Energy Data, Buildings and Net Zero

Closing the Data Deficit

June 2024

Contents

Contributors

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

1/48

Executive Summary

The Importance of Decarbonising the Property Sector and Data

Buildings represent around a quarter of the national carbon footprint. This means that the property sector has a critical role to play if the UK is to meet its commitment to be a net zero economy by 2050.

Access to energy consumption data is essential to understand how a building performs in-use and to inform carbon reduction strategies. Research by the UKGBC suggests that optimisation – ensuring a building runs as efficiently as possible – can deliver a 26% reduction in operational energy use[1]. This shows the impact that data alone can have on delivering the sector's and the Government's net zero ambitions.

A Focus on Landlord/Tenant Arrangements

The structure of the UK property sector means that there are a range of circumstances where it is difficult to access energy data. The ease with which property owners and occupiers can obtain energy consumption data varies by property arrangements. Owner occupiers are generally able to access their energy consumption data relatively easily. The situation can be more complex where there is a landlord/tenant or freeholder/leaseholder arrangement. Over half of the UK commercial real estate sector is tenanted, and a third of the residential sector. As such, many property owners and investors will not have easy access to tenants' energy consumption data. This lack of shared access to data is slowing down the property sector's decarbonisation processes.

Decarbonising the property sector requires collaboration between property owners and occupiers, which is not always straightforward. The focus of this research is therefore on landlord/tenant situations[2].

Current Legislation Does Not Require Comprehensive Sharing of Energy Data

Existing legislation on environmental and energy policies only require the largest energy users to report on their energy usage to Government. Within the energy sector, Ofgem has identified licensees who are subject to data sharing regulations which does not typically include property owners. This results in a situation where there is currently no legislation requiring the exchange of energy consumption data between property owners and occupiers.

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[1] UKGBC (2024) Retrofitting Office Buildings: Building the Case for Net Zero, available from: https://ukgbc.org/wp-content/uploads/2024/01/Retrofitting-Office-Buildings-Building-the-Case-for-Net-Zero.pdf

[2] There can be many contractual arrangements between those stakeholders, and for the context of this research we refer to landlords/owners/property investors/fund managers interchangeably on one side (albeit these can be different) and refer to tenant/occupier interchangeably on the other side, to illustrate these situations where one player needs access to the data that another stakeholder has ownership over.

Energy Data, Buildings and Net Zero: Closing the Data Deficit

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

‹ 2/48 ›

Why Collect Energy Data?

A lack of data hampers the ability to act in effective, specific and timely manners, and may result in missed opportunities for action, or in suboptimal actions, which slows down the UK property sector's decarbonisation process. This can impact a property owner's ability to meet their net zero ambitions and to maximise rental income and creates a risk that assets become stranded. The occupier can also lose out on the energy cost savings that could be realised by occupying a more energy-efficient property.

Collecting energy data is critical to a net zero pathway for four main reasons:

01

Baseline and targets

It enables owners to calculate their baseline emissions and set appropriate emission reduction targets, by using the carbon factors of their energy usage to estimate the property's carbon intensity.

02

Prioritisation

Access to data allows owners to prioritise assets in need of improvements and to define relevant interventions and net zero strategies to reduce energy consumption and carbon emissions, such as improving a property's energy efficiency, installing more energy efficient equipment, etc.

03

Detailed pathways

Good quality detailed data enables property owners to engage with occupiers on net zero pathways and energy reduction strategies, prioritising high energy users, and to evidence the scale of the challenge or the opportunities for action.

04

Reporting

Data enables landlords to measure the impacts of their interventions and to report against their targets and carbon commitments.

Energy Data, Buildings and Net Zero: Closing the Data Deficit

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

3/48

Barriers and Enablers to Data Collection and Analysis

Owners have access to some energy data, for example where they procure energy. But much of the energy consumption data is in the hands of the tenants, and it is often difficult for property owners to obtain.

A wide variety of cultural, organisational, behavioural, technological and legal factors impact data collection and analysis. While some factors represent complicated barriers, others are essential enablers and help make the data flow better.

- The over-reliance on manual data collection results in significant organisational challenges for owners and occupiers who need to allocate valuable resources to data collection. Manual processes are also likely to result in incorrect and incomplete data, the accuracy of which is challenging to ascertain.

- There is a behavioural and cultural reluctance to share data between occupiers and owners, which limits the ability to collect data. This is particularly challenging in the retail sector, where tenants usually procure their own energy supply.

- Asset and property managers have an essential role to play in data collection, due to their connection to occupiers and properties. However, a lack of education or awareness on the topic of data and of environmental policies may act as a deterrent for some managers to become actively involved in the data sharing process.

- Developing organisational relationships between the asset teams and the sustainability teams across landlords and tenants is essential to facilitate the exchange of data.

- Smart meters and automated systems have been widely used by most property owners, are generally well received by tenants, and are critical in addressing organisational issues linked with manual collection.

- The installation of smart meters can be costly and challenging, requiring a power down of electrical systems that is disruptive. Smart meters also require management and maintenance to ensure they continue to send accurate and frequent data.

- Data collectors and aggregators are valuable in providing property owners with access to data that would otherwise be challenging to obtain. However many owners find selecting partners and approaches across the numerous choices and technological solutions is a challenge, which comes at a cost and offers limited interoperability.

