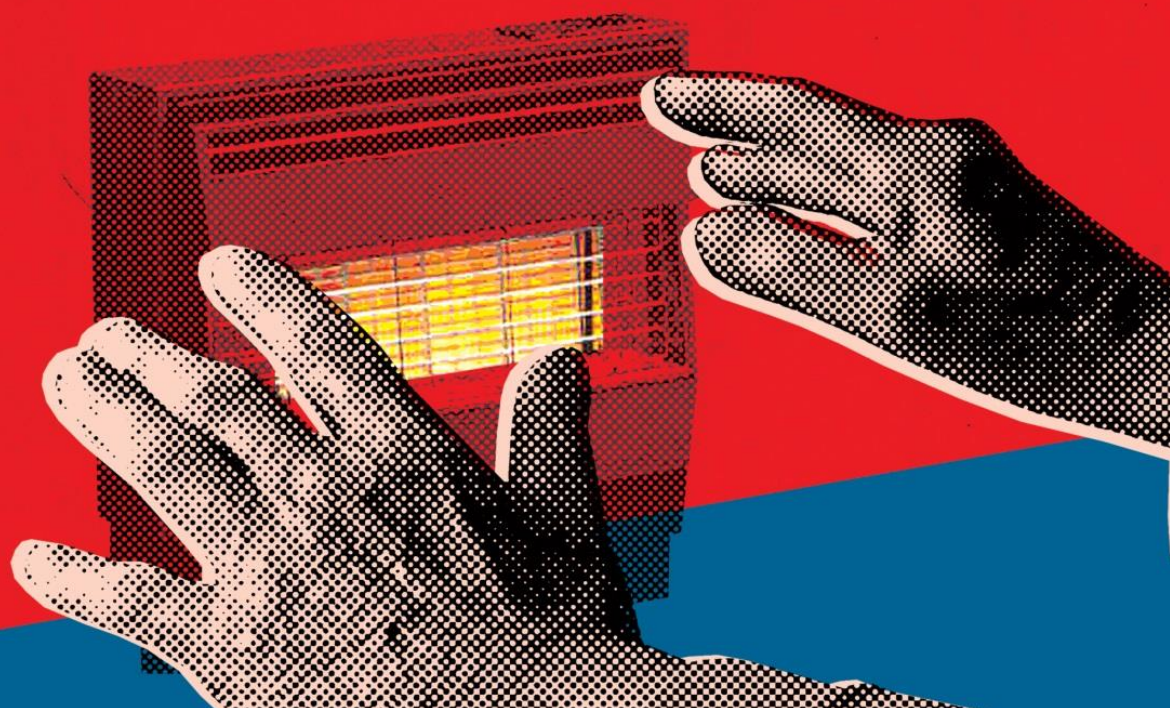


Energy (In)Efficiency:
*Exploring what tenants expect
and endure in the private
rented sector in England*

An evidence review

May 2016



Energy (In)Efficiency: Exploring what tenants expect and endure in the private rented sector in England

Making the case for more research into the tenant's perspective

An evidence review

Author(s):

Lindsey McCarthy

Aimee Ambrose

James Pinder

May 2016

Contents

1. Introduction	1
2. The private rented sector in England.....	2
2.1. Key points	2
2.2. The size and nature of the PRS.....	2
2.3. Conditions in the PRS	3
2.4. Energy efficiency and fuel poverty in the PRS	4
2.5. Impacts of fuel poverty on health and wellbeing	6
3. The plight of private rented sector tenants	9
3.1. Key points	9
3.2. Tenants' awareness of their rights and access to energy efficiency measures.....	9
3.3. Retaliatory action.....	11
3.4. The length of tenancies	12
4. The landlord's perspective	13
4.1. Key points	13
4.2. The principal-agent problem	13
4.3. Knowledge, time and resource	14
4.4. What holds landlords back?.....	15
4.5. The extent of existing knowledge.....	17
4.6. Addressing principal-agent	18
5. The 'missing' tenant voice	19
5.1. Key points	19
6. References	21

Introduction

This report summarises key insights to emerge from a review of research evidence which has spanned four months and involved the systematic review of over 130 published sources. The main aim of the report is to provide a précis of the extent of existing knowledge relating to tenants' experiences of living in private rented accommodation in England with regard to energy efficiency and thermal performance. The review also aimed to take account of the landlord's perspective as the chief agent determining the energy performance of the properties tenants occupy.

This evidence review was conducted as part of a broader research project funded by the Eaga Charitable Trust which seeks to test the assumption commonly made by landlords that energy efficiency is not important to their tenants. This project employs a combination of short postal surveys and in-depth qualitative interviews with tenants of low-value private rented properties in two case study locations (Hackney and Rotherham) to test this assumption. The project will also establish the likelihood that tenants will use the provisions of forthcoming legislation under the Energy Act (2011) to request reasonable energy efficiency improvements from their landlords, and whether they would be willing to pay more in rent for a more energy-efficient property (landlords assume they would not). By better understanding tenants' perspectives on energy efficiency, clarifying their needs, expectations and competing priorities, it is hoped that this project will contribute to the development of better-informed approaches to driving up standards of energy performance at the lower end of the private rented sector (PRS).

This report provides a foundation on which the empirical evidence to emerge from this study will build. By undertaking this review, it is hoped that the research team will be able to demonstrate how their primary research with private rented sector PRS tenants will add to and further existing knowledge regarding the nature of and potential solutions to the problem of energy inefficiency in the English PRS.

The report is structured around four main sections, in addition to this one, as follows:

- The PRS in England
- The plight of PRS tenants
- The landlord's perspective
- The missing voice.

The private rented sector in England

2.1. Key points

- The PRS is growing rapidly as home ownership becomes less accessible and the social housing sector contracts.
- The PRS plays an increasing role in accommodating households in poverty and is increasingly the only option available for vulnerable and low-income households.
- Conditions in the sector are worse than in any other tenure.
- The absence of minimum quality standards for the PRS mean that options for tackling the problem of widespread energy inefficiency are limited.
- Local authorities struggle to enforce what regulation does exist due to severe budget cuts.
- The PRS exhibits high levels of fuel poverty, disadvantaging tenants in relation to their physical and mental health and wellbeing.
- High levels of fuel poverty in the sector are attributed to a combination of low incomes, high fuel costs and the energy performance of the housing stock.

2.2. The size and nature of the PRS

England has seen a series of significant shifts in terms of housing tenure over the past three decades. After several decades of decline, the private rented sector (PRS) has been on an upward trajectory of substantial growth since the late 1980s (DCLG, 2015). Government statistics indicate that by 2013 there had been a resurgence in the PRS to more than four million privately rented dwellings in England, or 20 per cent of the stock¹ – for the first time in decades more people were renting from a private landlord rather than a social housing provider (DCLG, 2015). Based on an analysis of UK Census data, Rhodes (2015) traced a revival of private renting in the decade from 1991 to 2001, at which time there were 2.2 million private renters (or 11 per cent of all households). Between 2001 and 2011, the size of the sector increased dramatically (by 65 per cent) to 3.7 million (or 17.1 per cent of all households). Notably, this trend is unusual when compared with other western countries over the last 15 years where the PRS is stable (Germany, Norway, Sweden, USA), or in decline (Belgium); with the exception of Australia which also shows an increase in the size of the sector (Crook, Ferrari and Kemp, 2012).

¹ This figure was just below three million households in 2008; and approximately two million in 2003 (DCLG, 2015).

This growth of the PRS is not coincidental; nor has it occurred in isolation. Indeed, the boom in the sector has coincided with both an absolute and relative decline of the social rented housing sector over the past three decades (Hills, 2007). The proportion of households renting from a social landlord declined from 32 per cent in 1981 to 23 per cent in 1991 and only 17 per cent in 2009/10. The decline in social rented housing is linked to privatisation and marketisation processes coalescing in the 1980s as nearly two million units were sold to tenants under the Right to Buy (Cole and Furby, 1994). Stock transfer, or the transfer of former council stock into housing association ownership, coupled with the deregulation of housing finance, has contributed to these rapid housing sector shifts, and the current housing crisis in the UK in which the PRS accounts for an ever-increasing proportion of Local Housing Allowance claims (Watt, 2010; Kennett, Forrest and Marsh, 2012; Powell, 2015).

The PRS caters to a wide range of demand and performs a variety of functions, providing 'easy access and exit' housing for the young, professional and mobile; 'traditional' housing for the elderly or those who have always lived in the sector; 'residual' housing for low-income households or those unable to access owner-occupation or social renting; or 'stop-gap accommodation' in between the sale and purchase of a house (Rhodes, 2015). Evidence highlights the increasingly important role played by the PRS in accommodating households living in poverty. For low-income households, who are disproportionately more likely to rent, the role of the PRS can no longer be accurately described as 'residual' at all but is increasingly the only option available for vulnerable and low-income households who would previously have been housed in the social rented sector (Kemp, 2011; Powell, 2015).

