the 'Bad Landlord', one who harasses, charges extortionate rents, evicts or provides substandard housing, is pervasive and enduring in the rental sector and beyond. In the UK, policy has had to 'rehabilitate' the image of landlords to encourage investment in the PRS, through the formation of self-regulating government-landlord partnership groups. UK government discourse posits that bad landlords are a 'small minority', and that instances of misappropriation are due to 'amateurism'. Despite certain advances in changing the image of landlords, Rhodes & Rugg (2018) argue that the concept of the bad landlord continues to be 'too weak to cover the worst levels of criminality in the PRS'.

There are three issues in the PRS on which a plurality of views between landlords and tenants on what is deemed acceptable with regards to housing can be found. These are the multiplicity of

attributes and the subjectivity of what constitute a ‘good tenancy’, rents, security of tenure and housing standards (Whitehead, Williams, and London 2019). The dichotomy of the good/bad tenant stigmatizes certain groups, but also ‘valorizes certain behaviours and marks others as problematic’ produced in relation to ‘expectations of middle-class homeownership (Power and Gillon 2020). Some discourses posit renters as ‘failed consumers’ and as risks, locally as a neighbourhood and property quality risk, and nationally, as a fiscal risk, particularly in older age. Particular groups of renters, as evaluated through lenses of race, class, income, gender and age, are seen as ‘riskier’ than others, particularly those on housing or income benefits. Some stereotypes of renters go so far as to see them as ‘ethically defective’, having ‘poorer maintenance standards or ‘lacking a sense of pride’ in their homes (Cheshire *et al.* 2010). Conversely, renters are a significant dimension of how housing investment gains are achieved, and thus Power & Gillon (2020) see renters within this paradox as ‘generators of risk, reward and value’. Outcomes of their research found that the ‘good’ tenant is primarily classed by their compliance with their rental contract; ability to pay rent in a timely manner, being aware and responsive to landlord needs, taking stewardship of the home, reporting repairs and so forth. However, they also found that elements of the ‘good’ tenant were performative, with some tenants avoiding complaining or not making extra demands for non-essential repairs, thus ensuring a secured tenancy, but at the cost of a decent home.

Security in the context of housing is traditionally a reference to security of tenure, but it has been found to be a ‘multi-dimensional and nuanced set of factors’ (Hulse and Milligan 2014), including the extent to which tenants can ‘make a home and stay there’, market contexts and cultures, and landlord-tenant relationships. Byrne & McArdle (2020) argue that insecurity and secure occupancy should be understood as a function of power and relationships between the landlord and tenant, rather than a passive characteristic of tenants’ experiences in the PRS, due to the fact that landlords, to a varying degree, are in a position of power and influence over a tenant’s access to their home and condition of a dwelling. Research on the Irish PRS showed that these kinds of power asymmetries between landlord and tenant in the PRS are present in a number of ways. Firstly, it is expressed through legislative insecurity, particularly security of tenure, where landlords are permitted to terminate tenancies on several grounds, including intentions to refurbish or sell. Second is market security, which amplifies legislative insecurity, due to a dearth of affordable alternative properties and which can lead to a feeling of lack of control for tenants. Thirdly, cultural insecurity also plays a role; rental homes are seen explicitly as the landlord’s property, meaning that landlords are in control of multiple aspects that can establish a secure sense of home for a tenant, including décor, pets, whether they accept children and so on. This can also be expressed as discrimination towards certain social groups, particularly migrants. Chisholm *et al.* (2020) argue that tenant-landlord power is manifest in three further ways; ‘visible power’- who prevails in decision-making and disputes, ‘hidden power’ – conflict does not arise as tenants do not feel able to voice grievances, and ‘invisible/naturalized power’ – where tenants become accustomed to sub-standard housing. With regards to the last two dimensions of power, these are not necessarily intentional, or a result of landlord inaction, but rather signify more subtle behavioural dynamics and the consequence of enduring stereotypes in the PRS.

Since the GFC, Ireland has seen the proportion of households renting double between 2006-16, as well as a notable increase in evictions, overcrowding, rent increases, with the PRS being the key driver of homelessness in the country in the past two decades (Byrne and McArdle 2020).

Average annual rent increases in Dublin have been greater than 7% since 2014. In response, policy has started to shift to reflect an increasing recognition of the importance of secure and affordable PRS housing, particularly following an official acknowledgement that growing numbers of people will never transition to homeownership in Ireland. Nevertheless, policies that have been implemented since 2016 have been largely ineffective, as rents continue to spiral upwards, and that ‘non-compliance persists’, including retaliatory evictions. It is suggested that if tenants are unable or too fearful of confronting landlords, particularly in a challenging and tight market, then legislation may continue to be ineffective. Tenant insecurity then is key to shaping and constraining agency when contesting breaches of rights and legislation.

Recent literature has uncovered tensions between renters and shareholder interests in institutional investor-owned properties, with landlord accountability being problematic, especially if headquartered in different cities or even abroad (Nethercote 2020). Other issues found include rent hikes tied to property upgrades, sub-metering of utilities including energy, poor property management, ancillary charges, and increased illegal inspections and evictions.

Roberts & Satsangi (2020) have found that there are broadly two arguments in contemporary political debates on the (de/re)regulation of landlordism, which tends to centre on the benefits of the free market versus the social costs of an unregulated sector. The first is an ‘ethical argument with an economic consequence’, whereby landlords are in a position of power over their tenants, and an assumption can be made that some will abuse this power. Thus, to protect tenants, landlords should be regulated. The other is an ‘economic argument with an ethical consequence’, that regulating landlords imposes costs, which will in turn be imposed on the tenant by increasing rent costs and reduced housing supply, and thus, regulation should be limited. Sanderson’s (2019) research explores what factors are within a landlord’s control to obtain loyal tenants, as it is in a landlord’s interest to have their tenant renew their lease, due to the costs incurred to the landlord of a vacant property, including council tax and search costs. They found that responsiveness to requests, trust, value for money, good communication, professionalism and customer care are key factors that build tenant satisfaction and in turn lead to an increased likelihood in renewing their lease. Research from around Europe further found that residential satisfaction is a function of the home, neighbours and the neighbourhood (Dekker *et al.* 2011), as well as noise, safety and overcrowding.

2.5. Inequalities in the private rented sector

As Byrne (2020) posits, if the ‘homeownership’ societies that were so characteristic in Europe and the West represented more than tenure, but also encompassed wider social, political and economic institutions, then the post-homeownership society that we are moving towards is indicative of much greater housing inequality. This relates to not only weaker security and housing quality, but also inequality in potential for wealth accumulation and provision for later life, with the potential to deepen existing intergenerational and class inequalities.

The increasing social diversity and number of people living in the PRS is not occurring in a vacuum; it is set among a backdrop of an increase in casual and insecure work, ongoing austerity measures, and welfare reform measures which have made it increasingly difficult to save towards a mortgage deposit. Rent increases have risen faster for low-income earners, with rent as a

proportion of income also rising: across the EU, more than 1 in 10 people on average are spending more than 40% of their income on housing costs, including energy, rent and other utilities (Haffner and Hulse 2019). As previously discussed, funding for housing benefits and welfare has been slashed across Europe; in 2013, the city of Milan received 22,000 applications from families who were fully entitled to social housing, but due to severe shortages, would never receive one in the near-mid future. Resistance to welfare-orientated housing policies among governments has increased, as they are seen to ‘encourage dependency’ (Roberts and Satsangi 2020).

The concept of housing exclusion and inequality has garnered significant research interest in the UK, where it is estimated that 1 in 7 people live in unaffordable, insecure, non-suitable or overcrowded housing. A 2001 English Housing Condition survey found that 50% of PRS dwellings were considered to be ‘non-decent’, with damp, overcrowding, inadequate heating facilities and high tenant dissatisfaction being widespread in comparison with owner-occupied dwellings (Lister 2006). Exclusion is created by a number of structural, institutional and individual factors, and is viewed to be worsening as a result of welfare reform and affordability in the PRS. Groups likely to be impacted by housing exclusion are also likely to be impacted by other forms of inequality, such as BAME (Black, Asian and Minority Ethnic) communities, with increased exposure to poor quality housing and homelessness, whilst housing benefit reforms were found to particularly impact low-income, younger people (Preece *et al.* 2019). There has also been an increase in stringency of financial assessment for potential tenants, looking at credit history to determine a tenant’s suitability, and an abandonment of policies that promote equality and tackle housing discrimination. Streimikeine and Balezentis (2019) find that in former Soviet countries, the urban areas with the lowest building and insulation quality overlaps with the areas with the lowest incomes and high numbers of elderly people.