- In the residential sector, UK data privacy laws mean that residential landlords have little means of gathering their residents' data and cannot do it without their consent. The processes can be reliant on manual data collection, at infrequent intervals and for a small proportion of their housing stock.

- While more effective in the office sector, in the retail sector green leases have been challenging to implement. They are not always enforced and can be refused by tenants without becoming a deal stopper for the lease. However the use of green leases can be beneficial in facilitating further discussions between owners and occupiers, and enabling collaborative approaches.

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

4/48

Conclusions

The need for change in how data is collected is closely linked to the purpose for collecting the data. The three main ways of improving data collection and sharing that are apparent from our review are:

- Mandating data sharing

- More extensive roll-out of smart metering

- Encouraging increased collaboration between owners and occupiers.

Whether more general and less frequently collected data, or more granular, frequent and detailed data is needed depends upon the purpose for which it is being used.

In general, mandating data sharing and a more extensive roll-out of smart metering are more relevant to baselining and targets, prioritisation, and reporting. While it would be helpful if data collected for these purposed is granular, detailed and frequently collected, these purposes can make do with less frequent and more aggregated data.

Fine grain data is more relevant for the purposes of developing detailed net zero pathways. Such strategies typically require close collaboration between landlords and tenants to share information, assess options and agree actions between the parties. While mandatory data collection will help this process it is probably not essential in cases where there is already good collaboration between owners and occupiers as the parties will tend to be willing to share information anyway.

The relationship between ways of improving data collection and sharing and the purposes of the data is summarised in **Table E1** below.

Table E1 Contribution of Recommendations to Reasons for Data Collection

Ways of improving data collection and sharing	Purpose for which data is used			
	Baselining & Setting targets	Measuring	Detailed pathways	Reporting
Mandatory data sharing	Helps achieve comprehensive coverage. Generally, data can be more aggregated and less frequently collected.		Can help provide better information. However not as important as collaboration.	Useful. Generally, data can be more aggregated and less frequently collected.
Improving smart meter roll-out	Helps improve accuracy, efficiency and coverage. Generally, data can be more aggregated and less frequently collected.			
Improving collaboration	Useful but unlikely to achieve comprehensive data coverage and accuracy.		Collaboration is essential to define detailed pathways.	Unlikely to achieve comprehensive data coverage and accuracy.

Recommendations

Given the challenges identified and the context for the purposes of collecting data the following recommendations are put forward.

A — Mandating Data Sharing

A1/C1

The Government should explore new and innovative ways of requiring mandatory data sharing between owners and occupiers combined with requirements for joint low carbon strategies. This could for instance be along the lines of France's Décret Tertiaire (see chapter 6).

A2

The Government should encourage minimum data sharing requirements in commercial leases. This should include reforming the Landlord and Tenant Act 1954.

A3

The Government should explore whether energy data could be considered a "legitimate interest" within the UK General Data Protection Regulations (GDPR).

B — Encourage Smart Meter Roll Out

B1

The Government should explore how owners and occupiers can be encouraged to work together to install smart meters and share smart meter data.

B2

The Government, in partnership with Ofgem and key stakeholders in the energy sector, should explore additional ways in which smart meter data might be shared directly with certain authorised property owners.

C — Promoting Collaboration in the Real Estate and Energy Industries

C1/A1

The Government should explore new and innovative ways of requiring mandatory data sharing between owners and occupiers combined with requirements for join low carbon strategies. This could for instance be along the lines of France's Décret Tertiaire.

C2

The Government should create a new Building Energy Data Taskforce, bringing together representatives from all sides, to ensure a common understanding of the challenges and explore solutions.

D — Promotion of Green Leases

D1

The real estate sector should continue to expand the use of green leases.

D2

The Government should show leadership by making all new commercial leases for Government buildings green leases.

E — Promoting the Use of Performance-Based Energy Metrics

E1

The Government should encourage the adoption of performance-based rating schemes, such as NABERS UK.

E2

The Government should show leadership by adopting performance-based rating schemes, such as NABERS UK, for new and existing office buildings leased by Government.
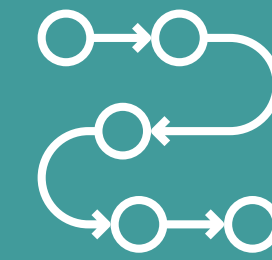
Next Steps

While the recommendations provide high level approaches to address the issues, their implementation should be explored further in partnership with a range of stakeholders in the real estate and energy industry and Government.

The Government has a well-defined process for policy and programme formulation, appraisal and monitoring. The Government should apply this process to the recommendations in this report.

Executive Summary | **Introduction** | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

6/48

01

Introduction

Energy Data, Buildings and Net Zero: Closing the Data Deficit

Executive Summary   **Introduction**   Context   Why Collect Energy Data?   How is Energy Data Collected?   Data Collection Barriers and Enablers   Good Practice and Case Studies   Conclusions and Recommendations   Next Steps   References and Appendices

‹   7/48   ›

1. Introduction

1.1. Net Zero Agenda, the Climate Emergency and the Real Estate Sector

1.1.1.   The UK Government is committed to reaching net zero carbon emissions by 2050. The real estate sector is a major contributor to carbon emissions. Further, many of the UK's largest real estate investors and owners have made commitments to achieve net zero carbon by 2050 or sooner. However, it is widely acknowledged that reaching this target will be a substantial challenge.