Despite its growth, and current size, it is difficult – given its diversity – to talk about the PRS as a coherent whole. Landlords operate on vastly varying scales and with different motivations and business plans (Crook and Kemp, 1996; Kemp and Rhodes, 1997) and are far from being a homogeneous group of actors. Instead, they are a very diverse set of individuals and organisations, some of whom would not even regard themselves (nor be thought of by others) as 'private landlords' (Kemp and Rhodes, 1997). The contemporary PRS has been referred to as a 'cottage industry', dominated by individual and 'accidental' landlords, who predominantly rent out one or two properties (Hickman et al., 2008; Rugg and Rhodes, 2008). In 2011, for instance, 89 per cent of landlords were private individual landlords who were responsible for 71 per cent of dwellings in the sector. Twenty-two per cent of landlords had let properties for three years or less with two-thirds (69 per cent) for 10 years or less. Only eight per cent of all landlords in the PRS were full-time landlords with the remainder operating on a part-time basis (DCLG, 2011). This diversity is reflected in individuals' motivations for becoming landlords, which encompasses families or couples in possession of more than one home or those who have inherited property ('accidental landlords') through to those who have entered the 'buy-to-let' market with the express purpose of making a return on investment (Leyshon and French, 2009).

2.3. Conditions in the PRS

Concerns about poor conditions at the lower end of the private rental market are not new (Rugg, 2008; Rugg and Rhodes, 2008). The absence of minimum quality standards means that options for tackling the problem of widespread energy inefficiency and its many corollaries are limited. Indeed, the only regulation of quality within the sector comes in the form of the Housing Health and Safety Rating System (HHSRS) under which local authorities can require improvements to be made to properties deemed to represent an excess cold hazard, meaning that they are so cold that they pose a threat to health (Baker and Laine, 2010). However, this system arguably does not go far enough in terms of addressing energy inefficiency, as it requires conditions to be extremely poor before it can be implemented and relies on

such conditions being brought to the attention of the local authority, either by the tenant or a third party (FoTE, 2011; CAB, 2013). Energy Performance Certificates (EPCs), which provide information about a property's energy performance (rated on a scale of A-G) and costs, and how these might be improved, have also been mandatory for all rental properties let since 2008. However, although they may raise awareness of energy performance amongst both landlords and tenants, there are currently no consequences for letting out a poorly-performing property.

Unfortunately, the impact of this rather limited regulation is being diluted further still as a result of the severe cuts to staff and services faced by local authority housing departments (Powell, 2015). It is no surprise, then, that the PRS, as measured by the Decent Homes Standard,² had the highest proportion of non-decent homes (30 per cent) in 2013 while the social rented sector had the lowest (15 per cent).³ The majority of privately-rented stock is old and in disrepair (CLG, 2009). Moreover, between 2005 and 2006, the Citizens Advice Bureau (2007) dealt with over 72,000 problems relating to private rented housing, of which 13 per cent related to repairs and maintenance issues. It has also been shown that when demand outpaces supply, as is currently the case, it becomes easier for landlords to let out properties in a poor state of repair (Holman, 1987). 'Slum renting', where landlords let inadequate accommodation to tenants who often have little choice about where they live, still exists today though there is a dearth of evidence on this practice (Rugg and Rhodes, 2008).

The state of the sector has arguably been worsened by successive Government policies and cuts, and the ongoing retraction of the welfare state. Cuts to the Local Housing Allowance (LHA) (housing benefit for those in private rented accommodation) have proved disruptive for private sector tenants who have been pushed to more marginal locations where rents are cheaper (Beatty et al., 2014). In other more indirect ways, and in some housing markets, these cuts are also impacting on landlords, and consequently, on housing conditions. This is particularly the case in housing market areas where a lack of alternative PRS sub-markets and social differentiation means that landlords are heavily reliant on LHA tenants for their income (Beatty et al., 2014). As evidence shows, some landlords have responded to reductions in LHA rates by cutting spending on property management and maintenance, leading to a gradual deterioration in the quality of housing as well as the living conditions of tenants (Beatty et al., 2014; Powell, 2015).

There is, however, some evidence to suggest that overall quality standards in the PRS are steadily improving, which is likely due to the inclusion of newer properties within the sector (through the inclusion of the properties of accidental landlords, for instance) rather than improvement of existing older stock (Kemp, 2011; Rhodes, 2015). Despite these small (apparent) moves in the right direction – on paper at least – the PRS still has poorer dwelling conditions than any other sector. Furthermore, the worst dwellings are occupied by the most vulnerable and lowest-income households (ACE, 2014).

2.4. Energy efficiency and fuel poverty in the PRS

Poor housing conditions in the PRS extend to and encompass energy performance, which lags behind that of other sectors (ACE, 2014). The PRS contains a higher proportion (11 per cent) of energy-inefficient homes (those in bands F and G of the

² A Decent home must meet minimum safety standards, be in reasonable repair, have modern facilities, effective heating and insulation (Shelter, 2015).

³ All statistics taken from English Housing Survey 2013/14 unless otherwise stated.

EU's Energy Performance Certificate)⁴ than any other sector (ACE, 2014). As such, fuel poverty⁵ is a major issue within the sector, especially for low-income tenants. Illustrating the scale of the problem, the Association for the Conservation of Energy (2014) report that in 2011 nearly half of the households living in privately-rented F- and G-rated homes were in fuel poverty: higher than in both the social rented and owner-occupied sectors. Similarly, one in two private renters in Northern Ireland are likely to be in fuel poverty (Liddell and Gray, 2014).

High levels of fuel poverty in the sector are attributable, the literature suggests, to a combination of low incomes, high fuel costs and energy performance of the housing stock itself. Taking first the combination of low incomes and high fuel costs, there is considerable evidence that the lower end of the PRS represents the 'perfect storm' of a concentration of low income households who experience difficulties keeping up with rising energy costs in addition to high housing costs (Kemp, 2011; Bird and Hernandez, 2012). According to the Committee on Climate Change (2014), the average dual fuel energy bill for a typical household has increased by 75 per cent (£490) since 2004. This is compounded by higher than average rental and related housing costs in the PRS: in 2007, one in three low-income private renters reported finding it difficult to afford the cost of their housing, a figure twice as high as that for low-income social housing tenants (Kemp, 2011). This difficulty was even more pronounced among private tenants in receipt of housing benefit.

Furthermore, more recent research has analysed the financial impacts of recent reforms to LHA on private tenants (Beatty et al., 2014). After reforms took effect in April 2011, they had reduced maximum LHA entitlements in given property types by an average of £8.21 per week; the majority of this cost fell on tenants in terms of reduced LHA relative to contractual rents (only six per cent fell on landlords in terms of contractual rent reductions). In response to the reductions in LHA levels, private tenants reported spending less on household 'essentials' and 'non-essentials' to make up for shortfalls. Kemp's (2011) findings show that the level of income poverty among private tenants who are unable to keep their living room warm in winter (54 per cent) is significantly higher than among those who are able to keep comfortably warm (33 per cent). There is also evidence from both the UK and the USA which confirms that low-income tenants are the group most likely to spend the highest percentage of their income on energy and heating costs while receiving the lowest amounts of energy (per pound or dollar spent). There are two main reasons for this, first they are more likely to be paying a higher tariff for their energy due to pre-payment or key meters (The Guardian, 2013) and second, the energy efficiency measures in their rental units are at the lowest levels (Bird and Hernandez, 2012). Indeed, in 2013 The Guardian (2013) reported that customers on pre-payment meters are paying up to £300 more per year than those on the cheapest fuel tariffs. While this body of research is illuminating, there is an obvious need for further and more up-to-date research which explores how recent housing and welfare reforms have impacted on private tenants' specific household spending reductions, in terms of energy use.

⁴ The European Union's Energy Performance Certificate (EPC) is based on a standard assessment of the energy performance of a property and results in a ranking somewhere on a scale running from A to G where A is the most energy efficient properties with the lowest running costs and G the least. It is obligatory to have an up-to-date EPC in place when selling or letting a property in the EU.

⁵ Fuel poverty is defined currently as when a household needs to spend more than 10 per cent of its income on fuel to maintain a satisfactory heating regime of 21 °C for the main living area and 18°C for other occupied rooms during daytime hours (Boardman, 1991). This definition was updated in 2013 following the Hills (2012) review. The new definition uses a relative measure of fuel poverty, defining a household as fuel poor if income is less than 60 per cent of the median equivalised income (after housing costs) plus energy expenditure, and if the amount it needs to spend on fuel to maintain an adequate level of energy service is greater than the median equivalised energy bill in the population.

The other key contributor to high levels of fuel poverty within the sector is the energy performance of the stock itself which serves to exacerbate the challenges surrounding the affordability of energy. Privately-rented homes represent the worst-performing tenure type with only 8 per cent of homes obtaining a rating from A to C on the EPC scale (DCLG, 2012). PRS stock is old and the sector contains the highest proportion of 'hard to treat', pre-1919 properties. Just 24 per cent of PRS properties have cavity wall insulation (compared to 48 per cent of social housing and 44 per cent of owner-occupied housing). They are also less likely to have central heating, loft insulation or full double-glazing (DECC, 2014). More than 15 per cent of properties are deemed to constitute a Category 1 'excess cold' hazard according to the HHSRS, meaning that they are dangerously cold (UK Parliament, 2012). In-depth case study work in Northern Ireland revealed that as a result of these cold conditions, there was frequently a need for secondary heating systems, commonly in the form of a coal or electric fire, which significantly added to tenants' heating costs (Liddell and Gray, 2014).