Suggested solutions from Preece *et al.*’s (2019) research is for PRS regulation and reform, alongside increasing social housing provision and re-reforming welfare, in the face of increasing financialization and privatization in the English housing market. Due to the devolved status of housing decisions to national governments, Scotland and Wales have begun implementing some such strategies, including indefinite tenancies in Scotland, which is a welcome positive step for increasing tenant security. On the other hand, this will exacerbate existing geographic spatial housing inequalities across the UK.

As discussed in Section 2.4, insecurity is a core component in the agency of tenants in the PRS. McKee *et al.*, (2020) argue that it also has emotional wellbeing consequences, particularly among low-income groups, who are experiencing housing pressures ‘most acutely, yet whose voices have been less prominent in the literature’. They contend that the current housing system creates an ‘alienated psychological experience’, one of ‘fear, stress, anxiety and disempowerment’. PRS insecurity was found by Warnes *et al.* (2013) to be key in the loss of tenancy among rehomed homeless people in London and three other provincial cities. Private renters in this study were the most likely to be unsettled and quoted unaffordable rent and bills as a key reason for leaving, with average weekly rents being twice of those placed in social housing. Property maintenance was also most poor for the private renters in the study.

Highlighting another form of PRS insecurity is the phenomenon of ‘forced sharing’ with strangers due to financial reasons. This is likely to become more common, particularly amongst under 35s in the UK due to cuts to young people’s housing benefits. Sharing a housing space with unknown people can have significant wellbeing impacts; many respondents in McKee et al.’s (2020) study reported a lack of privacy and feeling confined to their bedrooms. Peer-peer housing shares are also becoming increasingly common in Italy, also as a result of cuts to youth welfare support and wider social trends such as longer education paths and labour market precarity (Bricocoli and Sabatinelli 2016). They term shares with strangers as ‘cold shares’, whereby there is little social interaction or meaningful relationships between flatmates, little emotional connection and only exchanges made to use common spaces or for expenses.

Policy implementation with regards to the PRS must be context specific, as experiences (of the PRS) are framed by gender and mediated by ethnicity and class (Heath 2008). Gender is recognized to be a salient factor in access to and experiences of the PRS. In the UK, 63% of adults claiming housing benefits are women (Tunstall 2018). Since the GFC, the government has encouraged home-building and homeownership for middle-income earners, moving support and expenditure away from social housing and housing benefits, which is likely to disproportionately affect women due to their overrepresentation in the social rented sector and homeless families. Research by McKee et al. (2020) found that financial stresses and challenges of creating a home are exacerbated among families with children, who are becoming increasingly represented in the PRS. Indeed, renter families in London with children increased by 86% between 2006-11 (Nethercote 2020). Families with children face additional discrimination in the PRS, and thus low-income parents may face ‘double disadvantages’.

Race and ethnicity are also recognized to be contributors to discrimination and precarity in the PRS, as exemplified by Lancione’s (2019) research on the experiences of Roma people in Bucharest. In the 1950s-1980s, a large number of Roma people were moved into what was considered ‘second-class’ housing in the centre of Bucharest, paying rent to the state for dwellings which were demarcated for demolition and had largely been vacated by wealthier non-Roma groups (Lancione 2019). When the financialization of the housing sector became a core part of Romania’s acceptance to the EU, city centres became a prime area for redevelopment. The 2001 ‘Legia Retrocedarilor’ law allowed former owners of nationalized buildings to request their properties to be returned and re-privatized for private rental purposes, and thus led to marginalized and vulnerable Roma tenants being forced out of the city centre and subsequently made homeless or forced into the PRS. Within a largely unregulated PRS and also reflective of wider social issues, Roma people continue to be faced with distrust and racial stereotyping (Zamfirescu 2015). Indeed, Roma people have the highest levels of self-reported housing discrimination, making up 12% of responses, with people of North African origin making up another 9%. Other documented forms of discrimination in the EU, as recorded by surveys by the EU Agency for Fundamental Rights, reported that 44% of respondents were discriminated against by their names on housing applications (Silver and Danielowski 2019).

Recent migrants are recognized in the UK to overwhelmingly rely on the PRS for housing, with approximately 75% of those who have been in the country for under five years in private lets. However, in part due to income and housing cost disparity, they are often concentrated in cheaper, poorer quality, and less professionally managed housing, the same part of the sector

which is increasingly under pressure as more people come to rely on the bottom end of the PRS. This can place migrant communities in certain neighbourhoods in competition with other low-income groups, increasing tensions, and/or see a rise in multi-occupation dwellings to deal with housing pressure, which have their own physical, mental and environmental health problems. The end of government funded integration support for refugees and approved asylum seekers in 2012, which included loans for rent deposits, further places these already vulnerable groups in precarious renting situations where they may be unable to afford suitable homes (Perry 2012).

However, whilst race and gender inequality are present in the PRS, class is argued by Heath (2008) as the most salient of inequality issues in Europe with regards to housing prospects. In addition, inequality trends are being played out both intra and inter-generationally with growing and more pronounced divides between households within and between age-groups. Changes to the economy have made it increasingly difficult for young people to enter and progress in employment, and as such, financial support from families is becoming crucial to access costlier and more constrained housing (Rugg and Quilgars 2015). In many OECD countries, class and income are more important factors when it comes to homeownership than in previous generations, with analysis of housing pre- and post-GFC showing that the highest increases in the PRS are among young people in disadvantaged class positions (Flynn 2020). Meanwhile, housing wealth is becoming increasingly concentrated with those who already have higher housing wealth and incomes (Arundel 2017). Today's younger generations are poorer on average than those of previous generations, meaning that increasing rates of wealth and income inequality, leading to greater ranges of purchasing power within this generation, will exacerbate inequality in generations to come, alongside deepening of current inter-generational inequalities between 'housing poor young' and 'housing rich elders' (Rugg and Quilgars 2015). The experiences of young people and students will be addressed in the following section.

2.6. Young people and students

The tendency for young people to utilise the PRS for housing has been, and continues to be, a commonplace practice across the UK and other northern European countries (Lister 2006). What has changed however, is the length of stay in the PRS, as housing dynamics, economic changes and financialization of the market have 'destabilized traditional adulthood transitions' (Fuster *et al.* 2019). As mentioned in Section 2.1, '*Generation Rent*' refers to young people who live in the PRS for long periods due to the increased inaccessibility of homeownership and social housing (Hoolachan *et al.* 2016). In the UK, 46% of the PRS is made up of 16-34 year olds. Many of these are students, but a growing proportion are young people, professionals, and families more broadly. Research suggests that many in this situation view the PRS as a 'transitional tenure', until they are able to purchase their own home. However, some researchers have questioned whether this will actually materialize, due to the current political and economic situation surrounding homeownership; Rugg and Quilgars (2015) calculate that a young couple on a middle-income salary in the UK would need to save on average for 6.5 years for a deposit for a home, rising to twelve if they have children.

Successive governments have been unable to 'offer a coherent housing policy for young people', instead assuming that the parental home is available to fall back on if young people are unable to afford to rent or buy. In the UK, 26.9% of men and 13.3% of women aged 25-29 lived with their

parents, with only 23% of those wanting to be there, the lack of affordable housing the primary reason why they still did (Berrington and Stone 2014). In Germany, Italy and Denmark, the share of young people who had exited the parental home, formed traditional households and entered into homeownership fell by half between the 1980s and mid-2010s (Flynn 2020), whilst the average exit age from the family home was above 29 in all Southern European Countries (Bricocoli and Sabatinelli 2016). In addition to an extension in time taken to leave home, the phenomenon of ‘boomeranging’ or ‘yoyo kids’, whereby young people move in and out of the family home, and between dependence and semi-independence, has also seen a rise; in the EU, young people move on average four times as often as their parents did. Numbers of young people following this so-called ‘chaotic housing pathway’ is expected to rise over the coming years.

In the Spanish context, prior to the GFC, a majority of young people directly entered homeownership on leaving the family home (Fuster *et al.* 2019). Spain, classed along with Italy, Portugal and Greece as part of the ‘Southern-European welfare regime group’ has classically been characterized by the role of the family in provision of welfare, high rates of homeownership and parental co-residence. Since the GFC, homeownership among the 18-29 age group has declined from 52% to 29%, following similar patterns across the rest of Europe of stagnating wages, precarious job markets and high buying costs. Many of Fuster *et al.*’s (2019) interviewees enjoyed the flexibility of renting whilst they were young but did not see it as a desirable option for raising a family or for long-term stability, though admitting it might be the ‘only possible one’.

