UK Government

# RAF079/1718: Evaluation of the Domestic Private Rented Sector Minimum Energy Efficiency Standard Regulations

## Final report

Department for Energy Security and Net Zero (2026)

## Disclaimer

This report was compiled by ICF for the Department for Energy Security and Net Zero prior to the general election in the United Kingdom in July 2024. As such, any references to government policies, commitments or initiatives may reflect the stance of the previous administration and were accurate at the time of fieldwork and writing.


## Acknowledgements

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# Executive summary

## Introduction

This is the final report from the evaluation of the Energy Efficiency (Private Rented Property) (England and Wales) (Amendment) Regulations 2016. The evaluation has been conducted for the Department for Energy Security and Net Zero by ICF, Verian (formerly Kantar Public), and EREDA Consultants. It follows two interim evaluation reports published in 2019[1] and 2020[2].

The regulations established a minimum level of energy efficiency for privately rented property in England and Wales. It requires landlords to ensure that their properties reach at least an Energy Performance Certificate (EPC) rating of E or that they register a valid ground for exemption. From April 2018 landlords were required to respond to the regulations for new and renewed tenancies only and from April 2020 this was extended to all tenancies.

The evaluation aimed to assess the implementation of the regulations, provide evidence on levels of compliance, and estimate the impacts of the regulations on energy efficiency and more widely. The methodology included survey and interview research with landlords, tenants, and other market actors and a quasi-experimental approach to the assessment of impacts.

## Awareness and understanding of the regulations

Survey evidence has shown that awareness and understanding of the regulations amongst landlords were reasonably high when they were first introduced in 2018 and increased further over time. In 2021, 85% of English and 82% of Welsh landlords said they were aware of the regulations while 64% of English and 62% of Welsh landlords said they were both aware and fully understood the details of the regulations[3]. By 2024, 90% of English landlords said they were aware of the regulations and 72% said they were both aware and fully understood the details (no equivalent 2024 results for Welsh Landlords).

The level of awareness and understanding varied across different types of landlords. It was lower amongst individual landlords than companies which let domestic properties (63% vs. 78%), those renting a single property compared to those with multiple properties (55% vs. 71%), those who were not members of a landlord body compared to those who were (59% vs. 76%), and those who did not use a letting agent compared to those who did (61% vs. 66%).

[1] BEIS (2020) 'Domestic private rental sector minimum energy efficiency standards: interim evaluation', GOV.UK
[2] BEIS (2021) 'Domestic private rental sector minimum energy efficiency standards: interim evaluation 2020', GOV.UK
[3] The equivalent figures for 2018 were: 58% of English and 65% of Welsh landlords aware of the regulations; and 42% of English and 45% of Welsh landlords both aware and fully understood the details of the regulations.

Generally, the qualitative interviews conducted with landlords found good awareness and understanding overall but some common gaps in knowledge or misunderstandings about aspects of the regulations were evident (e.g. concerning different grounds for exemption and what types of tenancies are affected). Typically, this had not prevented landlords from complying with regulations but in a small number of cases it did appear to have been a contributory factor to non-compliance.

GOV.UK, Rent Smart Wales (for Welsh landlords), landlord bodies, and letting agents were widely cited sources of awareness and understanding of the regulations amongst landlords. Agents and other market actors were also often instrumental in helping landlords interpret the implications of the regulations for the individual properties they owned.

## Compliance with the regulations

Compliance was assessed using two data sources: the national EPC database and the Private Rented Sector (PRS) exemptions register. The first of these contained the current EPC ratings of 4,021,488 domestic PRS properties as of August 2023. The second included the details of 13,486 exemptions at the same timepoint. Using the data from both, it was estimated that 3,830,956 or 95.3% of domestic PRS properties with an EPC in England and Wales were compliant with the regulations and 190,532 or 4.7% were non-compliant as of August 2023.

There are caveats concerning this estimate and it should be treated as indicative rather than definitive. The national EPC database is not thought to provide 100% coverage of the entirety of the domestic PRS housing stock in England and Wales and has limitations concerning how up to date a picture it can provide (discussed in more detail in Section 1.2.5 of the report). Despite the caveats, the national EPC database was the most credible and robust dataset available for analysis. It was also cross-referenced against the only other comprehensive source of data on the domestic PRS housing stock, the English Housing Survey, and this provided reassurance of the broad validity of the results.

The most common energy efficiency improvements made to comply with the regulations were to the insulation of properties, often in combination with lower-cost measures such as energy-efficient lighting. Most exemptions were made on the grounds of there being no further improvements possible to meet the minimum E standard (39%); the costs of making such improvements exceeded the designated cap of £3,500 (27%); and consent not being granted (e.g. by planning authorities or tenants) for such improvements to be made (21%).

Motivators and facilitators of compliance amongst landlords interviewed were:

- The desire to avoid any potential negative consequences of non-compliance.
- A general compliance mindset (particularly evident amongst individual landlords).
- That energy efficiency improvements could often be integrated into other planned property maintenance or upgrades.
- That energy efficiency improvements were considered, for some properties and by some landlords, to be reasonably affordable.

Factors associated with non-compliance evident from the interview research were:

- Misunderstandings or gaps in understanding of the regulations.
- Time and cost implications of responding to the regulations (especially for landlords with multiple affected properties).
- A perceived lack of enforcement of the regulations.

Survey evidence suggests that a large majority (over 80%) of landlords with properties previously rated F or G used savings to meet at least some of the costs of making energy efficiency improvements in response to the regulations. However, landlords did report using other means to contribute to the cost of compliance, with mortgages, rent increases, and loans each being cited by around one in ten landlords.

# Impacts of the regulations

The main goal of the regulations was to improve the energy efficiency of domestic PRS properties in England and Wales. Increased energy efficiency should also lead to lower CO2 emissions and energy costs as well as having potential health benefits for tenants.

The energy efficiency impacts of the regulations were assessed using a quasi-experimental Difference-in-Differences (DiD) approach and additional analysis on the impact of the regulations on the propensity of landlords to make upgrades. The DiD approach was based on comparing a sub-sample of English and Welsh PRS properties that were rated F or G prior to the introduction of the regulations (and had at least one subsequent EPC rating following the introduction of the regulations) with a control group of matched properties in Scotland where equivalent regulations had not been introduced.

A caveat with the DiD analysis concerns the Scottish control group. Although no equivalent regulations were introduced in Scotland within the timeframe of the evaluation, the Scottish Government did publish plans to introduce similar EPC E minimum standards from 2020, only to later cancel these plans due to the onset of the Covid-19 pandemic. The Scottish Government also subsequently consulted on the possible introduction of an EPC C minimum standard from 2025. It is feasible that some Scottish landlords would have made energy efficiency improvements in anticipation of such regulations being introduced. The analysis may therefore underestimate the true impact of the regulations in England and Wales. In addition, while the control group was primarily composed of Scottish domestic PRS properties rated F and G prior to the regulations, in order to create a robust sample size for the analysis some Scottish owner-occupied properties rated F and G were included. This could have also affected the results since the incentives for owner-occupiers to upgrade their properties are different to the PRS.

A further caveat concerns the focus of the analysis specifically on properties that had both a registered EPC prior to the regulations and a newer EPC registered since their introduction. Registering a new EPC is a strong indicator that the landlord for the property has invested in energy efficiency improvements. The treatment and control group samples used in the analysis

were therefore likely to be biased towards properties that had been upgraded. The analysis was not designed to account for whether the regulations were influencing a higher proportion of landlords in England and Wales to make such upgrades than in Scotland.

Further analysis was conducted at the end of the evaluation to address this limitation, using the likelihood that landlords had registered a new EPC for a property before the 10-year expiry data of the previous EPC as a proxy for energy efficiency improvements having been made. Together these two pieces of analysis enable us to draw some conclusions about the impact of the regulations on energy efficiency.

## Impacts on energy efficiency

Landlords of PRS properties in England and Wales that were EPC F or G rated in 2013 or 2014 (i.e. likely to have fallen in scope of the PRS MEES) were more likely to have upgraded the energy efficiency of their property than other groups of property owners in England, Wales and Scotland. Between April 2018 and April 2020 (i.e. the period between the PRS MEES coming into force and the deadline for improvements to properties with existing tenancies), there was a 20.5 percentage point increase in the share of landlords with affected properties applying for a replacement EPC. This compared to a 6.5 percentage point increase amongst landlords with F or G rated PRS properties in Scotland (where the regulations did not apply). Note this conclusion is based on analysis of the likelihood that they got an updated EPC within the 10-year validity period (see above).

The DiD analysis estimated that the sub-sample of F and G rated PRS properties in England and Wales that had two EPCs (see above) were, by August 2023, 3.53 times more likely to have a rating of E or higher as a result of the introduction of the regulations. The analysis also looked at the impacts of the regulations on the Standard Assessment Procedure (SAP) scores of domestic PRS properties. SAP scores provide a more granular measure of energy efficiency than the broad EPC bands, using a 1-100 scale. It was estimated that SAP scores for the sub-sample of domestic PRS properties in England and Wales that had an EPC rating of F or G prior to 2018 were, on average, 1.1 points higher by August 2023 than would have otherwise been the case.

## Impacts on CO2 emissions

The analysis estimated that, because of the regulations, the sub-sample of PRS properties in England and Wales that had an EPC rating of F or G prior to 2018 and a second EPC now had average annual CO2 emissions per property that were 1,176kg lower than would have been the case in the absence of the regulations.

## Impacts on energy costs

The analysis estimated that the regulations had resulted in an average energy bill saving of £67 per year[4] for households that were previously EPC F or G rated domestic PRS properties and had a second EPC in England and Wales based on the analysis. This assumes tenants met the property's energy costs, rather than the landlord.

## Health impacts

It was not possible to analyse health impacts using the same quasi-experimental approach used with the other impacts. Health impacts were instead estimated using the Health Impact of Domestic Energy Efficiency Measures (HIDEEM) model. Using the model, it was estimated that the average PRS property in England and Wales would have got 0.1-0.3 ºC warmer (indoor winter temperature) by moving from an EPC rating of F or G to an E rating or better. Even this modest increase in indoor temperatures is associated with positive health benefits for the inhabitants of such properties. Health benefits are measured in Quality Adjusted Life Years (QALYs), and it is estimated that the health improvements resulting from warmer homes equated to 1,046 QALYs. When considering the impact these environmental exposure changes have on health sector expenditure for treatment of temperature related disease, these impacts equate to a total estimate of savings of around £1 million after 5 years (which covers the costs of avoided GP consultations and hospital admissions).

[4] Based on 2023 energy prices.

# 1 Introduction

This is the final report for the evaluation of the Energy Efficiency (Private Rented Property) (England and Wales) (Amendment) Regulations 2016 that were introduced in 2018 in England and Wales. The report synthesises findings from the research and analysis conducted for the evaluation to provide an overall assessment of the implementation and impact of the regulations. It follows two interim evaluation reports published in 2019[5] and 2020[6].

The evaluation has been conducted for the Department for Energy Security and Net Zero (DESNZ, formerly BEIS) by a consortium of ICF, Verian (formerly Kantar Public), and EREDA Consultants.

This chapter provides an overview of the regulations and the evaluation.

## 1.1 The domestic PRS minimum energy efficiency standard regulations

### 1.1.1 Overview of the timing and design of the regulations

The Energy Efficiency (Private Rented Property) (England and Wales) (Amendment) Regulations 2016 established a minimum level of energy efficiency for PRS properties in England and Wales. These regulations cover both domestic and non-domestic properties. The focus of this evaluation has been on domestic properties.

The regulations target the most inefficient properties, namely those with an Energy Performance Certificate (EPC) rating of F or G. It was estimated that at the beginning of 2017, 290,000 properties were impacted by the regulations[7]. The regulations first came into effect for new and renewed tenancies from April 2018 and for all types of tenancies from April 2020.

To be compliant with the regulations, landlords with a property rated F or G must either make energy efficiency improvements to raise this to an E rating or better or register an exemption. Landlords can currently register an exemption on the following grounds:

- **High cost** - making necessary energy efficiency improvements would cost more than £3,500 (although landlords are still required to make any improvements that can be made up to a cost of £3,500)[8].
- **All improvements made** - it is not possible to further improve the energy efficiency of the property.

[5] BEIS (2020) 'Domestic private rental sector minimum energy efficiency standards: interim evaluation', GOV.UK
[6] BEIS (2021) 'Domestic private rental sector minimum energy efficiency standards: interim evaluation 2020', GOV.UK
[7] BEIS (2017) 'Domestic Private Rented Sector minimum level of energy efficiency', GOV.UK
[8] This grounds for exemption were introduced from April 2019 and replaced the previous 'no cost to landlord' exemption, which exempted landlords from making improvements if they could not access third-party finance to meet the costs of doing this.

- **Consent** - improvements require consent from a third party, for example, the local planning authority, a superior landlord, tenant or mortgage lender, and this consent is not granted.
- **Devaluation** - making improvements would negatively affect the value of the property.
- **Wall insulation** - new wall insulation is required to improve energy efficiency, but this would have a negative impact on the fabric or structure of the property (or the building of which it forms a part).
- **New landlord** - while the other exemptions last for five years, a temporary exemption of six months can be registered if a person has become a landlord at short notice.

Landlords are required to register an exemption and provide supporting evidence on an online PRS Exemptions Register[9].

A landlord is deemed to be non-compliant with the regulations if they do not make energy efficiency improvements to their property or register an exemption and continue to rent it out. The regulations only apply to let properties that require an EPC. If a landlord takes no action but leaves their property unlet or sells it, then they are not non-compliant.

It is the landlord's responsibility to ensure their properties are compliant with the regulations, even if these are let and/or managed by an agent. Non-compliance can result in a fine of up to £5,000 for the landlord per property. Local authorities in England and Wales are responsible for enforcing compliance with the regulations.

A Theory of Change for the regulations is provided in Appendix 1 of this report.

## 1.2 The evaluation

### 1.2.1 Aims of the evaluation

The aims of the evaluation have been:

- **Aim 1** – To develop the evidence base to inform policy development. The evaluation should provide evidence to understand how the regulations are being implemented including landlord and wider stakeholder reactions to them. Evidence should be collected to understand awareness of the regulations among landlords and other stakeholders, the barriers that prevent landlords from taking action to comply, the role of other stakeholders in the process and implications for the housing market.

[9] PRS Exemptions Register

- **Aim 2** – To provide evidence of the impacts of the regulations. Levels of compliance with the regulations and the impact of the regulations on the energy efficiency of the private rental housing market should be assessed. The wider impacts of the regulations on landlords and tenants should also be assessed.

The detailed research questions the evaluation has addressed are provided in Appendix 2.

### 1.2.2 Overview of evaluation methodology

The evaluation methodology has combined a process evaluation exploring awareness and understanding of the regulations and factors influencing compliance (to address Aim 1) and an impact evaluation to quantify levels of compliance with the regulations and resultant impacts on energy efficiency, CO2 emissions, energy costs, and tenant health (to address Aim 2).

The process evaluation research has been conducted from the start of the evaluation in 2018 up to 2023 to provide ongoing evidence to inform the implementation of the regulations. The impact evaluation analysis has been undertaken in two tranches: in 2020 to provide early evidence for a regulatory review of the regulations; and in 2023 to provide evidence for this final evaluation.

Table 1 gives an overview of the different elements of the process and impact methodology and when they have been conducted. More information is then provided on each.

**Table 1: Overview of evaluation methodology (X indicates when research was carried out)**

| Evaluation year | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Process evaluation:** | | | | | | |
| Landlord surveys | X | X | X | X | X | X |
| Landlord interviews | X | X | X | | X | |
| Letting agent interviews | X | X | | | X | |
| Tenant interviews | | | X | | X | |
| **Impact evaluation:** | | | | | | |
| Assessment of compliance | | | X | | | X |
| Assessment of impact on energy efficiency | | | X | | | X |
| Assessment of impact on CO2 | | | X | | | X |
| Assessment of impact on energy costs | | | X | | | X |
| Assessment of impact on health | | | | | | X |

### 1.2.3 Process evaluation methodology

#### Landlord surveys

The evaluation has drawn on evidence from two pre-existing surveys of English landlords: the English Private Landlord Survey (EPLS) conducted in 2018 and 2021; and the Landlord Panel Survey (LPS) which has been conducted each year from 2017 up to 2023. There was no pre-existing survey of Welsh landlords, so a new Welsh Landlord Survey (WLS) was designed and conducted in 2018 and 2021 as part of the evaluation.

A small number of core questions have been used in each survey. This has enabled comparison of results on some key questions - landlords' awareness and understanding the regulations - both over time and between English and Welsh landlords. Other questions concerning landlord responses to the regulations have also provided indicative evidence to inform the assessment of compliance (based on actual EPC data) presented later in the report.

Out of the three surveys, the EPLS and WLS provide the most robust evidence, and the evaluation has accordingly focused mostly on their results. The LPS may underestimate the views of individual landlords and those with smaller portfolios. More information on the methodologies and comparative strengths and weaknesses the evidence from each survey is provided in Appendix 3.