The choices occupants make regarding energy consumption and the amount of money they spend on it are largely constrained by the characteristics of their dwelling (i.e. thermal performance or mode of heating): something only the landlord can alter (Ambrose, 2015). PRS tenants on a low income therefore face a double bind: forced into poorer and energy-inefficient stock at the bottom end of the PRS, they are more vulnerable to high fuel costs but reap little benefit in terms of warmth and comfort.

2.5. Impacts of fuel poverty on health and wellbeing

Following an independent inquiry into inequalities in health (Anderson, 1998), the UK's first Fuel Poverty Strategy was published in 2001, aimed at mitigating the health risks of cold homes with measures addressing the main causes of fuel poverty – the energy efficiency of homes; the cost of energy; and low incomes. Although there is little specific evidence on health and private renting, evidence on the health impacts of living in bad housing is compelling. Barnes et al.'s (2013) analysis of the Health Survey for England found that both children and working-age adults living in bad housing were more likely to have poorer general health and that working-age adults were also disproportionately at risk of low mental wellbeing and respiratory problems including asthma and breathlessness.

The impacts of fuel poverty on human health are well-documented. As others have commented, the primary health risk known to be associated with excess cold is to life itself (Liddell and Morris, 2010). Increased rates of mortality in cold weather were recognised decades ago (Young, 1924). More recent studies add to this body of evidence, confirming that significantly more deaths occur in the winter (Healy, 2003), and that residents of poorly-insulated homes are at greater risk (Wilkinson et al., 2007). 'Excess winter deaths' emerged as a term to describe this issue and was further consolidated by studies which definitively linked increased winter mortality rates to poor housing (Wilkinson et al., 2001). Following an examination of 40,000 excess winter deaths recorded in England and Wales, researchers further noted a significant link between poor housing and poverty, low indoor temperatures and cold-related deaths (Johnson and Griffiths, 2003). Analysis of 80,331 deaths from cardiovascular disease in England between 1986 and 1996 (using data from the 1991 English Housing Survey) found deaths were higher in winter months (December to March), in older properties (those built before 1850), and in buildings with poorer thermal efficiency ratings (Wilkinson et al., 2001).

Other studies have examined more enduring and cumulative health effects associated with cold housing such as increased risk of influenza, pneumonia, asthma, eczema, arthritis, and accidents at home (WHO, 2007). Poor housing conditions also impact on mental health and quality of life as demonstrated by a longitudinal study

conducted by The National Centre for Social Research (NATCEN) which explored housing conditions and their association with children's wellbeing between 2001 and 2005 (Barnes et al., 2008). Living in homes which lacked affordable warmth was associated with "multiple mental health risk" (where adolescents manifested four or more negative mental health symptoms) for the young people involved. These young people were more likely to have truanted, been expelled from school, and been in trouble with the police. These findings are explained speculatively by Liddell and Morris (2010), as a result of 'spatial shrink' (Farrell et al., 2008) – the restriction of heating to rooms which are used by most of the household most of the time – and the reduced opportunity for privacy and personal space. For instance, children in homes that lacked affordable warmth were less likely to have a quiet space to do homework. It is likely that a range of other impacts might be captured by studies if a different choice of mental health measures were employed, such as social engagement and daily living patterns (Liddell and Guiney, 2014).

There is increasing recognition of fuel poverty as a multidimensional concept in which the anxiety associated with energy burdens and debt, thermal discomfort, mould and damp, social isolation and stigmatisation combine to create a self-perpetuating cycle of "psychosocial stress and ill health" (Liddell and Guiney, 2014). A model developed by Liddell and Guiney (2014) encapsulates the cumulative stress of living in fuel poverty. In this model, deterioration in physical health stems directly from fuel poverty itself. Deterioration also occurs indirectly from the various stressors associated with fuel poverty through mood disturbance, anxiety, sleep disturbance, depression and inability to cope, all of which impair immune, cardiovascular and hormonal functions. Escalating stress potentially leads to other health-risk behaviours, such as alcohol consumption, smoking and overeating. Moreover, high utility and energy costs can lead to spiralling instability within low income households in the PRS putting them at greater risk of insecure tenancies and homelessness, and increasing the risk of debt accumulation (Hernandez and Bird, 2010).

Evidence on the health impacts of fuel poverty associated specifically with poor conditions in the PRS is less established but useful insights can be gleaned from a handful of key sources. A number of studies have focused on the health risks of living in poor accommodation in the PRS, in the sense of poor repair, or unsafe electrical and gas appliances, for instance (Lister, 2006). A report by Shelter (2014), informed by a YouGov survey of 4,544 private renters and over 1,000 private landlords, is one of the most recent studies of the effects that poor conditions in the PRS have on tenants. Ten per cent of renters participating in the survey said that their health had been adversely affected due to their landlord not dealing with repairs and poor conditions in their property in the last year.

Sustain, a joint longitudinal research project by Shelter and Crisis (2014), further highlights the effects of poor quality private rented housing on the health of tenants, concluding that 'the PRS has a profound impact on wellbeing' (page 6). The research tracked, over the course of 19 months, the experiences and wellbeing of 128 previously homeless people who had been rehoused in the PRS. Every property visited in this study had a condition problem, the most common being damp and mould. This had a profoundly negative impact on the household's health, especially in terms of respiratory conditions. About half of the participants reported an increase in the frequency of coughs and colds, as well as more visits to the GP. Most people with damp problems were told by landlords to keep the windows open to dry it out, a far from practical solution in the winter months. Others were told to dry out the damp by leaving their heating on for a longer period than usual, which led to increased energy bills for those who took up the suggestion – other tenants simply could not afford to do so. Impacts of housing problems on mental health and wellbeing were also profound: tenants spoke about stress, sleeplessness and being on a "sliding scale of deepening anxiety" (page 59). Parents felt that children were either directly

affected by housing issues such as cramped accommodation, or indirectly, by the adult's concern about housing. People's anxiety mainly related to the insecurity of tenure and landlord behaviour, whether outstanding issues with the property would be resolved or whether the landlord would ask them to leave.

The plight of private rented sector tenants

3.1. Key points

- In a context of high demand for rental properties, low-income PRS tenants are in a weak position in terms of raising issues relating to poor conditions and cold homes with their landlords.
- Many tenants fear retaliatory eviction if they 'rock the boat' with their landlord.
- Tenants are unlikely to be aware of their legal rights and of the practical support available through various subsidised energy efficiency schemes.
- Tenants are unlikely to engage with the information detailed in Energy Performance Certificates, if they are shown them.
- Short tenancies may act as a further disincentive if tenants choose to ignore low standards and look for an improved environment in their next property.
- For this and other reasons, low-income PRS tenants are unlikely to make informed decisions about which property they choose.

3.2. Tenants' awareness of their rights and access to energy efficiency measures

The available research evidence suggests that low-income tenants are in a particularly weak position when it comes to raising issues related to energy efficiency, cold homes and poor repair with their landlords (Shelter and Crisis, 2014). To voice a complaint to begin with tenants have to be aware of their legal rights. Yet the accessibility of information about tenants' rights has been found to be lacking (Consumer Focus Scotland and Shelter Scotland, 2009; Citizens Advice Bureau, 2011; British Property Federation, 2014). A Scottish Government Review (Scottish Government, 2014) suggests that there remains much work to do to promote an understanding amongst tenants about their rights. A so-called 'information asymmetry' has been identified among private tenants in particular, who are significantly less likely to be able to make informed decisions when deciding which house to move into compared with those moving into other tenures, especially property owners (Phillips, 2012). For low-income tenants, especially those receiving Local Housing Allowance, clearer information on energy performance may not be enough. In a pressurised housing market, simply finding a landlord willing to take them on as a tenant may be a more compelling factor than how easy it is to heat the property (Kemp, 2011).

The same applies to the provision of information regarding the energy efficiency of a property. For instance, a written submission to DECC by the English National Private Tenants Organisation, in 2011 (UK Parliament, 2012), found that not all PRS tenants

had seen an Energy Performance Certificate (EPC) for their prospective homes (as the law requires) and were therefore unaware of estimated heating costs before signing the tenancy agreement. Where tenants had received an EPC many, particularly older tenants and those from lower-skilled occupations, found it confusing and difficult to understand (Lainé, 2011). Even if a certification system is in place, then, if tenants cannot understand or easily interpret it, or if there is a lack of trust in the credibility of the system, it is likely to be ineffective (Leicester and Stoye, 2013). Research exploring this issue further found that where tenants had seen an EPC it was not through an active desire to check energy efficiency, but simply because they were shown it (Hope and Booth, 2014).

