



Department for  
Energy Security  
& Net Zero

# Research into the Allocation of Heat and Energy Efficiency Related Costs in Rented Non-domestic Buildings

Commercial Leases Research Project

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## Disclaimer

The Department for Energy Security and Net Zero (DESNZ), formerly BEIS, will be referenced throughout as BEIS due to the time the work was commissioned in 2022. The statistics quoted were correct at the time of writing.

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# 1 Executive Summary

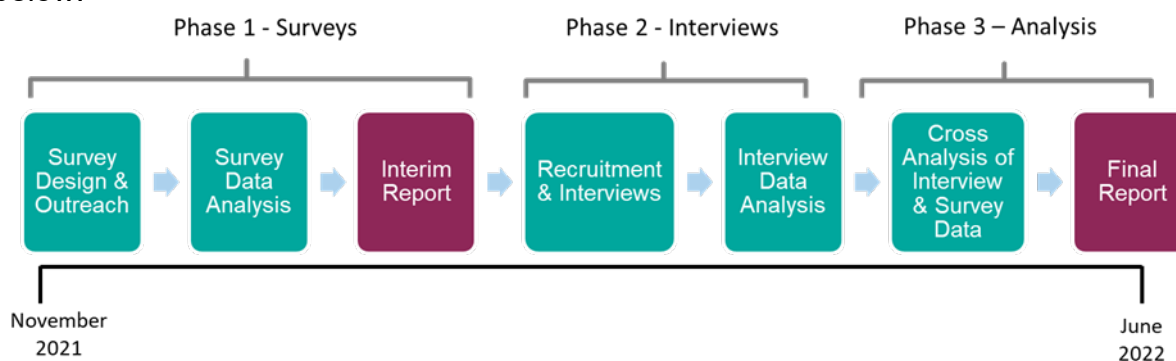
## 1.1 Introduction

Achieving net zero will require virtually all heat in buildings to be decarbonised. To help meet this target, the Department for Business, Energy and Industrial Strategy (BEIS), now known as the Department of Energy Security and Net Zero (DESNZ), is considering its approach to decarbonising heat and improving the energy efficiency of non-domestic buildings. The non-domestic building stock in England and Wales consists of approximately 1.66 million buildings, of which 60% are privately rented.<sup>1</sup> There are several market failures that prevent improvements to the energy efficiency of privately rented non-domestic properties. For example, landlords tend to be responsible for paying for improvements to the property, while tenants are responsible for fuel usage and energy bills.

This project, commissioned by BEIS, (and will be referenced as such throughout this report), builds upon the existing evidence base on how costs and responsibilities are split between landlords and tenants regarding space heating (including hot water generation) and cooling and energy efficiency improvements. The costs within scope of this research were operational costs (such as energy bills, maintaining and repairing heating systems, choosing an energy supplier/tariff, and metering responsibilities) and capital costs (such as installing new or replacing existing infrastructure in the building). It is necessary to build on the current evidence base because of the diverse nature of non-domestic buildings. Future policies for heat and energy efficiency in these buildings need to be reflective of the varied landlord-tenant arrangements that are in place across the building stock. In this project, research sectors were used as a proxy for building stock, which assumes that similar types of buildings were used by the same sectors (for example, the office sector used office blocks).

## 1.2 Method

This research comprised of two data collection phases and an analysis phase as outlined below:



<sup>1</sup> Department for Business, Energy & Industrial Strategy (2021) Non-domestic National Energy Efficiency Data Framework (ND-NEED), 2021

Over 600 tenants were surveyed between December 2021 and January 2022, and 37 landlords, tenants, and non-domestic leasing experts/legal representatives were interviewed between February and May 2022. The sample used for both the survey and interviews included coverage across all sectors, different sizes of organisations, on/off-gas grid premises, lease lengths, building ages, single/mixed-use buildings, Energy Performance Certificate (EPC) ratings, lease years, and fit-out categories.

## 1.3 Key Findings

The allocation of responsibility between the surveyed tenants and their landlords for costs varied and was dependent on the equipment or measure type. This is split out in 1.3.1. Sector type was a main driver for whether tenants or landlords were responsible for these costs, which is explored in 1.3.2.

### 1.3.1 Allocation of Cost Responsibility by Equipment/Measures

The allocation of responsibility between the surveyed tenants and their landlords for the costs associated with heating and cooling systems and energy efficiency measures varied across operational and capital costs. It also varied by equipment type and depended on how integrated the piece of equipment was within the building itself. Table 1 provides a summary of the split of allocation between the surveyed tenants and their landlords across the different costs and equipment. Note that this table doesn't capture the split by sectors which influences the allocation of cost. These results are from a survey of over 600 tenants where a range of sectors was sampled.

**Table 1 – Allocation of Cost Responsibility – Results from Tenant Survey**

Category – Operational Costs

Type of Cost	Equipment/ Measures	Landlord (%)	Tenant (%) <sup>2</sup>	Commentary
Maintenance Costs	Space Heating	48	29	According to tenants who answered the survey, their landlords were more likely to pay for the maintenance costs of space heating and cooling, hot water, and energy efficiency equipment, as this relates to the building fabric.
Maintenance Costs	Space Cooling	38	34	According to tenants who answered the survey, their landlords were more likely to pay for the maintenance costs of space heating and cooling, hot water, and

<sup>2</sup> Percentages do not equal 100% as the 'unknown' and 'other' categories have not been included in this summary table.



Allocation of heat and energy efficiency related costs in rented non-domestic buildings

				energy efficiency equipment, as this relates to the building fabric.
Maintenance Costs	Hot Water	49	27	According to tenants who answered the survey, their landlords were more likely to pay for the maintenance costs of space heating and cooling, hot water, and energy efficiency equipment, as this relates to the building fabric.
Maintenance Costs	Double/ Triple Glazing Windows and Doors	52	22	According to tenants who answered the survey, their landlords were more likely to pay for the maintenance costs of space heating and cooling, hot water, and energy efficiency equipment, as this relates to the building fabric.
Maintenance Costs	Wall, Floor, Roof & Loft Insulation	48	21	According to tenants who answered the survey, their landlords were more likely to pay for the maintenance costs of space heating and cooling, hot water, and energy efficiency equipment, as this relates to the building fabric.
Maintenance Costs	Low Energy/ High Efficiency Lighting	39	27	According to tenants who answered the survey, their landlords were more likely to pay for the maintenance costs of space heating and cooling, hot water, and energy efficiency equipment, as this relates to the building fabric.
Maintenance Costs	Building Management System	50	25	According to tenants who answered the survey, their landlords were more likely to pay for the maintenance costs of space heating and cooling, hot water, and energy efficiency equipment, as this relates to the building fabric.
Energy Bills	Choosing the Energy Tariff or Supplier	43	50	According to the surveyed tenants, their landlords were only slightly less likely to be responsible for choosing energy suppliers and taking readings than they (the tenants) are, although a few interviewees highlighted that some tenants request to choose their energy supplier or identify one in collaboration with their landlord to find the cheapest tariff

Energy Bills	Paying the Premises' Energy Bill	33	60	Surveyed tenants were more likely to be responsible for paying their premises' energy bills and reporting readings than their landlords.
Energy Bills	Taking Meter Readings	41	51	According to the surveyed tenants, their landlords were only slightly less likely to be responsible for choosing energy suppliers and taking readings than they (the tenants) are, although a few interviewees highlighted that some tenants request to choose their energy supplier or identify one in collaboration with their landlord to find the cheapest tariff
Energy Bills	Reporting Meter Readings	31	61	Surveyed tenants were more likely to be responsible for paying their premises' energy bills and reporting readings than their landlords.

Category – Capital Costs

Equipment/ Measures	Landlord (%)	Tenant (%) <sup>3</sup>	Commentary
Space Heating	37	34	It was reportedly the surveyed tenants' responsibility slightly less often than it was their landlords for space heating equipment costs.
Space Cooling	24	36	Surveyed tenants were more likely to be responsible for space cooling equipment costs and hot water equipment costs than their landlords.
Hot Water	32	37	Surveyed tenants were more likely to be responsible for space cooling equipment costs and hot water equipment costs than their landlords.
Double/Triple Glazing Windows and Doors	56	18	According to tenants who answered the survey, their landlords were more likely to be responsible for the capital cost of all energy efficiency measures, as this relates to the building fabric.

<sup>3</sup> Percentages do not equal 100% as the 'unknown' and 'other' categories have not been included in this summary table.

Wall, Floor, Roof & Loft Insulation	48	19	According to tenants who answered the survey, their landlords were more likely to be responsible for the capital cost of all energy efficiency measures, as this relates to the building fabric.
Low Energy/High Efficiency Lighting	34	26	According to tenants who answered the survey, their landlords were more likely to be responsible for the capital cost of all energy efficiency measures, as this relates to the building fabric.
Building Management System	46	22	According to tenants who answered the survey, their landlords were more likely to be responsible for the capital cost of all energy efficiency measures, as this relates to the building fabric.

### 1.3.2 Allocation of Cost Responsibility by Sector

There was variation by sector on where cost responsibility fell.

For operational costs:

- Tenants in the survey reported their landlords to have the highest responsibility for maintenance costs for all energy efficiency measures in the office sector – potentially because any costs are recouped through a service charge paid to landlords.
- It was reportedly the surveyed tenants' responsibility as often as their landlords for lighting fixture costs in the hospitality sector.

For capital costs:

- The surveyed tenants reported landlords within the hospitality sector more likely to be responsible for the capital costs of heating equipment than other sectors. This may be because larger spaces are linked to larger capital costs of equipment due to larger heating requirements, and landlords are more likely to be responsible for larger capital costs.
- Surveyed tenants in the industrial and storage sector were reported to be more likely responsible for heating equipment than other sectors. This may be because industrial units do not necessarily have a heating requirement, and therefore there is less expectation on landlords to provide heating systems or be responsible for the costs of such systems

### 1.3.3 Allocation of Cost Responsibility by Size of Organisation

The size of an organisation led to variation in capital costs responsibility. According to the survey of tenants, landlords of micro-sized organisations (0–9 employees) were more likely to be responsible for the cost of all measures when compared to other organisation sizes. Micro-sized organisations may be more likely to rent spaces that have shorter lease terms with lower values, as they would typically have lower turnovers and less staff than larger organisations. It

is, therefore, more likely that the landlord will take on responsibility for costs due to these factors.

### 1.3.4 How Cost Responsibility is Determined

The division of responsibility was based on terms stipulated in the contract. These agreements are usually drawn up by the landlord in the first instance and follow standard practice from typical UK agreements, sector specific agreements, or agreements based on the type of premise (e.g., a listed building). Where the tenant was responsible for the cost of equipment upgrades, consent from the landlord was generally still required for all technologies except for cooling equipment. Where the landlord was responsible for the cost of equipment upgrades, tenants were still highly likely to contribute either directly or indirectly (through a service charge).

### 1.3.5 Agreeing on Responsibility

Factors that impacted the decision-making process for agreeing on the responsibility of costs for installing new equipment at the start of a lease, or replacing broken equipment included: the clarity of leasing terms; the length of/remaining years in the lease; individual attitudes and flexibility of landlords and tenants; and relationships between landlords and tenants.

### 1.3.6 Allocation of Responsibilities for Voluntary or Mandatory Upgrades

The division of responsibility for funding and implementing future energy efficiency or heating upgrades under different hypothetical scenarios was also explored. These scenarios include both voluntary and mandatory upgrades. Voluntary upgrades might include those made to meet net zero commitments, whilst mandatory upgrades might include those made to comply with legislation. There was little variation in responses across the different scenarios. The key findings were as follows:

- Form of agreements for both voluntary and mandatory upgrades – irrespective of who was responsible – would involve either following a standard contract in the existing agreement, negotiating new clauses in this agreement, establishing new contracts, or apportioning cost responsibility through negotiation rather than a contract. There was a balance between those who prefer ‘formal’ agreements to ensure clarity and reduce risk, and ‘informal’ agreements to undergo a less onerous process.
- Agreeing on responsibility for both voluntary and mandatory upgrades was in line with the factors outlined for how current arrangements play out. However, it was stressed that the decision-making process varied greatly depending on the specific context. In addition to those listed above, key factors included how the payback of the upgrade would be apportioned, and the extent of upgrades.
- Using asset liquidity (cash flow or savings) was the preferred option for funding heating and cooling equipment, and energy efficiency measures, under both voluntary and mandatory scenarios. ‘Green grants’ and loans were frequently cited, but less common. Some would expect grants to be made available if the upgrades were mandated. Some landlords also stated that they passed costs of upgrades through to their tenants. The

rising prevalence of funds specifically set aside for net zero was also mentioned. As more businesses are implementing net zero plans, there is a trend towards greater agreement (and flexibility) on the need for upgrades and a more collaborative approach between landlords and tenants in the splitting of costs.

## 1.4 Conclusions

This research shows no consistent relationship between landlords and tenants on how costs are apportioned for heating and cooling equipment and energy efficiency measures.

The implications of these findings are likely to be wide-reaching. Firstly, any policies that promote the replacement of existing heating systems and improved energy efficiency measures will likely require agreement between landlords and tenants, irrespective of who the requirement falls on. This may involve negotiating new clauses within existing agreements or negotiating new contracts between landlords and tenants.

Generally, the larger the capital and operational cost, the more likely landlords will be responsible. However, landlords were also likely to be more responsible for capital costs in spaces rented by micro-sized organisations due to generally shorter leases with lower values. The cost responsibility varies depending on the sector, with deviations from the norm found particularly in the hospitality, office, and industrial sectors. These sectors may therefore be more easily influenced by any future policy aimed at decarbonising non-domestic buildings that focuses primarily on actors (the landlord/building, or the tenant), rather than policies which focus on sectors (proxy used for type of building in this research). Future policies may need to be appropriately nuanced to consider these dynamics. Any future 'one size fits all' policies (obligations or incentives) to encourage cooperation and equitable allocations of costs, are unlikely to be effective. New policies would need to be phased in over time. Finally, government may wish to be more prescriptive on who the cost responsibility of replacing heating systems and making energy efficiency upgrades falls on. This would require consultation in advance to ensure any future policy is developed with care and attention to the current dynamics at play. This could lead to a more formalised structure in the long term on who is responsible for the costs of heating and energy efficiency upgrades, making it more straightforward to introduce policy to encourage decarbonisation buildings.

Increasingly, irrespective of policy, demand for businesses to futureproof and reach net zero targets means the traditional split of costs may become more flexible, and more collaboration between tenants and landlords may be expected when making heating, cooling, and energy efficiency upgrades.

## 2 Introduction

The Department for Business, Energy, and Industrial Strategy (BEIS) has commissioned this research to build on its current evidence base relating to how costs and responsibilities associated with heating systems and energy efficiency measures are allocated within commercial private rented sector leases in England.

The research explores how space heating, cooling, hot water generation, and energy efficiency improvement costs are divided between tenants and landlords (i.e., the owner of the property) to inform future policy decisions.