1.1.2.   In 2023, the British Property Federation (BPF) published research on the challenges faced by the real estate industry in achieving the transition to net zero carbon emissions[3]. One of the conclusions of this research was that access to energy consumption data is a key challenge for the majority of property owners in the United Kingdom.

1.1.3.   Access to energy consumption data is essential to understand how a building operates. The energy consumed is typically a mix of energy sources that are directly linked to a carbon intensity factor, derived by the energy source's conversion of their original fuel into the useful energy for the building. This means that the fuel mix and timing of energy creation define the carbon intensity. In the absence of granular energy data it is difficult to accurately understand the carbon intensity of the operation of a building and how it can be improved.

1.1.4.   The ease with which property owners can obtain energy consumption data varies by property arrangements but many will not have easy access to occupiers' data. Also, the lack of good quality data is impacting on the property sector's decarbonisation processes and is diverting valuable resources away from implementing decarbonisation strategies. Decarbonising the property sector therefore requires collaboration between property owners and occupiers, which is not always straightforward.

1.2. Purpose and Approach

1.2.1.   Savills was appointed by the BPF to undertake further research into energy data in the context of the net zero agenda. This report has four goals:

- Investigate the role data plays in the real estate sector's transition to net zero.

- Explore the challenges faced by property owners in accessing, interpreting and using data required to implement net zero strategies across different asset classes.

- Understand the role that technology plays in overcoming data challenges.

- Provide recommendations and develop policy solutions on how to overcome these challenges.

1.2.2.   The main focus of this research is the landlord and tenant relationship, where property owners need to engage with their occupiers to access energy data. This landlord and tenant relationship in the context of data sharing is explored across a range of asset classes, including residential, office, retail and industrial and logistics. A series of interviews and discussions were held with members of the BPF, including both owners and investors, as well as stakeholders in the energy sector. Further details of the research approach are given at **Appendix B.**

1.2.3.   We define "energy data" in a broad sense. This includes periodic consumption (in kWh) and carbon factors (in kg CO2e/kWh). The supplier, tariff name, unit rate and standing charges are also potentially relevant.

1.3. Acknowledgements

1.3.1.   We thank members of the BPF, interviewees and colleagues for sparing their time and sharing their knowledge and ideas. Their insights have been invaluable in preparing this research, sharing the challenges they face and informing possible solutions, next steps and the way forward.

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[3] British Property Federation (2023) "Towards Net Zero: Challenges, Opportunities and Policy Recommendations", available from: https://bpf.org.uk/media/5945/towards_net_zero.pdf

Energy Data, Buildings and Net Zero: Closing the Data Deficit

Executive Summary | Introduction | **Context** | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

8/48

02

Context:
The Property Sector, Energy Data and Policy

Energy Data, Buildings and Net Zero: Closing the Data Deficit

2. Context: The Property Sector, Energy Data and Policy

2.1. Introduction and Summary

2.1.1. Tenanted and multi-tenanted properties represent a large share of the UK property sector. This is the main type of property scenario where data collection and sharing can be challenging. This chapter reviews the characteristics of this part of the sector to give context to the rest of our analysis. With the increasing focus on the need to reduce carbon emissions, there is an urgent requirement for energy data collection and analysis. Smart metering can help with this. Energy suppliers are required to install smart meters for all small non-domestic electricity users, however there have been delays in the roll-out of smart metering. For residential users, this is not mandatory but they are encouraged to put smart metering in place. Data confidentiality law also restricts landlord access to data, which is a significant constraint in some parts of the sector.

2.2. The UK Property Sector and Energy Data

2.2.1. Tenanted property is estimated to make up 56% of UK commercial property based on capital value. This is across all asset classes. High level estimates from the CoStar database on commercial property floorspace by asset class shows that 77% of office space, 70% of retail space, and 69% of industrial and logistics space are tenanted. When looking at multi-tenanted properties, this decreases to 58%, 42% and 25% of total UK floorspace of office space, retail space, and industrial and logistics space respectively.

2.2.2. In the residential sector 63% of properties are owner-occupied, with 37% being tenanted. Within the privately let "multi-tenanted" space, there is currently an estimated stock of just under 100,000 units of private Build-to-Rent properties in the UK.

2.2.3. **Figure 2.1** below illustrates the split of owner-occupier and tenanted space by asset class.