#### Landlord interviews

A total of 230 landlords were interviewed over the course of the evaluation (55 in 2018-19, 65 in 2020, and 110 in 2022). To explore the factors determining different responses to the regulations, the samples in each wave of interviews were recruited to represent landlords with an F or G rated property who had either made energy efficiency improvements, registered an exemption, or taken no action in response to the regulations. Samples were also recruited to represent landlords with small and large portfolios, private and company landlords[10], and landlords who did or did not use a letting agent.

The one recruitment quota that was not consistently met was for landlords who had taken no action in response to the regulations. Across the three interview waves, 26 such landlords were interviewed against a combined target of 55. Given the very high levels of compliance with the regulations (see Chapter 3) this is not surprising, but it has limited the insights gained into the circumstances and drivers of non-compliance. Appendix 4 provides more information on the recruitment methods used for the landlord interviews and the characteristics of the achieved samples.

#### Letting agent interviews

Thirty letting agents were interviewed for the evaluation (10 in 2018-19 and 20 in 2022). These were agents who had let and/or managed properties for landlords that were in scope of the regulations. They provided additional insights into the role of agents as a source of information and advice for landlords and an alternate perspective on the regulations that helped triangulate findings from the landlord interviews.

[10] Company landlords are those who own properties through a limited company.

### Tenant interviews

A total of 46 tenants who rented a property that had been impacted by the regulations were interviewed for the evaluation (16 in 2020 and 30 in 2022). The interviews provided qualitative evidence on tenants' awareness and understanding of the regulations and the extent of tenants' involvement in landlords' decision-making.

## 1.2.4 Compliance and impact evaluation methodology

The accompanying Technical Report[11] provides comprehensive information on the data sources and analytical approaches used to assess compliance with regulations and their impact. This is summarised here.

### Assessment of compliance

The assessment of compliance conducted for the evaluation has been based on two data sources: the national database of all registered EPCs in England and Wales; and the national PRS exemptions register. Data from both sources up to April 2020 were used to make an initial assessment of compliance for the 2020 interim evaluation report, and data up to August 2023 have been the basis for a similar assessment for this final evaluation report in 2024.

In the analysis, data for properties in the PRS exemptions register have been matched with data for the same properties in the EPC database (although not every property could be matched as the exemptions register does not collect unique identifiers such as the Unique Property Reference Number). Any PRS property with an EPC rating of F or G, and for which an exemption has not been registered, has been classified as non-compliant. Properties with an EPC rating of F or G and a registered exemption, and properties with an EPC rating of E or better, have been classified as compliant.

The strength of the analysis is that it is based on two definitive sources of data relevant to the regulations. Compliance can only be achieved by either improving the EPC rating of a property or registering an exemption. The national EPC database and PRS exemptions register are where 'proof' that a landlord has done either of these things is ultimately recorded.

A limitation of the analysis is that the EPC database does not provide complete coverage of every property in the domestic PRS sector in England and Wales. There are some properties that may have never had an EPC and/or which don't have a current EPC and so are not accounted in the EPC database. In addition, there are some longstanding concerns about the accuracy and consistency of EPCs themselves. EPC assessments are conducted by trained assessors, but known problems include unexpected changes in dwellings' characteristics (i.e. floor area or type), 'downgrades' to stated performance features, and resulting downgrades to EPC values. This variation is commonly assigned to assessor interpretation bias and only sometimes a true change in state.

[11] DESNZ (2026) 'Domestic private rental sector minimum energy efficiency standards regulations: evaluation report - Technical report', GOV.UK

The EPC database also cannot provide a fully up to date picture of the energy efficiency of every property. EPCs are valid for 10 years and it is only when a new EPC is undertaken that an improvement in energy efficiency will be recorded in the EPC database. Property owners can have a new EPC undertaken whenever they wish, more frequently than every 10 years, but they are not obligated to do so. An up-to-date valid EPC is only legally required at the point of sale or let. Interviews conducted with landlords for the evaluation found there were some who had made energy efficiency improvements in response to the regulations but had not then immediately had a new EPC assessment undertaken to confirm this had increased the rating to E or better. Such properties would still appear, in the EPC database, to be non-compliant. The analysis for the evaluation using the EPC database may therefore represent an underestimate of the actual level of compliance.

Despite these caveats, the national EPC database was the most credible and robust dataset available for analysis. The profile of private rental sector properties in the database in August 2023 was also found to closely match the profile in the most recent English Housing Survey (EHS). This provided reassurance of the broad validity of the results.

### Assessment of impacts on energy efficiency

The assessment of the impact of the regulations on energy efficiency, conducted first in 2020 and again in 2023, used a quasi-experimental panel Difference-in-Differences (DiD) approach and entropy balancing[12]. It has been based on comparing levels of energy efficiency of properties in scope of the regulations in England and Wales with a control group of equivalent private rental and owner-occupied properties in Scotland. The latter were included to increase the sample size sufficient to enable robust analysis.

The two primary data sources used were: the database of all registered EPCs in England and Wales; and the equivalent database of registered EPCs in Scotland. As with the assessment of compliance, data from the PRS exemptions register was also matched with data in the EPC database to exclude properties for which an exemption had been registered from the analysis.

An initial scoping study, conducted ahead of the 2020 analysis, explored the suitability of different potential control groups, including owner-occupied and socially rented properties in England and Wales. It concluded that properties in Scotland (where no equivalent to the PRS MEES regulations had at that time been introduced) represented the most suitable match.

A further scoping study preceding the 2023 analysis revisited and confirmed this choice but also identified policy developments in Scotland that could have had a bearing on the energy efficiency of its domestic PRS housing stock. In 2019 the Scottish Government proposed the implementation of a minimum energy efficiency standard (of an EPC rating of E, as in England and Wales) from April 2020 for new tenancies and from April 2022 for all tenancies. However, due to the onset of the COVID-19 pandemic, this was not implemented.

[12] Entropy balancing is a method developed by Hainmueller (2012) to maximise the analytical comparability of treatment and control groups when a quasi-experimental approach such as DiD is being used. In this evaluation, weights based on the characteristics of properties in the treatment group were derived through the entropy balancing method then applied to the control group to enhance the accuracy of the analysis. More details are provided in the impact evaluation technical report.

The Scottish Government subsequently proposed, in October 2021, updated regulations requiring all domestic PRS properties meet a minimum EPC rating of C for new tenancies from April 2025 and for all tenancies from April 2028. This proposal was also subsequently not implemented. The latest consultation issued by the Scottish Government in July 2023 proposed the introduction of a minimum EPC C rating standard for both new and existing tenancies from April 2028.

Another key design consideration for the impact assessment was what unit of measurement for 'energy efficiency' to base the analysis on. EPC ratings were the obvious choice but the seven broad EPC A to G ratings lack precision. For example, the energy efficiency of a property can improve but only sufficient to move it from 'a low F' to 'a high F' – such an impact is ignored in an EPC-based analysis. A more precise measure of energy efficiency based on SAP scores was therefore also used in the analysis:

**Standard Assessment Procedure (SAP) scores**

EPC ratings are based on the score that an assessor gives a property's energy efficiency on a 1-100 scale, known as the Standard Assessment Procedure or SAP score.

| SAP score: | EPC rating: |
|---|---|
| 92-100 | A |
| 81-91 | B |
| 69-80 | C |
| 55-68 | D |
| 39-54 | E |
| 21-38 | F |
| 1-20 | G |

The main strength of the impact assessment methodology is its quasi-experimental DiD design. The alternatives, for example a simplistic before-and-after or interrupted time series design, were rejected due to the potential influence of non-regulatory factors on observed levels of energy efficiency. The use of SAP scores in the analysis has also enabled a more precise assessment of impact on energy efficiency than would have been possible through an analysis based solely on the broader EPC ratings.

The limitations of the impact assessment analysis stem from its use of the national EPC database for England and Wales (and the equivalent national EPC database for Scotland) and the potential influence of policy developments in Scotland on the behaviour of property owners in the control group. The methodology for the assessment of compliance discussed in the preceding section highlighted certain limitations of the data in the national EPC database and

these apply equally in the assessment of impact on energy efficiency. Use of the English Housing Survey (EHS) as a data source for the analysis was explored but not found to be viable. The EHS's structure as a repeated cross-sectional, rather than longitudinal, survey ruled out its use in a quasi-experimental DiD approach, which requires at least two observations for the same property.

The policy developments in Scotland meant that, in the most recent 2023 impact assessment undertaken for the evaluation, the control group of Scottish properties used could no longer be viewed as a pure 'non-treatment' comparator. The possibility of regulations similar or even more stringent than the regulations in England and Wales was publicised in Scotland leading up to and since 2020 and may have influenced some Scottish landlords to make energy efficiency improvements in anticipation of their introduction.

The analysis and interpretation of the 2023 impact assessment results have been undertaken with consideration to the potential influence of the changing policy landscape in Scotland. The validity and reliability of the results have also been assessed through robustness tests, which are fully documented in the Impact Evaluation Technical Report.

### Assessment of impact on CO2 and energy costs

The assessment of the impact of the regulations on CO2 and energy costs, conducted in 2020 and in 2023, built directly on the assessment of impact on energy efficiency described above. The same data sources, control group, and DiD approach were employed.

The impact on energy costs was estimated by applying formulae developed by the Building Research Establishment (BRE) to data on the SAP score ratings of properties in the treatment and control groups. In the assessment of impact on CO2, the key measure was the Environmental Impact (EI) rating that properties are given in their EPC rather than the SAP score. EI ratings specifically concern the CO2 emissions of a property and are assessed on a 1-100 scale. BRE formulae were applied to data on EI ratings to estimate CO2 emissions.

As this analysis was based on the same data sources and quasi-experimental approach as the assessment of impact on energy efficiency, it shares similar strengths and weaknesses. The BRE conversion formulae it also draws on are widely recognised and used by governmental departments and industry bodies. Equally, they rely on a standard set of assumptions (e.g. concerning household heating patterns and internal temperatures) and so the results of the analysis do not reflect the actual energy costs and CO2 emissions of individual properties in England and Wales affected by the regulations.

### Additional analysis of impacts on propensity to make energy efficiency improvements

A limitation of the QEA impact analysis described above was that it was based solely on data for properties in the treatment and control group that both had a valid EPC registered before the introduction of the regulations and a newer EPC registered since. This does not represent all domestic PRS properties in scope of the regulations and is likely to be biased towards properties in both groups where energy efficiency improvements had been made. Registering a new EPC before the previous EPC for the property has reached its 10-year expiry date is a

strong indicator of landlords having made energy efficiency improvements. The analysis was not able to consider or factor-in whether the regulations had increased the propensity of landlords to register a new EPC in the treatment versus control group.

Additional analysis was therefore undertaken at the end of the evaluation to estimate the potential impact of the regulations on the propensity of landlords of English and Welsh F or G rated properties to make energy efficiency improvements around the time of their introduction. The analysis was based on using the prevalence of landlords registering a new EPC before they were legally required to around the time of the introduction of regulations as a rough proxy for them having made energy efficiency improvements. It consisted of:

- Identifying domestic English and Welsh PRS properties with an F or G EPC registered in 2013 or 2014 before the regulations.
- Selecting four control groups (English and Welsh owner-occupied with a F/G EPC registered in 2013/2024; English and Welsh owner-occupied with a A/E EPC registered in 2013/2014; Scottish PRS with a F/G EPC registered in 2013/2024; and Scottish PRS with a A/E EPC registered in 2013/2024)
- Computing the share of the properties applying for a new EPC across while the previous EPC was still valid across these groups over time as the regulations were introduced.

### Assessment of impact on health

The impact assessment for the evaluation conducted in 2023 incorporated a new modelling-based approach to estimate the possible health impacts of the regulations.

The approach utilised the Health Impact of Domestic Energy Efficiency Measures (HIDEEM) model (previously developed by members of the evaluation team for the UK Research Institute, European Research Council, National Institute for Health Research, and DESNZ), data from the English Housing Survey, and results from the assessment of the impact of the regulations on EPC ratings described above. The HIDEEM model works by calculating the changes in indoor environmental exposure of wintertime temperature and mould risk related to changes to the EPC rating of a property. The results are expressed in terms of quality-adjusted life-years (QALYs) - a recognised health outcome measure.

The strength of the health impact assessment is that it drew on a robust model and underlying data to provide at least an estimate of impact in an area that would otherwise be left unaccounted for in any consideration of the value of the regulations. One limitation of the health impact assessment is that the analysis is not based on actual health data collected directly for individual tenants living in properties affected by the regulations pre- and post- their introduction. As a result, caution should be exercised in using these results.

### 1.2.5 Summary of key strengths and limitations

Strengths and weakness of the evaluation methodology have been touched on already in this chapter and are detailed in depth in the Impact Evaluation Technical Report. These should be considered when interpreting the evaluation findings – particularly the findings on the impacts of the regulations. In summary:

**Key strengths**

- The main strength of the evaluation methodology – in particular, the approach used to assess the impacts of the regulations at the interim and final stage – has been its quasi-experimental design. Quasi-experimental methods are recommended by the HM Treasury Green Book and Magenta Book as the most robust means of estimating the impact of an intervention. The alternatives, for example a before-and-after, contribution analysis, or theory-based approach with no counterfactual would not have provided the same level of robustness or confidence in the results.
- The use of SAP scores in the analysis has enabled a more precise assessment of impacts on energy efficiency than would have been possible through an analysis based solely on the broad EPC A-G ratings.
- Survey and qualitative interview evidence has provided insights from landlords and other key actors in the sector that help to further explain and reinforce the quantitative compliance and impact results.

**Key limitations**

- The compliance and impact analysis for the evaluation relied on the national EPC database as the source for data on the energy efficiency of domestic properties across the domestic PRS. The database is not thought to provide completely comprehensive and up to date coverage of the sector in England and Wales. Some doubts have also been raised about the consistency and accuracy of EPCs themselves as a measure of energy efficiency. Equally, in terms of basic property characteristics and energy efficiency, the EPC database sample is quite similar to those found in the English Housing Survey (EHS). The EHS was also explored as an alternative data source for the analysis, but it does not cover Wales (or Scotland). As the EHS is a cross-sectional survey (rather than longitudinal) it does not support a quasi-experimental approach.
- There are limitations associated with the control group used in the impact analysis. Firstly, in order to achieve a sample size large enough to allow robust analysis it was necessary to include both Scottish PRS and some Scottish owner-occupied properties in the control group. This limits the direct comparability of the control group with the treated group, which was composed solely of English and Welsh PRS properties. Secondly, although nothing equivalent to the PRS MEES regulations was ultimately introduced in Scotland in the timescale of the evaluation, the Scottish Government did issue public consultations and policy papers between 2019 and 2023 that proposed similar or even more stringent regulations. It is feasible that the possibility of such regulations being introduced influenced Scottish landlords with an F or G rated property

to make energy efficiency improvements. As such the findings of the evaluation may represent an under-estimation of the impact of the regulations.

- The impact analysis was based on data for a specific subgroup of properties in the intervention and control group: those that had a registered EPC rated F or G before the regulations (2016-2018) and a further new EPC registered after their introduction (2018-2023). Focusing on just these properties provided the basis for direct comparison of the energy efficiency levels of properties over time as the regulations came in. However, it did not provide results that can be generalised to all properties in scope of the regulations. The sample was potentially biased towards properties in both the treatment and control groups where it was likely the landlord had made recent energy efficiency improvements. Registering a new EPC (especially if this occurs before the 10-year expiration of a pre-existing registered EPC) is a strong indicator that a landlord has made upgrades to the property in question. The analysis therefore primarily compared the scale of energy efficiency improvements achieved across properties in the treatment and control groups that were upgraded in the same timeframe around the introduction of the regulations. The analysis was not designed to test or factor-in whether the regulations were influencing more landlords in England and Wales to upgrade their properties at a faster rate than their equivalents in Scotland though.

  In recognition of this limitation, additional analysis was conducted in the final phase of the evaluation specifically exploring the propensity of landlords to make energy efficiency improvements (see above). This provided indicative evidence that complements and adds to the findings of the main impact analysis. However, this analysis also has caveats. It is based on an assumption that registering a new EPC before the 10-year expiration of a pre-existing registered EPC is a reliable proxy for landlord having made energy efficiency improvements. In addition, the analysis only examined data for properties that had a previous F or G EPC registered in 2013-2014. Those with a F or G EPC registered in the immediately preceding and following years were also in scope of the regulations and would ideally be included if a more comprehensive rerunning of this analysis was undertaken in future.

## 1.3 Report structure

The remainder of the report is structured as follows:

- **Chapter 2** reports findings on awareness and understanding the regulations.
- **Chapter 3** reports findings on compliance with the regulations.
- **Chapter 4** reports findings on the impacts of the regulations.
- **Chapter 5** provides conclusions and learning to inform future policy.