### 2.1 Background & Context

In June 2019, the UK Government signed into law a commitment to achieve net zero greenhouse gas (GHG) emissions by 2050 by amending the Climate Change Act 2008.<sup>4</sup> Direct and indirect emissions from non-domestic building operations accounted for approximately 9% of UK GHG emissions in 2020.<sup>5</sup> Therefore, if legally binding targets are to be met, the energy efficiency of the existing non-domestic building stock must be improved, and low carbon heating systems installed as a crucial part of this transformation. On top of reducing carbon footprints, saving money is also a driver for making non-domestic buildings more energy efficient. However, this is assuming the energy savings benefits outweigh the capital investment, and it should be noted that different parties may experience the costs or benefits on energy efficiency measures, and it may not always be the same party. This is increasingly important given the steep rise in energy prices experienced by the UK (and internationally) in 2022.

Non-domestic leases in England and Wales are underpinned by non-domestic leasehold legislation, which includes the Landlord and Tenant Act 1954, part II.<sup>6</sup> In 2021, the private rented sector accounted for 60% of the UK's 1.66 million non-domestic buildings.<sup>7</sup> There are several market failures within this sector that prevent improvements from being made to properties to increase their energy efficiency and making heating system upgrades. A key barrier includes the issue of misalignment: landlords tend to be responsible for paying for improvements to the property, while tenants are responsible for fuel usage and energy bills.<sup>8</sup> Secondly, the upfront costs of heating and energy efficiency improvements need a justifiable business case, and their long payback periods can often dissuade investment. In addition,

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<sup>4</sup> The UK Government (2008) Climate Change Act 2007, The UK: Stationary Office

<sup>5</sup> Department for Levelling Up, Housing & Communities (2021) Changes to the energy efficiency requirements of the Building Regulations for non-domestic buildings [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1040632/Non-domestic\\_Part\\_L.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1040632/Non-domestic_Part_L.pdf)

<sup>6</sup> The UK Government (1954), Landlord and Tenant Act 1954, Landlord and Tenant Act 1954 (legislation.gov.uk)

<sup>7</sup> BEIS (2021) Non-Domestic Private Rented Sector Minimum Energy Efficiency Standards Research, 2021, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/970354/non-domestic-private-rented-sector-minimum-energy-efficiency-standards-research.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/970354/non-domestic-private-rented-sector-minimum-energy-efficiency-standards-research.pdf)

<sup>8</sup> BEIS (2021) Non-Domestic Private Rented Sector Minimum Energy Efficiency Standards Research, 2021,

other dynamics – including fluctuating energy costs; the impacts of COVID-19; increased awareness around net zero; and projected changes in technology costs – all combine to complicate the decision for businesses to invest in upgrading heating systems or make energy efficiency improvements.

## 2.2 Project Aims & Objectives

The following sub-sections outline the aims and scope of the study, the research questions asked and the structure of this report.

### 2.2.1 Project Aims & Scope

The overarching aim of the research was to identify how the costs and responsibilities associated with improving energy efficiency and replacing and maintaining heating systems are allocated between landlords and tenants in England. The tenants in scope were private non-domestic tenants and tenants belonging to the third sector (e.g., voluntary organisations). The costs included were:

- Capital costs (relating to replacing or installing new infrastructure in the building)
- Operational costs (e.g., energy bills, maintenance and repair costs, and metering)

The research aimed to investigate how tenants and landlords allocate costs for the following features of a building:

- Heating and cooling (e.g., space heating, space cooling, and hot water provision)
- Energy efficiency (e.g., building fabric, metering, and submetering)
- Other features (e.g., energy supplied)

### 2.2.2 Project Research Questions

The research was designed to answer specific questions asked by BEIS. These research questions were structured in two distinct research phases.

Phase 1 primarily investigated:

- Who typically bears the cost of heating and energy efficiency upgrades in rented non-domestic buildings?
- How does this vary when looking across different segments of the building stock?
- If tenants and landlords are unsure or cannot agree on who is responsible, what factors are causing the uncertainty?

Phase 2 primarily investigated:

- Who pays (in greater detail, including reasoning and expanding on Phase 1 findings)?

- Views on whether the Government should include obligations or incentives in heat and energy efficiency policies to encourage cooperation and equitable allocation of costs. If so, what form could this take?
- Where the tenant is responsible, in which ways would they consider covering the costs of improving energy efficiency and replacing the heating system, in line with possible future regulations? Where the landlord is responsible, in which ways would they look to cover the cost?
- Why and what is driving the different agreement scenarios? Provide the missing link to understand how this is decided.

### 2.2.3 Report Structure

The remaining parts of the report are structured as follows:

- Section 2.0: Methodology – presents the methodology employed for Phases 1 and 2 of the research
- Section 3.0: Analysis of Results – presents the study findings, including the survey with tenants and the interviews conducted with landlords, tenants, legal representatives, and non-domestic property experts
- Section 4.0: Conclusions – presents conclusions from the research

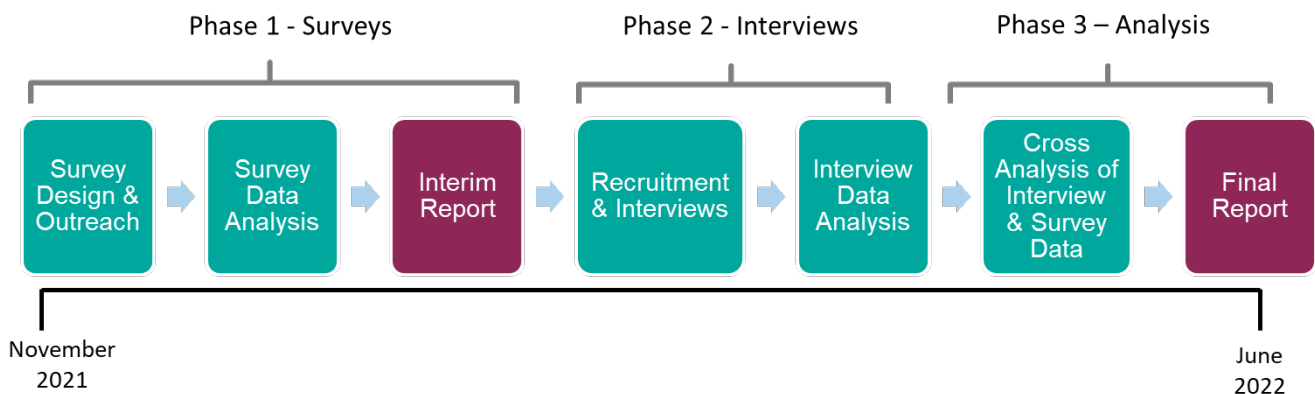
A separate document “Research into the Allocation of Heat and Energy Efficiency Related Costs in Rented Commercial Buildings – Appendices” accompanies this report and includes detail on the content of the survey and interviews conducted, as well as background information from the survey.



## 3 Methodology

The approach to answering the research questions (see section 1.2.2) comprised of two data collection phases and an analysis phase, as outlined in Figure 1.

**Figure 1: Outline of Methodology and Timescales**



### 3.1 Phase 1 - Quantitative Survey

We conducted an online quantitative survey<sup>9</sup> between December 2021 and January 2022 with tenants of private non-domestic buildings in England; no landlords were assessed at this time. The survey was designed to answer the following research questions:

- Who typically bears the cost of heating and energy efficiency upgrades in rented non-domestic buildings?
- How does this vary when looking across different segments of the building stock?
- If tenants and landlords are unsure or cannot agree on who is responsible, what factors are causing the uncertainty?

The survey also addressed the complexities around subletting and how this impacts the allocation of costs. An introduction to the survey, survey screener questions, and a copy of the survey is included in the accompanying appendices (A2.0).

#### 3.1.1 Sampling & Recruitment Approach

Eunomia partnered with Panelbase for the survey recruitment element of the study. Panelbase is a recruitment panel that specialises in online data collection services and regularly undertakes business surveying. They helped to identify individuals involved in managing the energy aspects of leases, such as facilities/office managers, environmental managers, and managing directors for small firms.

<sup>9</sup> See Appendices.

Stratified sampling<sup>10</sup> was used to sample the population of non-domestic buildings. This was based on the aim of achieving 500 responses from a representative cross-section of tenants of non-domestic buildings in England. The stratification was designed to be representative of the building splits in the Non-Domestic National Energy Efficiency Data-Framework (ND-NEED),<sup>11</sup> which includes a detailed breakdown of the non-domestic building stock in England and Wales in 2019. The non-domestic building stock was stratified by sector as follows:

- Hospitality
- Industrial & Storage
- Office
- Retail
- Other (Art, Leisure, Community, Education, Health, Emergency Services, Other)

The sampling quotas used are set out in Table 1, which breaks down the overall quota of 500 buildings into the stratified quotas by sector, as inferred from ND-NEED data. This provided the optimal survey sample size by sector, for which principal building use was used as a proxy. The achieved sample is also recorded in this table.<sup>12</sup>

**Table 2: Sector Strata**

Strata	Population Size(1)	Target Sample Size	Sample Size Achieved (by principal building use)	% of Target Achieved (by principal building use)
Hospitality	87,339	49	52	106%
Industrial & storage	232,365	130	119	92%
Office	180,609	101	167	165%
Retail	256,626	144	130	90%
Other(2)	135,861	76	27	35%
Total	892,800	500	547 (3)	N/A

(1)Sector split based on data from ND-NEED (England and Wales 2019)

(2)Art, Leisure, Community, Education, Health, Other

(3)There were 653 total complete survey responses. However, as the question on principal building use was added after the survey was opened, there were 106 survey responses for which the sector was unknown, resulting in 547 responses by principal building use.

<sup>10</sup> Stratified sampling method involves dividing a population into smaller groups (strata) based on a certain characteristic that is known for every sampling unit in the population, and then selecting samples independently from each stratum.

<sup>11</sup> Department for Business, Energy & Industrial Strategy (2020), Non-Domestic National Energy Efficiency Data Framework 2020: geographical annex data tables <https://www.gov.uk/government/statistics/non-domestic-national-energy-efficiency-data-framework-nd-need-202>

<sup>12</sup> The sampling strategy did not pursue further sub-dividing of each stratum by business size, because stratifying in this way would have resulted in a skewed understanding of the business stock and would have disregarded larger businesses due to a large number of small businesses.

Beyond sector, the sampling strategy considered whether the building was on or off the gas grid due to the previous government's consultation on phasing out fossil fuel heating systems in off-gas grid buildings.<sup>13</sup> The sampling strategy therefore also aimed to achieve a 65:35 split of on and off-gas grid building, which is greater than the actual split of 83:17 within the non-domestic building population. Of the 547 responses above, 313 were connected to the gas grid (61%), 135 were not (27%) and 61 (12%) did not know.

### 3.1.2 Analysis

After its collection, the data was analysed in Microsoft Excel. The purpose of the analysis was to gain an understanding of the current allocation of costs across sectors, organisation size and gas grid connection. This enabled the topic guides for the Phase 2 interviews to be developed with an understanding of what is currently happening, as well as to identify any themes to explore in more detail.

Descriptive statistics and tabulations of the survey data are included in Section 3.0, where interview findings were used to inform which survey results to analyse. In some instances, cross-tabulation methodology, which analyses the relationship between multiple variables (e.g., responsibility for the cost of installation vs grid connection) has been used to answer the research questions.

Headline statistics were reweighted by sector and by gas grid connection. Specifically, survey results analysing responsibility for the costs of heating and energy efficiency upgrades in rented non-domestic buildings were reweighted to reflect the sectoral proportions in ND-NEED and the share of buildings with a gas grid connection within each sector. Reweighting the survey results by gas grid connection was necessary to account for the oversampling of off-gas grid properties and allow for the results to be generalisable to the population of non-domestic tenants.

## 3.2 Phase 2 – Interviews

In Phase 2, a total of 37 interviews were conducted with landlords (19) and tenants (14) of non-domestic buildings, relevant legal professionals and non-domestic letting agents (4). This phase aimed to explore the question of 'who pays' in greater detail and build on the findings of Phase 1.

### 3.2.1 Sampling

The target number of interviews was 20 landlords, 20 tenants, and 5 legal representatives/non-domestic property experts (45 in total). This target was not met due to time constraints and difficulty obtaining suitable participants, despite engaging a commercial estate agent/consultancy as a sub-contractor to support recruitment, with 37 interviews completed

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<sup>13</sup> BEIS (2021), Phasing out the installation of fossil fuel heating in homes off the gas grid, <https://www.gov.uk/government/consultations/phasing-out-fossil-fuel-heating-in-homes-off-the-gas-grid>

overall. This was not considered to be a major issue as by the end of the primary research we were finding very similar results across the different interviews.

The interview recruitment strategy attempted to achieve interviews across the range of sectors identified as part of the survey. In addition to sectors, we also considered business size in line with BEIS's business size classification<sup>14</sup> and a range of fuel types (as a proxy for gas grid connection).

### 3.2.2 Topic Guides Development

Topic guides for the interviews were developed in consultation with BEIS and feedback from the Department for Levelling-up, Housing & Communities (DLUHC)<sup>15</sup>. The guide outlined the key questions, probes and prompts used during the interviews. Each theme within the guide was closely aligned to the research questions to ensure the study remained relevant and focused. Two pilot interviews were undertaken to assess the appropriateness of the topic guides and ensure that the data was yielded correctly, following which the topic guides were modified.

Interview topic guides are provided in the accompanying appendices (A4.0). With the permission of the interviewee, interviews were recorded for write-up purposes. Where interviewees did not want to be recorded (4 participants) the interviewer took notes during and immediately after the interview to be analysed. All data shared has been treated confidentially and participants were assured of this throughout the recruitment and interview process.

### 3.2.3 Recruitment

Recruitment of tenants, landlords, non-domestic leasing experts, and legal representatives took place through partnering with several groups, including Panelbase, Knight Frank,<sup>16</sup> Better Buildings Partnership (BBP), UK Green Building Council, and through engaging with Eunomia's previous and current clients. In one instance, the tenant and landlord of the same property were interviewed to better understand the dynamics at play. Prospective participants were invited to an interview which lasted approximately 30–45 minutes and was conducted online via Microsoft Teams or phone. The initial part of the call included a series of screening questions to ensure that the interviewee had the relevant knowledge and understanding of the questions to be answered (see accompanying appendices – A3.0). Participants were allowed to opt out at any stage of the process. Table 2 shows the number of interviews split by the three sampling criteria (sector, organisation size, and grid connection).

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<sup>14</sup> [Business population estimates for the UK and regions: 2019 statistical release \(HTML\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/business-population-estimates-for-the-uk-and-regions-2019-statistical-release)

<sup>15</sup> DLUHC has since been renamed as Ministry of Housing, Communities and Local Government (MHCLG).

<sup>16</sup> A leading non-domestic property consultancy that connected Eunomia with landlord and tenant clients

**Table 3: Number of Interviews Across different Strata Allocation (Tenant and Landlord interviews only)**

Sampling Criteria	Strata	No. of Interviews
Sector	Hospitality	5
	Office	14
	Industrial & Storage	7
	Retail	4
	Other	3
	Total	33
Size of Organisation	Micro	7
	Small	8
	Medium	7
	Large	9
	Unknown	2
	Total	33
Grid Connection	On Gas Grid	24
	Off Gas Grid	7
	Unknown	2
	Total	33

A detailed overview of the sector and size of the interviewed businesses can be found in the accompanying appendices (A5.0).

### 3.2.4 Data Analysis

The qualitative data from interviews was processed using thematic analysis. The interviews were transcribed, and the data was re-organised according to key themes and research questions, which enabled the identification of patterns and findings. This thematic analysis identified recurring themes within the data, as well as outlying perceptions expressed rarely or by only one participant.