Legal changes to the provision of the EPC first came into effect in January 2013, which required property advertisements to contain the EPC rating for the property, as well as the Standard Assessment Procedure (SAP) rating where an EPC is available. Although there has reportedly been limited engagement with them amongst tenants, EPCs are important in so far as energy efficiency is more difficult to gauge than other, more cosmetic aspects of property condition. At least some of the information needed to assess energy performance is hidden from tenants such as floor, wall and ceiling insulation, for instance, therefore underlining the importance of a rating system (Burfurd et al., 2012).

Other studies have found low levels of awareness among private tenants about schemes and initiatives intended to improve standards in the PRS. In Scotland, for instance, tenant awareness of schemes such as landlord registration, Housing in Multiple Occupation (HMO) licensing, the Private Rented Housing Panel, and the Repairing Standard remained low (Scottish Government, 2009b). This lack of awareness likely stemmed from the finding that the vast majority of tenants had never received any formal support or advice about private renting.

Moreover, once a tenancy begins, tenants may be unaware of who to contact if and when a problem does arise, something to emerge from research by Green et al. (2010), which revealed that 48 per cent (of the 127 private tenants surveyed) said they did not know who to contact if they had a problem with their landlord. Some 20 per cent said they would contact a housing advice service and 18 per cent said they would contact the Council. 56 per cent of tenants who contact the Housing Ombudsman do not talk to their landlord before making a complaint (British Property Federation, 2014), potentially reflecting a poor or heavily transactional relationship between landlord and tenant and a fear that speaking out may lead to eviction (Shelter, 2014).

Of course, it is not only tenants who may be unaware of their rights and responsibilities. A Scottish Government review of the private rented sector (2009a) found a small but substantial minority of private landlords were ill-informed about the residential lettings market and about landlord-tenant law. Despite this patchy awareness of legislation, almost half of landlords in the sample said they were not interested in training.

Research also suggests that it is Government policy which has failed to engage private sector landlords in the issue of energy efficiency (Hope and Booth, 2014). The failure of previous schemes to intervene in energy efficiency and fuel poverty has been explored elsewhere (Gilbertson et al., 2012; Liddell and Gray, 2014). Under the Energy Company Obligation (ECO) scheme, which gave social and private tenants access to subsidised energy efficiency measures, for instance, applications from tenants could not be processed without permission from the landlord. Government policy is ineffective in targeting the PRS in particular: 67 per cent of survey respondents stated they had never made use of any Government schemes to improve the energy efficiency of their tenanted homes (Hope and Booth,

2014). The only scheme that was accessed in the private rented sector was Warm Front (a boiler replacement and insulation scheme), with 22 per cent of respondents stating they had made use of the scheme. Almost half (47 per cent) of respondents had never heard of the UK Government's now defunct but once flagship Green Deal scheme (Hope and Booth, 2014). Hope and Booth's (2014) research comes with the caveat of a small sample size (only 53 private landlords completed the survey) and cannot be said to be representative of the sector as a whole. It does, however, highlight the need for more wide-ranging quantitative and qualitative studies to add to knowledge of private rented landlords' attitudes towards improving the energy efficiency of their properties. This theme is explored further in a later section of this report: The Landlord's Perspective.

3.3. Retaliatory action

"The spectre of rent rises is strengthened by an acute shortage of rental housing [...] and the consequent loss of tenants' influence on the market" (Palmer et al., 2015: 926).

Perhaps of greater significance than awareness of rights is private tenants' lack of rights in a largely unregulated PRS. Current housing legislation in England and Wales does not protect tenants from eviction when exercising their rights to have repairs and health and safety issues addressed. Specifically, Section 21 of the Housing Act 1988 allows landlords to legally end a periodic assured shorthold tenancy agreement by serving a Notice Requiring Possession, giving the tenant two months' notice to leave. As long as this Notice is served correctly, tenants have no grounds for defence. Landlords do not have to give a reason for serving this Notice. Tenants thus occupy a difficult position – even more acute in housing market areas where there is high demand – being faced with the threat of eviction or rent increases if they dare to 'rock the boat', or having to live in poor conditions if they do not. Research reflects this impossible dilemma: questions included in the Survey of English Housing (CLG, 2000) showed that 21 per cent of private tenants were dissatisfied with the way their landlords carried out repairs and maintenance of their property. Yet only one-quarter of those tenants said they had 'tried to enforce their rights'. When those who had not taken action were asked why not, 21 per cent said they did not want to cause trouble with their landlord, and a further five per cent felt their tenancy would be ended if they requested repairs (CLG, 2000). This reticence to seek help with repairs extended to take-up of assistance from environmental health officers (EHOs), as an email survey of EHOs revealed that all respondents had clients who had been deterred from accepting help because they feared repercussions from their landlord (CLG, 2000). Low-income tenants and those without financial or familial safety nets in particular, stand to lose more when "complaining can mean losing everything" (Hackney Renters, 2014: 9).

Without the force of law behind them, private tenants therefore experience difficulty enforcing their rights given their lack of security of tenure, and the threat of retaliatory eviction if complaints are made. This power imbalance means that landlords have little incentive to respond quickly, if at all, to requests from tenants for repair or energy efficiency modifications. Long delays between complaint and repair, or complete non-response, has been shown to have an impact on tenants' attitude towards future interactions with their landlords (Ambrose et al., 2015). Young people, or those who are new to independent living in the PRS, are affected even more profoundly. In a study by Lister (2006) young people often described landlords as 'unapproachable' thus hindering their ability to voice concerns, preventing them from reporting repairs because they were 'afraid to phone up' or 'worried about having arguments'. In some circumstances, the tenant-landlord relationship gave way to 'tit-for-tat' situations whereby both parties felt they were owed a 'favour' by the other, and neither 'gave in' (Lister, 2006). Similar evidence of poor communication is

echoed in the social rented sector, where recent research revealed how limited routine contact between tenant and landlord hampered communication regarding arrears and financial difficulties and led many tenants to feel that landlords were only concerned with collecting the rent (Ambrose et al., 2015). Failings of the landlord-tenant relationship are possibly more pronounced in a less secure PRS (Leicester and Stoye, 2013; Liddell and Gray, 2014).

Tenants' perceptions of landlord responsiveness, then, have a significant bearing on whether they will approach them in the future with repair or energy efficiency requests. Yet, past energy efficiency initiatives, such as the Green Deal, the Energy Company Obligation and Warm Front have relied on good landlord-tenant communication and cooperation. The Green Deal, for instance, required the tenant to consent, in writing, to the Green Deal plan being initiated, and the landlord to disclose details of an existing Green Deal to new and prospective tenants. New and prospective tenants were required to acknowledge responsibility for the repayments in writing. For the most vulnerable, low income and new migrant groups, this level of communication and cooperation is likely to pose considerable difficulties and concerns (Wilson, 2014).

3.4. The length of tenancies

Some literature suggests that tenants are likely to be too disempowered to demand improvements around the energy performance and condition of their accommodation due to the short length of tenancies. According to Wilson (2014), tenants may choose to ignore poor standards in their current property if they only plan on living there for a short period of time. If improved energy efficiency means potential weeks of disruption, tenants may tolerate the cold and poor conditions in the present and invest more time in seeking an improved environment in their next property (Wilson, 2014). However, the marked increase in demand for private rental housing (as outlined in Chapter 2) means that the role of the sector is shifting from one providing transitional housing for new and young households to the provision of accommodation for more long-term tenants (Kemp, 2015). As Kemp (2015: 617) notes, 'the emergence of 'generation rent' since the turn of the century has included growing numbers of families and low-income households who might previously have expected to become homeowners or social housing tenants'. As the sector becomes less transitional, and more and more people become part of 'generation rent' it is perhaps increasingly less likely that tenancy length alone will deter private tenants from making energy efficiency and other property improvement requests.

The landlord's perspective

4.1. Key points

- Landlords determine the energy performance of tenants' properties and are therefore, to a large extent, gatekeepers to their health, wellbeing and prosperity.
- Effective policy responses to poor conditions in the PRS will need to take account of the perspectives of both landlords and tenants.
- Landlords' inertia regarding investment in the energy performance of their properties is commonly attributed to the 'principal-agent problem': a 'mismatch' between the party paying the costs (the landlord) and the beneficiaries of the improvements (the tenant).
- Landlords' understanding of how to improve energy performance is often limited and requires an investment of time and resource that they are unwilling or unable to make.
- Landlords are deterred from investing in energy efficiency measures by a range of economic and socio-cultural barriers, which demonstrate that landlords are not as economically rational as is often assumed.
- A combination of economic incentives and regulation is likely to be required to spur landlords into action.

It is impossible to give due consideration to the tenants' perspective without giving due attention to that of the landlord. Landlords determine the energy performance of the properties that their tenants live in and are therefore, to a large extent, gatekeepers to their health, wellbeing and prosperity. Despite the clearly documented power imbalance between the two parties, their fates are intertwined and any effective policy response will need to take account of the positions of both parties and the interdependencies between them. In recognition of this interplay, this section provides insights from the literature into landlords' attitudes towards providing their tenants with properties which are energy efficient and affordable to heat.