As discussed in previous sections, the idea of ‘home’ can provide security, constancy and familiarity, create a sense of autonomy and control and can be reflective of identity, status and conduct. Nevertheless, in the PRS, the inability to make changes to a property, alongside privacy invasions, such as compromising landlord inspections, can have implications for wellbeing and establishing such a sense of home (Power and Gillon 2020). Thus, research finds that the PRS is the least equipped tenure type able to provide the above forms of security, particularly where short lease tenancies are prominent, and rents are unregulated. Research by Lister (2006) has found that a combination of factors led to ‘awful and unlawful’ living conditions for young people living in the PRS; firstly that tenants were often unaware of their rights or of certain safety aspects, that landlords were unwilling to carry out repairs, lack of agreement between parties, and that in the ‘absence of direct enforcement mechanisms’, young people had little power with which to assert their rights.

In addition, austerity cuts to benefits have been reduced for young people at a greater rate than any other social group. In the UK, young, single people are considered ‘non-priority’ cases for social housing, due to perceived ‘lower level of need’, and for those on benefits, the barriers to accessing quality housing in the PRS can be even greater, due to negative stereotyping and being considered ‘risky’ due to income. Following the Localism Act of 2011, which allows local authorities to offer homeless households a twelve-month PRS assured tenancy, young low-income people are exposed to increasing competition from households who would traditionally have been offered social housing. The cost of housing means that low-income groups must prioritize rent above other needs, including energy and food, with some relying on foodbanks or even payday loans to survive. As a result of the above, Hoolachan *et al.*, (2016) conclude that the PRS does not sufficiently provide ‘material security’ for young people, and that some are forced

to remain, as an amalgamation of cost, access and employment, in the PRS for extended periods of time.

Students make up a key proportion of PRS demand in many areas, and comprise a ‘niche market’, defined as a supply that ‘has become adapted to meet the needs of a specific, specialized group’ (Rugg *et al.* 2002, 292). UK university reform in the 1990s saw an increase in demand for the student PRS, with a corresponding increase in landlords investing in student properties. In 2011, 1.1m full-time students utilized the PRS for housing in the UK, with the student market now comprising an asset class trading on the global market (Rugg and Rhodes 2018). Affordability of student housing is becoming an increasing concern, with rents rising above the rate of inflation. In 2015, only 19% of units were available at 50% of the maximum student maintenance loan.

Student demand on the PRS can be intensely localized, generally close to the higher education institution (HEI) and in favoured ‘student’ parts of the urban area. Where student pressure exists on the PRS, it is more likely that properties that come onto the market will be BTL by student market landlords. A key factor in landlords renting to students, despite negative stereotypes such as being messy, is the high rental yields that can be obtained from multiple occupancy tenancies (MOTs), over single occupancy lets, in addition to the characterization of student households as flexible and adaptable to almost all property types and limited specialist requirements. HEIs also often provide assistance for students through the student union or accommodation officers, such as approved landlord and letting agent lists and tenancy advice, giving students a market advantage over other tenant types. Agreements might also take the long student holidays into account, for example paying less rent over the summer months. London provides an exception to this rule, due to the general rental market also being under intense pressure. Student populations tend to be more dispersed, living in cheaper accommodation in neighbouring boroughs further afield from their place of study. Landlords do not charge rents favourable to low student incomes and often require high deposits and advance rent (Rugg *et al.* 2002). On the whole, research on the local impacts of student PRS demand is limited, although student demand can lead to a monopolization of the rental sector, significant changes to localities, driving up local house prices and crowding out low-income households.

Europe hosts 19.6m HEI students and a high proportion of thermally inefficient buildings. Recent research by Kousis *et al.* (2020) has revealed that students are one of the most ‘under-reported and under-supported’ groups living in fuel poverty in the PRS across Europe, a result of a lack of recognition as a vulnerable group, lack of knowledge of energy efficiency and students themselves not realizing that they may live in fuel poverty (Bouzarovski *et al.* 2013). Despite this, the physical and mental effects of living in fuel poverty on students can be considerable, related to low temperatures and high humidity. The results from Kousis *et al.*’s (2020) investigation showed that many students turn heating down or off to save money, notably 82% of respondents in the UK and 70% in Ireland, with many reporting that they felt cold in their homes. Over 30% of students in Ireland, Greece and Cyprus reported high energy bills despite efforts to reduce usage, and in Bulgaria, 27% were in arrears on energy bills. Although the sample size was fairly small and not representative of all students in the studied countries, this study gives an insight into fuel poverty faced by students in Europe as a starting point for further research.

3.

ENERGY POVERTY IN THE PRS

In this part of the report, we explore energy issues in the PRS more specifically, focusing on the distribution of the phenomenon, as well as developments resulting from energy efficiency investment. We subsequently examine the location and challenges of vulnerable households in the PRS. Here, we present more detailed work on the agencies of the landlord and the tenant, with a focus on relevant barriers and capabilities. Then follows an analysis of the drivers and barriers linked with retrofits in the PRS. The subsequent sections talk about policies, solutions, and best practices associated with energy efficiency improvements in the PRS. The conclusion of the literature review summarizes our framework and suggests areas where further work is needed.

3.1. The PRS in the context of energy poverty and energy efficiency debates

A large body of literature has pointed out the complex nature of the PRS as the least energy-efficient among the different housing sectors (Ambrose and McCarthy 2019; Ambrose 2015; Burfurd et al. 2012; Crook and Hughes 2001; Dowson et al. 2012; Druckman and Jackson 2008; Hope and Booth 2014; Morris and Genovese 2018; Roberts 2008; Wilkinson and Goodacre 2002). The importance of this sector is also reflected in its growing market size, otherwise often associated with the ‘Generation Rent’ – as noted above, this is a cohort of young people who are increasingly living in the PRS for long periods of their lives due to the inability to access social housing or homeownership (Hoolachan *et al.* 2016; McKee *et al.* 2020). As a sector, PRS is no more only a transitional housing pathway on the trajectory to homeownership or social housing, due to cases of ‘falling out’ of ownership leading to a move into social or private rental housing (Kemp and Keoghan 2001). In Britain, the PRS has also been affected by the financial crisis (Kemp 2015). A key driver for improving the ‘energy efficiency gap’ in the PRS stems from its environmental and climate implications; buildings contribute more than 40% of the EU’s final energy budget. Nevertheless, renovation rates across the EU average at about 1% per year (Druckman and Jackson 2008; Heffernan et al. 2020; Hope and Booth 2014; März 2018a; März et al. 2020; Miu and Hawkes 2020; Naber et al. 2019; Weber and Wolff 2018).

Improving the efficiency of the PRS is not just a question of technical efficiency, it is related to wider social, economic and political challenges, as Section 2 has outlined. Smith and Hubbard (2014) have argued that there is a trend of socio-spatial segregation in student-only spaces, often in the PRS, to satisfy the need for the commodification of student housing in the UK. In Poland, it has been evidenced that low-income tenants and long-term rental debtors have been displaced in municipally-owned housing stock, leading to dynamics of gentrification (Bouzarovski *et al.* 2018). Evidence from Germany shows that refurbishment projects can inflict injustices on tenants in the PRS, pointing to a wider distributional conflict around affordable housing and unjust distributions of cost burdens of energy transitions (Grossmann 2019). State-imposed energy standards for buildings have left their economic consequences to be resolved in the conflicts between housing companies and tenants (Grossmann 2019). To refer to the injustice consequences of renovation projects (Baeten et al. 2017) uses the notion of ‘renoviction’. Stojilovska et al (2020) state that although the links between housing and energy poverty have been understudied, energy

retrofitting projects lead to an increase in rents, displacement, and segregation.