### 3.2.5 Research Challenges

Throughout the study, we noted several research challenges and aimed to minimise the impact of these where possible. These are detailed below.

### 3.2.6 Surveys

The survey focused on tenants only, and subsequent quantitative findings are therefore based on their views. As the initial 500 responses did not satisfy all the sampling quotas (Table 1), additional targeted surveys were completed, resulting in 603 overall responses.

There were not enough responses from the 'Other' industry sector to meet the quota, despite much targeted sampling (this was the only category that missed its quota as outlined within Table 1). During analysis, we found that respondents frequently misreported their principal premise use as 'Other' when they belonged to the four main industry sectors.

We undertook extensive targeted sampling to meet the on and off-gas grid sample targets. Though the off-gas grid target was missed by 23 responses, many of the 'connection status unknown' responses were obtained during a period of targeting off-gas grid properties, and therefore it is unclear what percentage of respondents were on/off-gas grid.

Under the original sampling quota based on 500 responses, a margin of error (MoE)<sup>17</sup> of 4.4% was expected. The 4.4% was the predicted MoE calculated before the survey collection and was used to inform a sensible sample size/stratification.

As the survey sought to obtain tenant views, capturing landlord perceptions was out of scope. Therefore, their views were targeted in the interviews during Phase 2 of the research.

### 3.2.7 Interviews

The main challenge during interview recruitment was interviewing both the tenant and landlord for a single premises. While introductions were requested at the end of every interview, this approach had limited success, resulting in only one interview of this kind from multiple attempts (1 conducted). We expect that this was due to the sensitivities surrounding the discussion of a potentially contentious topic. Moreover, often participants were hesitant about sharing contact information due to the intricacies of landlord-tenant relationships, and uncertainty surrounding the potential participant's desire to participate in the study. Though we attempted to mitigate this by sharing documents and information directly with those who had already completed the interview, for them to pass it on, attempts were still futile.

With the interview process covering four main themes, it was challenging to capture all feedback from interviewees in detail within the 45 to 60-minute timeframe. This issue was minimised by prioritising key topics and continually assessing interview responses to understand where any gaps needed to be filled.

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<sup>17</sup> Margin of error is the predicted deviation around the survey results (at a specified confidence level), dependent on your sample size.

## 4 Analysis of Results

This section presents the findings of the research to answer each of the key research questions (see section 1.2.2). It includes analysis from both the survey (quantitative) and interviews (qualitative). The structure of this section is as follows:

- Section 3.1 – Provides insight into the types of installations and upgrades being made by those who participated in the research
- Section 3.2 – Examines who is responsible (landlord or tenant) for the operational (energy bills, maintaining and repairing heating systems and metering responsibilities) and capital costs for heating, cooling, hot water, and energy efficiency measures
- Section 3.3 – Explores how the cost responsibility is determined between landlords or tenants
- Section 3.4 – Investigates why there are variations in responsibility for costs
- Section 3.5– Assesses how the allocation of responsibility varies under hypothetical future scenarios, including voluntary upgrades, or mandatory upgrades required through future legislation

The profile of the non-domestic properties can be found in the accompanying appendices (A5.0 and A6.0). This provides further statistical evidence on the representativeness of the businesses surveyed and interviewed.

### 4.1 Installations and Upgrades

This section provides background and context on heating, cooling, hot water and energy efficiency measures, before discussing how cost responsibility falls between tenants and landlords. Surveyed tenants used a variety of different primary space heating and hot water heading sources, but the majority reported using gas from the grid, followed by direct electric. The primary space heating system used by tenants in the survey to heat premises was central heating (78%).

Most tenants in the survey (64%) had not changed any heat or energy efficiency measures since occupying the premises. On the other hand, the interviews identified that landlords were more likely to have made both heating, cooling, and energy efficiency upgrades.

It was evident from the interviews that both landlords and tenants are increasingly focused on making low carbon heating and energy efficiency improvements, with environmental and business motivations behind this. However, barriers to these included costs of upgrades which have increased throughout the pandemic and several other reasons that are outlined in this section.

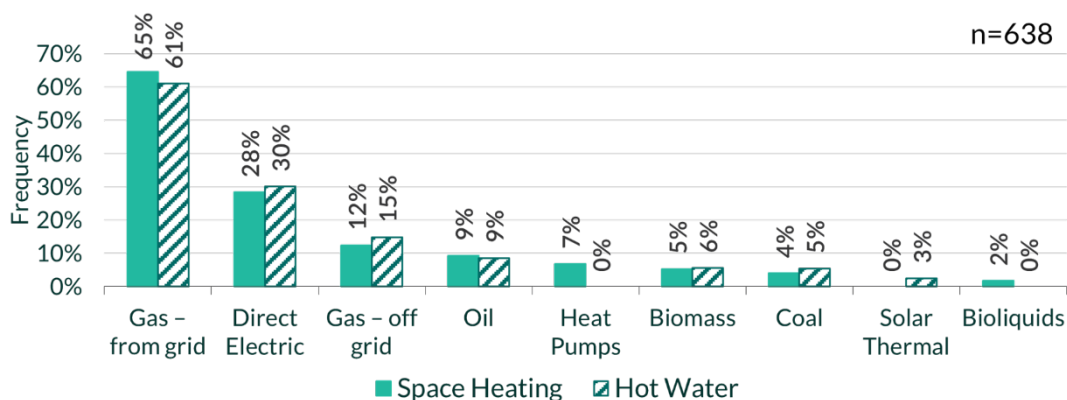
This section discusses the types of installations and upgrades that have been (or will be) implemented into the premises of landlords and tenants surveyed and interviewed. Barriers to implementing such measures and the transition to low carbon heat were also explored with interviewees. This provides context to the decision-making factors considered throughout Section 3.2 to Section 3.5.

#### 4.1.1 Existing Heating and Cooling Installations

The tenants that were surveyed used a variety of different primary sources for space heating and hot water (Figure 2). They were most likely to heat spaces and hot water with gas from the grid (over 60%), or through direct electric appliances such as electric panel heaters (approximately 30%). Tenants that responded to the survey were also significantly more likely to use the same fuel source for both space heating and for hot water. This was applicable to surveyed tenants who used on and off-grid gas, direct electric, oil, biomass and coal sources of heat.<sup>18</sup>

However, these results for space heating and hot water installations are not representative of the building stock due to the oversampling of off-gas grid buildings as mentioned in section 2.1.2, and because a relatively large share of on-gas grid buildings do not use gas as a primary fuel.

**Figure 2: Primary Source of Space Heating and Hot Water in the Premises<sup>19</sup>**



The primary space heating system reported by tenants in the survey also varied by type (Figure 3) These were either:

- **Central heating** – a system using one main source of heat (gas or electric), circulated through the buildings via pipes and radiators
- **Fixed heaters** – room heaters fitted to a wall that can use gas or electricity independently of a central heating system

<sup>18</sup> This test for significance is automatically carried out by Survey Monkey in their crosstab reports, using a pooled t-test of two proportions with a p value less than 0.05. The groups assessed for this test were: Gas – from grid (n=415), direct electric (n=180), gas – off grid (n=80), oil (n=59), biomass (n=35) and coal (n=27).

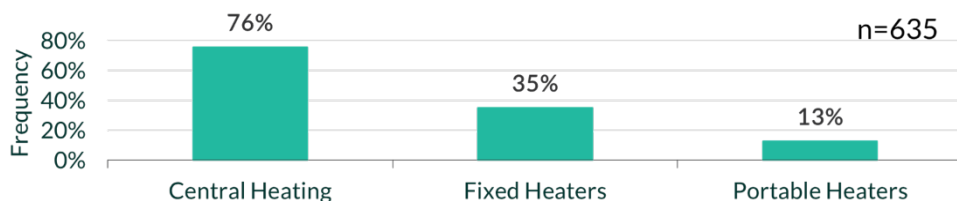
<sup>19</sup> Question 13 & Question 15: “How is the heat delivered (space heat not water)?” & “What is the primary source of heat for the hot water system in the premises?”



- **Portable heaters** – room heaters that are portable and can use gas or electricity independently of a central heating system

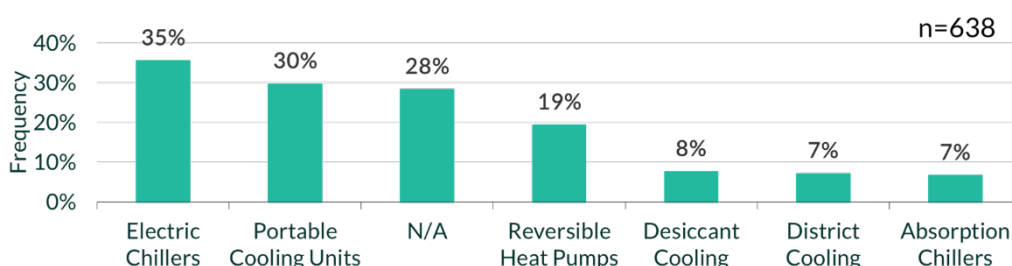
Surveyed tenants reported that 76% of premises used central heating, 35% of premises used fixed heaters, and 13% of premises portable heaters.

**Figure 3: Primary Space Heating System in the Premises<sup>20</sup>**



Similarly, the primary source of space cooling reported by tenants in the survey varied by type of technology (Figure 4). Surveyed tenants were most likely to use electric chillers and portable cooling units (35% and 30%, respectively). Just over a quarter of respondents (28%) said that space cooling systems were not used in their building.

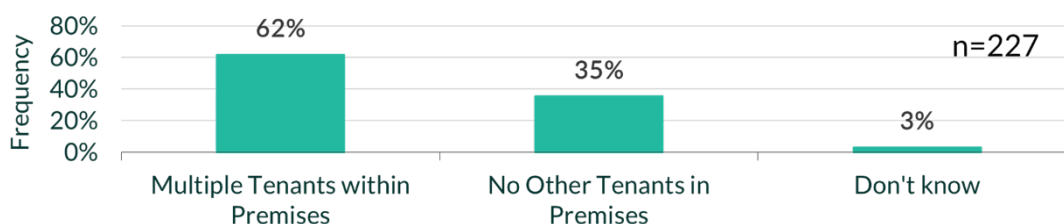
**Figure 4: Primary Source of Space Cooling in the Premises<sup>21</sup>**



#### 4.1.2 Heat and Energy Efficiency Upgrades Implemented

Of those surveyed, approximately two thirds of tenants (64%) had not changed any heat or energy efficiency measures since occupying the premises. For those surveyed tenants that had made changes (36%), two thirds of occupied the premises with multiple tenants (Figure 5).

**Figure 5: If the Tenant Made Changes, were there Multiple Tenants within the Premises<sup>22</sup>**



<sup>20</sup> Question 12: “What is the primary heating system for the premises (space heating not water)? Tick all that apply.”

<sup>21</sup> Question 14: “What is the primary cooling system for the premises (space cooling not water)?”

<sup>22</sup> Question 18: “If answered yes to Question 16, are there multiple tenants within the premises?”

Interviews with landlords and tenants provided additional insights. Reasons given by landlords for implementing energy efficiency upgrades included improving performance data, trying to save on utility bills, and requests by tenants. One commonly implemented measure was energy efficient or LED lighting. Multiple interviewees mentioned it as a 'quick win', which improved energy usage at a relatively low cost. It can be installed gradually without the need for major works – one landlord explained that they refurbish each of their properties with LED lighting as each tenancy ends. Other commonly implemented measures by interviewees were:

- Updating heating systems to improve their efficiency. This was usually a replacement of existing gas boilers with more energy-efficient models
- Installing and upgrading ceiling and loft insulation, mentioned by both landlords and tenants
- Installing double glazed windows. This was also identified as a 'quick win' and a popular measure to reduce energy bills. This upgrade was mentioned by both landlords and tenants

Further measures included solar panels, thermal panels on doors, sensor-activated lighting, and upgrades to Building Management Systems (BMS) for more efficient uses of energy. Some landlords also identified improvements in monitoring energy usage with smart meters and using thermographic imaging of sites to detect areas for energy efficiency improvement.

Various landlords discussed their emphasis on behaviour change (increasing staff awareness of energy efficiency and incentivising clients to use less heating and cooling). This included one tenant who stated they move staff closer together to reduce office-wide energy consumption, by reducing the amount of space that needs to be heated.

In contrast, it was less common for interviewees to have made upgrades to space heating and hot water equipment than making energy efficiency upgrades on their property. These upgrades included:

- Replacing existing gas boilers with newer models. Installing a new low carbon heating system was also mentioned, but more commonly by landlords than tenants
- Tenants who had installed heaters (infrared heaters and portable heaters)

#### 4.1.3 Future Installations and Upgrades

When considering future installations (both commissioned work and thinking for the future), numerous interviewees mentioned improving wall and roof insulation and installing heat pumps or solar panels. Landlords mentioned that these types of technology require longer-term planning when compared to simple energy efficiency measures such as LED lighting. In addition, one tenant reported that they planned to switch to a renewable energy supply company for their electric heating. Key themes driving the consideration for future installations included decreasing environmental damage and improving sustainability, making the building more desirable and comfortable, and to reduce operating costs. There was an instance where a landlord's site was funded through a green finance instrument and required evidence of

strategies for targeting net zero. This had a major influence on the landlord's attitude and commitment to installing future upgrades.

One landlord (of an extensive mixed-use non-domestic portfolio) mentioned the development of a heat decarbonisation strategy. This would involve moving away from gas heating and moving towards electric heating and heat pumps where possible. It could also include introducing district heating across multiple properties and extending the use of an existing Combined Heat and Power plant. Many tenants and landlords also suggested switching to a renewable energy provider.

A handful of others (landlords and tenants) were planning to install further LED lighting and installing a building management system, to improve efficiency. Other upgrades mentioned by a few interviewees included plans to use 'smart' lighting and monitor occupancy patterns to reduce energy consumption; to fit a small wind turbine on site, and to use artificial intelligence technology to improve their BMS.

#### 4.1.4 Barriers to Implementation

Several interviewees (mostly tenants) gave reasons for not being able to implement upgrades or installations. These are summarised in the following sub-headings.

##### 4.1.4.1 Cost Constraints

A common reason given was that the costs were prohibitive. One landlord stated that investments in energy-related upgrades were complicated by the current volatility in energy prices. Another landlord stated that tenants are unlikely to agree to increased service charges given concerns regarding the current rate of inflation. Several tenants stated they were doing the best they could within cost constraints. One landlord said that there was no spare capital available for non-essential upgrades as '*average prices of [maintaining our properties] this year have increased by 39%*'.

Another barrier mentioned by several landlords was the balance between passing costs to their tenants and remaining competitive, as tenants are likely to move if the costs rise too much and they do not perceive a benefit.

##### 4.1.4.2 COVID-19 Pandemic

In a few cases, the effect of the COVID-19 pandemic meant that landlords were no longer receiving rental income and future tenants were not guaranteed. In addition, several supply chains have been disrupted making upgrades more complex and time-consuming. The increased cost of tradespeople and difficulties in sourcing labour were also cited as issues.

Several landlords noted that businesses are downsizing their premises following the pandemic, and therefore they are reluctant to make wide-scale and expensive changes due to difficulties in maintaining tenants.