Figure 2.1 Structure of the UK Property Sector
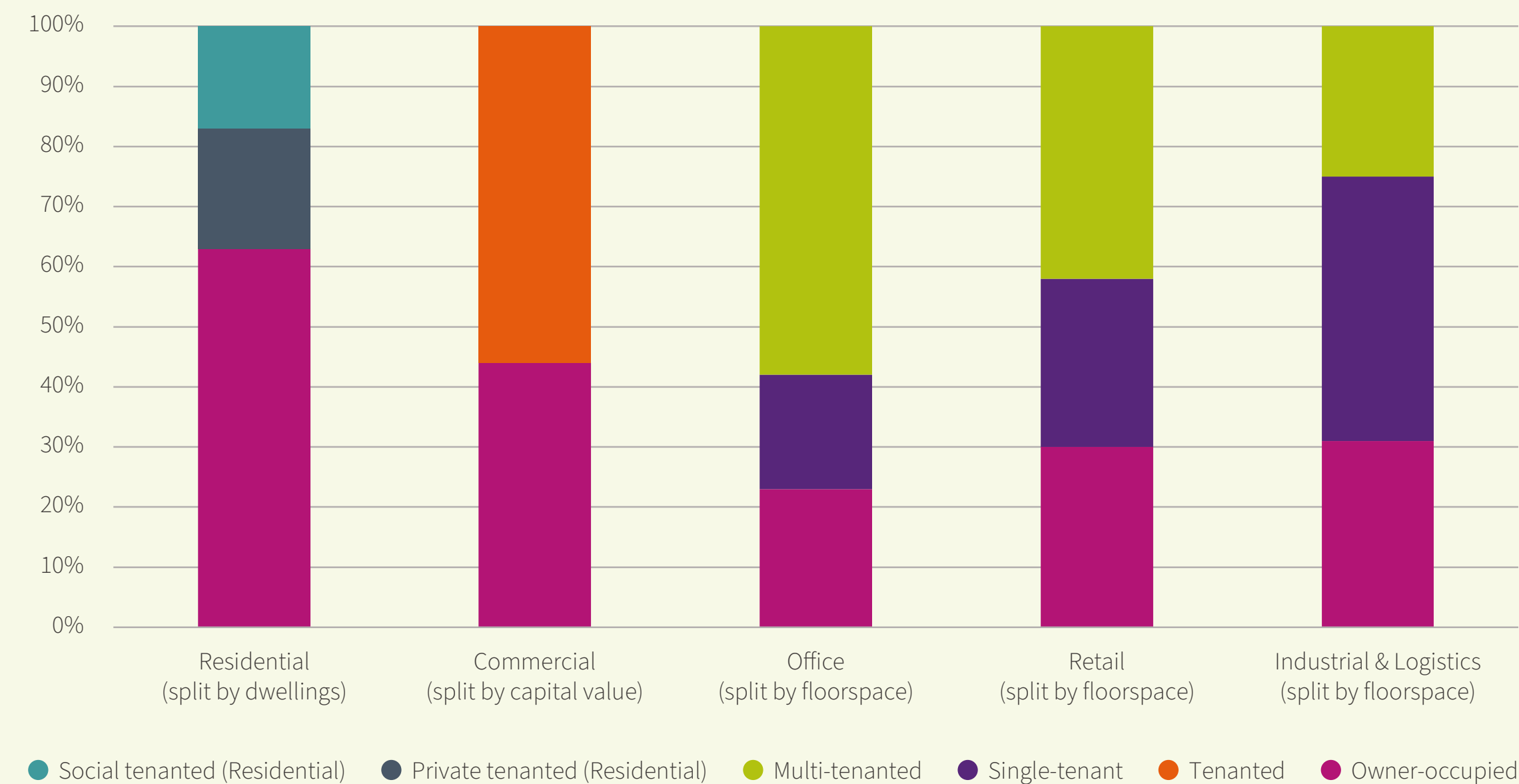
2.2.4. The substantial size of the tenanted and multi-tenanted part of the real estate sector means that access to energy data in this context is key to delivering a net zero property industry.

2.2.5. In tenanted space the ownership of the energy supply contract often falls to the occupier, who has the right to choose its energy providers. This means that within one building shared by multiple tenants, energy could be contracted with a range of providers. Property owners may have access to some data (for instance for shared parts where they will usually have the supply contract), but not all of it. There are exceptions, most particularly in office properties, where the owner is typically responsible for energy procurement. Accordingly, the variations in the level of tenanted space (for instance ranging from single-let to multi-let) and who holds the energy supply contract in different tenanted scenarios means that the ability of landlords to access data can vary across asset classes or from asset to asset.

2.2.6. Enabling energy data sharing is arguably most critical for larger properties, as these offer the highest potential for reductions in energy use and carbon emissions. The Department for Energy Security and Net Zero (DESNZ) and the Department for Business, Energy and Industrial Strategy (BEIS) found that large non-domestic buildings (over 1,000 sq.m) represent less than 10% of all buildings, but over 60% of energy usage[4]. However, energy use of smaller and medium properties is not insignificant and should still be subject to data sharing requirements to enable these buildings to decarbonise and to allow tenants of these buildings to benefit from lower emissions and, potentially, lower bills.

Source: ONS (2023) Subnational estimates of dwellings and households by tenure, England; IPF Research (2022) The Size and Structure of the UK Property Market: End-2020; CoStar data (2024)

[4] DESNZ & BEIS (2021) Introducing a performance-based policy framework in large commercial and industrial buildings, available from: https://www.gov.uk/government/consultations/introducing-a-performance-based-policy-framework-in-large-commercial-and-industrial-buildings

Executive Summary | Introduction | **Context** | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

‹ 10/48 ›

2.3. Climate Emergency and Net Zero Definition

2.3.1. As the built environment is responsible for up to 40% of global carbon emissions, through operational emissions, construction, and embodied carbon[5], achieving net zero carbon in this sector is critical to tackling climate change.