3.2. Vulnerable spaces and groups

In Europe, there is country-level evidence from the EU Energy Poverty Observatory (EPOV) pointing to some of the macro-scale variations among EU Member States. Disaggregated evidence is available for several of EPOV's primary indicators¹. Here, three trends are discernible:

1. Overall, households in the PRS struggle with energy-related problems to a much greater degree than the general population in terms of any energy poverty indicator;
2. In terms of arrears on utility bills (Figure 1), the greatest challenges are experienced by households living in Southeastern Europe, particularly Greece;
3. In terms of the high share of expenditure in income (Figure 2), Scandinavian countries exhibit, somewhat surprisingly, higher rates of energy poor people (despite low energy poverty levels overall). This highlights the need for contextualizing and weighting information on energy poverty trends in the PRS within the overall size and regulation of the sector, which is widely different across European countries;
4. As for the inability to keep the home warm (Figure 3), once again, there is a pronounced concentration in countries of Southern and Eastern Europe where general energy poverty is already high.

It should be noted that the EPOV indicators refer to 'market rent', which may not entirely map onto the private rented sector – as in some countries market rent is also paid in state- and co-operatively-owned dwellings. This potential discrepancy will need to be further contextualized and investigated in the course of the ENPOR project.

¹ Data Obtainable from the EPOV: <https://www.energypoverty.eu/indicators-data>

Figure 1: Share of (sub)population experiencing arrears on utility bills and paying market rent.

*based on the question ‘In the last twelve months, has the household been in arrears, i.e. has been unable to pay on time due to financial difficulties for utility bills (heating, electricity, gas, water, etc.) for the main dwelling?’.

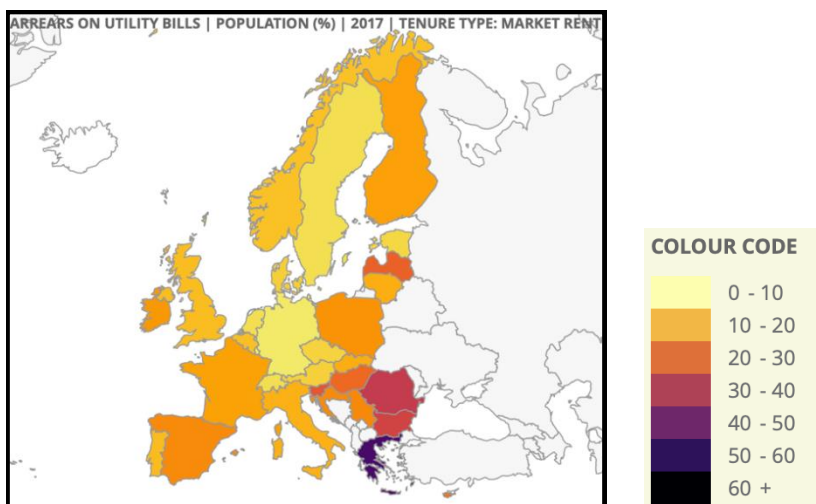


Figure 2: Proportion of households whose share of energy expenditure in income is more than twice the national median.

*Note: where income distributions are more equal, variance in energy expenditure translates to higher 2M shares. High variance in energy/income shares can occur due to structural differences in energy expenditure between household groups, as well as in situations where energy is often, but not exclusively, included in rent. There is no disaggregation by tenure for this indicator and thus Figure 2 includes all households.

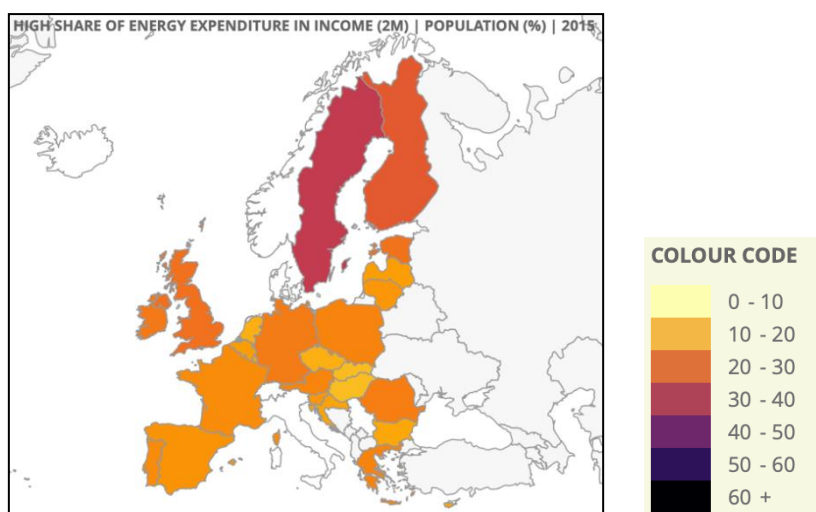
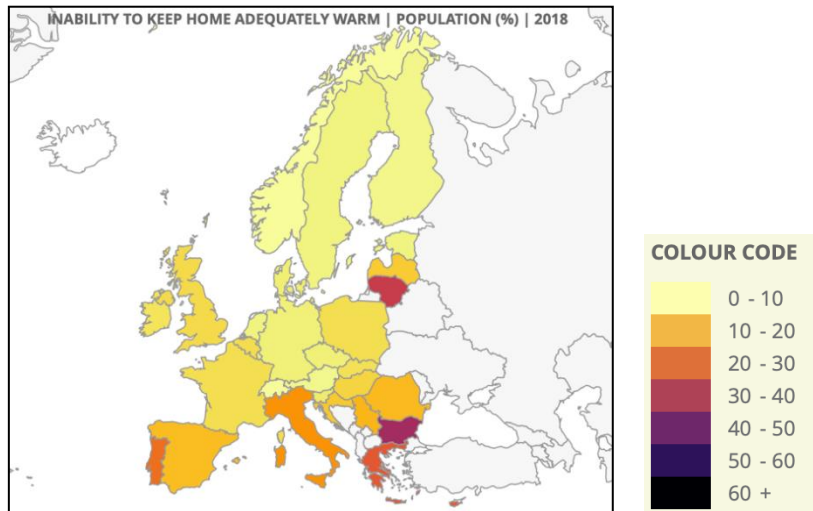


Figure 3: Share of (sub)population not able to keep their home adequately warm and paying market rent.

* based on the question 'Can your household afford to keep its home adequately warm?'



Overall, as the graphs show, the indicator used to highlight spatial trends in energy poverty needs to be carefully selected, due to the discrepancies revealed between countries depending on the measure that has been chosen. What is more, there is a clear need to provide detailed data beyond the national scale, as Member State-level statistics may conceal significant variations within regions and cities.

It is known that the PRS is often associated with households affected by energy poverty (Aristondo and Onaindia 2018; Bosch et al. 2019; Clair et al. 2019; Imbert et al. 2016; Ince and Marvin 2019; Kerr 2018; Legendre and Ricci 2015; Mohan et al. 2018; Robinson et al. 2019; Romero et al. 2018; Stojilovska et al. 2020). In some cases, living in the PRS is one of the factors contributing to energy poverty, such as being a pensioner with no children, living in a privately rented home (Roberts et al. 2015). Vulnerability to energy poverty is also linked to renting conditions and stipulations, as in Germany, for example, tenants have indefinite leases which give them security, unlike in the UK where tenancies are usually from 6 to 12 months (Clair et al. 2019).

Bouzarovski and Cauvain (2016) argue that, in the UK case, homes in multiple occupancy (HMOs) are a specific form of private rented accommodation that more vulnerable than the general private rented stock due to their geographical fragmentation, their exclusion from legal and statistical frameworks, high rates of energy poverty, as well as the lack of policies to improve energy efficiency in this type of housing. Students or young adults living in the PRS are highly vulnerable to energy poverty (Kousis *et al.* 2020; Petrova 2018). When choosing their accommodation, students are primarily interested in the cost of rent, the location, and the condition of the property (Kousis *et al.* 2020). Related to this is the question of how to enable energy efficiency retrofits when the tenants are low-income households. McKee et al. (2020) conclude that low-income tenants living in a market-based housing system have few alternatives

when faced with bad housing conditions.

Vulnerable households in the PRS face many limitations. Research on low-income households in Virginia shows that renters face more energy affordability challenges, such as needing to borrow money to pay their energy bills (Emmel et al. 2010). European students often fall behind in paying their energy bills; they reduce their heating or turn it off to keep their heating costs low (Kousis *et al.* 2020). A novel study from Hong Kong shows that PRS lacks individual energy meters (Fuller et al. 2019). The same contribution shows that renters in this context are vulnerable to electricity tariff increases imposed by landlords, while not being able to benefit from energy rebate savings offered by utilities (Fuller et al. 2019).