##### 4.1.4.3 Technology

Some of the barriers to implementation were specific to individual technologies: a small number of tenants had site-specific concerns regarding the suitability of upgrades, and one landlord cited the perceived ineffectiveness of heat pumps to provide the level of heat needed by some tenants for their business. One landlord felt stuck in a 'lose-lose' situation as they felt that installing an air-source heat pump was too noisy and a ground-source heat pump was too expensive.

#### **4.1.4.4 Access to Property**

Another landlord stated that it is difficult to access the property once a tenant has moved in, which limits the potential for upgrades. This was echoed by the non-domestic experts, who stated that landlords often wait until other structural work or replacements are required and then do a large-scale retrofit to minimise disruption.

#### **4.1.4.5 Short Term Approach**

Other reasons included the short-term nature of their tenants' leases – a couple of landlords stated that in short-term leases, tenants are understandably unwilling to contribute to upgrades that they will not benefit from in the long-term. However, a small number of landlords mentioned that they would be looking to sell their properties in the short-term once the tenants have moved out and therefore did not plan to make any upgrades.

#### **4.1.4.6 Lack of Interest and Awareness**

Another barrier mentioned specifically by landlords was a lack of interest in sustainability upgrades from tenants and a lack of knowledge about upgrades they could carry out.

*'A lack of understanding about what they [the tenants] would be responsible for if they wanted to make improvements.'*

Another landlord stated that there is a lack of awareness and knowledge amongst their tenants as to the possible measures to improve energy efficiency

#### **4.1.4.7 Lack of Clarity on Who is Responsible**

Several interviewees (both landlords and tenants) cited a lack of clarity on responsibilities as a barrier to implementing changes – this is discussed further in Section 3.2.

The non-domestic experts interviewed also stated that standard clauses relating to Energy Performance Certificate (EPC) standards are 'wishy washy' and do not actively promote upgrades and that there is currently no incentive for landlords to go beyond the 'bare minimum'. Moreover, the disruption to tenants' workforce and operations can disincentivise them from making large-scale changes. Non-domestic experts also stated that leases are generally getting shorter (especially as tenants seek greater flexibility following the pandemic) and break clauses are more prevalent, which makes implementing these measures harder as the payback is less likely to benefit the tenant.

#### 4.1.4.8 Market Conditions

A few interviewees identified the turbulent economy as creating uncertainty.<sup>23</sup> These interviewees identified high energy costs and uncertainty in supply chains as reasons why they are less likely to invest in voluntary upgrades. Another landlord identified a lack of skilled workers as a barrier, as they had to wait several months before receiving quotes. One landlord cited contracts with water and electricity suppliers and the growing inability to negotiate better prices or secure other contracts.

#### 4.1.5 Views on Low Carbon Heating and Energy Efficiency

Many interviewees said that low carbon heating and energy efficiency measures play an important role in their property. Those who said that these upgrades are low priority compared them to other priorities, such as the affordability of the property or tenants focusing more on their business products. It was clear that interviewees felt that the success of these measures was dependent on other factors such as a return on investments, or the availability of government grants.

In addition to an increased focus on sustainability (as discussed below), views on the role of low carbon heating and energy efficiency included brand differentiation (landlords), keeping energy costs as low as possible (tenants) and the need to remain compliant with increasingly stringent regulations relating to EPC ratings (landlords).

#### 4.1.6 Increasing Focus on Sustainability

Some interviewees noted a general trend in sustainability and Environmental, Social and Governance (ESG) concerns playing an increasingly larger role in property management. This was mainly highlighted by landlords, although one tenant mentioned how they had adapted their search for new sites to cover energy efficiency and renewable generation capacity. A couple of landlords were motivated by commitments to achieve net zero by 2050 and the need to provide evidence of improvement to shareholders. One explained that:

*‘Our site is funded through a green finance instrument, so part of the KPIs [...] is to provide evidence that we are targeting net zero.’*

Many interviewees said that making energy efficiency improvements was important to organisational reputation. A few of the tenants worked in the energy efficiency sector and consequently felt that they could not ‘fall behind’ or fail to be active in energy efficiency upgrades. A landlord similarly stated that:

*‘We can’t be seen as working in a bad building when we’re trying to improve energy efficiency elsewhere.’*

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<sup>23</sup> Throughout late 2021 and early 2022

Some landlords saw it as advantageous to offer this to tenants and saw the risk of losing potential tenants as an incentive, as more businesses begin to look at their carbon footprints. One landlord wanted to spread the cost (and risk) of upgrades over a longer period, so was gradually implementing measures – another stated that they feared having to pay more in future if non-compliant with legislative targets on energy efficiency.

This increasing focus on sustainability was echoed by the interviewed non-domestic experts:

*‘There has been a real change over the last 18 months where CSR [Corporate Social Responsibility] and ESG have become absolutely critical [...] historically, sustainability was low down on the pecking order [...] but what we’re seeing now, where people are trying to get their staff back into an office again, they need to be offering something better than working at home [...] younger staff are typically more attuned to sustainability and are asking at recruitment: what are the company’s green credentials, and they’re voting with their feet. So, to get and retain good staff, you need to have a good environment, and that includes looking at sustainability.’*

## 4.2 Allocation of Responsibilities

The allocation of responsibility between tenants who responded to the survey and their landlords for the costs associated with heating and cooling systems and energy efficiency measures was influenced by many different variables.

The allocation of responsibility varied across operational and capital costs. It also varied by equipment type and depended on how integrated the piece of equipment was within the building itself.

There was also variation by sector on where cost responsibility fell. According to the surveyed tenants, landlords had the highest maintenance cost responsibility for all energy efficiency measures in the office sector – potentially because any costs are recouped through a service charge paid to landlords by tenants. It was reported by tenants in the survey that it was their responsibility as often as it was their landlords for lighting fixture costs in the hospitality sector. For capital costs, surveyed tenants reported that hospitality sector landlords were more likely to be responsible for heating equipment. This may be because larger spaces are linked to larger capital costs of equipment, due to larger heating requirements, and landlords are more likely to be responsible for larger capital costs. Surveyed tenants in the industrial and storage sector were reported to be more likely responsible for heating equipment. This may be because industrial units do not necessarily have a heating requirement, and therefore there is less expectation on landlords to provide heating systems or be responsible for the costs of such systems.

The size of an organisation also led to variation in capital costs responsibility. Tenants reported in the survey that landlords of micro-sized organisations (0–9 employees) were more likely to be responsible for the cost of all measures when compared to other

organisation sizes. Micro-sized organisations may be more likely to rent spaces that have shorter leases terms with lower values, as they would typically have lower turnovers and less staff than larger organisations. It is therefore more likely that the landlord will take on responsibility for costs due to these factors.

This section discusses how cost allocations for various upgrades and installations are divided between landlords and tenants and how this was determined. To assess this, the following areas of the survey of tenants were analysed:

- **Operational costs** responsibility, including energy bills, maintaining and repairing heating, cooling and hot systems and energy efficiency measures, and metering responsibilities
- **Capital costs** of new equipment at the start of the lease, or of replacement equipment

The results in this section were additionally investigated by sector, size of organisation and gas grid connection to assess variation across different segments of the building stock.

#### **Research questions addressed:**

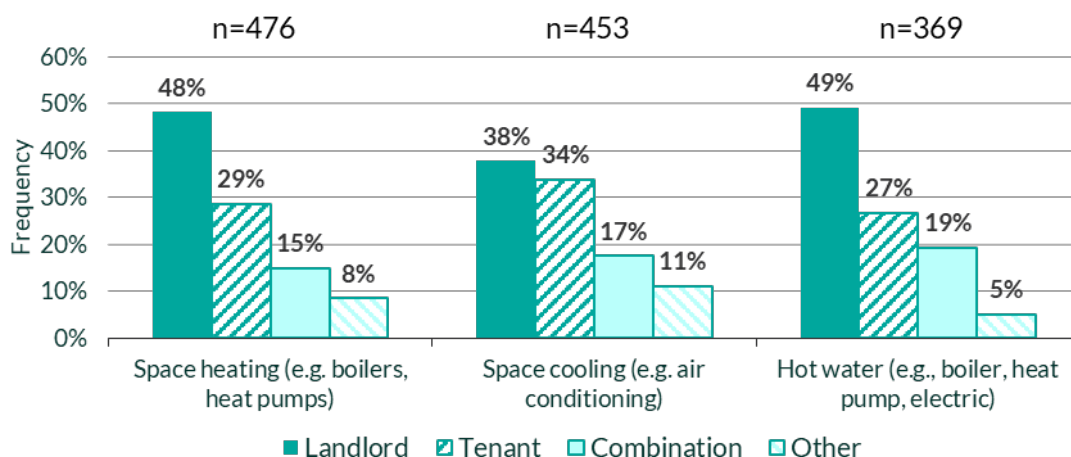
- *Who typically bears the cost of heating systems and energy efficiency upgrades in rented non-domestic buildings?*
- *How does this vary when looking across different segments of the building stock?*

### **4.2.1 Operational Cost Responsibility**

#### **4.2.1.1 Maintenance Costs – Space Heating, Cooling and Hot Water**

The survey of tenants indicated that the allocation of responsibility between themselves and their landlords for maintenance costs (maintaining and repairing) varied by type of heating and cooling equipment (Figure 6). This was similar to the upfront capital costs of these systems (see Section 3.2.2). The tenants surveyed were 1.7 times more likely to report that their landlords were responsible for paying for maintenance of space heating equipment. Surveyed tenants were also 1.8 times more likely to report that their landlords were responsible for paying for hot water equipment than they (as tenants) were. In contrast, the tenants reported in the survey that landlords were only 1.1 times more likely to be responsible for maintenance costs of space cooling equipment than they (as tenants) were.

**Figure 6: Maintenance Cost Responsibility for Heating and Cooling Equipment<sup>24</sup>**



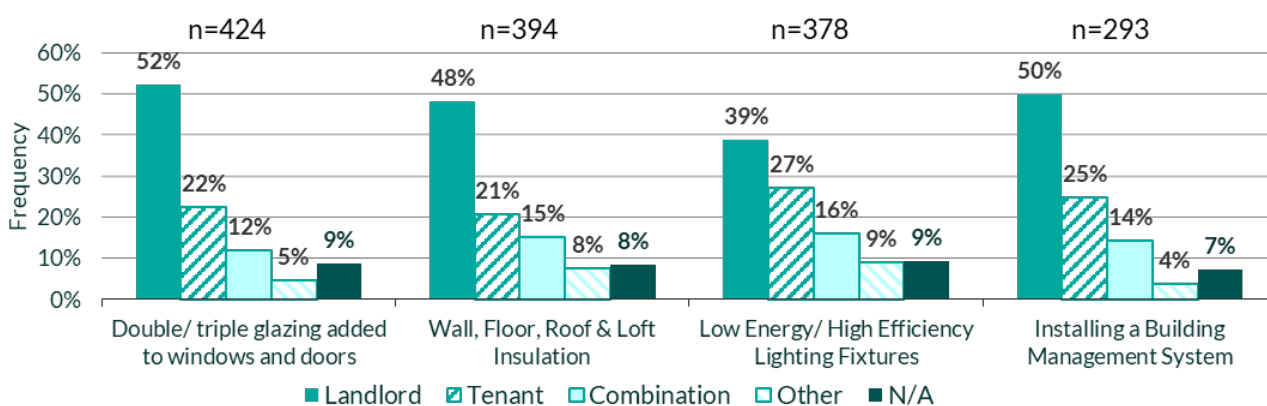
**Maintenance Costs by Sector – Space Heating, Cooling and Hot Water**

According to the survey of tenants, there was little variation in the allocation of maintenance costs for heating and cooling equipment when investigating by sector.

**4.2.1.2 Maintenance Costs – Energy Efficiency Measures**

Responsibility for maintenance costs also varied by type of energy efficiency measures; however, tenants reported their landlords were more likely to be responsible in all instances (Figure 7). This ranged from landlords being reportedly 1.4 to 2.3 times more likely responsible for lighting fixtures, and double/triple glazing windows and doors and insulation measures than the surveyed tenants, respectively.

**Figure 7: Maintenance Cost Responsibility for Energy Efficiency Measures<sup>25</sup>**



**Maintenance Cost by Sector – Energy Efficiency**

The survey of tenants found that the responsibility for the maintenance costs of energy efficiency measures varied by sector; however, tenants reported their landlords were more likely to be responsible in all instances (Figure 8). According to office tenants, their landlords

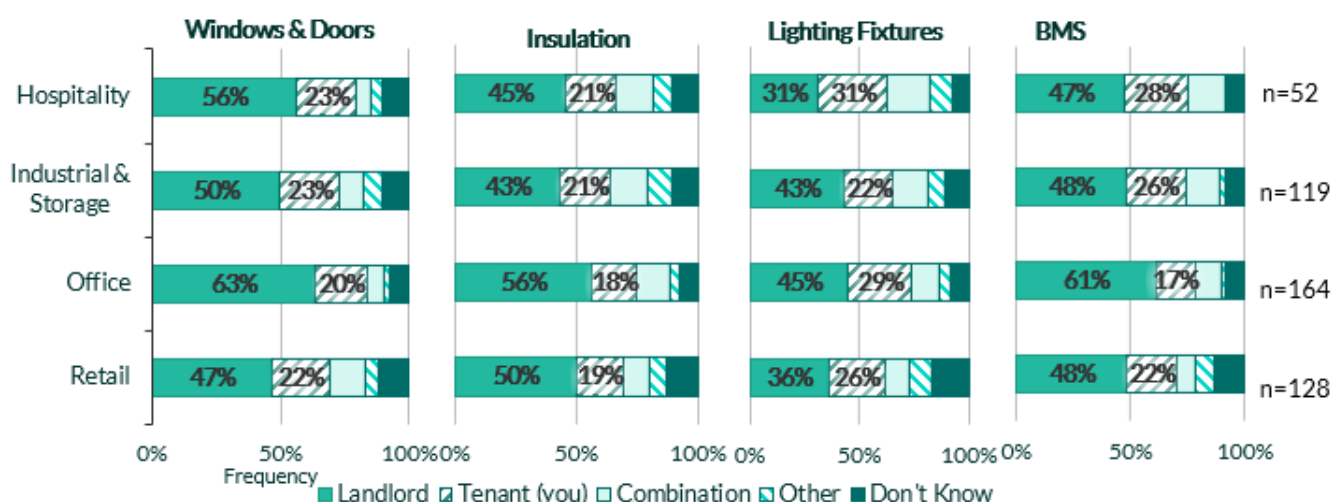
<sup>24</sup> Question 33: “Who is responsible for maintenance/repair costs of the heating and cooling infrastructure?”

<sup>25</sup> Question 8: “Who is responsible for maintenance/repair costs of energy efficiency infrastructure?”



were the most likely to be responsible for maintenance costs. This ranged from the landlords being reportedly 1.5 to 3.5 times more likely responsible for lighting fixtures and BMS maintenance costs than the surveyed tenants, respectively. This could be because maintenance costs are typically recouped through service fees (including within tenant bills) within the office sector. Conversely, in the Hospitality sector, the surveyed tenants reported being as likely to be responsible for the maintenance costs of lighting fixtures as their landlords. This may be because in this sector there was a high number of tenants (53%) being responsible for bills, compared to their landlords (38%).