2.3.2. The UK Green Building Council (UKGBC) has established a Net Zero Carbon Buildings Framework, which articulates the definitions and principles around approaches to net zero carbon in operation: "*When the amount of carbon emissions associated with the building's operational energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset.*"[6]

2.3.3. For greenhouse gas (GHG) accounting and reporting purposes, the Greenhouse Gas Protocol defines the following scopes:

- Scope 1: Emissions from sources directly owned or controlled by an organisation. This is typically the combustion of gas for heating or fuel use by vehicles or emissions from industrial production.

- Scope 2: Emissions from the generation of electricity consumed by an organisation. The electricity (and associated emissions) is generated outside of the reporting company's demise but is consumed as a result of the activities of the reporting company.

- Scope 3: Indirect emissions relating to an organisation's activities, but which occur from sources not owned or controlled by the organisation. These can include purchased goods and services, waste, employee commuting, and downstream leased assets such as tenanted property.

2.3.4. In the property sector, depending on lease structures and metering infrastructure, an occupier's Scope 1 and Scope 2 emissions can count as Scope 3 emissions for a property owner. In its "*Guide to Scope 3 Reporting in Commercial Real Estate (CRE) Companies*"[7], the UKGBC noted that Scope 3 emissions typically account for over 85% of a CRE company's entire footprint. Moreover, it observed that most CRE companies will report using an operational control approach. Accordingly, emissions from investments/downstream leased assets which a company owns but does not control should be included in its Scope 3 inventory. To address this substantial proportion of their carbon emissions, property owners therefore need to work jointly with their occupiers to exchange data, calculate their full carbon footprint and implement net zero strategies.

2.3.5. In 2020 the UKGBC set operational energy intensity targets for commercial office buildings within their "Net Zero Carbon: Energy Performance Targets for Offices" publication[8]. The metric used is Energy Use Intensity (EUI) in kWh/m2 as it is considered more accurate and specific than more generic carbon metrics for assessing building performance. EUI is solely dependent on how the building performs in-use, while the building's carbon emissions depend on both the building performance and the grid's carbon intensity.

2.3.6. The UK's first cross-industry Net Zero Carbon Buildings Standard is in development. The Standard will bring together net zero carbon requirements for all major building types. Leading organisations in the UK property sector have joined forces to champion this initiative, with a first version of the Standard expected in late 2024. This is anticipated to provide clarity on net zero for a wide range of use classes and may further focus attention on the critical role of energy consumption data.

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…large non-domestic buildings represent less than 10% of all buildings, but over 60% of energy usage.

[5] World Green Building Council (2019) Advancing Net Zero: Bringing embodied carbon upfront, available from: https://worldgbc.s3.eu-west-2.amazonaws.com/wp-content/uploads/2022/09/22123951/WorldGBC_Bringing_Embodied_Carbon_Upfront.pdf

[6] Low Carbon Alliance (n.d.) Net Zero Toolkit. https://lowcarbonalliance.co.uk/net-zero/

[7] UKGBC (2019) Guide to Scope 3 Reporting in Commercial Real Estate (CRE) Companies, available from: https://ukgbc.org/resources/guide-to-scope-3-reporting-in-commercial-real-estate/

[8] UKGBC (2020) Net zero carbon: energy performance targets for offices, available from: https://ukgbc.org/resources/net-zero-carbon-energy-performance-targets-for-offices/

2.4. Current Regulations on Energy Data Sharing

2.4.1. Currently there is no comprehensive legal requirement in the UK for occupiers to share energy data with owners and vice-versa.

2.4.2. BEIS, Ofgem and Innovate UK established the Energy Digitalisation Taskforce (EDT) in 2019 to develop an energy data strategy for the industry it regulates. Regulations on data sharing set up by the EDT only apply to "licensees" of Ofgem, which include gas distribution network companies, gas and electricity network companies, electricity distribution companies and the electricity system operator (National Grid). These have detailed data-sharing requirements, mandated to ensure transparency and to maximise net zero efforts within the energy industry. However, when it comes to energy data sharing within real-estate and the effective end-users of energy, regulatory frameworks are scarcer, with many still being at the development stage.

2.4.3. The Energy Savings Opportunity Scheme (ESOS) which covers large undertakings and their groups requires participants in the scheme to report total energy consumption, energy intensity ratios and areas of significant energy consumption; this includes the energy used in buildings, industrial processes and transport. Owners are not required to report on occupier-controlled energy use within their Scope 3, and therefore there are no requirements for the exchange of data between owners and occupiers. We understand that the next Phase of ESOS will require submissions to include action plans needed to meet future net zero commitments.

2.4.4. For other companies or organisations there is currently no requirement for actual performance energy data to be disclosed. The Government had been considering introducing a performance-based policy framework in large commercial and industrial buildings for rating their energy performance, and consulted on this approach with stakeholders in 2021[9]. However this has been paused, and the Government is exploring alternative approaches.

2.4.5. Through its "Data Sharing in a Digital Future: Consumer Consent" initiative, Ofgem aims to give domestic and microbusiness consumers the ability to share their energy data securely with trusted market participants. The regulation concerning this type of data sharing is expected to be published in late 2024.