# 2 Awareness and understanding of the regulations

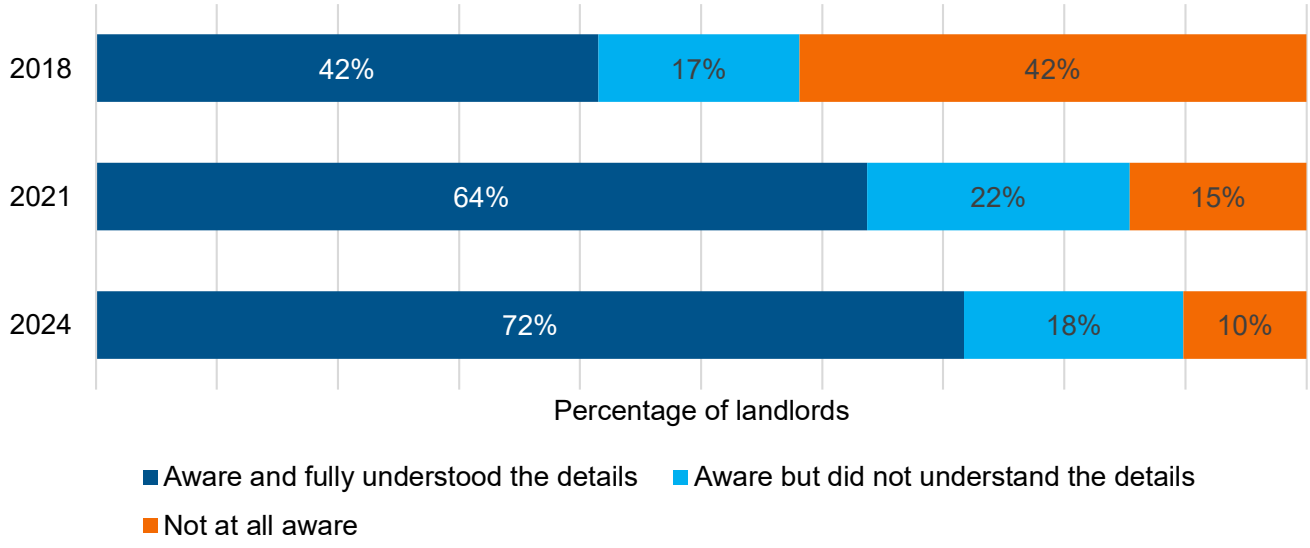
This chapter presents evidence on levels of awareness and understanding of the regulations amongst landlords; how this has varied over time and between different types of landlords; and key sources of landlord awareness and understanding. Evidence on levels of awareness and understanding amongst tenants is also reported.

## 2.1 Overall levels of awareness and understanding

Measuring levels of awareness and understanding of the regulations amongst landlords has been a priority for the evaluation because of its potential impact on compliance. Questions were therefore included in surveys of English and Welsh landlords from the start of the evaluation to track this over time.

Figure 1 shows that there was a substantial increase in levels of awareness and understanding of the regulations amongst English landlords since 2018 (the year the regulations were first introduced) and 2021. In 2018 it was a relatively mixed picture, with less than half (42%) of landlords saying they were aware of the regulations and fully understood the details and the same proportion (42%) saying they were not aware of them at all. By 2021 nearly two-thirds (64%) said they were aware of the regulations and fully understood the details, 22% were aware but didn't understand the details, and 15% were not at all aware. In 2024 this had improved further: 72% said they were aware of the regulations and fully understood the details, 18% were aware but didn't understand the details, and only 10% were not at all aware.

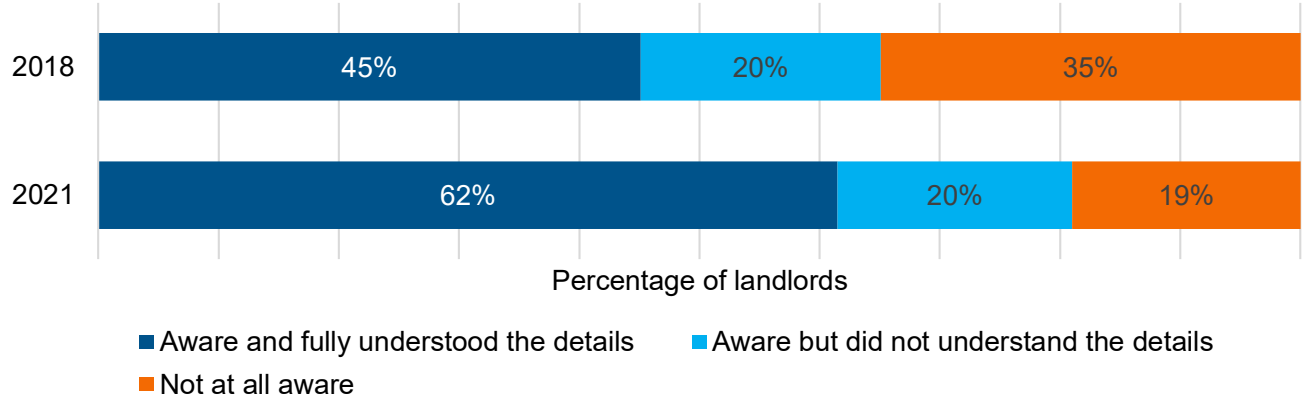
**Figure 1: Landlord awareness and understanding of the regulations, 2018, 2021 & 2024 (England)**




Source: English Private Landlord Survey 2018 n=6,212; English Private Landlord Survey 2021 n=8,621; English Private Landlord Survey 2024 n=8,613. Note: Row totals may not sum exactly to 100% due to rounding.

Equivalent survey results for Welsh landlords are only available up to 2021. Nonetheless, up to that point, they indicate very similar levels of awareness and understanding to English landlords and a similar scale upward trend over time. Figure 2 shows that in 2018, 45% of Welsh landlords said they were aware of the regulations and fully understood the details and 35% were not at all aware of them. By 2021, 62% said they were aware of the regulations and fully understood the details and only 19% were not at all aware.

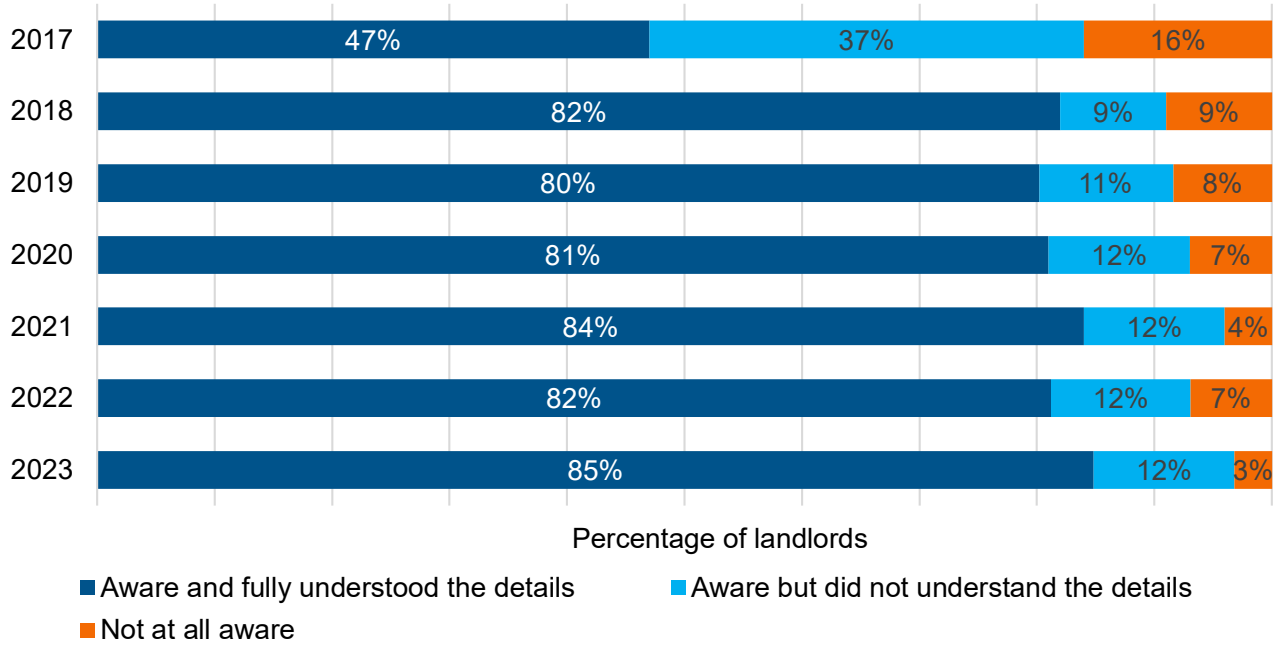
**Figure 2: Landlord awareness and understanding of the regulations, 2018 & 2021 (Wales)**




Source: Welsh Landlord Survey 2018 n=1,119; 2021 n=1,789. Note: Row totals may not sum exactly to 100% due to rounding.

A further survey, the Landlord Panel Survey, provides a less representative but more granular year-on-year indication of changes in levels of awareness and understanding. The survey is conducted with members of an English national landlord body, and the sample contains a higher proportion of company landlords and landlords with larger portfolios that in wider population of all landlords (see Annex 3 for more information). Figure 3 shows the Landlord Panel Survey results between 2017 and 2023. Reflecting the unique composition of the sample, levels of awareness and understanding are higher than those evident in the other surveys. The results also indicate a sharp increase in awareness and understanding between 2017 and 2018 (when the regulations first came into force) followed by a less pronounced but generally upward trend since then up to 2023.

**Figure 3: Additional Landlord Panel Survey results for levels of awareness and understanding of the regulations, 2017 to 2023 (England)**




Source: Landlord Panel Survey 2017 n=856; 2018 n=690; 2019 n=888; 2020 n=1,305; 2021 n=621; 2022 n=979; 2023 n=683. Note: Row totals may not sum exactly to 100% due to rounding.

Overall, the survey evidence indicates that an increasingly large majority of landlords say they have been aware of the regulations from since the year they were introduced. Amongst those who are aware of the regulations, most also say they fully understand the details. Equally, there appears to have remained a minority of landlords who profess to being aware but not fully understanding of the details, and a further smaller minority who say they are not at all aware.

This picture is consistent with the qualitative interviews with landlords conducted for the evaluation. Amongst those interviewed most recently in 2022, there were very high levels of awareness of the regulations and understanding of their basic main features, i.e. that it applies to F and G rated properties, that the minimum standard is an E rating, and that there is some form of penalty for non-compliance.

Equally, several of the landlords interviewed still revealed gaps in their knowledge or misunderstandings of more detailed aspects of the regulations - in terms of what all the grounds for registering an exemption are, which types of tenancies are affected, the nature of the penalty for non-compliance, and the speed with which landlords are expected to comply.

In many cases these gaps in knowledge or misunderstandings were not consequential. For example, there were several landlords who said they had decided to make energy efficiency improvements without much awareness or understanding of the possibility of registering an exemption as an alternative means of complying.

> *"I assumed the need to improve the EPC rating applied to all my properties. I'm not aware they could be subject to some kind of exemption, so I just proceeded on that basis."*
> (Individual landlord, England, 5+ properties, made improvements)

Others were unaware of what the penalty for non-compliance was but had gone ahead and made energy efficiency improvements or registered an exemption, nonetheless.

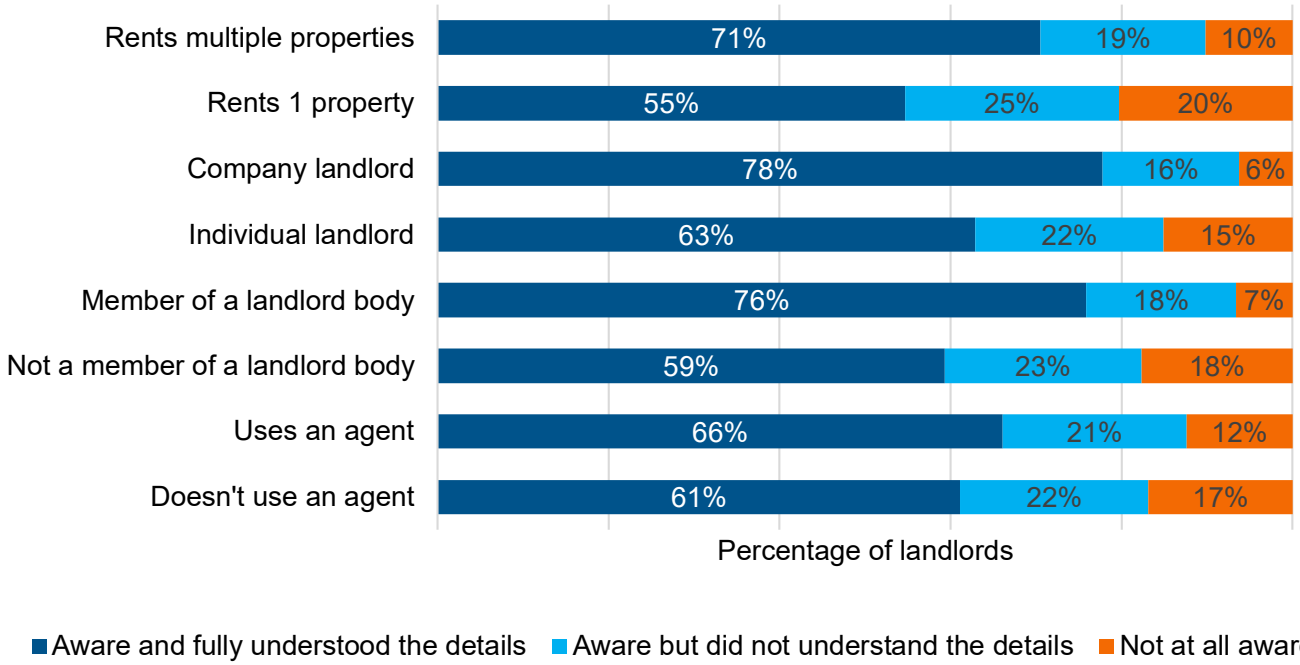
> *"I don't know, I'd guess it's a £1,000 fine. I didn't look into it."*
> (Individual landlord, Wales, 1 property, registered exemption)

However, there were a small number of cases where gaps in knowledge or misunderstandings about the regulations could be linked to non-compliance. These are described in Chapter 3.

## 2.2 Awareness and understanding across different types of landlords

Landlords are not a homogenous group. The available English and Welsh survey evidence has consistently indicated that individual landlords, those renting only one property, those who are not a member of a landlord body, and those who do not use an agent have lower levels of awareness and understanding of the regulations than other landlords. Figure 4 illustrates this based on the results of the 2021 English Private Landlord Survey. All the differences it shows are statistically significant at the $p<0.05$ level.

**Figure 4: Awareness and understanding of the regulations for different types of landlords, in 2021 (England)**



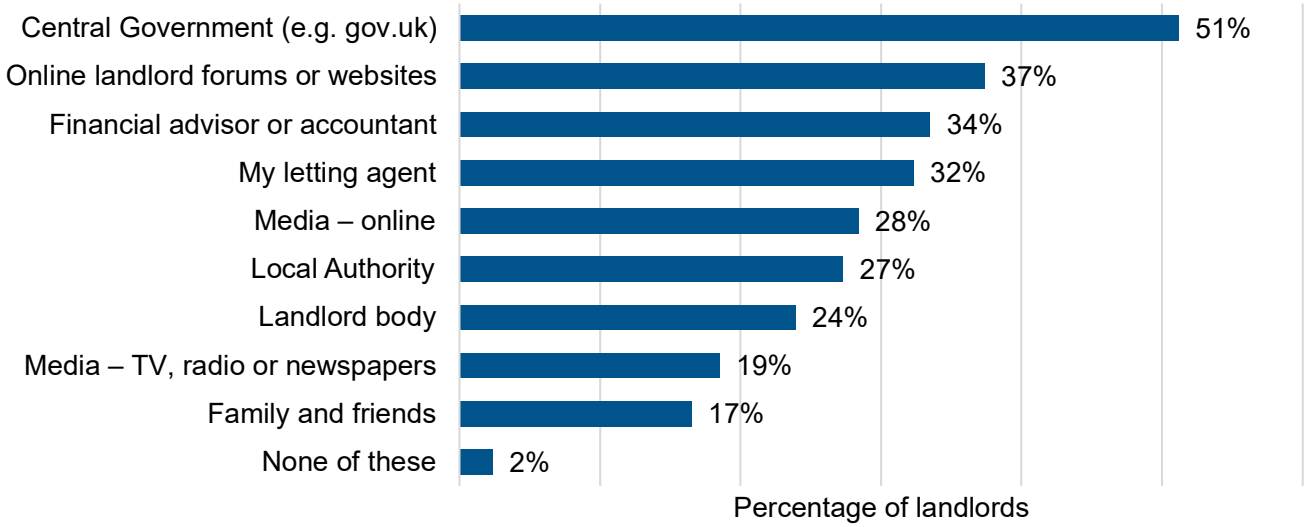

Source: English Private Landlord Survey 2021 n=8,621. Note: Row totals may not sum exactly to 100% due to rounding.

The most recent qualitative interviews with landlords in 2022 reinforced the survey findings. Individual landlords – particularly those newer to the private rental sector and not affiliated with a landlord body or using an agent – were the least knowledgeable about the regulations.

## 2.3 Sources of landlord awareness and understanding

Where landlords have acquired their awareness and understanding of the regulations has not been directly explored through surveys of English landlords. However, the 2021 English Private Landlord Survey included a broader question about their sources of information concerning "tax, regulation and the law" and Figure 5 shows the results.