**Figure 8: Maintenance Cost Responsibility of Energy Efficiency Measures, By Sector<sup>26</sup>**



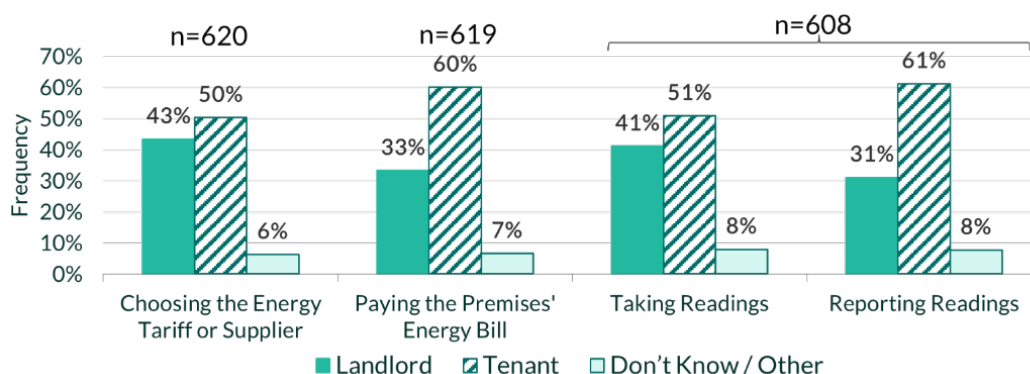
#### 4.2.1.3 Energy Tariff, Bills and Meter Reading Responsibility

The survey of tenants showed variation in who was responsible for managing tariffs and metering (Figure 9). Landlords were reported in the survey to be slightly less likely responsible for choosing energy suppliers and taking readings than the surveyed tenants. The interviews reflected similar findings, although a few interviewees highlighted that some tenants requested to choose their energy supplier or identify one in collaboration with their landlord to find the cheapest tariff.

Tenants reported in the survey that they were more likely (by two times) to be responsible for paying their premises energy bills and report readings than their landlords (60% and 61% respectively for tenants and 33% and 31% for landlords).

<sup>26</sup> Question 38 & Question 6: “Who is responsible for maintenance/repair costs of energy efficiency infrastructure?” & “What is the primary purpose of the principal site / building mentioned in the lease agreement?”

**Figure 9: Energy Supply, Bills and Meter Reading Responsibilities<sup>27</sup>**

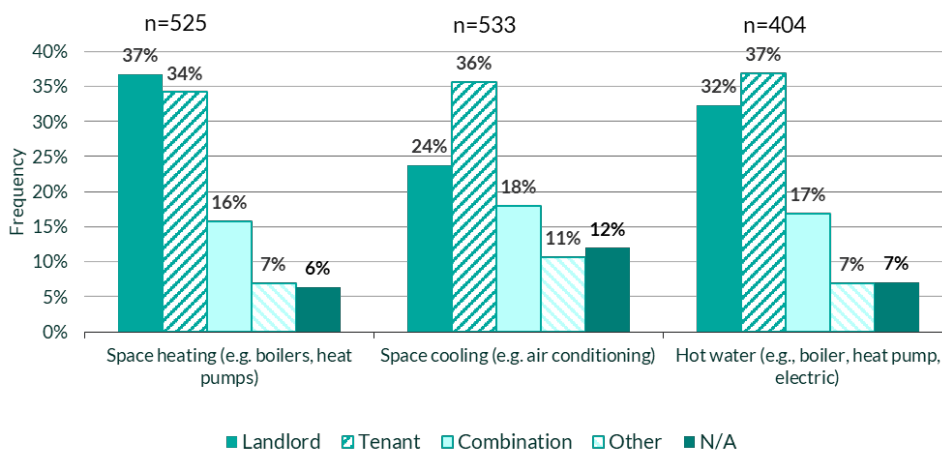


## 4.2.2 Capital Cost Responsibility

### 4.2.2.1 Capital Costs – Space Heating, Cooling and Hot Water

The survey of tenants showed how the allocation of capital costs varied by heating and cooling equipment (Figure 10). According to tenants, their landlords were 1.1 times more likely to be responsible for space heating equipment costs than they (the tenants) were. However, tenants reported being more likely to be responsible for space cooling equipment costs (36% and 24%, respectively) and hot water equipment costs (37% and 32%, respectively). There were no notable differences in the distribution of equipment cost responsibility reported by tenants when investigated by gas grid connection. Differences in the distribution of cost responsibility appear driven by variations by sector (Figure 10).

**Figure 10: Responsibility for Space Heating, Cooling and Hot Water Equipment Costs<sup>28</sup>**



<sup>27</sup> Question 42, 43 & 44: “Who is responsible for choosing the energy tariff/ supplier for the premises?” “Who is responsible for paying your premises energy bill (or proportion if multiple tenants)?”, and “Who is responsible for taking/ reporting meter readings?”

<sup>28</sup> Question 32: “For each of the premise’s elements listed below, who is responsible for paying for the heating and cooling equipment costs (the capital costs, not running costs) in the premises?”

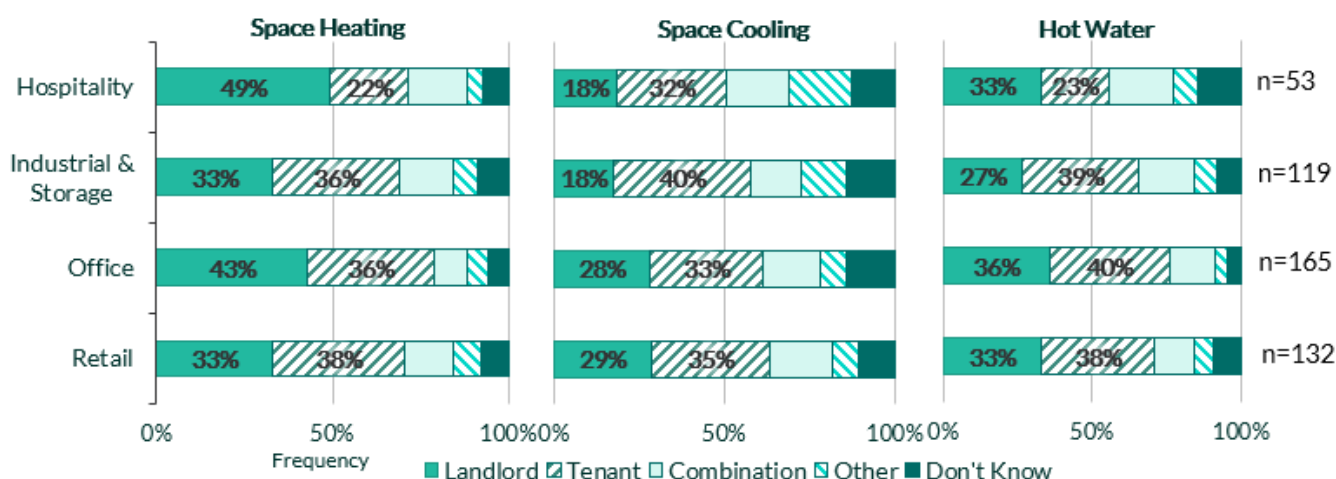
### Capital Costs by Sector – Space Heating, Cooling and Hot Water

The survey of tenants indicated that heating, cooling, and hot water equipment cost responsibility varied by sector (Figure 11).

Office and Retail sector tenants reported in the survey that they were equally likely responsible for space heating and hot water equipment costs as their landlords. In contrast, Hospitality landlords were reported to be more than twice as likely to be responsible for space heating equipment costs as their surveyed tenants, and approximately 1.5 times for hot water equipment costs.

Industrial & Storage tenants reported in the survey that they were approximately 1.5 times more likely to be responsible for hot water equipment costs and twice as likely for space cooling equipment costs than their landlords. Heating requirements are more likely to be determined on a tenant-by-tenant basis for industrial units, as this is dependent on what the business is. For example, a storage and distribution centre is unlikely to require any heating as doors are open all day, whereas a manufacturing facility with staff inside throughout the day may require heating.

**Figure 11: Heating & Cooling Equipment Cost Responsibility, by Sector<sup>29</sup>**

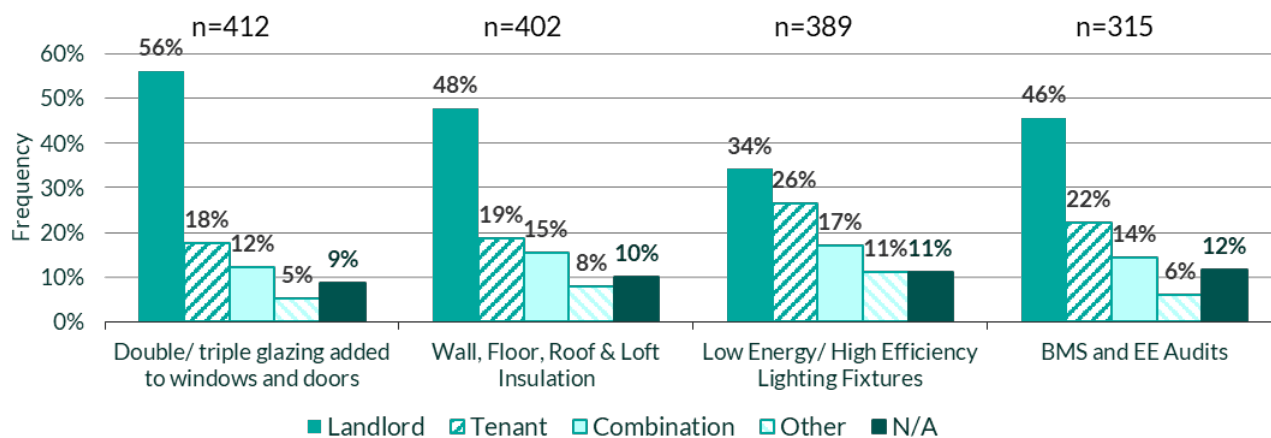


Hospitality tenants surveyed also reported being twice as likely to be responsible for space cooling equipment costs as their landlords, while Office and Retail tenants reported in the survey that they were equally responsible for space cooling costs as their landlords.

<sup>29</sup> Question 32 & Question 6: “For each of the premise’s elements listed below, who is responsible for paying for the heating and cooling equipment costs (the capital costs, not running costs) in the premises?” & “What is the primary purpose of the principal site / building mentioned in the lease agreement?”

#### 4.2.2.2 Capital Costs – Energy Efficiency Measures

**Figure 12: Responsibility for Energy Efficiency Upgrade Costs<sup>30</sup>**



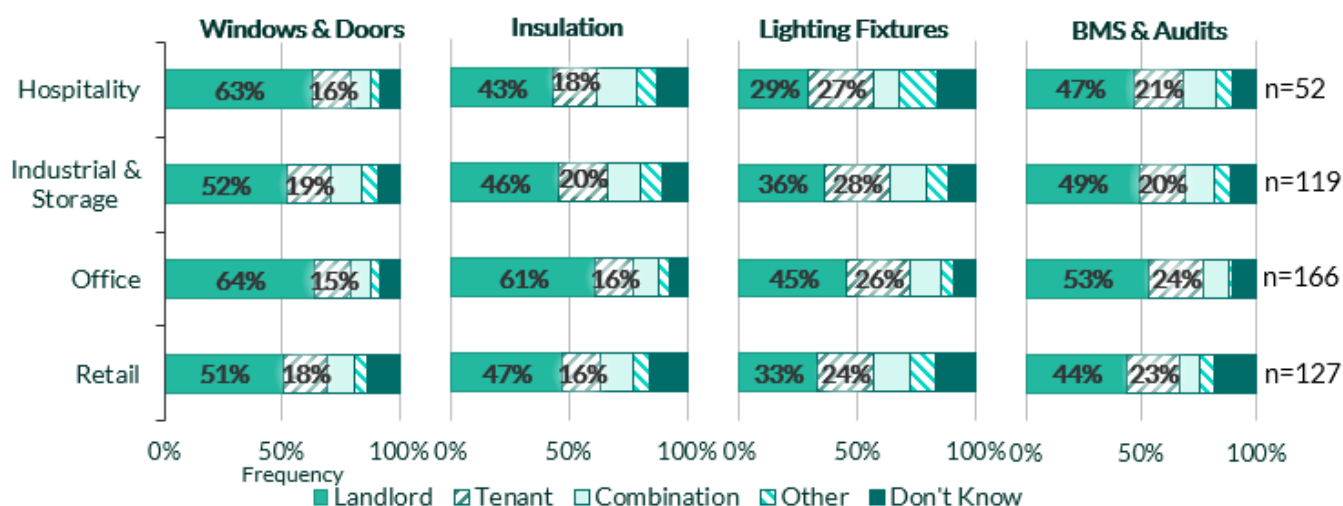
According to the surveyed tenants, the cost allocation between landlords and tenants varied by type of energy efficiency upgrade (Figure 12). For all measures, landlords were reportedly more likely to pay for energy efficiency upgrades than the surveyed tenants. This reported difference ranged from landlords being 1.3 times more likely to pay than the surveyed tenants for lighting fixtures, to 3.2, 2.5 and 2 times more likely for windows & doors, insulation, and Building Management Systems (BMS) & energy efficiency audits, respectively. This is likely because some of these energy efficiency measures, particularly double/triple glazing windows and doors and wall, floor, roof and loft insulation, relate to the building fabric.<sup>31</sup> There were no notable differences in the distribution of energy efficiency measure cost responsibility reported by tenants when investigated by gas grid connection. Differences in the distribution of cost responsibility appear driven by variations by sector (Figure 13).

#### 4.2.2.2 Capital Costs by Sector – Energy Efficiency

The survey of tenants showed of tenants indicated that there was variation in cost responsibility of energy efficiency upgrades by sector. Tenants reported in the survey that their landlords were more likely to be responsible for all measures, apart from lighting fixtures in Hospitality buildings, where tenants and landlords were equally likely to be responsible (Figure 13). Upgrades to energy efficiency measures are likely more likely to be the landlord's responsibility as they tend to be intrinsically linked to the fabric of the building.

<sup>30</sup> Question 37: "For each of the premise's elements listed below, who is responsible for paying for the energy efficiency improvement measures in the premises?"

<sup>31</sup> The fabric of a building refers to the elements that characterise the structure as a building, for example, walls, roofs, internal surfaces, floors, stairs, landings, and all doors and windows.