2.4.6. In the residential property sector, the General Data Protection Regulation (GDPR) regulates the sharing of the energy data of private individuals and residents, where meter data is considered personal data. Therefore owners of tenanted residential properties can only access this data with written "opt-in" consent from their tenants.

56% of commercial property is tenanted

37% of residential property is tenanted

2.5. Smart Meter Roll-out in the UK

2.5.1. Ofgem has released regulations in the last decade to improve metering data collection for energy consumers of various sizes. 57% of all meters in the UK are now smart, or around 32 million. However around 9% of them are not working properly[10].

2.5.2. High energy consumers have been required to set up their own half-hourly meters since 2017 at their own cost. For lower energy users the responsibility and the cost of implementing smart meters has been put on licensed energy suppliers. This has resulted in suppliers struggling to meet the targets and deadlines being pushed into the future. Current targets, set for 2025, aim for 80% of homes and 73% of small and medium sized enterprises (SME) to have smart meters. In response suppliers have been pushing for regulation that would mandate that any new homes built would have a smart meter installed by default.

2.5.3. Smart meters collect readings and transmit them to energy suppliers once a month, with consumers being able to increase the frequency if they wish so. To improve on that, Ofgem has appointed Elexon to implement a change that will make half-hourly collections the default setting. This would mean that the whole electricity market would move to half-hourly settlement (MHHS) by 2025.

2.6. Conclusion and Summary

2.6.1. By nature of the way the real estate sector is structured and the way energy contracts are set up, owner-occupiers will have direct access to their energy data. However, in the tenanted space, data privacy and energy sector regulations will impact the way data can be shared. This report therefore seeks to investigate further the landlord/tenant relationship in those tenanted spaces and what it means for the exchange of data.

[9] DESNZ & BEIS (2021) Introducing a performance-based policy framework in large commercial and industrial buildings, available from: https://www.gov.uk/government/consultations/introducing-a-performance-based-policy-framework-in-large-commercial-and-industrial-buildings

[10] House of Commons Committee of Public Accounts (2023) Update on the rollout of smart meters, available from: https://committees.parliament.uk/publications/41730/documents/206773/default/

Executive Summary

Introduction

Context

Why Collect Energy Data?

How is Energy Data Collected?

Data Collection Barriers and Enablers

Good Practice and Case Studies

Conclusions and Recommendations

Next Steps

References and Appendices

12/48

03

Why Collect Energy Data?

3. Why Collect Energy Data?

3.1. Introduction and Summary

3.1.1. If access to good quality tenant data is perceived a challenge, as noted by the BPF in their 2023 research, a question first needs to be asked: why do property owners wish to collect data?

3.1.2. The role of data in reaching net zero is best summarised by the following statement.

" [Data is] absolutely critical. Without that data, you don't know where you are, and you don't know what you need to do to get to where you need to be... What are our customers using? What are we using? You've just got to know what you're using because until you know it, what are you measuring yourself against?

St Modwen

3.1.3. In this report we distinguish between four main reasons for collecting energy data:

- Defining a baseline and setting targets
- Defining net zero pathways
- Engaging with occupiers and other stakeholders and defining joint strategies
- Impact measuring and carbon reporting

3.1.4. The frequency and level of data collection needed depends on the reason/purpose.

3.2. Defining Baseline and Setting Targets

3.2.1. The initial reason for collecting data is to know where to start and where to go from there. Property owners need to understand the actual energy usage of their buildings and portfolio. This helps them define their baseline energy consumption and carbon emissions. The baseline then informs the setting of energy consumption reduction targets. Defining a baseline and setting targets does not necessarily require detailed and frequent data.

3.3. Defining Net Zero Pathways and Making the Case for Intervention

3.3.1. Owners can use energy data to help define investment priorities, including refurbishments. Research has found that existing information, such as EPCs, is not adequate for this purpose[11]. The use of more detailed and granular energy data can therefore result in better strategic decision-making and help prioritise interventions. Property owners use the data they gather to decide which assets need investment, and subsequently what specific interventions are needed. This can include data that is specific to spaces, demises and energy consuming usage (heating, cooling, ventilation, lighting, etc), or that provides timely insights, such as half-hourly or daily energy usage.

3.3.2. When transitioning from gas (either for heating or for cooking) to electricity, property owners also need detailed knowledge of the actual energy usage to ensure that the right electricity infrastructure is in place at the site level to facilitate this transition.

" …one of the things it [data] has allowed us to do is actually define our net zero pathways, so undertake net zero audits and then create strategies to improve the efficiency, reducing the energy demand of our assets.

British Land

" Without data, it's almost meaningless and obviously it's so much easier to improve the assets if you understand how they perform properly.

A commercial property investor and asset manager

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[11] DESNZ & BEIS (2021) Introducing a performance-based policy framework in large commercial and industrial buildings, available from: https://www.gov.uk/government/consultations/introducing-a-performance-based-policy-framework-in-large-commercial-and-industrial-buildings

3.4. Engaging with Occupiers to Help them Decarbonise their Space

3.4.1. Good quality and detailed energy data enables property owners to engage with their occupiers on their energy usage and develop joint strategies and solutions. This is particularly important where decisions need to be made by owners and occupiers together. An example could be the installation of solar panels on the roofs of industrial or out-of-town retail units, which involves collaboration on lease arrangements and agreement on who makes decisions and who pays.