**Figure 5: Sources of awareness and understanding, in 2021 (England)**

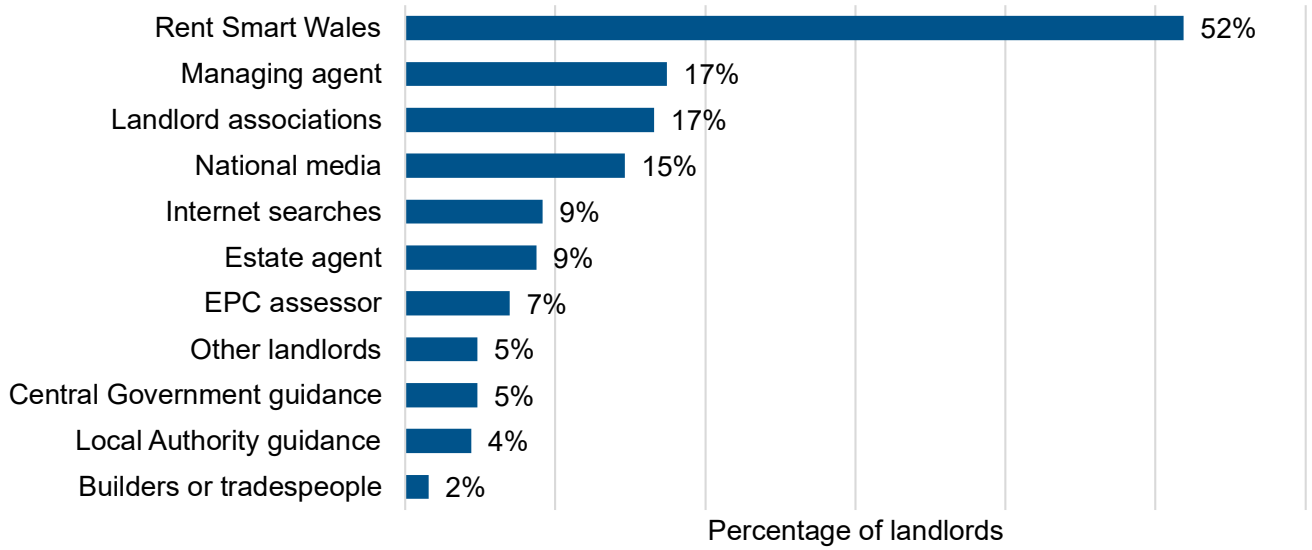



Source: English Private Landlord Survey 2021 n=8,621.

Central government was the most widely cited source, while landlord forums or websites, agents, landlord bodies, the media, and local authorities were also frequently cited.

The context is slightly different in Wales, as all landlords are required to register with Rent Smart Wales (RSW) to legally rent out properties. As part of the registration process, landlords complete training which includes coverage of the regulations. The RSW website and bulletins they send their registrants also provide information about them. This is reflected in the 2021 Welsh Landlord Survey results shown in Figure 6. RSW is the most widely cited source, while agents and landlord bodies also feature prominently, as in England.

**Figure 6: Sources of awareness and understanding, in 2021 (Wales)**




Source: Welsh Landlord Survey 2021 n=1,789

In the qualitative interviews for the evaluation, landlords also shared their views on the information they had accessed. The consensus was that there was sufficient information available about the regulations and that it was accessible to anyone willing to look for it. Equally, it was also apparent from the interviews that different sources of information made different contributions to landlords' awareness and understanding. Some were primarily alerting them to the existence of the regulations and conveying information about their basic features, while others were being used by landlords to help them interpret and apply the regulations to their individual circumstances.

### Central government information

Information about the regulations that was available on GOV.UK was perceived positively by interviewed landlords. It was seen as accessible, generally easy to understand, and definitive in terms of what landlords are required to do to be legally compliant with the regulations.

> *"It's straightforward, fairly basic information, but it also points you in the right direction and leads you onto the detailed bits and pieces."*
> (Individual landlord, 1 property, England, registered exemption)

GOV.UK was also where most agents said they went to for definitive information about all the ins and out of the regulations. Equally, many landlords indicated they had not made their decision about how to respond to the regulations solely based on the central government guidance. Often, they had wanted help in translating and applying elements in the detail of the guidance to their specific properties or just advice from a third party on what they should do.

> *"What I find with GOV.UK is it obviously provides the detail in black and white. What I also often find is that I need to seek interpretation of that."*
> (Individual landlord, 2-4 properties, England, made improvements)

### Rent Smart Wales

Rent Smart Wales (RSW) appears to perform an intermediary or equivalent role for Welsh landlords as GOV.UK does for English landlords. Welsh landlords had often first become aware of the regulations through the RSW registration process and subsequently found information about them through RSW newsletters or the RSW website.

> *"I had to register as a landlord with Rent Smart Wales and it's part of the training. It's a slight advantage of the Welsh being licensed, they do email me quite a lot and tell me, 'This is changing, that's changing'."*
> (Company landlord, 5+ properties, Wales, made improvements)

As with GOV.UK, RSW was seen as a trusted source of information and guidance about the regulations but not so much as a source of tailored information and advice. For example, one of the Welsh landlords interviewed said they had contacted RSW for such advice but had been advised to take their query up with their local authority. In both England and Wales, it is local authorities that are responsible for enforcement of the regulations rather than DESNZ or RSW.

### Landlord bodies

Just under a third (31%) of landlords in England are members of a landlord body[13]. Such bodies were cited by interviewed landlords as an important source of awareness and information about the regulations. Partly they were described as performing the same role as GOV.UK and RSW - making landlords aware of the regulations and conveying the basics about them - but a few landlords indicated a preference for getting such information from a landlord body. This was perhaps because it was perceived to be more concise and tailored to a landlord audience.

> *"I did look on the government website yes and it's informative, but my primary source was the National Residential Landlord Association. Their information is very concise and they're a very well-informed body, they wouldn't be giving me wrong advice."*
> (Individual landlord, 5+ properties, England, made improvements)

### Agents

The agents interviewed for the evaluation (who were generally 'managing' agents rather than 'letting' agents) said that they performed an active role in both making their landlord clients aware of the regulations and in helping them to respond to them. They perceived it to be in their interests to ensure all the properties on their books were legally compliant, knew the EPC ratings of all the properties, and saw it as part of their role to help their landlords respond to these and other regulations. The agents interviewed also considered themselves to be knowledgeable about the regulations and perceived that they were performing a necessary role in digesting and translating information about them for their landlords.

[13] DLUHC (2022) 'English Private Landlord Survey 2021', GOV.UK

> *"I'm pretty sure that most landlords know about the regulations now, but I'm not sure that they would be able to, unless it was their only job like me, decipher all the details about them."*
> (Agent, managing 16+ properties, Wales)

This was largely backed up by landlords with an agent who were interviewed, although there was a distinction between those who used managing or letting agents. Letting agents were often cited by landlords as making them aware of the regulations (but not much else) while managing agents were reported to have materially assisted them in determining how to respond to the regulations. Assistance ranged from advising a landlord on their options, to arranging for an EPC assessor or installer to view their property and make more detailed recommendations, and even in some cases registering an exemption on their behalf.

### Local authorities

Interviews conducted in the first two years after the introduction of the regulations suggested that local authorities were playing a limited role in providing information or advice about the regulations to landlords. This was still largely the impression from the most recent interviews in 2022, though there were some changes. Some landlords said their local authority had introduced a licencing scheme for local landlords and that, having signed up to this, they had received information about these and other regulations.

> *"They [the local authority] brought in a licensing scheme four years ago and it means – which is actually quite helpful – I get these landlord newsletters every few months, and they have made landlords aware of these regulations through that."*
> (Company landlord, 5+ properties, England, made improvements)

The pros and cons of local landlord licensing is a wider topic beyond the scope of this evaluation but purely in terms of ensuring awareness of the regulations and opening lines of communication between landlords and local authorities, it appears to have been a positive.

### EPC assessors, installers, and others in the trade

EPC assessors, installers, and others in the trade had often been consulted – either directly or through the landlord's agent – when landlords had become aware of the regulations and were considering how to respond. They were relied on to provide information tailored to the landlord's property about what their options were for increasing the energy efficiency to the required standard, the costs involved, and in some cases also whether the landlord may have grounds for an exemption.

## 2.4 Tenant awareness and understanding

Awareness of the current regulations was very low across the tenants interviewed for the evaluation - even amongst those who were renting properties that had benefited from energy efficiency improvements since the introduction of the regulations. Most understood that landlords were subject to legal requirements concerning the safety of properties but were completely unaware of there being regulations concerning its energy efficiency and EPC rating.

Tenants renting a property that had benefited from energy efficiency improvements since the introduction of the regulations all said they were not aware why the landlord had decided to make the improvements. This reflected their typical lack of involvement in the landlord's decision-making process.

When tenants were prompted with basic information about the regulations in the interviews they expressed very positive views towards them. The regulations were seen as a positive means by which Government was protecting their interests and holding landlords to account, in a way that they did not feel they had the power to do fully themselves.

> *"I didn't know about them and I'm surprised. In a good way."*
> (Tenant, England)

> *"I think that's a great thing, definitely."*
> (Tenant, Wales)

Most tenants only had some understanding of the EPC rating scale and so were reluctant to pass judgement on whether an E rating was an appropriate minimum standard. However, tenants did perceive the warmth and energy efficiency of properties in the rental sector to be variable and strongly endorsed the need for there to be a minimum standard all properties were legally required to meet.

# 3 Compliance with the regulations

This chapter presents the evaluation findings on the extent to which landlords have complied with the regulations since their introduction. Specifically, it addresses levels of compliance with the regulations, the different forms compliance has taken, and the factors influencing whether landlords have complied.

## 3.1 Levels of compliance

### 3.1.1 Overall compliance

Landlords with an F or G rated property have been expected to comply with the regulations by either making energy efficiency improvements sufficient to meet the minimum E standard or by registering an exemption on one of the grounds permitted within the regulations. The assessment of compliance for the evaluation was therefore based on data from both the national (England and Wales) EPC database and the national PRS exemptions register.

Table 2 shows the data in the EPC database on the number and proportion of PRS properties with different ratings in August 2023 when the assessment was conducted. A total of 94.9% of properties had an EPC rating equal to or above the regulations' minimum standard of E and 5.1% had an EPC rating of F or G (and so were potentially non-compliant if they didn't have an exemption).

**Table 2: EPC ratings of domestic PRS properties in England and Wales as of August 2023**

| EPC rating | Number of properties | Proportion of properties |
|---|---|---|
| A | 841 | 0.02% |
| B | 194,067 | 4.8% |
| C | 1,358,226 | 33.8% |
| D | 1,613,338 | 40.1% |
| E | 650,998 | 16.2% |
| F | 156,706 | 3.9% |
| G | 47,312 | 1.2% |
| All | 4,021,488 | 100% |

Source: National EPC Database.

As of August 2023, the PRS Exemptions Register included details of a total of 16,257 exemptions. Of these, 2,771 were exemptions that had been registered but since expired (most exemptions are valid for five years[14]). The remainder - 13,486 - were current valid exemptions.

Table 3 combines the data from the national EPC database and PRS exemptions to estimate the overall level of compliance as of August 2023. It shows that, when considering current exemptions, an estimated 95.26% of PRS properties were compliant and 4.74% were non-compliant with the regulations.

**Table 3: Estimated compliance as of August 2023**

| Property Type | Number of properties | Proportion of properties |
|---|---|---|
| A-E rated properties | 3,817,470 | 94.93% |
| F-G rated properties | 204,018 | 5.07% |
| Exemptions | 13,486 | 0.34% |
| Compliant properties | 3,830,956 | 95.26% |
| Non-compliant properties | 190,532 | 4.74% |
| All | 4,021,488 | 100% |

Source: National EPC Database; PRS Exemptions Register.

The results from the analysis conducted in 2020 using the same methodology for the interim evaluation were that 95.8% of PRS properties were compliant and 4.2% non-compliant. This suggests a slight decrease in compliance between the two timepoints. Equally, as described in Chapter 1, there are caveats concerning the coverage and accuracy of the EPC database on which this analysis is based. Qualitative findings from the evaluation, discussed later in this chapter, provide possible explanations for why compliance with the regulations may have appeared so high initially but then flat-lined or even fallen slightly since.

To cross-validate the results of the assessment of compliance set out above, data from the English Housing Survey (EHS) was also analysed. The latest EHS data available for analysis was from the 2020-21 EHS and it only represents English PRS properties and not Welsh ones. Nonetheless, as shown in Table 4, the EHS data suggests a similar level of compliance to the EPC database. In the 2020-21 EHS a marginally higher proportion of PRS dwellings met the minimum standard of an E rating (95.7%) than in the EPC database in August 2023 (94.9%).

[14] The exception to this is exemptions on the ‘new landlord’ grounds for exemption. These are valid for one year.

**Table 4: EPC ratings of domestic PRS properties in the EHS and the EPC database**

| EPC rating | EHS 2020-21 | EPC Database August 2023 |
|---|---|---|
| A/B | 2.4% | 4.8% |
| C | 39.4% | 33.8% |
| D | 44.3% | 40.1% |
| E | 9.6% | 16.2% |
| F | 3.4% | 3.9% |
| G | 0.9% | 1.2% |
| All | 100% | 100% |

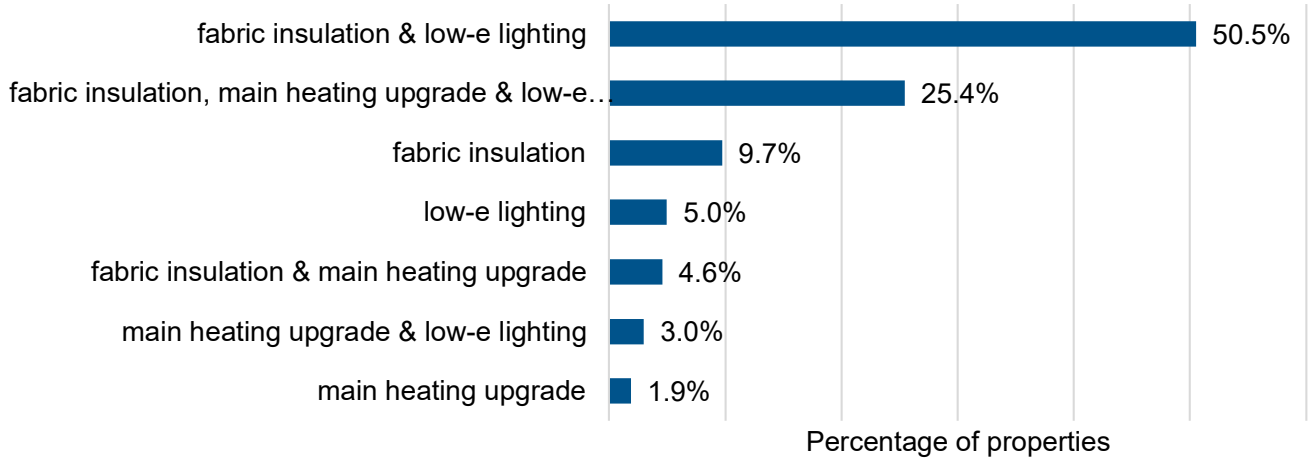
Source: English Housing Survey 2020-21; National EPC Database.

This comparison provides reassurance of the broad validity of the level of compliance estimated by the evaluation using the national EPC database and suggests that, if anything, it may represent an underestimate. The technical report accompanying this report provides more detail on the comparability of the EHS and EPC database samples.

### 3.1.2 How landlords have complied with the regulations

The national EPC database provides evidence on what types of energy improvements have been made by landlords to comply with the regulations. Figure 7 is based on a sub-sample of properties in the database that had a registered EPC with a rating of F or G prior to the regulations and a newer EPC after their introduction with an improved rating. It shows that improvements were concentrated on improved insulation, although this was frequently in combination with more efficient lighting or other changes.

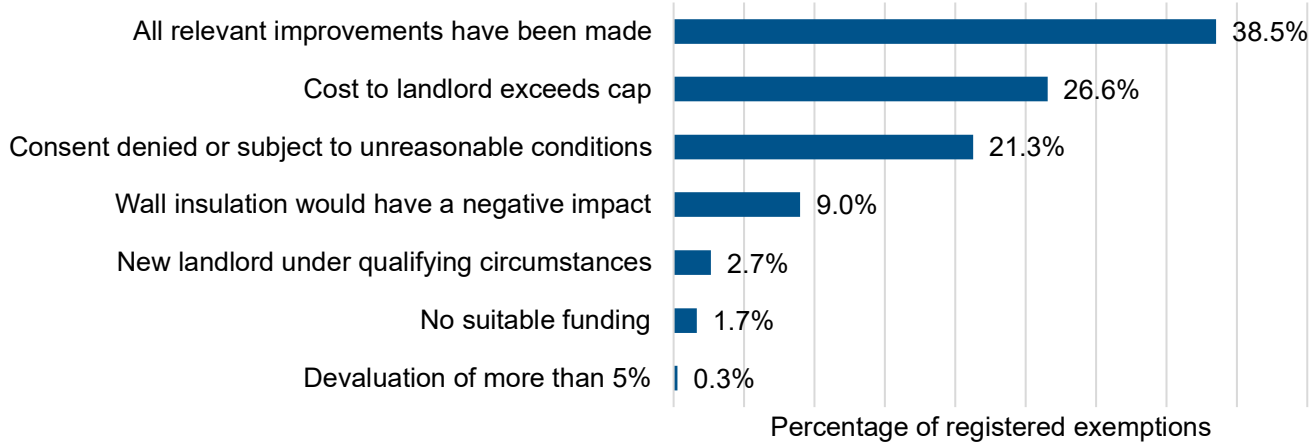
**Figure 7: Energy efficiency improvements made to properties previously rated F or G**




Note: ‘fabric insulation’ includes loft, wall, floor insulation and window upgrades. Source: National EPC Database.