4.2. The principal-agent problem

There appears to be, both within UK and international literature, a clear characterisation of private sector tenants as the (rather passive) victims of landlords who are, in general, reluctant to invest in the energy performance of their properties. A handful of key sources (Bradbrook, 1991; Wilkinson and Goodacre, 2002; Druckman and Jackson 2008; Barton, 2012) support this characterisation and attribute it to a 'mismatch' within the PRS between the party paying the costs (the landlord) and the beneficiaries of the improvements (the tenant). This mismatch is

often referred to as the 'principal-agent problem' (Jaffe and Stavins, 1994), a broader concept used in many disciplines that has been increasingly applied to the case of landlords and energy efficiency (IEA, 2007). The principal-agent problem is described by the International Energy Agency (IEA) as the situation where "two parties engaged in a contract have different goals and different levels of information".

Jaffe and Stavins were the first to apply the concept to the matter of energy consumption and the so-called 'energy efficiency gap' which exists between actual and optimal energy use. In this context, they state that:

If the potential adopter [of energy efficiency measures] is not the party that pays the energy bill, then good information in the hands of the potential adopter may not be sufficient for optimal diffusion; adoption will only occur if the adopter can recover the investment from the party that enjoys the energy savings. Thus, if it is difficult for the possessor of information to convey it credibly to the party that benefits from reduced energy use, a principal/agent problem arises (1994: 805).

Thus, the principal-agent concept was felt to be well-suited to conveying the situation identified in the PRS whereby it is assumed that principals (tenants) are poorly informed about matters of energy efficiency and are therefore unlikely to pay a premium for a more energy efficient property and to make the connection between this and a warmer, more comfortable home. Knowing this, the agent (landlord) is unwilling to invest in energy efficiency on the basis that they will not be able to recoup the cost of their investments through the sale or rent of the property (Barton, 2012; Ambrose, 2015). The IEA have cemented the place of the principal-agent problem as the dominant explanation for sub-optimal take up of energy efficiency measures and interventions and cited a case study of energy efficiency in the PRS as one of four prime and pervasive examples of this, in their 2007 publication 'Mind the Gap: Quantifying Principal-Agent Problems in Energy Efficiency'.

The application of the principal-agent thesis to the relationship between landlords, tenants and energy efficiency characterises landlords as economically rational actors who are logically unwilling to invest in something which is not (necessarily) required of them by law and which they do not believe will yield a return. In response to the potential for the principal-agent thesis to oversimplify the problem, the IEA emphasise the complexity of principal-agent problems of all incarnations. As such, they argue, there is no single policy instrument capable of overcoming it and that neither 'regulatory mechanisms' nor 'information-based instruments' will be sufficient on their own. Instead, they strongly contend that 'policy packages' that are specific to the particular context in which they will be applied are critical and that a combination of institutional support for energy efficiency, price factors and public awareness is required to affect change. As such, the importance of understanding how the dynamics of the problem operate within a range of different contexts is crucial in terms of developing effective solutions. Ambrose (2015; forthcoming) begins to address this criticism in her studies of landlords' attitudes towards energy efficiency investments in the UK and New Zealand PRS, revealing that the same study conducted in different contexts can yield very different findings and affirming that landlords (and their attitudes towards energy efficiency investment) are not as homogenous as the international literature may suggest. Landlords in New Zealand, despite popular belief, did not conform as neatly to the contentions of the principal-agent thesis as their UK counterparts. This discussion will be returned to later in this section.

4.3. Knowledge, time and resource

Jaffe and Stavins (1994) and Jakob (2006) introduce another dimension to the principal-agent thesis in their respective discussions of energy saving technology

adoption rates: that of time and resource, positing that it is costly and time consuming for landlords (and tenants) to learn enough about energy efficiency measures to understand whether they are worthwhile and profitable. This, they contend, is a significant market barrier to innovative technology adoption. The argument continues that landlords are less likely to dedicate time to acquiring knowledge regarding the drawbacks, benefits, supply, financing and installation of an innovation than those who pay the energy bills. The tenant however, does not have a mandate to make such decisions (Bird and Hernandez, 2012). Moreover, they contend that even if landlords were persuaded to dedicate time to this, they would likely find inconclusive evidence regarding likely payback periods, particularly given uncertainties over future energy prices, rendering them unable to reach an informed decision. Hope and Booth (2014) also point to a lack of knowledge regarding energy efficiency amongst landlords surveyed through their research, having identified that the majority considered the energy performance of their properties to be good, when this is unlikely to be the case. However, they go on to caution that educating landlords is unlikely to automatically foster pro-environmental behaviour as the drivers of this are rather more complex.

4.4. What holds landlords back?

Drawing on insights from the UK and international literature, as well as primary data from her own research in the UK and New Zealand, Ambrose (2015; forthcoming) identifies a series of barriers deterring landlords from investing in the thermal performance and energy efficiency of their properties. These barriers can be broadly divided into economic and socio-cultural explanations of landlords' inertia and are summarised in Table 1 below. Whilst economic explanations focus on what might be considered 'rational' behaviour (i.e. the principal-agent problem), socio-cultural explanations go beyond this, taking account of cultural and contextually specific factors that may disrupt economic rationality and that influence concepts of what is regarded as rational and what is not.

Table 1: factors deterring landlords from investing in thermal performance and energy efficiency improvements based on international literature

Barrier	Description	Sources
Economic explanations		
Lack of direct financial incentives to landlords to invest or the 'principal-agent problem'.	Thought to be the predominant reason for poor energy performance within the PRS. It is argued that the landlord (the agent) determines the level of energy performance within a building, while the tenant (the principal) pays the energy bills. Where principals are poorly informed about energy efficiency they are unlikely to be willing to pay a premium for an energy efficient property. Knowing this, the agent is unwilling to invest as they will not be able to recoup the cost of their investments through sale or rent of the property.	Bradbrook (1991); Jackson (1992); Jaffe and Stavins (1994); Wilkinson and Goodacre (2002); Druckman and Jackson (2008); Gillingham et al. (2009); Barton (2012); ACE (2014).
Lack of knowledge and misinformation regarding the potential consequences of energy inefficiency and the range of possible solutions, exacerbated by a lack of time and technical knowledge amongst landlords.	Linked to the principal-agent problem. This argument emanates from discussions of energy-saving technology adoption rates. It is posited that it is costly and time consuming for individuals to learn enough about an innovation and understand whether it is profitable. Landlords are therefore less likely to dedicate time to acquiring knowledge regarding an energy saving innovation than those who pay the energy bills. The tenant however, does not have a mandate to make such decisions.	Jaffe and Stavins (1994); Jakob (2006); IEA (2007); Hope and Booth (2014).

Barrier	Description	Sources
	Lack of knowledge amongst consumers is a frequently cited barrier to more energy conscious behaviour and a key rationale for energy labelling codes, for example.	
Local and regional housing market factors including 'ceilings' on rent levels and property values in low value areas and associated lack of equity to aid investment.	A study of private landlords in the UK identified that, regardless of the quality of a property or how efficient it may be to run, local housing market factors including location, property type and level of demand created 'ceilings' or maximum levels of rent that landlords could charge for their properties and rationed investment accordingly.	Ambrose (2015)
Socio-cultural explanations		
Low expectations amongst residents and landlords.	<p>Studies in the UK have identified that cold homes and poor energy performance has become regarded as the 'norm' by tenants and landlords and that low expectations are entrenched. There was also evidence of a sense of impotence, with landlords doubting the extent to which they could improve energy performance given the inherent weaknesses of an ageing housing stock.</p> <p>In other international contexts, such as New Zealand, references to the existence of a hardship tolerant, masculine, pioneering culture have similar implications.</p> <p>Some caution is necessary, however, as many studies of the PRS have been concerned with the problems of low income and poor quality accommodation. In the long term, as general living standards rise, expectations about acceptable housing conditions also tend to rise, with a concomitant increase in energy consumption. Such increases in consumption can dilute the expected energy savings of energy efficiency interventions as energy usage increases (or do not decrease) in line with increased comfort in the home. This phenomenon is known as the 'rebound effect'.</p>	Rybczynski (1986); Shove (2003); Cupples et al. (2007); Gillingham et al. (2009); Ambrose (2015).
High turnover in the private rental market: landlords perceive that tenants rarely make a long term commitment to a property and have no obligation to do so.	Landlords in the UK expressed a reluctance to invest in properties unless they had long term tenants who they felt were more likely to contribute to the cost of improvements. Other sources argue the contrary, contending that transience actually encourages home improvements as new tenants moving in demand higher standards and that longer-standing tenants are more likely to accept poor conditions as satisfaction with properties increases over time.	DoE (1979); Ambrose (2015).
Low trust in Government initiatives amongst landlords	Studies in the UK established that landlords are cynical about key energy efficiency initiatives perceiving them to be 'pro-tenant'. Media reports relating to Warm Up New Zealand suggest similar issues.	Mourik and Rotmann (2013); CEA (2014); Ambrose (2015).