Based on the above, as well as work on multiple vulnerabilities (Simcock *et al.* 2020) we are able to formulate a tentative identification of some of the most vulnerable groups in the European PRS (see Table 1). This classification is based on three axes of vulnerability – socio-demographic (involving factors such as income, ethnicity, gender etc), housing (involving the regulation and structure of the housing stock in particular), and energy (concerning the efficiency and type of energy supply). The classification highlights intersections among the different types of vulnerability, and households that are more likely to be vulnerable based on one of the axes (as listed in the vertical column).

Table 1 An overview of vulnerable groups in the European PRS, based on existing literature on the topic. Rows indicate the primary axis of vulnerability

Primary axis of vulnerability	Socio-demographic	Housing	Energy supply
Socio-demographic	X	Single parent tenants Ethnic minority tenants Tenants with unemployed or older family members Tenants with small children Elderly tenants	Tenants suffering from other vulnerabilities beyond the home (e.g. high transport costs)
Housing	Households in short-term lets	X	Tenants in unaffordable and inflexible energy pricing arrangements (e.g. all utility payments wrapped in one) Tenants that live in areas with high energy costs from available suppliers
Energy supply	Tenants living in energy inefficient homes	Tenants in homes with an expensive energy supply (e.g. electric only)	X

3.3. Agency of the landlord in the context of energy poverty

The poor energy efficiency of the PRS, and its growing importance in intervention approaches, is the starting point of many articles to explore the reasons for the condition. As such, they focus on the role, motivations, and capability of the landlord. By studying the behavior of landlords with regard to energy efficiency retrofits, different typologies have been developed. According to Ambrose and McCarthy (2019), based on a study in New Zealand, landlords can be non-joiners, passive actors, active, or pro-active, the latter being very interested in accepting the benefits of

energy efficiency measures. Non-joiners have little or no interest in energy efficiency, however, it is so since they are providing accommodation for students and low-income groups that need cheap rent (Ambrose and McCarthy 2019). Some private landlords are reluctant to offer long-term leases because mortgage conditions prohibit them from renting out their properties for more than one year. As such, they are focused more on capital gains, wanting to maximize their freedom to sell with vacant possession (Kemp 2015). Phillips (2012), when talking about the New Zealand context, have found out that landlords and tenants have asymmetrical interests. The landlords, for instance, are willing to pay more for a new heating appliance, while tenants would prefer under-floor insulation – a situation attributed to an increased likelihood (compared to landlords) that tenants would report that ‘their homes are cold, damp, and expensive to heat compared with property owners’.

Evidence from Germany about the retrofit-related decision-making practices by small private landlords shows that the lack of information is not the only constraint. Some of the other reasons include the low level of esteem among tenants, fear of mould due to insufficient ventilation, time constraints, conservative habits and a negative perception of energy efficiency within a landlord's social circle (März 2018a). Another German study in Karlsruhe shows that the main drivers are the regulation and conservation of the property value (Naber *et al.* 2019). A study in the UK focusing on the behaviour of British private landlords shows that if they would invest in energy efficiency it is mostly with own saving rather than external financing, and most common measures include loft insulation, window glazing, and efficient boilers (Miu and Hawkes 2020). Evidence from Birmingham about young adults living in the PRS and suffering from energy poverty shows that efforts to deal with domestic energy challenges principally take place via informal collective arrangements (Petrova 2018). This ignores the core of the problem, by increasing the power of landlords while decreasing incentives for improving energy efficiency (Petrova 2018). Some studies point out that the relationship between landlords' role as market players, on the one hand, and the PRS as a market, on the other, should be studied in more detail (Hope and Booth 2014; Miu and Hawkes 2020; Rugg *et al.* 2002). Streimikeine and Balezentis 2019 note that in former Soviet countries, limited access to capital, the high cost of borrowing, low and uncertain property values, particularly in multi-apartment buildings can be a key barrier to implementing energy retrofits. The complexity for landlords who wish to implement energy improvements in this context is also compounded by the fact that households are unintentionally dependent on each other with regards to energy savings and can have opposing interests, making it harder to agree on renovations. Indeed, in most EU states, there is a need for assent of more than 50% of property owners before renovations can be conducted.

3.4. Agency of the tenant in the context of energy poverty

Unlike the landlord who might or might not be interested in retrofitting measures, the tenant has no choice but to depend on the will of the landlord for energy efficiency measures. As Middlemiss and Gillard (2015) point out, ‘residents do not feel like they have the capacity for action and as a result, they do not have the power to act’. The choices of tenants regarding energy are limited by the material characteristics of a property, as in some cases only the landlord can alter the home (Ambrose 2015). In a number of instances, tenants have less control over their energy supply and the operation of their heating system (Kearns *et al.* 2019) and can influence their heating costs only through behaviour change (März 2018b). This is also reflected in their mobility through the

housing market. Based on evidence from the Netherlands, those wishing to move from owner-occupied to rented housing, as well as households with more resources, are characterized by a greater probability to move (de Groot *et al.* 2011). Homeowners are more likely to exhibit a stronger intention to move because they face fewer obstacles relative to renters with a preference for another rental dwelling (de Groot *et al.* 2011).

Tenants are, however, not without any power. In Dunedin, New Zealand, tenants as consumers can play a key role in changing landlords' behaviours by demonstrating growing expectations about comfort in the home (Ambrose and McCarthy 2019). This is interpreted in the context of tenants departing from established cultural roles of accepting cold and inefficient homes (Ambrose and McCarthy 2019). An article aimed at understanding the agency of tenants finds that their satisfaction depends on the relationship with their landlord, how the landlord compares with tenants' previous landlords, and the property management service that they receive (Sanderson 2019). A rare contribution describing the situation in the Global South via the case of Ghana shows that homeownership behaviours are shaped by renters' experiences with landlords (Adu-Gyamfi *et al.* 2020). That means that the landlords' poor treatment of tenants – including sudden rent increases – coupled with the unfair allocation of utility bills, motivates renters to build their own home (Adu-Gyamfi *et al.* 2020).

The literature also shows that renters are unwilling to invest in energy efficiency measures in a property that they do not own (Emmel *et al.* 2010; Pelenur and Cruickshank 2012). They might also not have funds even to make small energy-related improvements to the home (Emmel *et al.* 2010). Heyman *et al.* (2005) have concluded that even if the home improvement scheme is free, this does not mean that renters would welcome it. In Slovenia, Zoric *et al.* 2012 find that the likelihood of a household accepting and implementing retrofits decreases with the age of the tenant or homeowner, with inconvenience and disruption cited as the key barriers.

It is important to think of the participatory design of the measure, and thinking about reasons for low take-up: these could include disruption associated with the implementation of the retrofit, lack of interest in the long-term state of rented accommodation, and a fear of rent increases (Heyman *et al.* 2005).

3.5. Energy poverty alleviation in the PRS: Drivers and barriers

There is a rich body of scholarship about the reasons for (non-)investment in PRS-focused retrofits. The barriers and drivers associated with efficiency retrofits in private housing span financial, regulatory, and environmental domains (Table 2). Some of the general challenges associated with the rental sector include high rent-income ratios, poor quality accommodation, overcrowding, exploitative landlords, and problematic tenants (Gilbert 2016). As Ambrose and McCarthy (2019) explain, referring to the literature studying the situation in the UK, the high turnover in the rental market means that landlords see the tenants as not committing to the property for a long-term period is a barrier to investment. The same study mentions that landlords have little trust in the government to support them in this regard (Ambrose and McCarthy 2019). Itard *et al.* 2008 cite a lack of necessary information and knowledge, adequate funding and cost-effective solutions as a key barrier to landlord take-up of policies and measures. Another issue (also shown in Table 2) is the lack of a representative body of which all landlords

are members, although these Unions or Membership bodies do exist in most European countries. (Kerr 2018), by studying the case of Scotland, concludes that landlords are small-scale, disaggregated, and a non-professional body, which makes it difficult to be targeted as a group by a measure, which highlights the importance of belonging to a union or body, which can push for better standards, good conduct and professionalization of their members.

Weber and Wolff (2018) have found that households experience higher costs after renovation mostly due to increased rents, even if energy costs are reduced. Similarly, Kemp and Kofner (2010) found that the rent increase could be higher than the savings in heating costs. A similar barrier has been identified in the case of some low-income tenants who pay utility costs included in the rent, resulting in a reduced incentive for tenants to save on energy costs (Gee and Chiappetta 2014). By drawing lessons from the Australian context, Heffernan et al (2020) explain that some of the barriers are regulatory, such as no standards for energy efficiency or no incentives on tax rebates for sustainable retrofits. Some examples of enabling energy efficiency retrofits include feed-in tariffs for landlords to stimulate their return of investment, setting up mandatory energy efficiency standards, as well as educating tenants about the benefits from energy efficiency investments (Heffernan *et al.* 2020).