**Figure 13: Responsibility for Energy Efficiency Upgrade Costs, by Sector<sup>32</sup>**

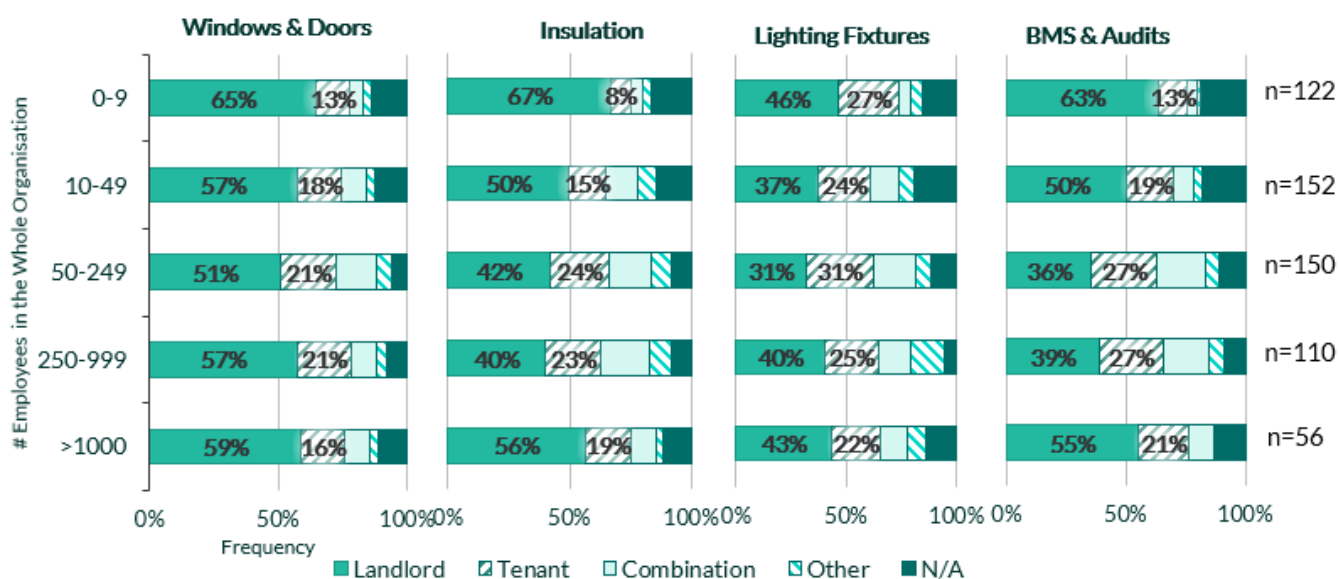
Of all sectors, surveyed tenants in the Office sector were most likely to report that their landlords were responsible for the costs of energy efficiency measures. Surveyed Office tenants also reported their landlords to be approximately four times more likely than they (the tenants) to be responsible for upgrade costs for both windows & doors and insulation measures. In the survey of tenants, Office landlords were also reportedly twice as likely as tenants to be responsible for installing lighting fixtures.

Similarly, surveyed Hospitality tenants reported their landlords to be four times more likely to pay for upgrading windows and doors than they are (tenants). Conversely, Hospitality tenants in the survey reported being equally likely to be responsible for the costs of lighting fixture upgrades as their landlords.

### Capital Costs by Size Organisation – Energy Efficiency

According to the surveyed tenants, there was little variation in responsibility for energy efficiency upgrades by the size of an organisation (Figure 14). However, the survey of tenants found that landlords of micro-organisations (with 0–9 employees) were most likely to be responsible for upgrade costs compared to other organisation sizes. This ranged from landlords being reported by the tenants to be 1.7 times more likely to be responsible for costs of lighting fixture upgrades to eight times for insulation upgrades. This could be because micro-sized organisations, given they tend to have smaller turnovers, will have shorter-term lets that are of a lower value when compared to larger sized organisations (although this study did not collect evidence that can be used to substantiate this theory).

<sup>32</sup> Question 37 & Question 6: “For each of the premise’s elements listed below, who is responsible for paying for the energy efficiency improvement measures in the premises?” & “What is the primary purpose of the principal site / building mentioned in the lease agreement?”

**Figure 14: Responsibility for Energy Efficiency Upgrade Costs, by Size of Organisation<sup>33</sup>**

### 4.3 How Cost Responsibility is Determined

The division of responsibility was usually based on what was stipulated in the contract between the landlord and tenant. These agreements are usually drawn up by the landlord in the first instance and follow standard practice from typical UK agreements, sector specific agreements, or agreements based on the type of premise (e.g., a listed building).

Where the tenant was responsible for the cost of equipment upgrades, consent from the landlord was generally still required for all technologies except for cooling equipment. Where the landlord was responsible for the cost of equipment upgrades, tenants were still highly likely to contribute either directly or indirectly (through a service charge).

This section discusses how the cost of responsibility for various upgrades and installations is determined. To assess this, the following areas were analysed:

- Requirements for tenants to seek consent to make changes (new equipment, or breakdown) even when the responsibility for costs falls on them
- What happens to any equipment that is purchased by the tenant throughout a lease when they vacate the premises?
- Tenant contributions to costs when the landlord is responsible for costs of equipment

<sup>33</sup> Question 37 & Question 8: "For each of the premise's elements listed below, who is responsible for paying for the energy efficiency improvement measures in the premises?" & "How many employees work within the whole organisation?"

**Research question addressed:**

- *How was it decided who takes responsibility for the costs of these elements? (Heating systems and energy efficiency upgrades in rented non-domestic buildings?)*

#### 4.3.1 Forms of Agreements

Many of the interviewees stated that the division of responsibilities was based on the original lease agreement ('contract'). Both landlords and non-domestic property experts stated that contracts were typically proposed by the landlord initially. Agreements on contracts typically followed standard practice for the UK, industry sector, and/or type of premises. These were referred to by the interviewees as either an 'institutionally accepted lease', a 'standard contract or lease,' or 'governed by historical norms'.

The interviews revealed that landlords and tenants tend to follow their agreed contracts, particularly where the lease has a clear indication of which party is responsible for which measure. However, some interviewees gave examples of deviations from contracts. This was dependent on several factors such as:

- The type of intervention
- The savings and who would benefit from these savings
- Considerations around timing

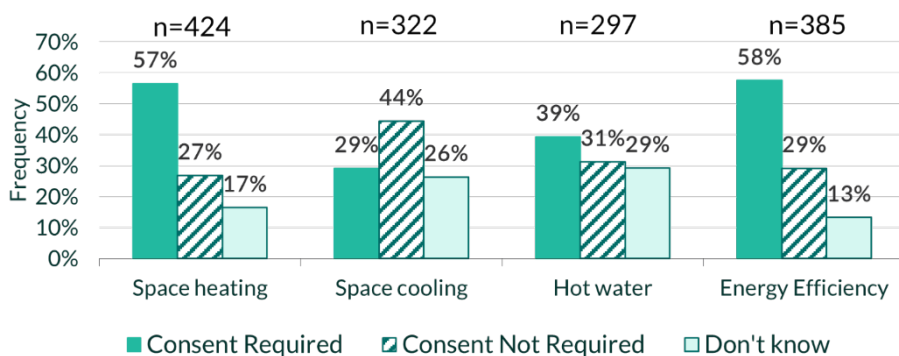
The interviews indicated that contracts may also provide high-level terms for negotiations between parties. For example, one landlord highlighted the presence of clauses within contracts that allowed for flexibility in negotiations regarding the division of costs. Such discussions were said to be undertaken on an ad hoc basis.

There were instances where the arrangements outlined in the contract differed from the arrangement in practice. For example, a tenant who (according to their contract) was exclusively responsible for the costs of an upgrade renegotiated so that the costs of installation were shared equally by the tenant and landlord. This was on the basis that the upgrade would result in an increased value of the asset for the landlord.

#### 4.3.2 Consent Where the Tenant is Responsible for Upgrade Costs

According to the tenant survey results, if the tenant was responsible for the cost of heat upgrades, the requirement for consent from their landlords varied between heating, cooling, and hot water (Figure 15). However, tenants reported little variation across all types of energy efficiency upgrades, where landlord consent was likely to be required for all measures.

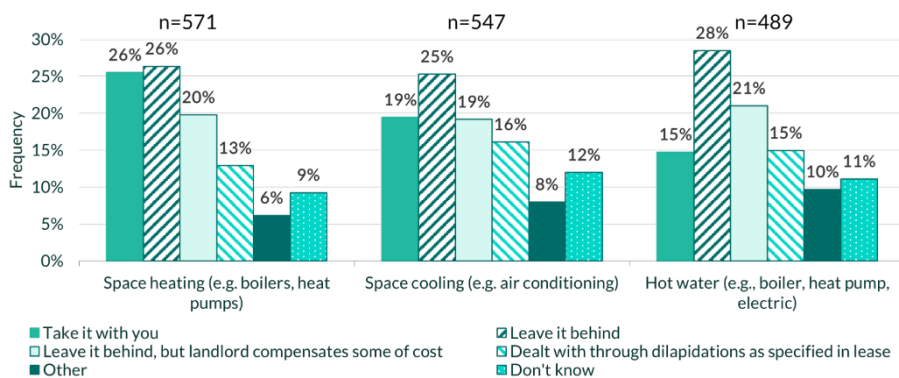
**Figure 15: Landlord Consent Requirement for Upgrades<sup>34, 35</sup> if Tenant is Responsible for Costs**



Surveyed tenants were twice as likely to require consent from their landlords than to not require it before upgrading space heating and energy efficiency measures. In the survey, tenants also reported being more likely to require consent (39%) than not (31%) for hot water equipment upgrades. In contrast, surveyed tenants reported being less likely to need consent (29%) than not (44%) before upgrading space cooling equipment.

#### 4.3.3 End-of-Lease Mechanisms where the Tenant is Responsible for Upgrade Costs

**Figure 16: What Happens to Systems Upgraded by Tenants when they Vacate the Premises<sup>36</sup>**



When heating and cooling system upgrades were the tenant’s responsibility, the survey of tenants found that they were approximately two to three times more likely to leave equipment behind than take it with them (Figure 16). The interview findings suggested that tenants were unable to take larger heating systems with them. If left behind, landlords were unlikely to

<sup>34</sup> Questions 34: “If you as the tenant are responsible, do you require consent from your landlord to make heating and cooling system upgrades (any changes or improvements to the specified systems)?”

<sup>35</sup> Question 40: “If you as the tenant are responsible, do you require consent from your landlord to make energy efficiency upgrades?”

<sup>36</sup> Question 35: “If you as the tenant are responsible for purchasing your own heating and cooling system, what would happen to that system if you were to vacate the premises?”



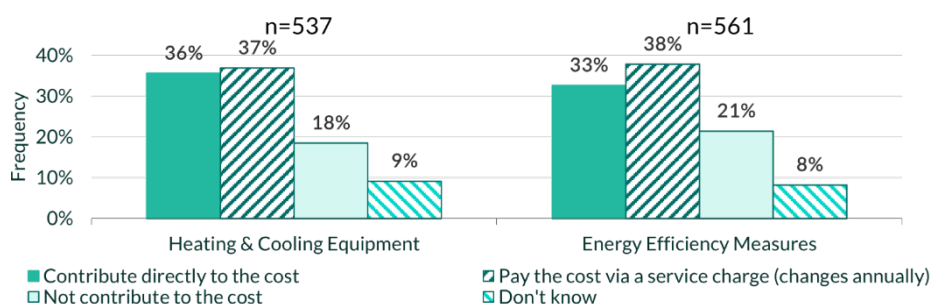
provide any cost compensation or resort to dilapidations (a specific area of law relating to breaches of a tenant’s lease obligations or covenants)<sup>37</sup> as specified in the lease.

The reported likelihood of surveyed tenants taking equipment with them varied by equipment type. Surveyed tenants were more likely to take space cooling and space heating equipment with them compared to hot water equipment (by 1.25 and 1.7 times, respectively).

#### 4.3.4 Tenant Cost Contributions

Even when their landlords were responsible for the costs of upgrading heating or energy efficiency measures, the tenants surveyed contributed towards the costs in 70% of cases, either directly or via a service charge (Figure 17).<sup>38</sup>

**Figure 17: How do Tenants Contribute to Costs if the Landlord is Responsible<sup>39</sup>**



Note: Heating & cooling equipment includes space heating, space cooling and hot water equipment.

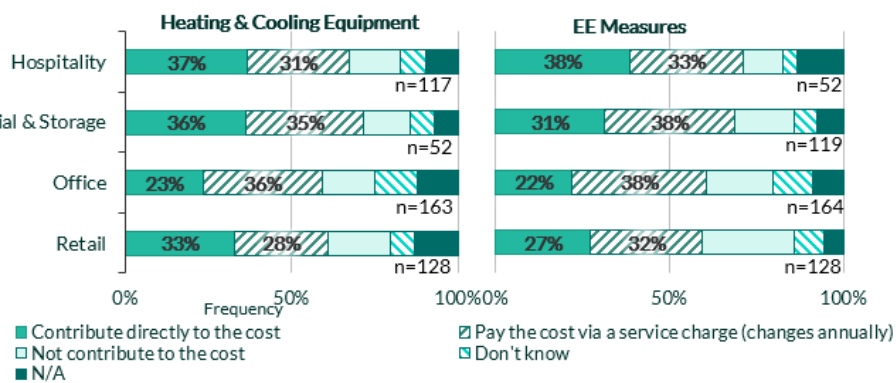
The way the surveyed tenants contributed to upgrades of both heating and cooling equipment and energy efficiency measure costs varied by sector (Figure 18), with surveyed Office tenants being least likely to contribute directly to heating and cooling equipment costs. For both heating and cooling equipment and energy efficiency measures, the likelihood of surveyed tenants paying via service charge was similar across all sectors. However, for energy efficiency measure upgrades, Retail and Office tenants were reported in the survey to be least likely to contribute to costs, while surveyed Hospitality tenants were most likely to contribute to costs, particularly with direct payments. There were no notable differences in the distribution of tenant contributions when investigated by the size of the organisation or gas grid connection.

<sup>37</sup> Savills (2017) A layman’s guide to dilapidations. <https://www.savills.co.uk/blog/article/215099/commercial-property/a-laymans-guide-to-dilapidations.aspx>

<sup>38</sup> The survey did not include a question on the size of the cost contribution from the tenant.

<sup>39</sup> Questions 36 & 41: “If your landlord is responsible for the heating and cooling equipment costs (the capital costs, not running costs) in the premises, do you:” & “If your landlord is responsible for the energy efficiency improvement measures in the premises, do you:”

**Figure 18: How do Tenants Contribute to Costs if the Landlord is Responsible, by Sector<sup>40</sup>**



Note: Heating & cooling equipment includes space heating, space cooling and hot water equipment.

## 4.4 Agreeing on Responsibility

Factors that impacted the decision-making process for agreeing on the responsibility of costs for installing new equipment at the start of a lease, or replacing broken equipment included: the clarity of leasing terms; the length of/remaining years in the lease; individual attitudes and flexibility of landlords and tenants; and relationships between landlords and tenants.

This section explores why there are variations in responsibility for energy efficiency upgrades, how these are agreed and how they play out in practice.

### Research question addressed:

- *If tenants and landlords are unsure or cannot agree on who is responsible (for who typically bears the cost of heating systems and energy efficiency upgrades in rented non-domestic buildings), what factors are causing the uncertainty?*

Interviewees identified several factors that made it more or less difficult for a tenant and landlord to agree on how responsibility for heating and cooling equipment and energy efficiency measures is determined. These themes are explored in the following sub-sections.

#### 4.4.1 Clarity of Contract

Several interviewees identified the level of clarity in the contract as a key factor in how responsibility was agreed upon. It was easier to assign costs where there were clear contractual terms around the measures and the responsible party. For example, one landlord

<sup>40</sup> Questions 36 & 41 & Question 6: “If your landlord is responsible for costs of measures, do you:” & “What is the primary purpose of the principal site / building mentioned in the lease agreement?”

suggested that sufficient maintenance of equipment (operational costs) was not always carried out when responsibility fell to the tenant due to the ambiguity of the contract:

*“We agreed in the lease that we (landlord) would accept responsibility and liability for replacement and fixtures, but they (tenant) sign that they would agree to maintain. This is where the problem lies, in that sometimes these responsibilities overlap. So, if we get called and they bring in an inspector or they make a complaint that equipment must be replaced, even though they are responsible for the maintenance, we get trapped because we stated that we would be responsible for fixtures or even replacements even if it was because of lack of [proper] maintenance.”*

It was clear that where properties leased were listed buildings, the complications of conducting work meant that the landlord took on all responsibility, and this was clear in contracts. Listed buildings have legal protection making landlords (as building owners) responsible for the upkeep and preservation of the building and liable for any damage.