The inclusion of socio-cultural factors in this table is significant and is informed by Ambrose's study of landlords' attitudes towards energy efficiency investment in New Zealand (2015). This study demonstrated, *inter alia*, how socio-cultural factors can have a considerable influence on landlords' behaviour, despite the pervasive belief

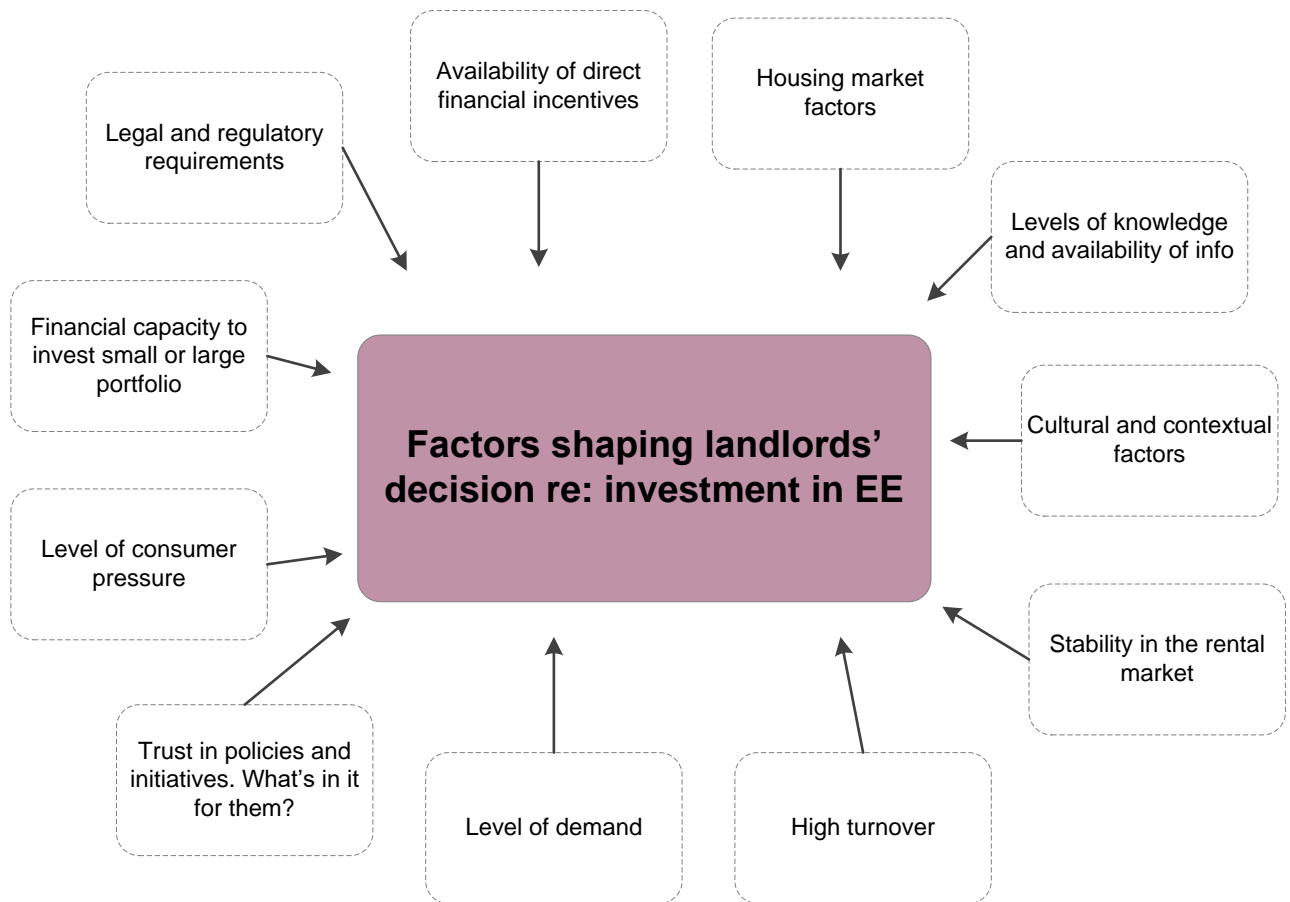
(as expressed in much of the international literature) that landlords are economically rational actors. The results revealed a shift in attitudes amongst landlords over the last 3-5 years, with many landlords becoming more amenable to investing in basic insulation and low energy heat sources. This shift has been driven by increased pressure from tenants who are ostensibly departing from established cultural norms and are no longer willing to tolerate cold homes and high energy bills. In this sense, the study highlights how socio-cultural factors, such as growing expectations regarding warmth and comfort in the home, can disrupt established cultural norms and economic rationales to bring about change.

The barriers detailed in Table 1 are summarised graphically in Figure 1 below and are supplemented by insights from a small number of relevant Australian and New Zealand studies including a major study of the barriers to greater environmental sustainability in the Australian PRS (Gabriel et al., 2010). This study identified the prevalence of small scale, 'non-professional' investors and their associated lack of financial resource as a further barrier to improved energy performance in the sector. This was confirmed to also be the case in New Zealand by the National Survey of Landlords (Saville-Smith and Fraser, 2004) which revealed that 42 per cent of landlords own only one rental property.

4.5. The extent of existing knowledge

The factors identified in Figure 1 therefore represent the extent of existing knowledge in relation to the factors determining landlords' propensity to invest in improvements to the thermal and energy performance of their properties.

Figure 1: summary of factors shaping landlords' decisions regarding investment in thermal performance and EE, as identified from the international literature. Taken from Ambrose (forthcoming)



4.6. Addressing principal-agent

Despite widespread discussion and debate regarding the principal agent thesis, there has been far less coverage within the literature regarding specific solutions and policy responses. Jaffe and Stavins (1994) offer some relevant opinions in relation to increasing uptake of energy saving technology arguing that where barriers have a market dimension (i.e. the principal-agent problem) then Government should intervene with regulation. In relation to non-market issues, incentives should be applied. Economic incentives and regulation can be equally effective under different circumstances, they assert. This point is supported by Bradbrook (1991) who concluded that a combined 'carrot and stick' approach is desirable, bringing together incentives such as tax credits alongside legal requirements. Scanlon and Kochan (2009) argue that incentives are essential to promote action amongst landlords operating as small businesses. Both Gabriel et al. (2010) and Hope and Booth (2014) add that, in relation to regulations and incentives, the problem requires a more targeted response tailored to the particular dynamics of different segments of the PRS (i.e. large and small landlords), something that energy policy has so far neglected to do (Scanlon and Kochan, 2009; Wetherill et al. 2010).

The 'missing' tenant voice

5.1. Key points

- Vulnerable tenants have a great reliance on their landlords to provide them with safe accommodation but a fundamental power imbalance between the two parties means that positive change is unlikely.
- Activism amongst PRS tenants is rare and there are no formal channels for affording tenants a collective voice.
- Research dedicated to the tenants' perspective is very limited and landlords continue to base decisions about investment in energy efficiency on assumptions about what matters to tenants.
- Tenants tend not to speak out against poor conditions and cold homes and we need to know what they really think.

Certain tenants in the PRS (young people, migrants, elderly and vulnerable groups in particular) are shown to have a greater dependence on their landlords for safe accommodation and the provision of services, giving rise to the manifestation of unequal power dynamics between them (Lister, 2006). For as long as private tenants pay the energy bills and landlords face the costs of installing energy efficiency measures, the view from the literature remains largely pessimistic that any change for the better will occur in the sector.

Leicester and Stoye (2013) assert that unless landlords can appropriate the benefits from higher rents, they would not have the incentive to install energy efficiency measures. If rents were increased as a result of improved property condition and energy performance, tenants may stand to gain by saving on energy costs. But even so, this would depend on tenants being able to understand and interpret this trade-off between rent and energy, and to trust that it will indeed work to their financial benefit (Leicester and Stoye, 2013). Others state that low-income renters have the smallest amount of available or discretionary capital costs and income (Bird and Hernandez, 2012). The possibility of paying more in rent for a warmer, property with more affordable household costs and bills, then, is particularly problematic for low-income renters who are already juggling budgets simply to stay put in their current accommodation (Beatty et al., 2014).

Furthermore, some suggest that private tenants lack the collective force to empower them to demand change around issues such as energy efficiency. Unlike social tenants, private tenants' rights groups do not represent a sufficiently mobilized or cohesive force to have a significant impact upon the Government and landlords in general (Lister, 2006). The assumption here is that because there is no one national tenant organisation (since there is no single landlord in one place) the degree of collective interest in activism is much less pronounced. The emphasis in the

literature tends towards one of tenant passivity, powerlessness, and low expectations; that because of "current pressures on housing in some areas, people are desperate for any kind of accommodation and are willing to live in non-decent homes" (British Property Federation, 2014: 3).

There is, however, emerging evidence that small pockets of private tenant activism is beginning to surface. In particular, evidence from New Zealand (Ambrose, 2015; forthcoming) begins to offer some hope that tenant activism can bring about a shift in attitudes amongst landlords, although this does rely on a series of social and cultural factors coalescing to create the right conditions for change. Therefore, if we are to try and create the conditions where constructive activism can be fostered and change effected from the 'bottom up' (which will be particularly important in the absence of robust legislation), we must first ensure that we understand the tenants' perspective: how they think about and understand energy efficiency; how it affects them in daily life; the nature of their relationship with their landlord and the barriers they face in challenging the status quo.