A key barrier to retrofitting the PRS (as also shown in Table 2) is the so-called split-incentive – also known as the tenant-landlord dilemma - covered widely in the literature. It captures a situation whereby landlords do not gain any direct advantage from improvements in energy efficiency in the property, while the tenants benefit from improved comfort and lower energy costs (Bird and Hernández 2012; Dowson *et al.* 2012; Druckman and Jackson 2008; Fuerst *et al.* 2020; Golubchikov and Deda 2012; Kerr 2018; Pelenur and Cruickshank 2012; Reames 2016; Roberts 2008; Shove 1998; Weber and Wolff 2018; Wilkinson and Goodacre 2002). Shove (1998) claims that this dilemma can hinder technical potential. Improving the energy efficiency in the PRS is also of interest to the EU, as the Energy Efficiency Directive recognizes the need to stimulate landlords to invest in energy efficiency (European Commission 2012).

Table 2 Overview of barriers and drivers for investment in energy efficiency in PRS

Categories	Barriers to investment in energy efficiency in PRS	Drivers for investment in energy efficiency in PRS
Financial	Split-incentive/ lack of direct financial incentive to landlords High upfront costs Return on investment Increased rent (which exceeds the overall energy savings) Utility costs included in	Upfront cost reduction Incentives Improving the marketability of the dwelling

	the rent Energy efficiency does not increase the value of the property Lack of funding schemes	
Regulation	Disincentivising regulation Difficulty in implementation	Supportive regulation
Social	Lack of knowledge/awareness High turnover in the rental market Low-income tenants Lack of membership in industry-wide body of landlords Unacceptable levels of disruption to households during renovation	Education
Environmental		Environmental concerns Increased thermal comfort of tenants Lower energy costs

Sources: Authors' analyses based on a variety of readings (Ambrose and McCarthy 2019; European Commission 2012; European Parliament 2010; Gee and Chiappetta 2014; Heffernan *et al.* 2020; Hope and Booth 2014; Kemp and Kofner 2010; Kerr 2018; Reames 2016; Tuominen *et al.* 2012; Weber and Wolff 2018).

3.6. Exploring energy poverty alleviation in the PRS

The literature about the PRS discusses its regulation, financial, and other support models. One question is whether the rental market should be deregulated. In England, key reasons for the poor quality of the PRS include tax and subsidy policy (Crook and Hughes 2001). Work in this domain has found that market rents are not strongly related to the refurbishment of dwellings in the deregulated sector, and that the worst dwellings are owned by landlords mostly interested in a significant commercial return on their investments. This means that the deregulated market does not provide the incentives for investment; ergo, government intervention is needed (Crook and Hughes 2001). Crook and Kemp (1996) add that rent deregulation does not contribute to

improving the PRS due to the gap between rental returns and those required by landlords resulting from tax and subsidy regulations. A comprehensive study about the regulation of rents in France, England, Germany, Spain, Sweden, and the Netherlands shows that rent regulation protects the tenants, but offers few benefits for landlords (Haffner et al. 2008). The authors of the study suggest that a wider acceptance of rent regulation would positively affect the reputation of the PRS, thus potentially contributing to greater benefits for landlords (Haffner et al. 2008).

However, regulation that is too strict can backfire. While voluntary accreditation schemes have been successful in Wales, compulsory registration and accreditation of PRS housing as a legal step was not supported in Wales by landlords, and is seen as a collective punishment (Jones 2015). The argument is that such a step would require strong political will and resources to address the underground PRS market operating illegally (Jones 2015). A recent contribution shows how jurisdictions in Scotland, and to a lesser extent Wales and Northern Ireland, are moving towards models of regulation, while England is becoming an outlier in the way in which it regulates private renting (Moore 2017). This has implications for the balance between the rights of landlords and tenants, by only permitting evictions under strict and evidenced conditions, as is the case in Scotland, and where mandatory landlord registration may serve to improve management and property standards, as landlords increase their levels of professionalism (Moore 2017).

State policies to stimulate homeownership have implications for the development and quality of the PRS. Based on a review of 20 high-income OECD countries, Flynn (2020) has found dualistic rental systems – social and private do not compete with each other, but unitary rental sectors like in Sweden do not block the PRS from the public or social sector. This enables governments to regulate prices in the PRS through competition with the social sector, leading to improving the quality of the PRS (Flynn 2020). It is in the governments' hands to improve policies towards the rental sector (Gilbert 2016); promoting homeownership is not the solution. Good examples come from Germany and Switzerland, where tenure-neutral policies have reduced the incentives for homeownership (Gilbert 2016). Research in Australia – a country with a high level of homeownership and low rates of social housing – shows that debt-financed landlords have been valorized politically as self-reliant and providing essential housing, with landlordism acquiring a negative connotation (Hulse *et al.* 2020).

As previously mentioned, the split incentive is a key obstacle to improving the efficiency of the PRS. At the core lies an imbalanced relationship of two parties with asymmetrical interests, an issue which a limited number of studies have explored. In the case of Ireland, Byrne and McArdle (2020) argue that the tenant-landlord relationship is a power relationship, but also a social one. This imbalance of power between the two parties needs to be built into policy design and regulations (Byrne and McArdle 2020). McKee et al. (2020) explain the changing roles of landlords and tenants after the UK Immigration Act of 2016, according to which landlords need to conduct mandatory immigration document checks on potential tenants, potentially leading to racial profiling and forcing vulnerable and undocumented migrants into bad housing situations. Suggestions for

In the context of energy efficiency, and as noted above, the landlord-tenant relationship also has an ethical dimension. Some authors have explored the positive and negative stereotypes of

tenants and landlords in this context, as explored in Section 2.4 (Power and Gillon 2020; Roberts and Satsangi 2020). Based on a study in Australia, a good tenant was deemed as one who pays the rent on time, which the tenant does to secure its tenancy; however, this might mean limitation of the needs of the tenant and fear of rent increase in case some property repairs are needed (Power and Gillon 2020). In Scotland, Roberts and Satsangi (2020) claim that the ethical and discursive notion of a 'bad landlord' was used by politicians to influence the political debate and to create policies on the regulation of landlords. In the context of the global South, in South Africa, where informal renting housing is on the rise, mechanisms to oversee the relationship between landlords and tenants have been identified as one way of protecting tenants from exploitation, while facilitating the regularization of informal rental housing (Scheba and Turok 2020).

3.7. Recommendations and best practices: A framework

A distinctive line of work in the PRS and energy fields has offered a problem-solving focus on solutions to existing challenges. One key recommendation for increasing energy efficiency in the PRS is the provision of a link between rents and measures, so that landlords have a monetary incentive to invest in energy efficiency (Fuerst *et al.* 2020) – see Table 1 for reference. There have also been arguments in favour of support measures directed towards landlords, so as to provide them with incentives, relevant information, as well as access to finance and technology (Wilkinson and Goodacre 2002).

Recommendations about how to engage landlords in improving the energy efficiency of their property also include private sector landlords' membership of national landlord associations, as a means of establishing a collective voice and form of accreditation, and the consideration of clearer powers for tenants to demand energy efficiency retrofits, accompanied by mechanisms to ensure that request is followed through (Hope and Booth 2014). Golubchikov and Deda (2012) argue that the institutional capacities of housing management bodies should be strengthened, possibly through legislation. Some authors have also found labeling to be a helpful solution. Enabling landlords to post public information about the energy efficiency of their properties increases investment in energy efficiency (Burfurd *et al.* 2012). Franke and Nadler (2019) recommend that Energy Performance Certificates should communicate economic incentives, such as estimates of heating costs.