3.4.2. The benefits of engaging with occupiers and sharing data was noted by a number of interviewees.

> "
> …only by having that data can you have those conversations, about how you transition to net zero.
>
> Canary Wharf Group

> "
> It [data] helps us understand customer energy profiles, allowing us to collaborate with our customers better.
>
> British Land

3.4.3. This type of engagement can help occupiers decarbonise the space and properties they use, reducing both their energy use and energy bills. Landsec, for example, is collaborating with some of its highest energy consuming office occupiers, offering energy audits and bespoke reports detailing recommended actions to increase the efficiency of their spaces. This is only possible when actual energy consumption data is available to both owners and occupiers.

3.5. Impact Measurement & Carbon Reporting

3.5.1. Having access to good quality data enables property owners to measure the impacts of their net zero strategies. This helps confirm that interventions they have made actually reduce energy consumption in a building and justify that they are worthy investments. Property owners also need data to report on and evidence the progress against their low carbon targets.

> "
> So we need to have the data to be able to report and achieve those targets… it's difficult to provide evidence that we are moving towards a net zero direction if it cannot be quantified.
>
> A commercial property investor and asset manager

Executive Summary | Introduction | Context | **Why Collect Energy Data?** | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

15/48

3.6. Summary

3.6.1. The need for and nature of energy data required depends on how the information is being used. We distinguish between four main purposes and between the different level of detail of data required. This is summarised in Table 3.1 below.

Table 3.1 Type of Energy Data Needed by Reason to Collect Data

Data Purpose	Type of Data Typically Needed
Defining a baseline and setting targets	• More aggregated, higher-level data, monthly or annually • Does not need to be demise-specific but can be aggregated to a building level
Defining net zero pathways	• Use of high-level data to prioritise assets. Data does not need to be demise-specific but can be aggregated to a building level • Detailed, granular half hourly data to identify & prioritise specific interventions
Engaging with stakeholders and joint strategies	• Detailed, granular half hourly data to help occupiers understand where they can improve and adapt their behaviours • Data specific to the demise occupied by the specific stakeholder

Impact measuring and carbon reporting	• For reporting purposes
	  – High-level data, monthly or annually for reporting purposes
	  – Can be aggregated to a building or estate level
	• For impact measuring:
	  – Detailed granular half hourly data may be required to confirm the impact of the intervention
	  – Data either aggregated to the building/estate or specific to the demise depending on what type of intervention took place (building level or targeted a specific occupier)

Source: Savills 2024

Energy Data, Buildings and Net Zero: Closing the Data Deficit

Executive Summary | Introduction | Context | Why Collect Energy Data? | **How is Energy Data Collected?** | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

16/48

04

How is Energy Data Collected?

4. How is Energy Data Collected?

4.1. Introduction and Summary

4.1.1. This chapter provides a summary of how energy data is collected in the UK real estate sector. The means of collection are driven in part by the structure of the energy sector, the energy contractual supply arrangements, as well as by regulation and legislation.

4.2. Direct and Indirect Data Collection: Landlord Supply Versus Tenant Supply

4.2.1. Data can be collected by property owners or occupiers, either directly or indirectly. This depends on who has ownership of the energy supply contract – i.e. who is responsible for procuring energy.

4.2.2. Where the energy contract is with the owner, they have full access to the energy data. They are able to directly collect data on tenants' usage, which is typically an important element of the owner's Scope 3 emissions, and also can work with tenants to save energy and cut bills.

4.2.3. Where the energy contract sits with the tenant, the property owner can face greater challenges in accessing data since it belongs to the tenant. Landlords can only access and use this data provided they have received written consent from the tenant, who is allowed to withhold this consent.

4.2.4. Based on our research and on the interviewees' responses, the typical situation by asset class appears as follows:

Office space

The ownership of the energy supply contract is often with the property owner. All interviewees involved with properties in this asset class have expressed more positive views with regards to their ability to collect and analyse energy consumption data.

Residential space

Tenants typically have the freedom to choose their own energy provider, and therefore own the supply contracts. Property owners usually do not have a right to access that data unless they have written consent from their residents. In apartment buildings, property owners typically own the supply contract for common and shared parts; however this represents a small part of the buildings' total energy consumption. In some instances property owners own the supply contract for the whole building for new Build-to-Rent properties. Interviewees expressed concerns about their ability to access regular, robust and good quality resident energy data.

Town centre retail space

Retail occupiers usually own their energy supply contracts, and property owners need consent to access that data. This results in challenges to the collection and analysis of energy data.

Shopping centres and retail parks

Tenants typically own their units' energy supply contract while property owners own the supply contract of the common parts. However, the latter represents a small proportion of the overall energy consumption. Property owners struggle to access tenant owned data.

Industrial and logistics space

Whether the owner or occupier owns the energy supply contract varies depending on various factors. Typically, tenants will tend to have the energy supply contracts in older and/or larger premises. Property owners often own energy supply data in more modern multi-let buildings. Interviewees stated that there are situations where it is challenging and others where it is easier to collect energy data.