Currently, our ability to address these questions is sorely limited due to the dearth of previous research seeking to understand tenants' perspective. This is a considerable oversight, not just because tenants are the group most impacted by poor standards of energy efficiency in PRS properties but because landlords are basing decisions about investments in energy efficiency on assumptions about what matters to tenants. A significant number of studies on energy efficiency make assumptions about what tenants think, and fail to represent the tenant voice at all through empirical work (Abbott, 2009; Ástmarsson et al., 2013). The need for future research to understand tenants' attitudes towards energy efficiency is ever more pressing with the introduction of new legislation under the Energy Act (2011) being introduced in 2016 and 2018 respectively. It is crucial to explore how tenants might respond to this new legislation; whether it will empower them to exercise their rights; barriers that still might prevent them from doing so; and the likelihood that they will feel able to make use of the provisions of the Energy Act.

In recent years the most significant piece of research in relation to tenants' perceptions and expectations of housing quality in the PRS (although not energy efficiency specifically) was undertaken by the housing charity, *Shelter*, and the findings set out in their report entitled '*Can't complain: why poor conditions prevail in the PRS.*' The report, which draws on multiple sources of secondary data and some case studies of individuals, highlights how many tenants do not raise poor conditions with landlords, for fear of retaliatory eviction, and how landlords are unlikely to respond to tenants' requests in a climate where demand for PRS properties outstrips supply and new tenants are easy to find. The report therefore provides a clear indication that tenants may not be speaking out about cold homes and poor energy efficiency, not because they do not care (as assumed by landlords - Ambrose, 2015) but because they feel in a weak position as consumers. The assumed ambivalence of tenants is particularly hard to believe when the consequences of poor energy efficiency include cold homes, poor health and high energy costs. There may be many reasons why this dominant assumption has developed: it may simply be erroneous; it may stem from the lack of choice tenants have when searching for a PRS property that leads them to prioritise other factors over energy efficiency, warmth and comfort; it may be due to a lack of understanding of the relationship between energy performance and cold homes or because tenants are afraid to speak out. Whatever the reason, it is time to end the speculation and find out what tenants really think.

References

- Abbott, J. (2009) *Green Landlords: Solving the Rubik's Cube of Energy Efficiency in Rental Housing*. Victoria BC: BCSEA (British Columbia Sustainable Energy Association).
- Ambrose, A. (2015) Improving energy efficiency in the private rented sector: why don't landlords act? *Indoor and Built Environment*, 24 (7), pp. 913-924.
- Ambrose, A. (forthcoming) "Heat Pumps and insulation are expected as standard now": changing attitudes towards energy efficiency amongst private landlords in Dunedin, New Zealand. *Energy Efficiency*.
- Ambrose, A., Eadson, W., Hickman, P. and McCarthy, L. (2015) *Tenancy sustainment amongst those aged under 35*. Sheffield: CRESR, Sheffield Hallam University.
- Anderson, H. S. (1998) Motives for Investments in Housing Rehabilitation among Private Landlords under Rent Control. *Housing Studies*, 13 (2), 177-200.
- Anderson, H. S. (2008) Is the Private Rented Sector an Efficient Producer of Housing Service? Private Landlords in Denmark and their Economic Strategies. *International Journal of Housing Policy*, 8 (3), pp. 263-286.
- Association for the Conservation of Energy (ACE) (2014) *Private rented sector energy efficiency regulations (domestic) (England and Wales). Consultation response submitted to Department of Energy and Climate Change*. London: ACE.
- Ástmarsson, B., Jensen, P. A. and Maslesa, E. (2013) Sustainable renovation of residential buildings. *Energy Policy*, 63, pp. 355-362.
- Baker, W. and Laine, L. (2010) *A private Green Deal: the case for minimum energy efficiency standards in the PRS*. Report for Consumer Focus UK, October. London: Consumer Focus.
- Barnes, M., Butt, S., and Tomaszewski., W. (2008) *The dynamics of bad housing: the impact of bad housing on the living standards of children*. London: National Centre for Social Research.
- Barnes, M., Cullinane, C., Scott, S. and Silvester, H. (2013) *People living in bad housing – numbers and health impacts*. London: NatCen Social Research.
- Barton B. (2012) *Energy Efficiency and Rental Accommodation: Dealing with Split Incentives*. Report for the University of Waikato Centre for Environmental, Resources and Energy Law. Hamilton: University of Waikato.

Beatty, C., Cole, I., Powell, R., Kemp, P., Brewer, M., Browne, J., Emmerson, C., Hood, A. and Joyce, R. (2014). *The impact of recent reforms to Local Housing Allowances: Summary of Key Findings*. London: DWP.

Bird, S. and Hernandez, D. (2012) Policy options for the split incentive: Increasing energy efficiency for low-income renters. *Energy Policy*, 48, pp. 506-514.

Bradbrook A. (1991) The Development of Energy Conservation Legislation for Private Rental Housing. *Environmental and Planning Law Journal*, 8 (2), pp. 91-1107.

British Property Federation (2013) *A British Property Federation guide to Energy Efficiency and the Private Rented Sector*. London: BPF.

British Property Federation (2014) *A British Property Federation response to: A Department of Communities and Local Government consultation on: Review of Property Conditions in the Private Rented Sector*. London: BPF.

Burfurd, I., Gangadharan, L. and Nemes, V. (2012) Stars and standards: Energy efficiency in rental markets. *Journal of Environmental Economics and Management*, 64, pp. 153-168.

Citizens Advice Bureau (CAB) (2007) *The tenant's dilemma. Warning: your home is at risk if you dare complain*. Liverpool: CAB.

Citizens Advice Bureau (CAB) (2011) *Private tenants are trapped into higher fuel bills*. [internet]. 2011 Dec 13. [Cited 2014 Dec 16]. Available at: <https://www.citizensadvice.org.uk/about-us/how-citizens-advice-works/media/press-releases/private-tenants-are-trapped-into-higher-fuel-bills/>

CLG (2000) *English Housing Survey: Headline Report*. London: CLG.

CLG (2009) *English Housing Survey: Headline Report*. London: CLG.

Cole, I. and Furbey, R. (1994) *The eclipse of council housing*. London: Routledge.

Committee on Climate Change (2014) *Energy Prices and Bills: impacts of meeting carbon budgets*. London: Committee on Climate Change.

Community Energy Action (CEA) (2014) *Rentals lagging behind in insulation scheme*, [online]. Available from: http://www.cea.co.nz/Rentals-lagging-behind-insulation-scheme-I.1770_N.10 [Accessed 24th July 2015].

Consumer Focus Scotland and Shelter Scotland (2009) *Improving the private rented sector in Scotland for the benefit of consumers*. Glasgow: Consumer Focus Scotland.

Crook, A.D.H. and Kemp, P.A. (1996) *Private Landlords in England*. London: HMSO.

Crook, A. D. H., Ferrari, E. and Kemp, P. (2012) Knowing the Area: The Management of Market and Business Risks by Private Landlords in Scotland. *Urban Studies*, pp. 1-17.

Cupples, J., Guyatt, V., and Pearce, J. (2007) Put on a jacket, you wuss: Cultural identities, home heating and air pollution in Christchurch, New Zealand. *Environment and Planning A*, 39, pp. 2883–2898.

DCLG (2010) *Promoting investment in private rented housing supply: International policy comparisons*. London: DCLG.

DCLG (2011) *Private Landlord Survey 2010*. London: DCLG.

- DCLG (2012) *Review of the barriers to institutional investment in private rented homes*. London: DCLG.
- DCLG (2013) *The Private Rented Sector: First Report of Session 2013–14*. London: DCLG.
- DCLG (2015) *English Housing Survey: Headline report 2013-14*. London: DCLG.
- DECC (2014) *Annual Fuel Poverty Statistics Report, 2014*. London: DECC.
- Department of Environment (DoE) (1979) *English House Condition Survey, 1976, Part 2: Report of the Social Survey*. London: HMSO.
- Druckman, A. and Jackson, T. (2008) Household energy consumption in the UK: A highly geographically and socio-economically disaggregated model. *Energy Policy*, 36, pp. 3177-3192.
- Farrell, C., McAvoy, H. and Wilde, J. (2008) *Tackling Health Inequalities: An All-Ireland Approach to Social Determinants*. Dublin: Combat Poverty Agency.
- Frey, J., Brown, J. and Russell, K. (2008) *Northern Ireland House Condition Survey 2006: Main Report*. Belfast: Northern Ireland Housing Executive.
- Friends of the Earth (FoTE) (2011) *Minimum energy efficiency standard for private rented homes*. London: FOTE.
- Gabriel, M., Watson, P., Ong, R., Wood, G. and Wulf, M. (2010) *The Environmental Sustainability of Australia's private rental housing stock*. Final Report for the Australian Housing and Urban Research Institute. AHURI Positioning Paper No. 159.
- Gilbertson, J., Eadson, W. and Walshaw, A. (2012) *Attitudes and perceptions of the Green Deal amongst private landlords in Rotherham*. Sheffield: Sheffield Hallam University.
- Gillingham, K, Newell, R. G. and Palmer, K. (2009) *Energy efficiency economics and policy*. Report for the National Bureau of Economic Research. Working Paper no. 15031. Cambridge MA: NBER.
- Green, S., Hickman, P., Foden, M. and Powell, R. (2010) *An Evaluation of the North Staffordshire Landlord Accreditation Scheme*. Sheffield: CRESR, Sheffield Hallam University.
- Hackney Renters (2014) *Why London private landlords are making fuel poverty worse*. [Internet]. 2014 May 21. Available at: <http://hackneyrenters.org/2014/05/21/why-london-private-landlords-are-making-fuel-poverty-worse/>
- Healy, J.D. (2003) Excess winter deaths in Europe: a cross country analysis identifying key risk factors. *Journal of Epidemiology and Community Health*, 57, pp. 784-789.
- Hernández, D. and Bird, S. (2010) Energy Burden and the Need for Integrated Low-Income Housing and Energy Policy. *Poverty and Public Policy*, 2 (4), pp. 5-25.
- Hickman, P., Sprigings, N., McCoulough, E. and Cole, I. (2008) *The Private Rented Sector in West Yorkshire: Final Report*. Sheffield: CRESR, Sheffield Hallam University.
- Hills, J. (2007) *Ends and Means: The Hills Review of the Future of Social Housing*. DCLG: London.
- Holman, B. (1987) Research from the Underside. *The British Journal of Social Work*, 17 (6), pp. 669-683.