Some papers emphasize the need for governmental intervention and regulation to improve the efficiency of PRS. One idea is to impose the licensing or certification of private housing, so as to ensure its quality as a requirement for being rented out (Rugg and Rhodes 2018). Evidence from Germany indicates that grants for incremental investment – rather than only comprehensive renovations – can be given, and tax reductions can also be introduced (März 2018a). Regarding the challenging area of vulnerable tenants in the PRS, recommendations are directed towards improving the standard of PRS properties, including mandatory inspections for these properties on an annual or bi-annual basis (McAuley 2020). A similar suggestion is landlord licensing, which has been shown to drive up property standards in the UK in areas where it is in force (McAuley 2020). Various good examples of retrofitting the PRS can be found in Germany, where the PRS is large. In renovated dwellings, the rent can only be increased by 11 percent of the retrofit costs per dwelling per year; this is seen as a generous arrangement from a landlord's perspective (Kemp and Kofner 2010). Yet in some cases it is not possible to raise rents by that amount due to weak demand (Kemp and Kofner 2010). Based on research in Zagreb, Grdenić *et al.* (2020) argue in favour of banning poor quality rented accommodation.

There is a developed body of literature aimed at studying and resolving the tenant-landlord dilemma. To support the UK's Green Deal and overcome the split incentive barrier, (Pelenur and Cruickshank 2012) suggest interventions to target particular demographic groups and housing sectors, such as single persons, individuals with a degree, flats and terraced homes. In the Netherlands, there is a policy which attempts to overcome this dilemma by stipulating that total housing costs – including rent and energy – cannot be increased following a renovation (EU Energy Poverty Observatory 2020). In the case of Sweden, a specific policy aims to address the split incentive by offering financial support to the landlord so as to improve the energy efficiency

of the property, with a portion being allocated to a rent reduction for the tenants (EU Energy Poverty Observatory 2020). Future policies should ensure that funding mechanisms do not inadvertently place the burden on vulnerable tenants or social security programmes, such as through the introduction of rent caps, energy retrofit one-stop shops at the local level, mediation between landlords and tenants, and guidance for landlords before renovations or coercive actions take place (Refabert, 2020).

Several authors refer to combinations of measures. Bird and Hernández (2012) call for incentives for landlords and a utility-managed on-bill financing mechanism. Drawing from the Australian experience, Wood et al. (2012) suggest tax preferences and the establishment of a rent premium. Ástmarsson et al (2013) bring the experience from Denmark to recommend a package of legislative changes, financial incentives, and the improved dissemination of information. März et al (2020) discuss a comprehensive policy approach that would require better energy efficiency-related landlord targeting through networking, fostering a sense of responsibility neighborhoods, and improving local framework conditions.

Investing in energy retrofitting in the PRS is a particular challenge when it comes to low-income households. Reames (2016) has studied low-income, majority African-American neighborhoods in Kansas City, Missouri to propose a community-based energy programme as a good example of overcoming different barriers and increasing participation in the adoption of energy technologies. A key ingredient here is the spatial targeting of the programme, which considers the particularities of the local context and the community's needs, creating relations of trust (Reames 2016). Liu et al. (2017) refer to the adoption of minimum rented property standards and 'negative gearing' – a taxation incentive specific to Australia, whereby investors are attracted to invest in PRS housing while rental returns are expected, at least in the short term, to be lower than the cost of owning and maintaining the property. MacAskill et al. (2019) advocate in favour of supporting the operational performance of the rented stock provided to low- and middle-income households, while meeting investor expectations on return.

As various authors have found that students living in the PRS are particularly vulnerable to energy poverty, it follows that addressing their needs – and investing in retrofits – also calls for a comprehensive set of measures. One approach is to raise awareness among students about choosing an energy-efficient and a slightly more expensive property, but with lower energy costs (Kousis *et al.* 2020). The role of government intervention is seen in the form of establishing non-profit social rental organizations managed by national social services or non-governmental organizations, so as to target tenants with low incomes and a high demand for accommodation, such as students; these bodies can potentially act as a mediator between property owners and renters (SAVES2 Project 2018). Similarly, Morris and Genovese (2018) call for greater cooperation among relevant stakeholders – energy providers, landlords, and local authorities – to support students in finding cheap energy suppliers and address the inefficiency of the PRS.

Energy poverty scholarship has analysed the targeting and effectiveness of existing energy efficiency policies in the PRS. Gillard et al. (2017) have found that energy efficiency policies do not account for the profile and needs of vulnerable households in this sector. This means that energy poverty is not only a matter of uneven distribution; it is a wider socio-political injustice, because many energy efficiency policies can reinforce existing social and systematic inequalities (Gillard *et*

al. 2017). Many energy poverty policies are also poorly targeted, as evidenced by the Northern Irish example (Walker *et al.* 2013, 2014). For example, the Warm Homes scheme – a programme for improving energy efficiency in vulnerable households in the PRS – does not reach those in greatest need (Walker *et al.* 2013). Energy efficiency policies are extended only those in living in a moderate level of energy poverty (Walker *et al.* 2014). Even when retrofit measures help households living in energy poverty, in some cases this support might be insufficient to bring them out of the condition, because each household requires a unique set of measures (Walker *et al.* 2014). Research from Germany promises a win-win scenario to overcome the split incentive, thanks to a tenants' electricity law that allows landlords to profit from selling electricity to tenants (Braeuer *et al.* 2019). At the same time, tenants can save on electricity costs, thus balancing the relationship between tenants and landlords (Braeuer *et al.* 2019).

Table 3 Evaluation of general approaches for investment in energy efficiency in the PRS

Type of policies	Examples
Incentivizing landlords	Finances, technology, and information to invest in energy efficiency, profiling of non-interested landlords, better targeting of landlords, rent increases, networking, "One-Stop Shops"
Representation of landlords	Landlords joining an association, clearer responsibilities for housing management
Energy labelling of properties	Displaying energy performance certificates, including the effect on heating costs
Licencing	Quality of the property is licensed, ban for properties with poor quality, an inspection of properties for their quality
Tax reductions	Reducing the risk of investment and balancing the impacts for tenants
Rent regulation	Preventing rent increases due to energy retrofits, balancing the PRS with interest in homeownership and social housing
Participation and awareness-raising	Engagement of, and cooperation with, various stakeholders, community-based approaches, raising awareness about the choice of properties, energy efficiency and energy poverty policies explicitly targeting vulnerable households, identifying the needs of energy-poor households

Sources: Authors' analyses based on a variety of readings (Burfurd *et al.* 2012; Crook and Hughes 2001; EU Energy Poverty Observatory 2020; Flynn 2020; Franke and Nadler 2019; Fuerst *et al.* 2020; Gilbert 2016; Gillard *et al.* 2017; Golubchikov and Deda 2012; Grdenić *et al.* 2020; Haffner *et al.* 2008; Hope and Booth 2014; Kemp and Kofner 2010; Kousis *et al.* 2020; MacAskill *et al.* 2019; März 2018a; März *et al.* 2020; McAuley 2020; Moore 2017; Morris and Genovese 2018; Pelenur and Cruickshank 2012; Reames 2016; Rugg and Rhodes 2018; SAVES2 Project 2018; Walker *et al.* 2013, 2014; Wilkinson and Goodacre 2002).

Policies on energy poverty amelioration in the PRS can be summarized across several categories (Table 2). While it is clear that unitary and simple solutions do not exist, it is possible to identify good practices and examples from several policies. Many studies point to the importance of wider social and political measures – rather than technical approaches only – to improving the quality of the PRS, particularly in terms of applying a wider understanding of the human and social complexities surrounding tenants, landlords, vulnerable households, the market, and the government (Gillard *et al.* 2017; Reames 2016). Many papers suggest a combination of measures (Ástmarsson *et al.* 2013; Bird and Hernández 2012; März *et al.* 2020; Wood *et al.* 2012) to overcome the split incentive and improve the relationship between tenants and landlords (Byrne and McArdle 2020).

4.

CONCLUSIONS AND NEXT STEPS

This literature review has analysed the state of art in understanding the historical, geographical and regulatory context for energy poverty alleviation in the PRS. We have highlighted the structural driving forces and contingencies of PRS energy efficiency improvements in particular, as well as the wider conceptual framing and implications of socio-technical retrofits as they relate to the sector. Much of the review has been devoted to the discussion of ongoing challenges in the sector – as well as efforts to resolve them – in addition to the positions and experiences of key stakeholders: landlords and tenants. Our work has been mostly based on research in the Western context, although we have drawn on examples from across the world, to the greatest extent possible.