During interviews, non-domestic leasing experts expressed concerns around the lack of and (where included) vagueness of energy efficiency requirements within contracts. Though tenants and landlords tend to have a positive view toward sustainability-related clauses, this does not ensure action – the lack of clarity in contracts often translates to a lack of commitment, especially where requirements are not quantified (e.g., ‘a tenant will reduce its energy use by 10%’). One expert believed this was partly because such requirements are quite controversial, alluding to the sector being willing to pay lip service to targets but not take any practical action to achieve them.

On a wider scale, a lack of clarity on responsibility is partly due to vague requirements and a lack of consideration for energy efficiency in the Heads of Terms,<sup>41</sup> which set a precedent for what is likely to be included in the formal contract. For example, the Heads of Terms for one large non-domestic landlord indicates the following, which does not provide any definition or specific examples of what ‘environmentally friendly and energy efficient’ could look like:

*“The lessor and lessee are committed to making the building and the operation of it environmentally friendly and energy efficient. Accordingly, the following provisions will be documented in a memorandum of understanding which will be asked next to the agreement for lease.”*

This makes it more difficult for tenants to agree to such requirements within a contract.

*“I feel that we are trying to run before we can walk to a certain extent. If you look at the lease agreement, everyone is like, yes, let’s get green leases like this. But stage one is just getting it in your Heads of Terms, and only then can we start*

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<sup>41</sup> The Heads of Terms is a document that outlines the terms of a non-domestic transaction agreed upon in principle between parties in the course of negotiations before the legal agreement of a contract

*pushing the boundaries in terms of what goes into the leases. But the industry is not even getting the basics right.”*

A lack of understanding about the non-domestic benefits of making energy efficiency upgrades by those involved in drawing up contracts was stated as an issue that led to later uncertainty upon implementation.

#### 4.4.2 Length of/ Remaining Years in the Lease

Some interviewees identified the length of a lease as affecting decisions around agreeing on responsibility for costs. Several tenants said that they did not see the point in implementing any changes as they had short tenancies. Similarly, others stated that they would only ask for or arrange upgrades if it was a long-term tenancy (roughly over two years). Likewise, landlords would be more likely to undertake upgrades if the tenant had recently renewed a lease and was invested in the property.

Lease lengths vary between sectors – hospitality and larger retailers tend to have longer leases, whereas offices and smaller retailers are usually shorter, a trend which has been exacerbated by the COVID-19 pandemic. A lease’s length is often used to assess the investment required for a measure against the payback period. A short contract may mean difficulties with dividing costs where an installation or upgrade would last beyond the tenant’s contract: the division of cost must align with the overall return on investment for the parties covering the cost. On the other hand, a long lease can make it difficult for either party to request upgrades if the contract details are not updated or reviewed regularly.

One non-domestic property expert explained that it is difficult for the landlord to retrospectively amend existing contracts to address more recent targets around net zero. When explaining the decision behind the net zero target year for climate commitments, contract lengths were a crucial consideration for one trade association:

*“We arrived at 2050 because that was effectively where the Government had indicated its long-term target. But it was also because of the length of leases and our members could not credibly commit to a target where they had leases that were extending out for 30 years plus, because they would not be able to deliver on it.”*

#### 4.4.3 Landlord and Tenant Attitudes

The attitudes of landlords and tenants were important in determining responsibility. Both tenants and landlords stated that the inflexibility of their landlord or tenant restricts their ability to make improvements, and that flexibility and open conversations on cost negotiation make it easier to agree on responsibility. Some landlords noted that they had been fortunate with tenants, whereas others said it was a challenging process and it was necessary to ‘educate’ tenants on their responsibilities.

Similarly, both landlords and tenants explained that the decision to make upgrades varied depending on the pre-existing relationship with their tenant/landlord. For example, one tenant

said that they would readily agree on responsibility for costs as they were happy with their lease and wished to maintain the arrangement with their landlord. However, others stated that it was difficult to have conversations if they had limited communications with their tenant or landlord or if they were uninterested in the topic. One landlord of multi-occupancy buildings described the challenges of convening a group to decide by a majority vote and ensuring that the minimum number of individuals participated.

#### 4.4.4 The Landlord-Tenant Relationship

Whether the tenant and landlord had a positive working relationship played a part in where responsibilities were assigned. Tenants who had a positive relationship with their landlord stated that their landlords usually acknowledged that certain types of upgrades were of mutual benefit and were unlikely to push back. This was echoed by landlords, some of whom said that informal discussions with their tenants were usually sufficient because the upgrades improve the asset.

These types of collaborative projects between landlords and tenants, where there are mutual benefits from the upgrades, are more likely to be implemented.

#### 4.4.5 Impact of Mediation

Interviewees were asked about the contribution of third parties – in this instance, a person or group besides the landlord and tenant involved in contract negotiation, typically a solicitor – towards agreeing on responsibility for upgrades. Most of the tenants and landlords interviewed stated that third-party involvement was minimal.

There was no agreement among legal representatives and non-domestic experts as to whether third party involvement was beneficial. Some interviewees noted that involving third parties tended to overcomplicate processes and add another dimension of split incentives. However, it was noted that third-party involvement was useful in some situations to mediate discussions (e.g., numerous tenants within a building).

Others noted that it was also particularly helpful in cases where tenants requested service charge caps. It was stressed that this was particularly prevalent in old buildings with high repair costs where landlords were often left to pay the excess. While large corporations with extensive portfolios generally absorbed these costs, smaller landlords often struggled as they did not have the capital to implement repairs and upgrades without additional help from their tenants. As such, having a third party to mediate discussions was advised.

### 4.5 Allocation of Responsibilities for Voluntary or Mandatory Upgrades

This section explores how the responsibility for funding and implementing future energy efficiency or heating upgrades would be split under different hypothetical scenarios. These scenarios include both voluntary and mandatory upgrades. Voluntary upgrades might

include those made to meet a company's own net zero commitments whilst mandatory upgrades might include those made to comply with legislation. There was little variation in responses across the different scenarios.

The key findings were as follows:

- The form of agreements for both voluntary and mandatory upgrades – irrespective of who was responsible – would involve either: following a standard contract in the existing agreement; negotiating new clauses in an existing agreement; establishing new contracts; or apportioning cost responsibly through negotiation rather than a contract. There were mixed views on whether the nature of these negotiations should be formal or informal, with some preferring formal negotiations to ensure clarity and reduce risk, and others preferring informal negotiations for a less onerous process.
- Agreeing on responsibility for both voluntary and mandatory upgrades was in line with the factors outlined for how current arrangements play out; for example, the clarity of leasing terms; the length of/remaining years in the lease; the landlord-tenant relationship; the extent of upgrades and the apportionment of upgrade payback. However, interviewees stressed that the decision-making process varied greatly depending on the specific context
- Using asset liquidity (cash flow or savings) was the preferred option for funding heating and cooling equipment and energy efficiency measures, under both voluntary and mandatory scenarios. 'Green grants'<sup>42</sup> and loans were also frequently cited. The rising prevalence of funds specifically set aside for net zero was also mentioned. As more businesses are implementing net zero plans, there is a trend towards greater agreement (and flexibility) on the need for upgrades and a more collaborative approach between landlords and tenants in the splitting of costs.

This section explores how the responsibility for funding and implementing future energy efficiency or heating upgrades would be split under different hypothetical scenarios. These scenarios include whether upgrades are voluntary (i.e., the choice of the landlord or tenant to make improvements) or mandatory (i.e., if future legislation meant changes were required).

Where tenants and landlords have already made voluntary improvements or upgrades to comply with legislation, this was also discussed. Therefore, this section not only captures what would happen, but what has happened in practice.

#### **Research questions addressed:**

- *What are landlords', tenants', and legal professionals' views on whether the Government should include obligations or incentives into heat and energy efficiency policies to encourage cooperation and equitable allocation of costs? If so, what form could this take?*

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<sup>42</sup> Subsidised costs of energy efficiency improvements from government or other bodies.

- *Where the tenant is responsible, and in which ways would they consider covering the costs of improving energy efficiency and replacing the heating system, in line with potential future regulations?*
- *In which ways would landlords look to cover the cost, if responsible?*

Tenants, landlords, and non-domestic leasing experts were presented with three different scenarios relating to the division of cost responsibilities for energy efficiency upgrades and heat installation measures. The scenarios included the following:

- Voluntary Upgrades (for example, upgrades made to meet net zero commitments)
  - Scenario 1a: If the party (landlord or tenant) who wanted to install these measures was not the responsible party
  - Scenario 1b: If the party (landlord or tenant) wanting to install these measures was responsible but wanted to split the costs between both parties
- Mandatory Upgrades (for example, upgrades made to comply with legislation)
  - Scenario 2: If future legislation meant that installing low carbon heating at the point of replacement became mandatory, should it be the landlord or the tenant who is responsible for funding the cost of these changes, or should the responsibility be shared?

#### 4.5.1 Voluntary Upgrades

This section looks at scenarios 1a and 1b outlined above. Where the findings differ across these two scenarios has been highlighted in the section below.

##### 4.5.1.1 Forms of Agreements

###### Past Upgrades

When asked how the responsibilities for previous voluntary upgrades and installations (i.e., what has happened in practice) were determined, interviewees stated that they:

- followed a standard contract and the process was already covered in their existing agreement
- negotiated and incorporated new clauses within the existing contract
- underwent negotiations to establish a new contract
- apportioned costs through negotiation rather than a standard contract

One landlord interviewed held annual reviews to outline suggested interventions and their costs. Another landlord interviewee held a committee of tenant representatives where decisions are made by a majority vote.

*'We've got a committee where there are representatives across (tenants) so it would be a group decision and go with the majority. We would only make changes when it is absolutely necessary or you have the majority buy in, but unfortunately, cost is becoming a beast driver for everything. It is just the nature*

*of the environment that we are in now. Before cost was maybe a lower consideration, and they focused on quality service or brand or trust but now, it's purely about cost.'*

A few landlord interviewees noted the increased inclusion of 'green clauses' in contracts which set out responsibilities for energy efficiency.

*'We've just added some new clauses to our lease, I guess we will call them green clauses, where now the tenants have an obligation to use best endeavours to be more efficient with their energy and utility consumption. And they also are obliged, at my request, to share data with me about that consumption, so that we could work together to improve the overall energy efficiency of the building.'*  
(Landlord of office and industrial units).'

## **Future Upgrades**

Feedback on how costs would be allocated for voluntary future upgrades mirrored those listed above for what has happened in practice when voluntary upgrades are made.

Under scenario 1a, where the landlord was responsible for costs, it was suggested by some interviewees that requests for operational efficiency installations or upgrades by the tenant (e.g., upgrading to a more efficient system where the current system is still functioning well) would either require a negotiation process or would be shouldered by the tenant.

Some tenants noted contractual requirements to return the premises to their original state at the end of the lease, which disincentivised them from making upgrades altogether. However, one tenant flagged that to avoid energy efficiency gains being stripped back in returning the property to its original state, they would look to renegotiate their contract.

In relation to scenario 1b and the splitting of costs where one party is responsible, as energy efficiency measures tend to be tied to the fabric of the building, a landlord interviewee reported that in situations where an upgrade is viewed as non-essential, it is more challenging to require tenants to absorb this cost. In these situations, the landlord takes responsibility for the costs in consideration of the longer-term benefits for the property.

### **4.5.1.2 Nature of Negotiations**

For voluntary upgrades under scenarios 1a and 1b, there were mixed opinions on whether contract re-negotiations to account for upgrades would be formal or informal – with variation in approach amongst both landlords and tenants. Tenants and landlords that would push for formal renegotiation (involving solicitors as required) cited the reason for this being clarity, risk management and the potential to avoid arguments further down the line:

*'We all know people who have been bitten, it backfires. It is just not worth it, better to take longer, rather than it being a problem later. It should be formal and then there is no going back on that.'*



A few emphasised that they would want to avoid an onerous process (i.e., using a straightforward deed of variation)<sup>43</sup> but that re-negotiation may be necessary if upgrades are not specified in the contract.

Tenants who would prefer an informal renegotiation or discussion usually had a positive relationship with their landlord and stated that smaller upgrades (such as installing LED lighting) would not be worth renegotiating formally.

One multi-portfolio landlord stated that they keep the contracts as similar as possible between tenants and therefore informal discussions for individual tenants would be preferable.

Amongst the interviewees who would not look to renegotiate their contract (both landlords and tenants), the most common reason was that it would be simpler to stick with the agreed clauses as upgrade costs were not worth the 'faff' required to renegotiate the contract with lawyers. Similarly, some tenants felt that if the investments were relatively small (such as installing LED lighting), they could be implemented without any contract amends as the changes were minimal and 'common sense', whereas renegotiation was preferable for larger investments. A landlord stated that for an investment exceeding £2,000 they would alter the contract.

By contrast, a few other interviewees stated that tenancy agreements were signed with the intention to stick to the clauses, and therefore renegotiations would not be considered.

#### **4.5.1.3 Agreeing on Responsibility**

Approaches to agreeing on cost responsibility for future voluntary (scenarios 1a and 1b) heating and cooling equipment upgrades and energy efficiency measures would vary depending on the specific context. Factors that would determine how this process played out were similar to those discussed in the original division of responsibilities (see section 3.4).

#### **The Length of/Remaining Years in the Lease**

Some landlords mentioned how the length of lease or point within the lease was a factor that would impact how responsibility for upgrades would be decided. One landlord stated that leasing agreements over long leases would require renegotiation to ascertain who is responsible, on a case-by-case basis for upgrades as:

*'Usually the tenancy agreement is quite high level because it's very difficult if you are signing a 10–20 year lease agreement, you cannot pre-empt all situations, all circumstances. So it is on a project-by-project basis.'*

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<sup>43</sup> In the property sector, a Deed of Variation is a standard document used to vary the terms of a leasehold agreement, as agreed by the relevant freeholder and leaseholder/s and sometimes other parties, such as lenders.

## **Landlord-Tenant Relationship**

The relationship between the landlord and tenant was stated as a factor that would determine how future costs responsibility would be agreed upon (refer to section 3.4.4 for further detail).

Future standards may improve the relationship between tenants and landlords by defining the benefits to landlords of tenants led voluntary upgrades. The commercial leasing experts interviewed stated that the release of recognised standards for energy efficiency (such as the net zero Carbon Buildings Framework Definition set up by the UK Green Buildings Council)<sup>44</sup> will reassure landlords that upgrades would improve their assets on the market.

## **The Apportionment of Upgrade Payback**

Some interviewees indicated for future upgrades they would be open to negotiations, especially where large costs and/or savings factor into the implementation of an intervention.

Amongst those who would renegotiate, it was typical to make the cost splitting more equitable, and it depended on which party was pushing for the upgrades. These opinions were also voiced by non-domestic property experts, who stated that the split of responsibility for past upgrades and future upgrades depends on the type of intervention and on who benefits from the investment.