The PRS exemptions register also provides evidence on which grounds exemptions have been most widely used (see Chapter 1 for more details on the definition of each ground for exemption). Figure 8 shows that the three grounds for exemptions which accounted for a large majority of current exemptions are there being no further improvements possible to meet the minimum E standard; the costs of making such improvements exceeds the cost cap determined by DESNZ of £3,500; and consent not being granted (by planning authorities, tenants, or others) for improvements to be made. The other grounds for exemption had been much less frequently used.

**Figure 8: Grounds for current exemptions registered as of August 2023**




Note: The 'No suitable funding' category in Figure 8 refers to a grounds for exemption that was in place when the regulations were first introduced in 2018. It applied if landlords could not find third party funding to meet the costs of making energy efficiency improvements and, as reported in the 2020 Interim Evaluation, was initially the most widely used grounds for exemption. It was replaced from April 2019 by the £3,500 cap on the costs to landlords of making energy efficiency improvements. Source: National EPC Database.

## 3.2 Factors influencing compliance

Why landlords have or have not complied with the regulations was explored in each wave of the qualitative research conducted for the evaluation.

### 3.2.1 Factors motivating and facilitating compliance

The qualitative research highlighted four primary factors motivating and facilitating compliance with the regulations.

**A general compliance mindset**

Many landlords described a straightforward decision-making process from when they became aware of the regulations, without much real consideration of even the possibility of not complying. Compliance with these and other legal requirements was seemingly accepted by them as part and parcel of being a landlord. If there were no significant practical or financial barriers, such landlords had generally complied by making energy efficiency improvements at the earliest opportunity.

> *"Well, there was a legal requirement, so I made the improvements and that's really about all the thought I gave it."*
> (Individual landlord, 1 property, Wales, made improvements)

This widespread mindset (most apparent amongst individual landlords but also some company landlords) may partly explain why the initial assessment of compliance for the interim evaluation in 2020 found such high rates of compliance. On first learning of the regulations, many such landlords had quickly made energy efficiency improvements.

### To avoid the negative consequences of non-compliance

Awareness that non-compliance can lead to a fine was high amongst landlords. Even though understanding of how much a fine would be (£5,000 per property) was more mixed, the desire to avoid any sort of fine was still a clear motivator for landlords to comply. An equal or greater motivation was also to avoid being unable to legally rent out their property (and therefore not generating any rental income) for an extended period.

> *"If I hadn't done something I knew I was going to get a ridiculous fine."*
> (Individual landlord, 2-4 properties, England, made improvements)

> *"We can't afford for our properties to be empty for any length of time."*
> (Company landlord, 5+ properties, England, registered exemption)

This was apparent as a motivator for compliance amongst individual and company landlords. However, one factor that could limit its effect was a perceived lack of visible enforcement of the regulations. This is discussed further in the next section.

### Energy efficiency improvements could be incorporated into general property maintenance/upgrades

Landlords often said they had complied with the regulations by incorporating energy efficiency improvements into work they had already planned to maintain or upgrade a property. While the focus of such work may not have otherwise been on increasing the energy efficiency of the property, they often indicated it had been not too much of a stretch practically or financially to include improvements sufficient to achieve the required E rating as part of the work.

> *"We're always upgrading as we go. As part of our normal upgrades, we will put double glazed windows in if they don't have them already, maybe change the boiler if it's an old one, put LED lighting in and so on."*
> (Company landlord, England, 5+ properties, made improvements)

Landlords do expect their properties to need periodic investment, to keep them in reasonable condition and attractive to tenants. They described conducting general maintenance or upgrades every few years, typically timed to coincide with when a tenancy was changing, and the property would be vacant for a short period.

### Energy efficiency improvements were reasonably affordable to make

In the first two waves of interviews (2018-19 and 2020) landlords often expressed negative views towards the regulations, on the grounds that they were a further way in which the Government was imposing unnecessary additional financial costs on them. Some even claimed they had sold or were considering selling a property rather than pay for energy efficiency improvements to be made. In the most recent interviews for the evaluation in 2022 there was acknowledgement from some landlords that the improvements they needed to make to increase the EPC rating of their property to E or better had been quite affordable.

> *"We could afford £3,000 to do what we had to do so we weren't too bothered by that."*
> (Individual landlord, 1 property, Wales, made improvements)

A minority cited more potential difficulties and resultant costs associated with getting their properties (particularly older properties and those with a 'non-standard' design) up to the required E rating. This had typically prompted them to investigate the possibility of registering an exemption and most indicated they had ultimately complied through that alternative route.

### Other potential motivators and facilitators for compliance

Since the conception of the regulations there has been a hope that landlords would be motivated to comply by two factors: a belief they could increase the resale value or rental yield of their property by making energy efficiency improvements; and increased demand from tenants for more energy efficient rental properties.

In first few years of the regulations' introduction neither of these factors appeared to be exerting influence on landlord decision-making. In the final wave of interviews in 2022 landlords remained sceptical that energy efficiency improvements would result in an increase in the value of their property if they chose to sell it or justify them significantly increasing the rent they charged, particularly when compared with other improvements they could make to their property. This is despite published evidence that increases in a property's EPC rating are associated with increases in its value[15].

> *"It's hard to get the extra money back on these investments. I would get much more from putting in a new bathroom than I would from energy efficiency improvements."*
> (Individual landlord, 2-4 properties, Wales, made improvements)

In the first few years of the regulations, tenants who were interviewed said that energy efficiency was a marginal consideration when they were choosing what property to rent. However, there was evidence from the final wave of interviews with tenants in 2022 (which coincided with rising energy costs) that energy efficiency was becoming more of a concern.

[15] See, for example: DECC (2013) 'An Investigation of the Effect of EPC ratings on House Prices', GOV.UK

> *"Because prices have gone so madly high, I would be asking questions about energy efficiency if I was looking for a new flat. It would not be the main factor but definitely I would like to know."*
> (Tenant, England)

Landlords and letting agents interviewed in 2022 also indicated they had started to pick up on this shift in tenant priorities. More research would be needed to establish whether the shift in tenant priorities has persisted since 2022, as inflation has dropped, and the extent to which this has changed landlords' attitudes towards making energy efficiency improvements.

### 3.2.2 Factors associated with non-compliance

Identifying and recruiting landlords who were non-compliant with the regulations was a challenge throughout the evaluation, as described in the first chapter. Consequently, it is possible that there have been a small constituency of 'rogue landlords' who are aware of the regulations and have cynically chosen to ignore them – and who the evaluation has not captured. Nonetheless each wave of interviews for the evaluation included some with non-compliant landlords. None would fit the stereotype of a rogue landlord, but their circumstances, perceptions and reasoning are still valid in understanding why some landlords have not complied. From those interviews, the main factors associated with non-compliance were as follows.

**Misunderstandings or gaps in understanding of the regulations**

Awareness of the regulations is increasingly high (as reported in Chapter 2) and there were no instances amongst those interviewed most recently in 2022 of a landlord failing to comply out of a complete lack of knowledge that they existed. Understanding of all the details of the regulations was more mixed though, even four years after their introduction in 2022, and there were a small number of cases out of the landlords interviewed where this had led or contributed to non-compliance.

One example of this was landlords - interviewed in 2022 - who believed that the regulations still only applied to new tenancies (this was the case from April 2018 but from April 2020 the regulations were extended to all tenancies) and therefore only required a response by them at the point a tenancy changed.

> *"I've got a tenant in there at the moment so that's not a problem, but when we come to relet it, there would be work to do to make it compliant."*
> (Individual landlord, 2-4 properties, Wales, non-compliant)

Another example was landlords misunderstanding the regulation's 'cost cap' grounds for exemption. For example, one landlord had understood that if the required energy efficiency improvements would cost over the £3,500 cost cap, and they could demonstrate this when registering their exemption, then no energy efficiency improvements were required. In fact, landlords are legally required to make what energy efficiency improvements are possible up to the cost of £3,500 before they can legitimately register a cost cap exemption.

> *"I just had to get three quotes to show how expensive it would be, uploaded them, and that was it."*
> (Individual landlord, 1 property, England, non-compliant)

There were a couple of other landlords interviewed in 2022 who said they had registered a cost cap exemption, but it was unclear whether they had made what energy efficiency improvements they could up to the £3,500 limit.

### Time and cost implications of responding to the regulations

When interviews were conducted for the evaluation in 2020, shortly after the regulations had been extended to apply to all tenancies rather than just new ones, it was found that some landlords were non-compliant because they claimed they just 'hadn't got round to' making energy efficiency improvements or registering an exemption yet. This was particularly apparent amongst landlords with large portfolios, and several F or G rated properties within this - some they had taken actions to comply with, others they were still in the process of doing so.

While there were less instances of this in the last wave of interviews in 2022, there were still cases of landlords with a large portfolio saying they had complied for some of their properties but were yet to respond for other properties.

> *"We haven't done a full audit of our stock but I've no doubt there's a few that still fall foul. We just haven't yet got to them."*
> (Company landlord, 5+ properties, England, non-compliant)

It is fair to assume landlords with multiple property in scope of the regulations may have faced a greater task in terms of assessing options, taking actions, and paying for improvements than landlords with a single property. Equally, the impression from the interviews was that if such large portfolio landlords had felt an urgent need to ensure all their properties were compliant then they could have acted quicker than they had. For example, the landlord quoted above appeared to believe there was no imminent danger of their non-compliant properties being identified and fines imposed – which links to the next factor concerning enforcement.

### A perceived lack of enforcement of the regulations

For many landlords – the majority of those interviewed at every stage of the evaluation – the visibility or invisibility of enforcement of the regulations did not appear to have greatly mattered. For those with a general compliance mindset and those motivated by a desire to avoid the negative consequences of non-compliance, any possibility of them being punished had been sufficient for them to comply. However, there were some landlords for whom a lack of visible enforcement of the regulations appeared to have been a factor in them not complying.

> *"No-one is enforcing it in our county. Nobody is saying 'why is your property EPC rating F?'"*
> (Individual landlord, 1 property, England, non-compliant)

As the years passed since the introduction of the regulations, and as enforcement has continued to seem largely invisible, the apparent N/A of some landlords to not comply (or certainly take their time in complying) seemed to increase. This may partly help to explain why levels of compliance appeared to have fallen slightly between 2020 and 2023. Local authorities are responsible for enforcement of the regulations. The impression from the interviews was that most landlords (and agents) were not conscious of much active monitoring and enforcement taking place in areas they rented properties.

> *"I'm aware that where we operate, there has not been a single case of anybody non-compliant being prosecuted or fined."*
> (Agent, England)

This wasn't universal though, and there was one example in the 2022 interviews for the evaluation which showed that, even if it is not visible to all landlords and agents, enforcement is happening in some local areas.

> *"I actually had a […] letter from the council only this week threatening me with a £5,000 fine."*
> (Individual landlord, 5+ properties, England, non-compliant)

The issue of enforcement was also raised by some landlords interviewed who had registered an exemption in response to the regulations. None said an exemption they registered on the PRS Register had subsequently been questioned or queried. This appeared to have contributed to a view amongst some that the regulations were not being rigorously enforced.

**Tenant-related issues**

In surveys of landlords conducted around the time of the introduction of the regulations, one potential barrier to compliance cited was the disruption that making energy efficiency improvements to a property could have for tenants[16].

In practice, based on both landlord and tenant interviews conducted for the evaluation, this did not appear to have been a widespread barrier. Landlords said wherever possible they had made improvements between tenancies or, if they needed to make them while they had a sitting tenant in the property, most did not report difficulties with this. Tenants interviewed were largely consistent with their responses in saying they were prepared to put up with such disruption because of the benefits (in terms of comfort, warmth) that improvements being made would provide.

> *"It was a lot of noise and three men in the flat walking in and out for two days, but I was getting a new boiler, so I didn't mind putting up with it."*
> (Tenant, Wales)

However, there were a small number of landlords interviewed who said they had been unable to make energy efficiency improvements because the tenant had refused entry to the property. One was described by the landlord as a 'problem tenant' they were seeking to have evicted, while the other was said to have serious mental health issues. These cases appear to have been the exception rather than the rule though. Landlords have also had the option of registering an exemption if tenants have not consented to improvements being made.

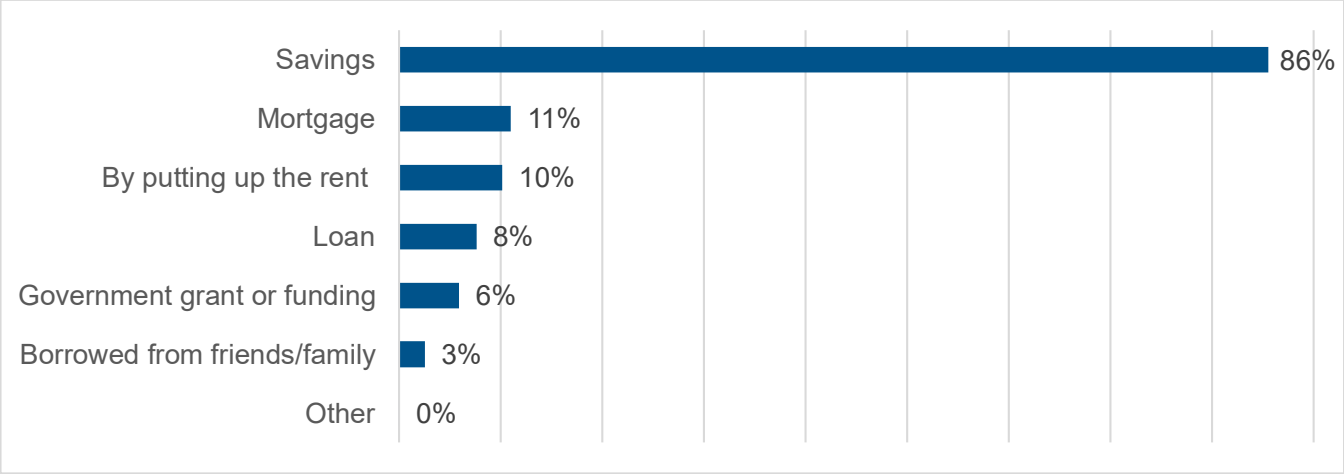
### 3.2.3 How landlords have met costs associated with compliance

The available survey evidence indicates that a large majority (over 80%) of landlords with properties previously rated F or G used 'savings' to meet at least some of the costs of making energy efficiency improvements in response to the regulations. Landlords also reported using other means to contribute to the cost of compliance, with mortgages, rent increases, and loans

[16] In the 2017 Quarter 3 Landlord Panel Survey of English landlords, 38% cited this as a potential barrier to them making energy efficiency improvements.

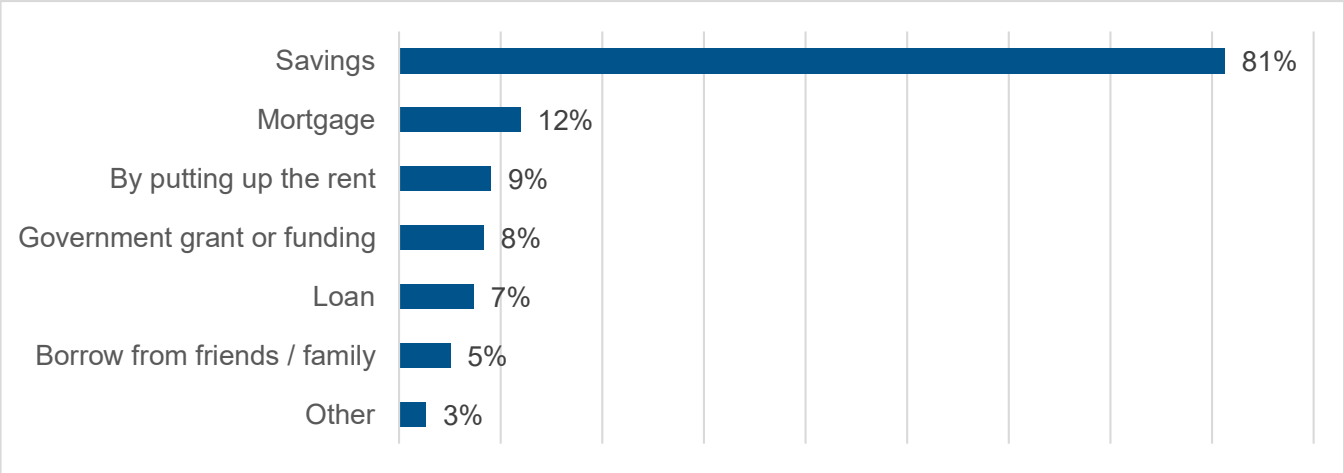
each being cited by around one in ten landlords. This was consistent across both English and Welsh landlords, as shown in Figure 9 and Figure 10.