Overall, we can conclude that the evolution of PRS housing is relatively well understood, and a spate of contributions are starting to highlight the roles of stakeholders involved, the social vulnerabilities that it underpins and creates, as well as the wider regulatory context in which it functions. **Coverage is geographically uneven**, however, as are the drivers and effects of policies studied – to the extent that **it is difficult to formulate universally generalizable findings**. At the same time, there is a growing body of literature on energy efficiency retrofits in the PRS. From this knowledge corpus, it is clear that **the PRS generally has the poorest energy performance relative to the rest of the housing stock** (Ambrose and McCarthy 2019; Ambrose 2015; Burfurd *et al.* 2012; Crook and Hughes 2001; Dowson *et al.* 2012; Druckman and Jackson 2008; Hope and Booth 2014; Morris and Genovese 2018; Roberts 2008; Wilkinson and Goodacre 2002). The low energy efficiency of the PRS, coupled with its complex environmental implications, are one of the key motives to study the sector, as well as the **challenges and possibilities for improving its energy performance** (Druckman and Jackson 2008; Heffernan *et al.* 2020; Hope and Booth 2014; März 2018a; März *et al.* 2020; Miu and Hawkes 2020; Naber *et al.* 2019; Weber and Wolff 2018).

The PRS tends to concentrate households and groups affected by energy poverty, rendering efforts to increase its efficiency an even greater challenge (Aristondo and Onaindia 2018; Bosch *et al.* 2019; Clair *et al.* 2019; Imbert *et al.* 2016; Ince and Marvin 2019; Kerr 2018; Legendre and Ricci 2015; Mohan *et al.* 2018; Robinson *et al.* 2019; Romero *et al.* 2018; Stojilovska *et al.* 2020).

Landlords can be reluctant to improve these aspects (Kemp 2015) and have emerged as crucial stakeholders to be targeted for policy measures and raising awareness campaigns (Fuerst et al. 2020; Wilkinson and Goodacre 2002). At the same time, **tenants are structurally disempowered**, with limited opportunities to tackle the inefficiency of their homes, although **this varies depending on regulatory and governance contexts** (Ambrose 2015; Middlemiss and Gillard 2015).

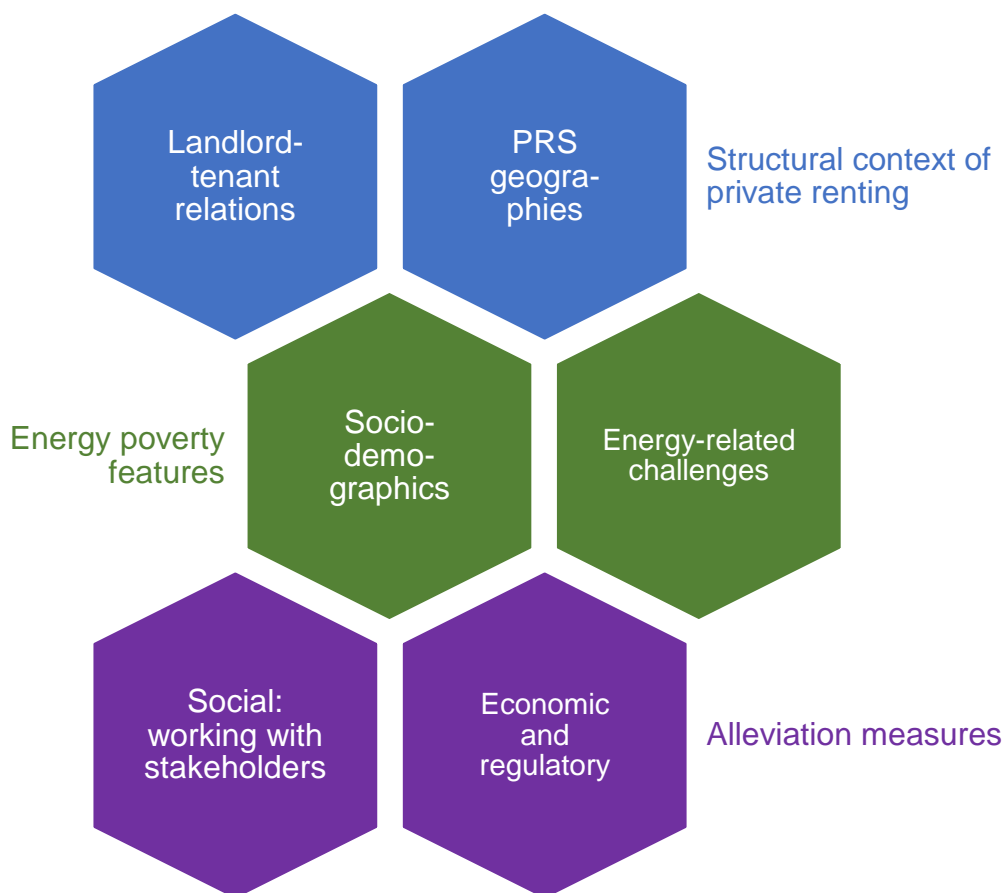
The literature identifies many challenges towards the implementation of energy efficiency improvements in the PRS, some of which are related to **the lack of interest and the lack of opportunities to be engaged in energy retrofits**; while others refer to the **financial and social implications that follow renovation**, leading to conflict, displacement and segregation (Bouzarovski *et al.* 2018; Grossmann 2019; Smith and Hubbard 2014; Stojilovska *et al.* 2020). A key barrier regarding energy poverty alleviation is the **tenant-landlord dilemma**, which has received much academic interest in terms of finding solutions (Bird and Hernández 2012; Dowson et al. 2012; Druckman and Jackson 2008; Fuerst et al. 2020; Golubchikov and Deda 2012; Kerr 2018; Pelenur and Cruickshank 2012; Reames 2016; Roberts 2008; Shove 1998; Weber and Wolff 2018; Wilkinson and Goodacre 2002). The dilemma is also of concern to the EU Energy Efficiency Directive (European Commission 2012). Beyond this quandary, however, we have analysed multiple models and systems focusing on the **maintenance, regulation, and improvement of the PRS. These include regulation, the stimulation of the PRS in general, governmental subsidies, taxation models, and campaigns.**

We have developed a matrix (Table 3) to highlight the **multiple pathways for energy poverty alleviation in the PRS, including regulatory, financial, and social measures** (Ástmarsson *et al.* 2013; Bird and Hernández 2012; März *et al.* 2020; Wood *et al.* 2012). Of key importance to our proposed framework is the representation of different stakeholders involved in the sector (Hope and Booth 2014; Kerr 2018; SAVES2 Project 2018), cooperation (Morris and Genovese 2018), and the need for considering the specific challenges faced by low-income households (Walker *et al.* 2013, 2014). At the core of our proposed approach lies the proposition that **energy efficiency retrofitting should be considered as more than a technical exercise**. It is a process that **intercepts human lives and stories** (Gillard *et al.* 2017; Reames 2016). The overall **conceptual framing** to understand the PRS in Europe, therefore, needs to consider multiple dimensions (Figure 4).

Although the knowledge base on energy interventions in the PRS is growing, there are many gaps and unanswered questions. While the split incentive has received a lot of academic attention, there have been **limited ex-post evaluations** of measures aimed at improving the energy efficiency of this housing stock. At the same time, there is much work on the initiation of energy efficiency policies, while **less analysis has been undertaken on the implications of such strategies**. Much work remains to be done in terms of **exploring energy efficiency interventions from the tenants' perspective**, the effectiveness of different **socio-technical types of interventions**, as well as the identification of **good practices to demonstrate proactive involvement and tenant-led initiatives**. While current interest is principally focused on market, regulatory and technological solutions to the tenant-landlord dilemma, much less work has been done on the **everyday lived experience of living in such housing, and the social relations among relevant stakeholders**.

Geographically, current knowledge is dominated by evidence from Western Europe. There is much less work on Southern and Eastern European countries (even if they have a smaller PRS); and more widely the Global South and Pacific Rim. We even struggled to identify relevant research in North America – possibly due to different scientific and policy vocabularies. In addition, some vulnerable groups living in the PRS – especially **migrants and pensioners** – are comparatively less studied. Future research, therefore, needs to consider **underexplored regions and vulnerable groups**, while also examining the topic through more **systemic perspectives, such as energy and spatial justice**. While the starting points of the existing literature are the energy and climate implications of the PRS, there are significant opportunities to research the social and economic interests that drive PRS retrofits from a **political economy standpoint**. Finally, the PRS sector has been under-explored as a space where energy **vulnerability is generated and persists in multiple and complex ways**. A useful first step would be to link trends in the sector to wider energy poverty indicators, such as those developed by the EU Energy Poverty Observatory.

Figure 4: A conceptual framework to study energy poverty in the PRS – key components.



5.

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