One landlord shared their experience of implementing measures post-contract signing when the tenant found the premises to be less well insulated than expected. The tenant requested an upgrade in electrical heaters (as there was no specific clause outlining responsibility for these measures) or exercising the break clause.<sup>45</sup> The landlord agreed to split the cost, and this decision to deviate from the contract was supported by advice from energy companies on the cost savings for the installation or implementation of more energy-efficient measures.

Some tenants said they would look to renegotiate to retain ownership of the investment (using examples of electric vehicle charging points and solar panels) and to recognise their contribution to improving the asset's market value through their investment and upgrades.

A factor in determining costs, for past and future voluntary upgrades, was whether other tenants in a multi-tenant non-domestic premise were interested in sharing costs.

## **Net Zero Impact on Decision Making Process for Agreeing Responsibility**

Landlords (especially larger landlords with property portfolios) are increasingly looking to make their portfolios net zero (one said that they were aiming for net zero by 2030) and more tenants are making requests in line with their own climate targets.

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<sup>44</sup> The UK Green Building Council (2019) Net Zero Carbon Buildings: A Framework Definition, <https://www.ukgbc.org/ukgbc-work/net-zero-carbon-buildings-a-framework-definition/>

<sup>45</sup> A break clause in a tenancy agreement gives the landlord or tenant the right to end a fixed term tenancy prior the expiry of the fixed term period

The integration of clauses into contracts relating to net zero targets was often a source of uncertainty due to:

- The length of the lease being short term whilst net zero targets are longer-term
- Most leases being agreed before net zero commitments are made
- Incorporating net zero clauses requiring major contract amendments or signing of new leases

In terms of potential future changes, one landlord stated that their intended timescales of upgrades would be determined by the pace of demand from tenants, which would, in turn, be influenced by how rapidly businesses move towards net zero. Similarly, a commercial property expert stated that landlords would make changes based on:

- Whether the upgrades would improve their ability to re-let at the end of the lease
- Any EPC requirements that needed to be met
- If additional tax was placed on high-carbon properties
- Whether they could attract tenants looking for low-carbon premises Funding Mechanisms

For voluntary upgrades that have been installed, and for upgrades under the hypothetical voluntary (scenarios 1a and 1b) scenarios, interviewees referenced several funding pathways as the means to fund heating, cooling and energy efficiency improvements. This included:

- Utilising capital, cash flow, or asset liquidity
- Taking out loans and grants
- Utilising 'green' finance

### **Capital, Cash Flow, or Asset Liquidity**

Using cash flow, capital or asset liquidity was the most frequently cited funding mechanism. Several landlords mentioned having budgets set aside for maintenance and development which would be employed for these purposes. Several tenants also specified that paying via capital would be easier if the purchases for any upgrades could be paid for in instalments.

### **Loans and Grants**

The option of accessing government loans or 'green' grants was mentioned by many tenants and a few landlords. However, most interviewees stated that they are difficult to access so other options (primarily savings) would be simpler.

Loans were the least popular option when in comparison to utilising cash flow or green finance. This was due to high interest rates and their complexity (for example a lengthy application process). A few interviewees stated that they would get a loan if they decided to make upgrades, preferably with a long payback period to spread the cost. Loans were slightly more popular with landlords who controlled a larger portfolio of properties. Some interviewees also

stated that the ability to secure low-cost loans specifically for green improvements would be a material factor in their decision-making.

### **Green Finance**

The legal and non-domestic experts interviewed also mentioned that larger non-domestic landlords are increasingly looking at green finance (through transition funds, internal carbon prices, green bonds, etc.). One non-domestic property expert stated that:

*‘There's quite a lot of innovation in that area [the non-domestic property sector] at the moment in terms of trying to get sustainable finance to work to enable them to upgrade their existing portfolios.’*

A landlord (of a large non-domestic portfolio of properties) backed this up, stating they used a green bond framework specifically designed to implement energy improvements and low carbon technology.

### **Factors Influencing Decisions on Funding Mechanisms**

There was no considerable discrepancy in the type of funding mechanism chosen between landlords and tenants, or in specifying what factors would influence their decision. Most interviewees caveated their decisions as highly dependent on context, for example:

- Whether the investment would increase the value of the asset (organisation, shareholders, individuals);
- Whether the investment would enable rent to be increased in the future;
- The payback period of the investment;
- The magnitude of the cost required and whether it would impact other planned expenditures;
- The time of year (both financial and calendar);
- The remaining length of the lease;
- Whether the interest rate on loans was competitive; and
- Whether they had been given enough notice to set aside necessary capital (tenant)

The findings did not change depending on whether the interviewee was the party pushing for upgrades or whether they were responsible for costs.

Some interviewees also commented on how costs are often passed through to the other party. Several landlords mentioned funding the change through increasing rents or service charges (mostly incrementally as opposed to a step-change), and that the tenants would be more likely to provide funding if they were to benefit through reduced energy bills.

Landlord interviewees advised how the service charge is a common approach to recoup any costs they absorb from voluntary upgrades they have made when a contract has been arranged with the tenant.

## 4.5.2 Mandatory Upgrades

This section explores scenario 2 for mandatory upgrades: "If future legislation meant that installing low carbon heating at the point of replacement became mandatory, should it be the landlord or the tenant who is responsible for funding the cost of these changes, or should the responsibility be shared?"

### 4.5.2.1 Form of Agreements

The responses from interviewees regarding how agreements would be made differed little under this scenario, compared to voluntary upgrades scenarios 1a and 1b (see Section 4.5.1.1). The preference from both landlords and tenants would be for a formal renegotiation or an amendment of the contract. This would ensure that both parties were protected and that the split of responsibilities was clear. A few tenants did however state that they would prefer an informal renegotiation for simplicity.

### 4.5.2.2 Agreeing on Responsibility

In agreeing on responsibility under scenario 2 (mandatory future upgrades), many interviewees felt that every property and upgrade was unique, and the cost split should be determined on a case-by-case basis. This was again subject to caveats regarding the cost of the upgrade.

There was divided opinion on whether the costs should fall to the landlord or be split between landlord and tenants if upgrades were mandatory. It was widely felt that legislation would accelerate the process of implementing the upgrades, but that any future policies would need to be appropriately nuanced to consider the wide variation in context and dynamics (e.g., for micro-sized organisations or sector-specific challenges).

### 4.5.2.3 Legislative Barriers to Dividing Responsibilities

In reference to hypothetical scenario 2 (mandatory future upgrades), this section looks at views from interviewees on how to encourage cooperation and the equitable allocation of costs, and whether legislative barriers would prevent this from occurring.

Some interviewees reflected on the large variation in letting situations and the lack of current sector-specific legislation. Some landlords stated how any future 'blunt' or 'one size fits all' policies will not help generate change.

Most interviewees felt that new policies would need to be phased in over time, with accompanying guidance on how the costs and responsibilities for energy efficiency upgrades should be split. However, it was emphasised that the requirements for smaller landlords need to be achievable. The size of an organisation would also be a key consideration, especially regarding access to resources to make upgrades and investments, with smaller organisations less able to fund new equipment.

#### 4.5.2.4 Funding Mechanisms

Interviewees' responses around funding hypothetical mandatory upgrades (scenario 2) were similar to those stated for funding voluntary changes (refer to section 4.5.1).

As with voluntary upgrades, the most frequently mentioned factor was the cost and extent of the upgrade. The funding mechanism that would be to make mandatory upgrades would depend on how costs were split between tenants and landlords. Only a few interviewees mentioned utilising savings or available capital to fund upgrades if they are legislated, and only if upfront costs were small. If the upgrades required a larger investment, then interviewees stated that other sources of funding would be explored.

Grant funding was mentioned by several interviewees, some of whom specified that they would expect a funding mechanism for improvements to be available if the upgrades were mandated. A few also mentioned loans:

*'Funding from the local council or national Government would be a crucial factor for us, I think we'd have to get a loan if there was a requirement to install new measures if it was our responsibility.'*

A few landlords also stated that if they passed costs of upgrades through to their tenants (through increased rent or service charges) then the tenants would be more likely to look elsewhere. This view implies that any legislative requirement to install upgrades must be apportioned to avoid reducing competitiveness.

Interviews implied that both landlords and tenants expected less personal responsibility for funding upgrades where they are mandated as opposed to voluntary. Furthermore, some of the various caveats provided were context dependent and differed across different building types

#### 4.5.3 Timing of Upgrades

Under both the hypothetical voluntary and mandatory scenarios (refer to section 3.5), interviewees were asked at what point they foresee any upgrades taking place, to which there was a wide range of responses. This helps understand if there are any barriers or opportunities in relation to the timing of any future voluntary or mandatory upgrades.

Tenants and landlords had mixed opinions on undertaking upgrades mid-tenancy versus waiting until the end of a tenancy. Several landlords cited the increased simplicity of making upgrades post-tenancy (which could also enable them to increase the rent). A few tenants stated that implementing upgrades at the beginning of the tenancy ensures that they would receive the full benefits of the investment. In comparison, a few landlords stated that in their mixed-use premises there will always be tenants at different points of the lease and therefore, the stages of the lease are immaterial.

A few tenants stated that the nature of the upgrade would naturally influence timings – if it is a replacement purchase, rather than a voluntary or mandatory upgrade, then timescales are

stressed, and it would be mid-tenancy. The rapidity of implementation would also be determined by whether the necessary finance was available (e.g., in the service charge budget) and trying to limit the disruption to the tenants' business. The enthusiasm of both parties was also cited as a crucial factor – if one party were pushing then the upgrades would be likely to occur sooner.

## 5 Conclusions

This report demonstrates that an in-depth understanding of how cost responsibilities for heating and cooling systems and energy efficiency measures are allocated between tenants and landlords in non-domestic privately rented properties is required to inform future policy within this area. The key messages from this research are outlined below to assist in building an understanding of the different landlord-tenant arrangements that are in place across the UK non-domestic building stock (sector used as a proxy for building type).

### Operational Cost Responsibility

**Responsibility between landlords and tenants for operational costs varied by type of heating and cooling equipment and energy efficiency measure.** Overall, landlords were more likely to be responsible than tenants for operational costs. Sectoral differences were evidenced with Office landlords being the most likely to be responsible out of all sectors.

### Capital Cost Responsibility

**Responsibility for capital costs varied across heating and cooling equipment and energy efficiency measures. In general, tenants were more likely to be responsible for the equipment costs of cooling systems and hot water than landlords, whereas landlords were slightly more likely than tenants to be responsible for the costs of heating systems.** The exception to this was listed buildings, where landlords tended to take ownership of all aspects. This is because listed buildings have legal protection making landlords (as building owners) responsible for the upkeep and preservation of the building and liable for any damage.

Responsibility for equipment costs varied by sector. In the hospitality sector, landlords were more likely to be responsible for space heating and hot water. For the industrial and storage sector, landlords and tenants were equally likely to be responsible for space heating. As industrial units do not necessarily have a heating requirement, meaning it is their choice as to whether to have a heating system in their unit, which may explain why tenants are more likely to be responsible in this sector.

**For energy efficiency upgrades, landlords were more likely to be responsible, as this related to the building fabric.** Micro-sized organisations (0–9) appeared to have less responsibility for energy efficiency upgrades. These are typically shorter term and lower value lets in comparison to larger organisations with higher turnovers and more staff, which may explain these organisations' diminished level of responsibility.



## Determining Cost Responsibility

**The division of responsibility for heating, cooling, hot water, and energy efficiency measures tended to be stipulated within lease contracts.** These agreements are typically drawn up by landlords in the first instance. Determining how responsibility for upgrades fell was undertaken through a variety of methods, including:

- Adhering to the terms in the existing agreements;
- Negotiations of new clauses within existing agreements;
- Negotiations of new contacts

**The allocation of cost responsibility differed, and deviation from agreements may take place depending on the scenario** (for example whether it be a breakdown of equipment, whether it be a voluntary upgrade to decarbonise, or whether future policy mandates upgrades). **There were several factors affecting the decision-making process, these included: clarity of leasing terms; the length of the lease/remaining years in the lease; the attitudes and flexibility of landlords and tenants; and existing relationships between landlords and tenants.** However, overall, the larger the capital and operational cost, the more likely it was for landlords to be responsible.

For voluntary and mandatory upgrades (future hypothetical scenarios), the method for determining responsibility and factors impacting the decision-making process were similar to those outlined above. However, the payback period and the extent of the upgrades were also key factors.

## Funding Upgrades

This decision on who would be responsible for costs in both the hypothetical and voluntary scenarios appeared to be highly dependent upon the investment context. For example, relevant considerations include:

- Whether the investment would increase the value of the asset (organisation, shareholders, individuals);
- Whether the investment would enable rent to be increased in the future;
- The payback period of the investment;
- The magnitude of the cost required and whether it would impact other planned expenditures;
- The time of year (both financial and calendar);
- The remaining length of the lease;
- Whether the interest rate on loans was competitive; and
- Whether they had been given enough notice to set aside necessary capital (tenant).

The split of responsibility for upgrades would depend on the type of intervention and on who benefits from the investment. Collaborative discussion on upgrades between landlords and tenants was becoming increasingly common and this will continue for the foreseeable future. Projects between landlords and tenants over long leases and with a good relationship, where there were mutual benefits from the upgrades, are more likely to be implemented.

**Several funding mechanisms would be (and have been used) to pay for upgrades or installation costs by both landlords and tenants. Most organisations stated they would utilise cash flow, capital, or asset liquidity.** Loans were a less popular mechanism to fund improvements, and grants would be a preferred option but are not readily available. Increasingly, larger non-domestic landlords are looking at green finance (through transition funds, internal carbon prices, green bonds and other innovative mechanisms) to upgrade their portfolios in line with net zero ambitions.

## Future Policy Considerations

The implications of these findings are likely to be wide-reaching. Firstly, any policies that promote the replacement of existing heating systems and improved energy efficiency measures will likely require agreement between landlords and tenants, irrespective of who the requirement falls on. This may involve negotiating new clauses within existing agreements or negotiating new contracts between landlords and tenants.

Overall, the larger the capital and operational cost, the more likely landlords will be responsible. The cost responsibility varies depending on the sector, with deviations from the norm found particularly in the hospitality, office, and industrial sectors. These sectors may therefore be more easily influenced by any future policy aimed at decarbonising non-domestic buildings that focuses primarily on actors (the landlord/building, or the tenant), rather than policies which focus on sectors (proxy used for type of building in this research). Future policies may need to be appropriately nuanced to consider these dynamics. Any future 'one size fits all' policies (obligations or incentives) to encourage cooperation and equitable allocations of costs, are unlikely to be effective. New policies would need to be phased in over time. Finally, government may wish to be more prescriptive on who the cost responsibility of replacing heating systems and making energy efficiency upgrades falls on. This would require consultation in advance to ensure any future policy is developed with care and attention to the current dynamics at play. This could lead to a more formalised structure in the long term on who is responsible for the costs of heating and energy efficiency upgrades, making it more straightforward to introduce policy to encourage decarbonisation buildings.

Increasingly, irrespective of policy, demand for businesses to futureproof and reach net zero targets means the traditional split of costs may become more flexible, and more collaboration between tenants and landlords may be expected.

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