**Figure 9: How landlords report meeting costs of making energy efficiency improvements in response to the regulations (England)**




Source: Landlord Panel Survey 2022 Quarter 3 n=118

**Figure 10: How landlords report meeting costs of making energy efficiency improvements in response to the regulations (Wales)**




Source: Welsh Landlord Survey 2021 n=141

The survey results were echoed in the last round of qualitative interviews conducted for the evaluation in 2022. Few of the landlords interviewed said they had increased rents solely to pay for energy efficiency improvements, although if such improvements had been made as part of a wider property upgrade, then they had felt more justified in increasing rents. There appeared to a general wariness about increasing rents and a belief amongst landlords that energy efficiency improvements on their own did not make properties much more attractive to renters. Rising energy bills were starting to challenge this perception amongst some landlords when the interviews were conducted in July-September 2022, but this had not yet at that point affected their decision-making about the rents they charged.

# 4 Impacts of the regulations

The main goal of the regulations was to improve the energy efficiency of domestic PRS properties in England and Wales. Lower energy use within PRS properties leads to lower CO2 emissions and energy bills. Improved energy efficiency also improves the health of residents of PRS properties. This chapter of the report presents the results of the quasi-experimental analysis (QEA) of the impacts of the regulations in each of these areas.

## 4.1 Impacts on energy efficiency

As discussed in Section 1.2.4, the assessment of the impacts of the regulations on the energy efficiency of PRS properties involved two pieces of analysis:

- First, the team used a quasi-experimental approach to estimate the impacts of the regulations on the energy efficiency of a sub-sample of PRS properties. This sub-sample consisted of properties in the treatment and control group that had an EPC registered prior to the introduction of the regulations and a further EPC that was registered at a later date. This enabled us to measure change but introduced a potential bias since having two EPCs means it is likely that a property was upgraded. The analysis effectively compared the scale of energy efficiency improvements for properties in the treatment group that registered a new EPC (and therefore presumably had been upgraded) with equivalent properties in the control group that had also registered a new EPC and presumably been upgraded in the same timescale. What it couldn't do was also account for whether the regulations were influencing a higher proportion of landlords in England and Wales to make such upgrades than in Scotland.
- Second, reflecting this limitation, the team carried out a follow-up piece of analysis that specifically explored the impact of the regulations on the propensity of landlords to upgrade the energy efficiency of their PRS properties. Together these two pieces of analysis enable us to draw some conclusions about the impact of the regulations on energy efficiency, but readers should note the limitations discussed in Section 1.2.5.

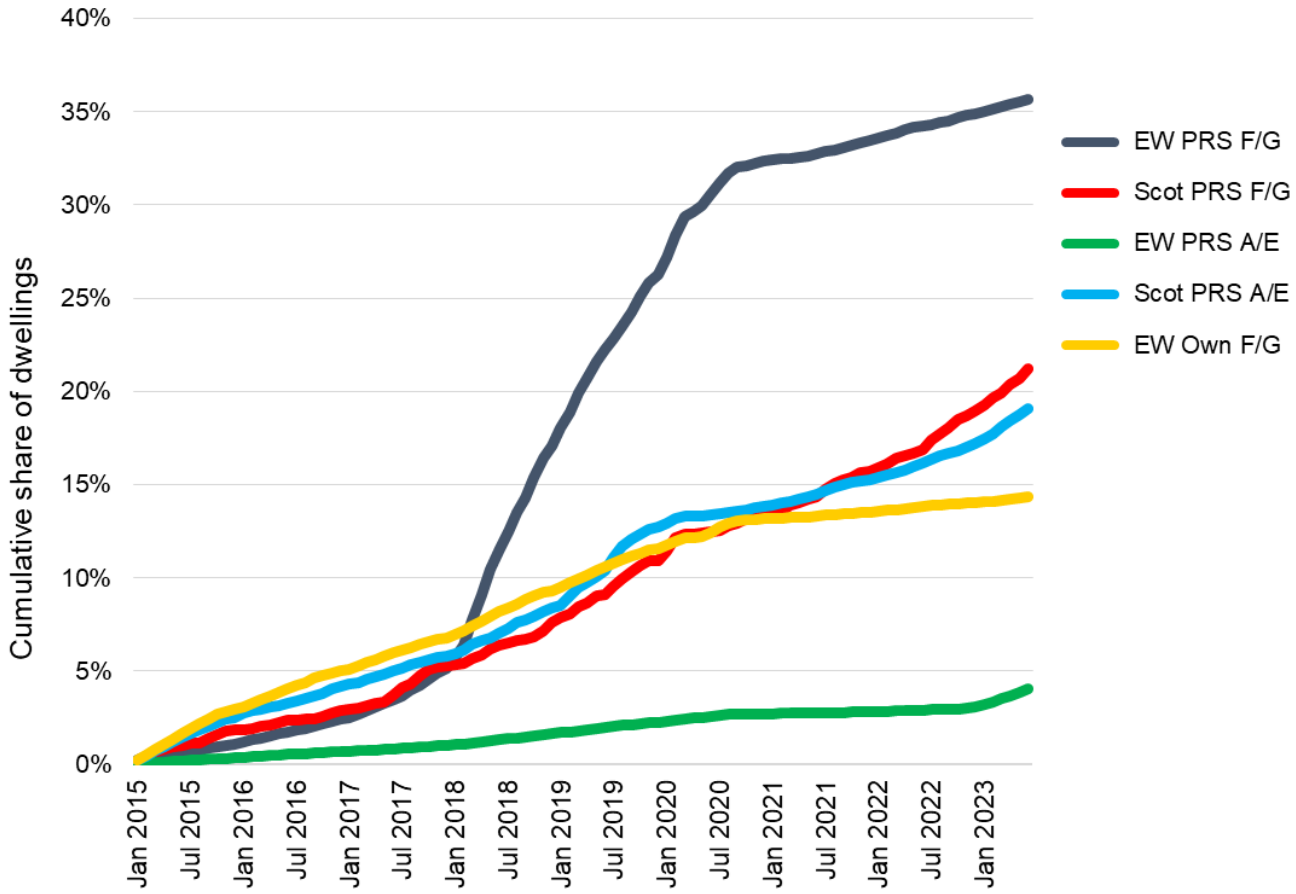
### 4.1.1 Impacts on whether landlords upgraded the energy efficiency of properties

To analyse the impacts of the regulations on the propensity of landlords to improve the energy efficiency of their PRS properties, the focus is on the 'EPC replacement rate' for properties with an F or G rated EPC. The EPC replacement rate refers to the percentage of properties with an EPC issued in 2013 or 2014 that had an application for a new EPC. A high EPC replacement rate suggests that many landlords improved the energy efficiency of their properties, possibly due to the regulatory requirements.[17]

[17] The detailed methodology is provided in Section 1.2.4. In summary, since EPCs are valid for 10 years, it has been assumed that any landlord in England and Wales who registered a new EPC before the validity period ended did so because they had made energy efficiency upgrades to their property. The analysis was limited to F or G rated EPCs that were issued in 2013 or 2014 (i.e. well before the PRS MEES came into force).

Figure 11 shows the results of the analysis. Between 2015 and early 2018, the EPC replacement rate for F and G rated PRS properties in England and Wales (i.e. the targets for the regulations) was low, similar to that of most of the comparison groups shown in Figure 11. As a result, by early 2018 only around 5% of the F or G rated EPCs issued in 2013 or 2014 for PRS properties had been replaced (in both England and Wales and in Scotland). However, from early 2018 to spring 2020 (i.e. the deadline for new tenancies under the regulations), the EPC replacement rate in the England and Wales PRS increased significantly. By spring 2020, over 30% of the F or G rated EPCs issued in 2013 or 2014 for PRS properties had been replaced. The EPC replacement rate amongst most of the comparison groups was unchanged over this period, including amongst Scottish PRS properties with an F or G rated EPC that was issued in 2013 or 2014 (i.e. the group most similar to those affected by the regulations). This suggests that the introduction of the regulations in England and Wales had an impact on landlords, leading many to improve the energy efficiency of their properties.

**Figure 11: Cumulative share of dwellings with an EPC issued in 2013 or 2014 applying for a second certificate for the properties affected by the PRS MEES regulations (2015-2023)**




Notes: 'EW PRS F/G' indicates English/Welsh PRS properties with an F/G EPC; 'Scot PRS F/G' indicates Scottish PRS properties with an F/G EPC; 'EW PRS A/E' indicates English/Welsh PRS properties with an A-E EPC; 'Scot PRS A/E' indicates Scottish PRS properties with an A-E EPC issued in 2013 – 2014, 'EW Own F/G' indicates English/Welsh owner-occupied properties with an F/G EPC.

Also notable in Figure 11 is that after spring 2020 the increase in the EPC replacement rate amongst F or G rated EPCs issued in 2013 or 2014 slowed down. It continued at a similar rate to that observed before the regulations came into effect, and by 2023, just under 35% of these properties had a replacement EPC. In contrast, the EPC replacement rate amongst Scottish PRS properties increased from mid-2019 onwards – for both F-G rated and A-E rated properties. Whilst this remained below the cumulative EPC replacement share for PRS properties in England and Wales, this highlights the potential effect on landlords of the proposed equivalent PRS MEES regulations in Scotland (see Section 1.2.5 for details of changes in the Scottish PRS and the effect on the control group comparison).

### 4.1.2 Impacts on the energy efficiency of properties

As discussed previously (Section 1.2.4) and in the accompanying Technical Report, the impacts of the regulations on the domestic PRS in England and Wales have been estimated by using equivalent Scottish properties[18] – where there was no equivalent to the PRS MEES regulations when the analysis was carried out – as a control group. As noted above, however, there were limitations to the scope of this exercise: it was restricted to a sub-sample of PRS properties in the treatment and control group with EPCs registered both before and after the introduction of the regulations, and the Scottish control group included both PRS and owner-occupied properties. Caution should therefore be exercised in interpreting all of the following findings since they are likely to be an underestimation of the impacts of the regulations.

As a result of the regulations, the sub-sample of PRS properties in England and Wales that used to be EPC F or G rated were more likely to be rated at least E than would have been the case in the absence of the regulations (based on comparison with the control group). This finding is based on the calculation of odds ratios, and it is estimated that these English and Welsh PRS properties were 3.53 times more likely to be rated to at least EPC E than would have been the case if there had been no regulations. The analysis also differentiated between properties that entered the PRS market since 2018 (e.g. because they were previously owner occupied or socially rented) and those that were in the PRS market prior to 2018 (when the regulations were introduced). ‘Recent’ PRS properties in England and Wales were 3.56 times more likely than would otherwise have been the case to have reached at least an EPC E rating. ‘Established’ PRS properties in England and Wales were 3.19 times more likely to have reached the EPC E threshold than if there had been no regulations.

[18] Note that the Scotland control group included owner-occupied properties as well as PRS properties. Changes in the owner-occupied housing stock would have been influenced by other policy support programmes that subsidised energy efficiency improvements, including the Energy Company Obligation (ECO).

Analysis[19] also looked at the impacts of the regulations on the SAP rate of domestic PRS properties (on the 1-100 SAP scale[20]). This is useful because it provides a more granular assessment of the extent to which the regulations have impacted on the energy efficiency of domestic PRS properties. Overall, the regulations had a statistically significant impact on the SAP scores of the properties in the sub-sample. SAP rates amongst PRS properties in England and Wales that had an EPC rating of F or G prior to 2018 were, on average, 1.1 points higher by 2023 than they would have been if there had been no regulations.

There was a notable difference in results depending on how long properties had been within the PRS market. Recent market entrants in England and Wales (i.e. properties that had entered the PRS market since 2018) had an average SAP score in 2023 that was 1.8 points higher than would have been the case without the regulations. Conversely, amongst established PRS properties (i.e. properties that were already in the PRS prior to 2018), average SAP scores in England and Wales were 2.9 points lower by 2023 than would otherwise have been the case. Note that this does not mean that SAP scores decreased; rather, that they did not increase as fast as was the case amongst equivalent Scottish properties in the control group.

Overall, therefore, we find that the regulations had a positive impact on the energy efficiency of previously F and G rated domestic PRS properties in England and Wales (where there was a second EPC). This was especially true of properties that entered the PRS market since the regulations were introduced in 2018 (e.g. because they were formerly owner-occupied). For PRS properties that were already in the PRS market in England and Wales before the regulations were introduced, the picture is slightly more mixed. Whilst they are more likely to have been upgraded to reach the minimum EPC E threshold than if there had been no regulations, on average these properties saw less of an increase in their SAP scores. This could be evidence of a threshold effect, whereby landlords of established PRS properties in England and Wales did just enough to meet the minimum standard of an E rating, whereas – on average – their counterparts in Scotland ultimately went further.

It is also notable that the estimated size of the effect of the regulations in this final analysis is lower than was estimated in the 2020 interim analysis[21]. For example, in 2020 it was estimated that the SAP rating of PRS properties in England and Wales had increased by 5 points more than if there had been no regulations. This time, the impact is estimated to be 1.1 SAP points. As discussed in Section 1.2.4, the Scottish Government planned to introduce analogous minimum energy efficiency standards for new and renewed tenancies in April 2020, and from April 2022 for all tenancies. The COVID-19 pandemic caused these plans to be delayed, and nothing was implemented when the analysis for this report was carried out. As discussed above (see text below Figure 11), evidence suggests that Scottish landlords anticipating these

[19] As discussed in Section 1.2.4 and the accompanying Technical Report, various models were used for the impact evaluation. The figures reported here use the 'baseline' model. Robustness checks, including an entropy balancing method, were used to test whether the findings were consistent across different methods and sub-samples. Results were found to be similar regardless of the method used.
[20] The SAP score is an index between 1 and 100 allowing the comparison of energy efficiency across different properties. The higher the SAP rate, the higher the energy efficiency of a home.
[21] BEIS (2020) 'Domestic private rental sector minimum energy efficiency standards: interim evaluation 2020', GOV.UK

requirements may already have started to upgrade the energy efficiency of their properties from 2019. This might explain some of the narrowing of the difference in the energy efficiency performance of PRS properties in England and Wales and properties in Scotland, especially amongst properties that were established in the PRS market.

## 4.2 Impacts on CO2 emissions

As discussed in Section 1.2.4, the impacts of the regulations on CO2 emissions have been estimated by modelling their impacts on the Environmental Impact (EI) rating[22] of PRS properties, and then by converting this impact into estimated CO2 emissions. These are thus assumed impacts rather than observed real-world impacts. The EI rating considers the overall performance of a building, including its construction, materials, and design, as well as the efficiency of its fixed services like heating, lighting, and other energy-related features. It does not, however, consider comfort taking by occupants of PRS properties. These are behaviours that offset carbon savings, for example if occupants increase the temperature of their home in response to having energy efficiency measures installed.

It is estimated that, for the sub-sample of domestic PRS properties in England and Wales with two EPCs, the regulations have improved the average EI rate by 6.9 points more than would have been the case if there had been no regulations. As before, this is only for properties that had an EPC F or G rating prior to 2018 and a second EPC. The estimated impact on EI ratings was higher for recent PRS market entrants (an increase of 7.2 EI points higher than would otherwise have been the case) than it was for established PRS properties (an increase of 3.3 EI points higher than would otherwise have been the case). All these differences were statistically significant.

These impacts on EI rates have been converted into estimated CO2 emission savings (Table 5). Across the sub-sample of domestic PRS properties in England and Wales, the regulations are estimated to have caused average annual CO2 emissions to be 1,176kg lower per property per year than if there had been no regulations. Again, this is just amongst properties that were EPC rated F or G before 2018 and which had a second EPC, not the whole PRS.

Relative to the average energy bill savings detailed in the next section, the CO2 emissions savings could be interpreted to be proportionally large when compared against average household carbon emissions and energy bills in England and Wales. This may be explained by variations in RdSAP methodology over time and changing assumptions regarding the carbon intensity of the grid. Please see sections 2.5 and sections 4.4.4 of the accompanying technical report for further detail.

[22] The EI rating uses a scale of 1-100, where a higher number indicates a lower environmental impact.

**Table 5: Estimated change in annual CO2 emissions from domestic PRS properties in England and Wales, relative to Scotland (per year, per property)**

| PRS market segment | Estimated annual average change in CO2 emissions |
|---|---|
| All PRS properties | -1,176 kg |
| Recent PRS properties | -1,223 kg |
| Established PRS properties | -587 kg |

## 4.3 Impacts on energy costs

The impacts of the regulations on the energy costs incurred by households living in PRS properties have been modelled by estimating the impacts of improvements in energy efficiency on energy consumption. As with the modelled changes in CO2 emissions, these are assumed impacts rather than observed real-world impacts, since they do not consider any comfort taking by occupants of PRS properties. These data are also based on analysis of a sub-sample of PRS properties (F or G rated and with a second EPC). Energy cost estimates have been calculated using 2023 energy prices.