- Hope, J. H. and Booth, A. (2014) Attitudes and behaviours of private sector landlords towards the energy efficiency of tenanted homes. *Energy Policy*, 75, pp. 369-378.
- International Energy Agency (IEA) (2007) *Mind the Gap: Quantifying Principal-Agent Problems in Energy Efficiency*. OECD/IEA: Paris.
- Jackson, T. (1992) *Energy efficiency without tears: Towards a 'no-regrets' greenhouse policy*. Report for Friends of the Earth. London: FOTE.
- Jaffe, A. B. and Stavins, R. N. (1994) The energy-efficiency gap: What does it mean? *Energy Policy*, 22 (10), pp. 804-810.
- Jakob, M. (2006) Marginal costs and co-benefits of energy efficiency investments: The case of the Swiss residential sector. *Energy Policy*, 34, pp. 172-187.
- Johnson, H. and Griffiths, C. (2003) Estimating excess winter mortality in England and Wales. *Health Statistics Quarterly*, (20), pp. 19-24.
- Kemp, P. (2011) Low income tenants in the private rental housing market. *Housing Studies*, 26 (7/8), pp. 1019-1034.
- Kemp, P. (2015) Private Renting after the Global Financial Crisis. *Housing Studies*, 30 (4), pp. 601-620.
- Kemp, P. and Rhodes, D. (1997) The motivations and attitudes to letting of private landlords in Scotland. *Journal of Property Research*, 14, pp. 117-132.
- Kennett, P., Forrest, R. and Marsh, A. (2012) The Global Economic Crisis and the Reshaping of Housing Opportunities. *Housing, Theory and Society*, 30, pp. 10-28.
- Kennett, P., Forrest, R., Marsh, A. and Department of the Environment, Transport and the Regions (2000) *Harassment and unlawful eviction of private rented sector tenants and park home residents*. London: DETR.
- Lainé, L. (2011) *Room for Improvement: The impact of EPCs on consumer decision-making*. London: Consumer Focus.
- Leicester, A. and Stoye, G. (2013) *People or places? Factors associated with the presence of domestic energy efficiency measures in England*. IFS Working Paper W13/14. London: IFS.
- Leyshon, A. and French, S. (2009) 'We all live in a Robbie Fowler house': The geographies of the buy to let market in the UK. *British Journal of Politics and International Relations*, 11 (3), pp. 438-460.
- Liddell, C. and Gray, B. (2014) *Fuel Poverty in Northern Ireland's Private Rental Sector*. Londonderry: Ulster University.
- Liddell, C. and Guiney, C. (2014) *Improving domestic energy efficiency: Frameworks for understanding impacts on mental health*. Environmental Health (under review).
- Liddell, C. and Morris, C. (2010) Fuel poverty and human health: a review of recent evidence. *Energy Policy*, 38 (6), pp. 2987-2997.
- Lister, D. (2006) Unlawful or just awful? Young people's experiences of living in the private rented sector in England. *Young: Nordic Journal of Youth Research*, 14 (2), pp. 141-155.

Mourik, R. and Rotmann, S. (2013) *Most of the time what we do is what we do most of time. And sometimes we do something new.* Subtask 1: Analysis of case studies IEA DSM Closing the Loop- Behaviour Change in DSM: From Theory to Practice. Paris: IEA.

Palmer, J., Instone, L., Mee, K. J., Williams, M. and Vaughan, N. (2015) Green tenants: practicing a sustainability ethics for the rental housing sector. *Local Environment: The International Journal of Justice and Sustainability*, 20 (8), pp. 923-939.

Phillips, Y. (2012) Landlords versus tenants: Information asymmetry and mismatched preferences for home energy efficiency. *Energy Policy*, 45, pp. 112-121.

Powell, R. (2015) Housing Benefit reform and the private rented sector in the UK: on the deleterious consequences of short-term, ideological "knowledge." *Housing, Theory and Society*, 32 (3), pp. 320-345.

Rhodes, D. (2015) The Fall and Rise of the Private Rented Sector in England. *Built Environment*, 41 (2), pp. 258-270.

Rugg, J. (2008) *A Route to Homelessness? A study of why private sector tenants become homeless.* London: Shelter.

Rugg, J. and Rhodes, D. (2008) *The Private Rented Sector: its contribution and potential.* York: Centre for Housing Policy.

Rybczynski, W. (1986) *Home: A short history of an idea.* New York: Viking.

Saville-Smith, K. and Fraser, R. (2004) *National Landlords Survey: Preliminary Analysis of the Data.* Wellington: CRESA.

Scanlon, K. and Kochan, B. (2009) *Towards a Sustainable Private Rented Sector: The lessons from other countries.* Report for the London School of Economics. London: LSE.

Scottish Government (2009a) *Scottish Government Review of the Private Rented Sector: Vol 1.* Edinburgh: Scottish Government.

Scottish Government (2009b) *Views and Experiences of Tenants in the Private Rented Sector in Scotland: Vol 2.* Edinburgh: Scottish Government.

Scottish Government (2014) *Report of the Review of the Private Rented Sector Tenancy Regime.* Edinburgh: Scottish Government.

Shelter (2014) *Can't complain: Why poor conditions prevail in private rented homes.* London: Shelter.

Shelter and Crisis (2014) *A Roof over my Head: the final report of the Sustain project.* London: Shelter.

Shove, E. (2003) Converging Conventions of Comfort, Cleanliness and Convenience. *Journal of Consumer Policy*, 26 (4), pp. 395–418.

The Guardian (2013) *Pre-pay meters can cost poorer households hundreds.* Available at: <http://www.theguardian.com/money/2013/apr/20/energy-bills-prepay-meters-cost-poorer-households>

UK Government (2013) *The Energy Act.* [online]. Available at: <http://www.legislation.gov.uk/ukpga/2013/32/contents/enacted/data.htm> [Accessed: 22nd July 2015].

UK Parliament (2012) *Energy and Climate Change Committee. Written evidence submitted by the National Private Tenants' Organisation*. [Internet]. 2012 July 4. [Cited 2015 May 20]. Available at: http://www.publications.parliament.uk/pa/cm201012/cmselect/cmenergy/1744i_ii/1744we19.htm

Watt, P. (2010) Housing Stock Transfers, Regeneration and State-led Gentrification. *Urban Policy and Research*, 27 (3), pp. 229–242.

Wetherill, M., Swan, W. and Abbott, C. (2010) *The influence of UK energy policy on low carbon retrofit in UK housing*. In: Conference on retrofitting (eds W Swan and P Brown), Salford, UK, 24-26 January 2010. Salford: University of Salford.

Wilkinson, P., Landon, M., Armstrong, B., Stevenson, S., Pattenden, S., McKee, M. and Fletcher, T. (2001) *Cold Comfort: The Social and Environmental Determinants of Excess Winter Deaths in England, 1986-96*. Bristol: The Policy Press.

Wilkinson, P., Smith, K. R., Beevers, S., Tonne, C. and Oreszczyn, T. (2007). Energy, energy efficiency, and the built environment. *The Lancet*, 370, (9593), pp. 1175-1187.

Wilkinson, S. J. and Goodacre, C. (2002) Promoting energy efficiency in the private rented sector. *Property Management*, 20 (1), pp. 49-63.

Wilson, J. (2014) *Engaging Private Landlords in Energy Efficiency: Approaches for London boroughs to work with landlords and raise the standards in their private rented sectors*. London: Future of London.

World Health Organization (WHO) (2007) *Housing, energy and thermal comfort: A review of 10 countries within the WHO European region*. Denmark: World Health Organization Europe.

Young, M. (1924) The influence of weather conditions on the mortality from bronchitis and pneumonia in children. *Journal of Hygiene*, 23, pp. 151–175.