As Table 6 shows, it is estimated that annual energy costs amongst households living in the sub-sample of PRS properties in England and Wales are £67 lower than they would otherwise have been. In other words, the regulations are estimated to have saved the average household £67 per year, due to reduced energy consumption resulting from a move from EPC F or G to E. Amongst households living in properties that have entered the PRS market since 2018 (recent PRS properties) it is estimated that the average household has saved £109 a year in energy costs than would have been if there had been no regulations. Amongst established PRS properties (i.e. those that were already in the PRS market in 2018), energy costs are estimated to be £184 per year higher than would otherwise have been the case. Note that it is not the case that energy costs have increased in England and Wales; rather, it is that they have not decreased as fast as they have in Scotland, the control group upon which these calculations are based. These estimates are modelled from changes in the SAP scores of PRS properties. As discussed above, for established PRS properties, it appears that Scottish landlords went further than their English counterparts in improving the energy efficiency of their properties, especially after 2020. This was potentially in response to the planned introduction of analogous minimum energy efficiency standards in Scotland, since delayed.

**Table 6: Estimated change in annual energy costs within domestic PRS properties in England and Wales, relative to Scotland (per year, per property)**

| PRS market segment | Estimated annual change in energy costs |
|---|---|
| All PRS properties | -£67 |
| Recent PRS properties | -£109 |
| Established PRS properties | £184 |

## 4.4 Impacts on tenants' health

By bringing domestic PRS properties to a minimum EPC E rating, the regulations will improve the health of tenants, either in the form of an improvement in their welfare (e.g. thermal comfort) or a potential reduction in the incidence of ill health. Colder indoor temperatures are associated with increased risk of developing various cardiovascular and respiratory diseases. Health improvements can be estimated using the Health Impact of Domestic Energy Efficiency Measures (HIDEEM) model (see Section 1.2.4 for details). This analysis differs from that presented above; in that it was not possible to model the additional health impacts of the regulations. Rather, the analysis presented here shows the aggregate impact of PRS properties in England and Wales moving from an EPC rating of F or G to at least an E. A share of these health improvements, therefore, would have happened anyway, regardless of whether the regulations had been introduced.

Using the HIDEEM model it is estimated that the average domestic PRS property in England and Wales would have got 0.1-0.3 ºC warmer (indoor winter temperature) by moving from an EPC rating of F or G to at least an E. As noted above, it is not possible to conclude whether this temperature increase would have been due to improvements in energy efficiency caused by the regulations, or something else.

Even this modest increase in indoor temperatures is associated with positive health benefits for tenants living in PRS properties. Health benefits are measured in Quality Adjusted Life Years (QALYs). Table 7 shows the estimated QALYs – over a 5-year period – for households living in properties assumed to have moved from an EPC rating of F or G to at least an E. These are aggregate values for all households, for each of the health conditions shown in Table 7. It is estimated that health improvements equate to 1,046 QALYs. Analysis also looked at longer-term health benefits, assuming a 42-year time horizon rather than 5 years. Not surprisingly, the health improvements were much more substantial over the long-term, equal to 8,154 QALYs. When considering the impact these environmental exposure changes have on health sector expenditure for treatment of temperature related disease, these impacts equate to a total estimate of around £1 million after 5 years (which covers the costs of avoided GP consultations and hospital admissions).

**Table 7: Health benefits (expressed as QALYs over 5 years) amongst households living in PRS properties moving from EPC rating of F or G to at least an E**

| Condition | Mortality (Lys) | Morbidity (QALYs) | Total (QALYs) |
|---|---|---|---|
| Cardiovascular | 20 | 114 | 134 |
| Stroke | 5 | 14 | 20 |
| Heart attack | 6 | 16 | 22 |
| Cardiopulmonary | 0 | 0 | 0 |
| Lung cancer | 0 | 0 | 0 |
| Common mental disorders | - | 322 | 322 |
| Chronic obstructive pulmonary disease (COPD) | - | 548 | 548 |
| Asthma (children) | - | 0 | 0 |
| All conditions | 31 | 1,015 | 1,046 |

## 4.5 Other impacts

One of the original aims of the evaluation was to analyse the impact of the regulations on the wider private rental sector market in terms of: landlord finances; rent levels; PRS property prices; and potential movement of PRS properties into the owner-occupied sector.

The 2021 interim evaluation report included indicative findings on such wider market impacts.[23] Qualitative evidence collected at that point indicated that the regulations had influenced some landlords to consider selling up and leaving the PRS. However, there was little evidence that the regulations were leading to this occurring on a large scale. The landlords concerned who were interviewed were disenchanted with other government policy they felt was imposing additional costs on them. The regulations were perceived to be an additional imposition that might tip the balance towards them selling up but not a defining factor on their own.

[23] BEIS (2020) 'Domestic private rental sector minimum energy efficiency standards: interim evaluation 2020', GOV.UK

Subsequent interviews and survey results indicated a similar picture. Less than one in ten landlords in the latest English and Welsh surveys available at that point said they had sold F or G rated properties as an alternative to making energy efficiency improvements in response to the regulations.[24] Most landlords had also not reportedly sought to recoup the costs associated with making energy efficiency improvements through rent increases (see Section 3.2.3 of this report).

In addition, data from the EHS shows that the overall number of domestic properties in the PRS in England has remained stable since the introduction of the regulations. In 2018-19 there were 4.6m PRS properties[25] and in 2022-23 there were also 4.6m[26].

The feasibility of conducting further analysis of the market impacts of the regulations – drawing on commercial property website data – was assessed at the mid-point in the evaluation. However, due to the potential difficulties and costs associated with accessing the data, it was agreed between DESNZ (then BEIS) and the evaluation consortium not to take this forward.

[24] Questions about actions and compliance in response to the regulations were asked in the Landlord Panel Survey and Welsh Landlord Survey. Of landlords in England who responded to the LPS, 9% reported that they had not made improvements and either sold or not relet the property. Of landlords in Wales who responded to the WLS, 8% reported that they had not made improvements and either sold or not relet the property.
[25] MHCLG (2020) 'English Housing Survey 2018 to 2019: headline report', GOV.UK
[26] DLUHC (2023) 'English Housing Survey 2022 to 2023: headline report', GOV.UK

# 5 Conclusions

This final chapter presents the conclusions of the evaluation. It is structured around the evaluation questions that the study was tasked with answering. Further information about these questions is available in Appendix 2.

## 5.1 To what extent have landlords complied with the regulations?

### What proportion of landlords are aware of the regulations and their associated obligations? What factors influence landlord awareness of the regulations and knowledge of their associated obligations and actions they can take?

The evaluation found that over eight in ten landlords in England and Wales were aware of the regulations, three years on from their introduction in 2021. This increased to nine in ten in 2024 amongst English landlords (no equivalent 2024 results for Welsh landlords). Understanding of the details of the regulations was also generally good, although there were still a small number of instances found in the qualitative research conducted with landlords where misunderstandings about an aspect of the regulations had contributed to non-compliance. In addition, awareness and understanding were not uniform across all types of landlords. Individual landlords, those with small portfolios, those who don't use a letting agent, and who were not members of a national landlord body were the least likely to be aware of and fully understand the details of the regulations.

### What role are market stakeholders playing?

Market actors such as agents, EPC assessors and others in the trade appear to have performed a positive role in informing landlord responses to the regulations. They were frequently cited by landlords as a trusted source of information about the regulations and of tailored advice about how the regulations applied to individual properties and the options the landlord had for complying.

### What proportion of landlords/properties have complied with the regulations? For what reasons/in what circumstance is compliance taking/not taking place?

As of August 2023, over 95% of the domestic PRS housing stock was found to be compliant with the regulations. The evaluation found strong drivers of compliance amongst landlords who had F or G rated properties in scope of the regulations and who subsequently complied. Principle amongst these were: a desire to avoid any potential negative consequences of not complying; a general compliance mindset; and that, for some landlords and some properties, complying had been relatively straightforward and affordable to achieve.

The reasons for, and circumstances surrounding, non-compliance were harder to explore in the evaluation due to the reluctance of such landlords to share their views in a qualitative interview. Nonetheless, some recurring factors associated with non-compliance were apparent

from the research, principally: gaps in knowledge or misunderstandings about certain detailed aspects of the regulations; the potential time and cost implications of responding to the regulations (particularly for landlords with multiple affected properties); and a perceived lack of enforcement of the regulations.

### What changes to the policy, or supporting policies, could be implemented to increase compliance?

The evaluation findings suggest two ways in which further measures could potentially be implemented with the aim of increasing compliance. Firstly, additional information provision and advice concerning the regulations could be targeted at the types of landlords who have been consistently found to have the lowest levels of awareness and understanding of the regulations. Secondly, activities by local authorities to monitor and enforce the regulations could usefully be upscaled and publicised more widely than they currently are. Based on the qualitative research conducted for the evaluation, in isolated cases where landlords had been aware of such activity being undertaken by a local authority this had overridden any reluctance or doubts, they may have had towards complying. The issue was that most of the landlords who were interviewed indicated they were not aware of any such activity in the local areas where they rented properties and so did not benefit from this same powerful spur to comply.

## 5.2 To what extent have the regulations achieved their aims?

### What are the reasons why landlords have installed energy efficient measures in their properties and how many of those installations can be attributed to the PRS regulations?

The main reported reasons landlords had installed energy efficiency measures in response to the regulations were: the desire to avoid any potential negative consequences of non-compliance; a general compliance mindset (particularly evident amongst individual landlords); and the fact that energy efficiency improvements could often be integrated into other planned property maintenance or upgrades. If the energy efficiency improvements required to meet the minimum standard for properties concerned were perceived by the landlords to be reasonably affordable this was a further facilitator for them to make such changes.

To analyse the impacts of the regulations on the propensity of landlords to improve the energy efficiency of their PRS properties, the focus is on the ‘EPC replacement rate’ for properties with an F or G rated EPC. The EPC replacement rate refers to the percentage of properties with an EPC issued in 2013 or 2014 that had an application for a new EPC. A high EPC replacement rate suggests that many landlords improved the energy efficiency of their properties, possibly due to the regulatory requirements. The EPC replacement rate in the England and Wales PRS increased much faster than in comparison areas/sectors between early 2018 and spring 2020 (i.e. the deadline for new tenancies under the regulations). By spring 2020, over 30% of the F or G rated EPCs issued in in England and Wales in 2013 or 2014 for PRS properties had been replaced.

The extent to which energy efficiency improvements can be attributed to the regulations has been assessed using quasi-experimental analysis to compare a sub-sample of PRS properties in England and Wales to the equivalent properties in Scotland. The sub-sample consisted of properties with an F or G rating prior to when the regulations were introduced in England and Wales and a second EPC after this date. The analysis estimated that, because of the regulations, this sub-sample of domestic PRS properties in England and Wales were 3.53 times more likely than to have a rating of E or higher than would otherwise have been the case. The analysis also looked at the impacts of the regulations on the Standard Assessment Procedure (SAP) scores of domestic PRS properties. SAP scores provide a more granular measure of energy efficiency than the broad EPC bands, using a 1-100 scale. It was estimated that SAP scores for the sub-sample of domestic PRS properties in England and Wales that had an EPC rating of F or G prior to 2018 and a second EPC were, on average, 1.1 points higher by August 2023 than if there had been no regulations.

## What is the carbon, energy, and bills impact of the installations?

Improving the energy efficiency of properties means that they will require less energy, reducing carbon emissions and tenants' energy bills. The magnitude of these impacts has been calculated by comparing a sub-sample of PRS properties in England and Wales that were F or G rated, and which had a second EPC, with equivalent properties in Scotland. The analysis estimated that, because of the regulations, this sub-sample of properties in England and Wales now had average annual CO2 emissions per property that were 1,176kg lower than would have been the case if there had been no regulations. The analysis also estimated that the regulations had resulted in an average energy bill saving of £67 per year for households living in previously EPC F or G rated domestic PRS properties in England and Wales with a second EPC (assuming tenants met the property's energy costs, rather than the landlord).

## What are the wider impacts on health outcomes?

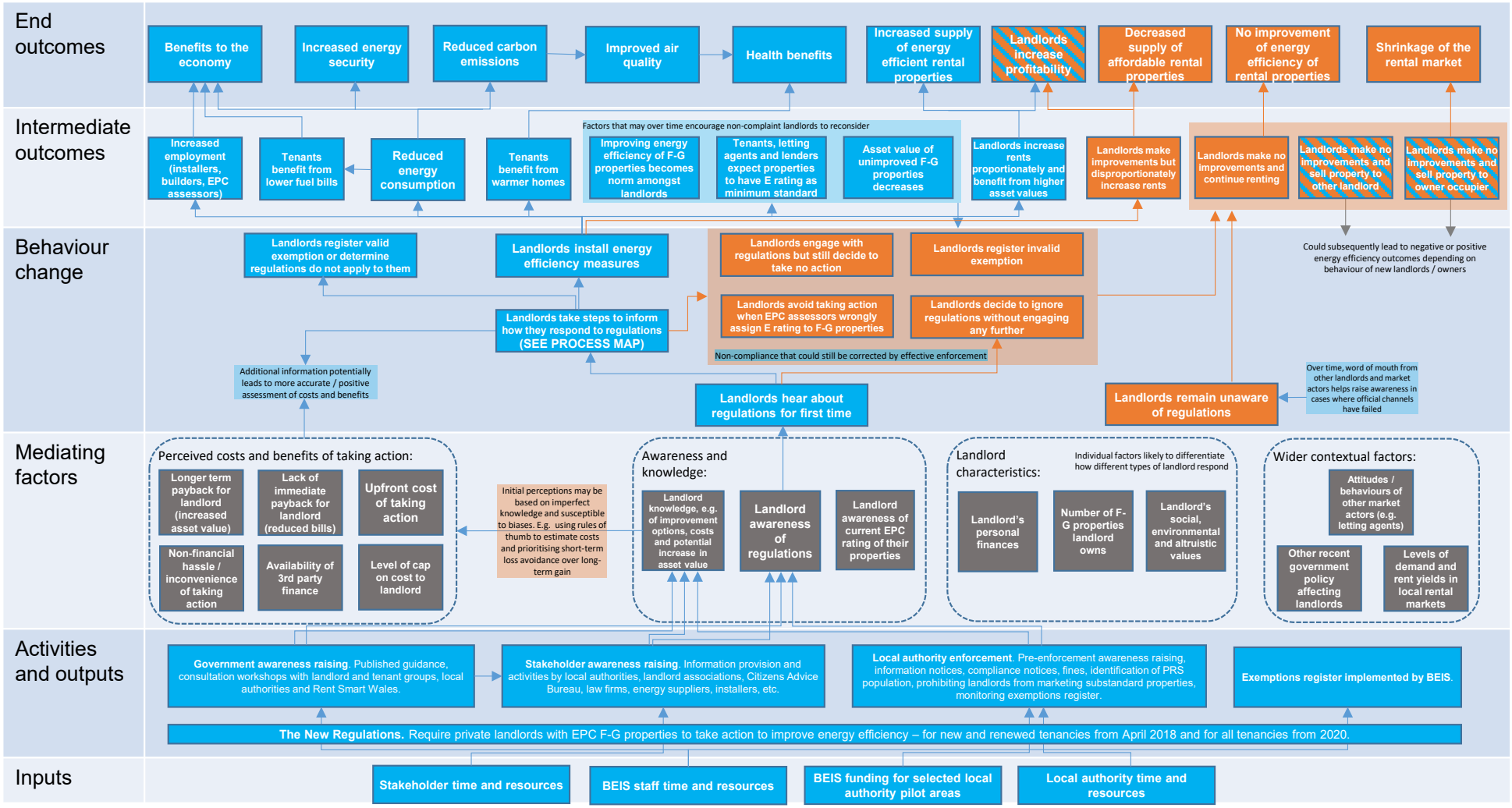
By bringing PRS properties to a minimum EPC E rating, the regulations will improve the health of tenants, either in the form of an improvement in their welfare (e.g. thermal comfort) or a potential reduction in the incidence of ill health. Colder indoor temperatures are associated with increased risk of developing various cardiovascular and respiratory diseases. Using the Health Impact of Domestic Energy Efficiency Measures (HIDEEM) model, it is estimated that the average PRS property in England and Wales would have got 0.1-0.3 ºC warmer (indoor winter temperature) by moving from an EPC rating of F or G to an E rating or better. Even this modest increase in indoor temperatures is associated with positive health benefits for the inhabitants of PRS properties, including reduced incidence of illnesses such as chronic obstructive pulmonary disease (COPD) and cardiovascular conditions. It is estimated that the health improvements equate to 1,046 QALYs[27].

[27] Quality-adjusted life-years (QALYs) - a recognised health outcome measure

# Appendices

# Appendix 1 - Theory of change for the regulations

At the outset of the evaluation the following Theory of Change was formulated. Blue represents the intended inputs, activities, outputs, changes in behaviour, and outcomes of the regulations. Orange represents potential unintended and/or undesirable consequences.



# Appendix 2 – Evaluation questions

The questions the evaluation sought to address were:

## 1. To what extent are landlords complying with the regulations?

- What proportion of landlords are aware of the regulations and their associated obligations?
- What proportion of landlords/properties have complied with the regulations [compliance means either having improved a property to EPC E or having registered a valid exemption]?
- For what reasons/in what circumstance is compliance not taking place?
- What factors influence landlord awareness of the regulations and knowledge of their associated obligations and actions they can take?
- How easy or difficult do landlords find it to respond to the regulations and why?
- What role are market stakeholders playing in the implementation of the regulations?
- What changes to the policy, or supporting policies, could be implemented to increase compliance?

## 2. To what extent have the regulations achieved their aims?

- How many energy efficiency installations have taken place in inefficient properties in the PRS sector?
- What are the reasons why landlords have installed energy efficient measures in their properties and how many of those installations can be attributed to the PRS regulations?
- What are the carbon, energy and bills impacts of the installations?
- What are the wider impacts on air quality and health outcomes?
- What impact have the regulations had on tenants, including energy bills, warmer homes and increases in rental costs?

## 3. Have the regulations had wider impacts on the private rental market?[28]

- What level of additional cost or burden is being placed on landlords? How and why are these costs falling across different landlord or property types?
- How many landlords are leaving the market, or changing property ownership/management practices as a result of the regulations?

[28] The 2021 Interim Evaluation Report included some speculative findings for these research questions, but it was then agreed with DESNZ not to focus further attention on them for the remainder of the evaluation due to data availability. Some potentially viable data sources to enable a robust analysis of market impacts were identified but the prohibitive costs of accessing the data (circa £100,000) meant it was not feasible to pursue this.

- How are the policies influencing the market for private rental properties, including property prices and movement of properties between PRS to Owner Occupier Sector?
- How are the policies influencing the market for property rental, including rental prices and demand for inefficient rental properties?

# Appendix 3 – Landlord surveys drawn on in the evaluation

The evaluation has drawn on results from three landlord surveys:

- **The English Private Landlord Survey (EPLS)**[29]. This is the largest and most robust survey of landlords in England and, within the timeframe of the evaluation, was undertaken in 2018, 2021 and 2024. The survey is conducted by the National Centre for Social Research (NatCen) for the Ministry for Housing, Communities and Local Government. The sample is drawn from landlords who have placed a deposit with a government Tenancy Deposit Protection scheme[30]. A small number of questions pertaining to awareness of the regulations were included in the 2018, 2021 and 2024 surveys.
- **The Landlord Panel Survey (LPS)**. This is conducted by BVA-BDRC with landlords in England. The survey is run each quarter annually with members of the National Residential Landlords Association (NRLA). DESNZ has commissioned the inclusion of questions on awareness, understanding and responses to the regulations in certain quarters of the survey since 2017.
- **The Welsh Landlord Survey (WLS)**. Prior to this evaluation there were no surveys of landlords in Wales equivalent to the EPLS or LPS in England. A new survey, the WLS, was therefore conducted by Verian (formerly Kantar Public) as part of the evaluation – in 2018 and 2021. The survey contained questions on awareness, understanding and responses to the regulations. The sample was drawn from landlords registered with Rent Smart Wales (RSW)[31]. All registered landlord who had given their consent to being send information and marketing by RSW were sent an email by RSW inviting them to participate in the survey using a link provided by the evaluation team. Results were weighted to correct for any non-response bias and ensure they were representative of Welsh domestic landlords. The weighting variables used were registration with RSW and landlord portfolio size. The questionnaire used in the 2021 iteration of the survey is provided in Appendix 4.

Table A3 gives further information on each survey.

[29] 'English Private Landlord Survey', GOV.UK
[30] The total proportion of private rented sector households covered by a TDP scheme in England is estimated at between 45% and 66%.
[31] It is estimated that over 95% of landlords in Wales are registered with Rent Smart Wales.

**Table A3: Overview of landlord surveys drawn on in the evaluation**

| | English Private Landlord Survey | Landlord Panel Survey | Welsh Landlord Survey |
|---|---|---|---|
| **Country** | England | England | Wales |
| **Survey client / provider** | MHCLG / NatCen | Various / BVA-BDRC | DESNZ / Verian |
| **Survey timing** | 2018, 2021 and 2024 | 2017 - present | 2018 and 2021 |
| **Method** | Online | Online | Online |
| **Sample size** | 7,823 in 2018<br>10,640 in 2021<br>10,919 in 2024 | circa 600-1,100 per wave | 1,119 in 2018<br>1,820 in 2021 |
| **Weighting** | Yes | No | Yes |
| **Sample composition** | | | |
| Landlord type: | | | |
| - Individual | 94% | 84% | 94% |
| - Company | 6% | 16% | 6% |
| Portfolio size: | | | |
| - 1 property | 43% | 20% | 70% |
| - 2-4 properties | 39% | 41% | 23% |
| - 5+ properties | 18% | 39% | 8% |

Out of the three surveys, the EPLS and WLS provide the most robust evidence, and the evaluation has accordingly focused most on their results. Both have large sample sizes, and the results are weighted to make them representative of the wider population of English and Welsh landlords respectively. Equally, WLS was only conducted twice in the timeframe of the regulations (most recently in 2021) and, in the case of the EPLS, only a small number of questions concerning awareness and understanding of the regulations were included in the survey questionnaire.

The LPS is conducted exclusively with landlords who are NRLA members, and the results are not weighted. As Table A3 shows, there are a higher proportion of company landlords and landlords with larger portfolios in the sample than in the weighted EPLS and WLS samples. Nonetheless, 31% of landlords in England are members of the NLRA or another landlord body[32], and the LPS has provided regular results on several questions for a recognised constituency of landlords over a long timeframe. Some LPS results have therefore been drawn on in the evaluation. In such instances, the composition of the LPS sample is highlighted in the text and should always be borne in mind in interpreting the results.

[32] DLUHC (2022) 'English Private Landlord Survey 2021: main report', GOV.UK

# Appendix 4 – Welsh landlord survey questionnaire

Hello and thank you for taking part in this survey for the Department for Business, Energy and Industrial Strategy (BEIS).

Kantar Public – an independent social research company – is conducting this survey on behalf of BEIS about the new energy efficiency regulations for private rented properties in England and Wales.

The survey will take approximately 5 minutes to complete, dependent upon the responses you provide.

Participation in the research is entirely voluntary. Your responses will be completely confidential, and nobody will be able to identify from the results that you've taken part in the research. BEIS will not be able to identify any individual from their answers, unless given your express permission to do so.

To review Kantar Public's privacy policy, please click here. If you would like more information about Kantar Public, please click here.

Q1 I am…

- A landlord
- An agent (→ go to re-contact question)
- Both a landlord and an agent
- None of the above (if selected go to closing text)

Q2 As a landlord, how many rental properties do you own and let in Wales? By "rental property" we mean residential property you own and rent out, but do not live in yourself.

[Numeric box – allow answers from 1 to 1000]

Q3 An Energy Performance Certificate (EPC) provides home buyers and tenants with a rating of the energy efficiency of the property. An A rating is the most energy efficient and a G rating the least efficient. Do any of your rental properties have an Energy Performance Certificate (EPC) rating of "E", "F" or "G"?

- Yes, more than half are E, F or G rated
- Yes, less than half are E, F or G rated
- Yes, but I am not sure how many
- None of my properties are E, F or G rated
- I don't know the EPC rating of my property(ies).

Q4 Since April 2018, there has been a new legal requirement for all properties rented out on new tenancies to have a minimum “E” energy efficiency rating on the Energy Performance Certificate (EPC) and in April 2020 this was extended to all tenancies. Before this survey, how aware, if at all, were you of this new legal requirement?

- I was not aware of this at all
- I was aware of it, but I did not understand the details
- I was aware of it and fully understood the details.

*Ask if Q4=2,3:*

Q5 And where did you see information about the new Energy Efficiency requirement? Select all that apply.

- Estate agent
- Managing agent
- Builders or tradespeople
- Landlord associations
- Rent Smart Wales
- National media
- Internet searches
- Central Government guidance documents
- Local Authority guidance documents
- EPC assessor
- Other landlords
- Other [please specify]
- Don’t know.

QX Have you owned any rental properties that did not meet the required standard either before or since the minimum energy efficiency requirement was introduced?

- Yes
- No
- Don’t know.

*Ask if QX=1:*

QY What, if anything, have you done in response to the new minimum energy efficiency requirement for this property? If you have had more than one affected property, please select all the responses that reflect how you have responded across these.

- Carried out works at the minimum cost required to comply and continued to let it out.
- Carried out the works that maximise the long-term value of my property and continued to let it out.
- Carried out works to bring it up to standard then sold it.
- Not carried out any works and continued to let it out.
- Not carried out any works and either sold the property or not re-let it.
- Applied for an exemption.
- Other [please specify]

*Ask if took action QY=1,2,3:*

QZ If you made improvements to bring a rental property up to standard, how did you fund this work? Please select all that apply.

- Savings
- Loan
- Mortgage
- Borrow from friends / family.
- By putting up the rent
- Government grant or funding
- Other [please specify]

*Ask if QX=2,3:*

Q6 The new minimum energy efficiency standard requirement is enforced by Local Authorities and non-compliant properties could incur a fine of up to £5,000. If you had a rental property that did not meet the required standard, would you…

- Carry out works at the minimum cost required to comply and continue to let it out.
- Carry out the works that maximise the long-term value of my property and continue to let it out.
- Carry out works to bring it up to standard then sell it.
- Not carry out any works, continue to let it out.
- Not carry out any works and either sell the property or not re-let it.
- Apply for an exemption.
- Other [please specify]
- Don’t know.

*Ask if would take any action Q6=1,2,3:*

Q7 If you made improvements to bring a rental property up to standard, how would you fund this work? Please select all that apply.

- Savings
- Loan
- Mortgage
- Borrow from friends / family.
- By putting up the rent
- Government grant or funding
- Other [please specify]
- Don't know.

Q9 Thinking about the barriers to improving the energy efficiency of the properties in your portfolio, do you think there are any barriers other than the financial costs?

- Yes
- No
- Don't know.

*Ask Q10 if Q9=1:*

Q10 Which of the following barriers do you believe exist in relation to improving the energy efficiency of properties in your portfolio? Please select up to three (scripter note: randomise)

- Lack of knowledge of what suits my properties.
- The characteristics of my properties make improvements unsuitable.
- Time and effort required to arrange improvements.
- Disruption caused to tenants.
- Lack of tenant support
- Harms the value or attractiveness of the property.
- Planning permission limitations
- Cost of improving the energy efficiency
- Other [please specify]

Q11 Which of the following best describes how you currently rent out your rental properties?

- As an individual or couple
- As a private company
- As a public company (plc)

- As something else

Q12 And which of the following best describes how you currently view your role as a landlord?

- Please select all that apply.
- As a full-time business
- As a part-time business
- As an investment for capital growth
- As an investment for rental income
- As a temporary investment
- As a long-term pension investment
- Providing housing as an employer
- Providing housing as a relative of the tenant
- As something else

Q13 Are any of your current tenants receiving Housing Benefit, the Local Housing Allowance or Universal Credit?

- Yes
- No
- Don’t know.

Q14 What type of properties do you let out in Wales? Please select all that apply.

- Detached house
- Semi-detached house
- Terraced house
- Purpose-built flat or maisonette
- Converted flat or maisonette.
- Bedsit, room, studio or flatlet.
- A House in Multiple Occupation (HMO)
- Don’t know.

Thank you for completing this survey.

If you have any further question about this research, please contact landlords@kantarpublic.com.

If you would like further details about the new regulations, please click here.

# Appendix 5 – Qualitative research conducted for the evaluation

## Landlord interviews

Qualitative interviews were conducted with landlords who rent properties in scope of the regulations in 2018-19, 2020, and 2022. In each wave, quotas were set for the recruitment of landlords with different characteristics, in terms of how they had responded to the regulations (by making energy efficiency improvements, registering an exemption, or taking no action); whether they rented properties in England or Wales, whether they were an individual or company landlord, and how many properties they rented.

In the first wave of interviews in 2018-19, landlords were recruited through two routes:

- Previous participation in the 2018 English Private Landlord Survey, 2018 Welsh Landlord Survey, or 2018 Landlord Panel Survey. Each survey included a question asking for the respondents' consent to be recontacted for research purposes.
- The PRS Exemptions Register. When landlords register an exemption, they are asked to provide their contact details and asked for consent to be recontacted for research purposes as part of the registration process.

A sample was recruited meeting all the quotas set except for one: landlords who had taken no action in response to the regulations. 10 were recruited against a target of 20. Landlords who had indicated they had taken no action at the point they completed one of the surveys were recontacted, but most said they had now either registered an exemption or made energy improvements.

In the second wave of interviews in 2020 a new recruitment approach was implemented to try to improve the representation of landlords who had taken no action in response to the regulations. Data in the national EPC database was matched with Land Registry data to identify landlords who had owned an F or G rated property at the time the regulations were introduced and either had or hadn't got an EPC with an improved rating since. Tele-matching was also undertaken to identify a current telephone number for the landlords identified.

Despite the new approach, the target number of landlords who had taken no action in response to the regulations was not recruited. The target was 15, and 15 landlords who appeared to fall into this group based on the available data and screening questionnaire were recruited. However, in the interviews subsequently conducted with the landlords, eight of them said that they had made energy efficiency improvements but not yet got a new EPC, and one said that they had only recently registered an exemption. This left an effective sample of six 'genuine' no action landlords.

In the final wave of the interviews in 2022, the recruitment approach reverted to that used in the first wave. Landlords were recruited from consenting participants in the 2021 English Private Landlord Survey, 2021 Welsh Landlord Survey, and 2021 Landlord Panel survey, and from the PRS Exemptions Register. 10 landlords who had taken no action in response to the regulation were recruited and interviewed against the target of 15. Other recruitment quotas

were met. Table A5 shows the characteristics of the landlords successfully recruited and interviewed in each wave of the research.

**Table A5: Landlords interviewed for the evaluation**

| | 2018-19 | 2020 | 2022 |
|---|---|---|---|
| **Response to regulations:** | | | |
| Made energy efficiency improvements | 20 | 33 | 30 |
| Registered exemption | 25 | 26 | 30 |
| Taken no action | 10 | 6 | 10 |
| Other[33] | 0 | 0 | 40 |
| **Country:** | | | |
| England | 39 | 52 | 74 |
| Wales | 16 | 13 | 36 |
| **Landlord type:** | | | |
| Company | 14 | 19 | 42 |
| Individual | 41 | 46 | 68 |
| **Properties:** | | | |
| 1 | 11 | 12 | 22 |
| 2-5 | 21 | 40 | 52 |
| 6+ | 23 | 13 | 36 |
| **Total** | **55** | **65** | **110** |

[33] Landlords who owned properties that were compliant with the current regulations but in scope of potential new regulations the Government consulted on which would raise the minimum energy efficiency standard to EPC rating C.

## Letting agent Interviews

Letting agents were interviewed as part of the evaluation in 2018-19 and 2022. They were recruited through the PRS exemptions register (agents are permitted to register exemptions on behalf of landlords and provide their contact details and consent to be recontacted as part of the registration process) and using free-find methods. In 2018-19, the target was to interview 10 letting agents who had let and/or managed properties for that were in scope of the regulations around the time they were introduced. This target was met. In 2022 the target was to interview 10 letting agents who had let and/or managed properties that were in scope of the regulations; and 10 letting agents who were letting and/or managing properties in scope of potential future regulations the Government previously consulted on in 2022 which would raise the minimum energy efficiency standard to EPC rating C. Both these targets were met.

## Tenant interviews

Tenants were interviewed in 2020 and 2022 of the evaluation. In 2020, the target was to interview 16 tenants who lived in properties that had been in scope of the regulations when they were introduced (eight where the landlord had made energy efficiency improvements in response; and eight where the landlord had registered an exemption). Tenants were recruited using data in the national EPC database and PRS exemptions register. Opt-in letters, addressed to the tenant, were written to properties in the EPC database that had an F or G rating before the regulations were introduced and an improved rating after and to properties on the PRS exemptions register. The targets for both types of tenants were met.

In 2022, the target was to interview 30 tenants (15 who lived in properties that had been in scope of the regulations when they were introduced and where the landlord had made energy efficiency improvements; and 15 who lived in properties that would be in scope of potential future regulations to raise the minimum standard to an EPC rating of C). This time free find recruitment methods (such as on-street recruitment) were used and the targets for both types of tenants were met.

## Conduct of interviews

In all the landlord, letting agent, and tenant fieldwork conducted for the evaluation, potential interviewees were assured of the anonymity of their participation and offered a £70 incentive for taking part. Interviews were conducted either online or by telephone, undertaken using topic guides agreed with DESNZ to ensure consistent coverage of key themes with each respondent group. Interviews were digitally recorded and transcribed. Interview transcripts were analysed using NVivo software.

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