4.3. Manual versus Automated Collection

4.3.1. There has been a shift towards automated data collection to improve data collection accuracy and frequency. This can be achieved by installing smart meters, or Automated Meter Reading devices (AMRs), which can provide real-time data down to half-hourly meter readings. This usually results in better quality and more reliable data.

4.3.2. However, while smart meters are increasingly being used there often remains a need for property owners to use manual methods to collect data from tenants because they often do not have access to the tenants' smart meter readings. Manual collection relies on data originating from a range of sources. Based on the experiences shared by interviewees, this can include: an invoice; annual surveys of tenants; a number written on a piece of paper, on a spreadsheet, or in an email; data obtained from a meter reading by a tenant, an inventory clerk, a facilities manager or asset team; and a photo of an invoice or of a meter.

4.3.3. Where they can, some property owners with responsibility for procuring the supply contract may choose to install sub-meters. Examples include commercial buildings or spaces that are shared by multiple tenants, to enable the owner to identify the energy consumption of the specific demise and spaces of their tenants. Other examples include the installation of sub-meters for specific equipment (i.e. lighting, ventilation and heating, etc), which can provide detailed insight on the energy performance of such equipment.

4.4. The Role of Third-Party Data Providers in the Energy Industry

4.4.1. Property owners can access energy data of their properties via the services of third-party data providers in the energy sector.

4.4.2. Some of these services, more commonly known as data aggregators/collectors/brokers, are licensed by Ofgem to access the central energy database. This can be done either by searching for the energy usage by postcode or based on a property's MPAN (Meter Point Administration Number).

4.4.3. Collecting data via an MPAN requires some interaction with occupiers, as they would have access to the MPAN and need to provide it to the property owner. Owners and third-party providers also need to have the consent of the owner of the meter's supply contract – the occupier – to access granular data at the demise level, otherwise it needs to be aggregated, to a minimum of four units. Data is typically collected on a monthly basis but can be available at half-hourly intervals where the appropriate meters have been installed and where the information is shared by the meter operator.

4.4.4. In the absence of information on the MPAN, the data can be searched by postcode where third parties have access to that data aggregated to include at least four units. While this may not enable owners to understand the performance of specific units, it does not require occupier consent and can still provide high-level

information at a building level. This can be most useful for multi-tenanted properties with "full repairing and insuring" (FRI) leases, where gaining the consent of all tenants would be difficult and time consuming. However, searching for the data by postcode can be challenging and lengthy, most particularly where postcodes of the original energy supply differ from the postcode of the property (for instance, when the energy supply code existed before the property was even built, resulting in different postcodes between the two).

4.4.5. The use of third-party service providers enables property owners to free up some of their resources and provides another avenue for data collection.

4.5. Conclusions

4.5.1. Data collection is still largely driven by manual processes in many parts of the industry, although there has been a strong push for automation where possible. The involvement of third-party data providers in the energy industry provide property owners with different avenues for data collection. However, unless occupier consent is given to the landlord to share data, data collectors can only provide this data in an aggregated (non-demise specific) form.

Energy Data, Buildings and Net Zero: Closing the Data Deficit

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | **Data Collection Barriers and Enablers** | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

19/48

05

Data Collection Barriers and Enablers

Energy Data, Buildings and Net Zero: Closing the Data Deficit

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | **Data Collection Barriers and Enablers** | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

20/48

5. Data Collection Barriers and Enablers

5.1. Introduction and Summary

5.1.1. Property owners face a range of organisational, behavioural, technological and legal barriers to collecting data, which can make data collection and analysis complicated, lengthy and costly.

5.2. Cultural, Organisational and Behavioural Dimensions

5.2.1. There are substantial cultural, organisational and behavioural factors that can act as either barriers or enablers of data collection and analysis. These include issues around: resourcing and human error; a lack of trust in landlords; concerns around reputational risk; and a lack of environmental awareness or misaligned priorities.

Resourcing Constraints and Human Error

5.2.2. Manual data collection, either directly from an owner's supply contract or indirectly through an occupier or property manager, often requires lengthy, time consuming and labour-intensive processes. These are not always successful or accurate. Given the cost and time needed to collect the data, this results in infrequent data collection, with the risk of using data that can be of poor quality, inaccurate or incomplete.

5.2.3. This is a challenge both on the owner and on the occupier side. Neither may have sufficient resources to allocate to data collection. These limited resources can be exacerbated by multiple data sharing requests across several properties. Tenants occupying multiple properties may receive multiple requests from various landlords, who may have different requirements from one property to another. Inversely, property owners may receive data in different, inconsistent, and non-standardised formats, which requires time-consuming data cleaning and processing.

5.2.4. Owners are sometimes forced to rely on energy benchmarks and other sources of information to fill in gaps, such as Energy Performance Certificates (EPCs), which do not represent a property's actual energy use. This significantly undermines owners' ability to use the data for their net zero strategies. This also means that they can only define baselines, set targets, or report impacts using suboptimal data (for instance data which is not based on any measurement at all of the in-use energy performance of the building and may not reflect a property's actual energy performance).

Trust Between Tenants and Landlords

5.2.5. The research also shows that there can be a lack of trust in landlords from tenants, which can disincentivise and discourage occupiers from sharing data. This was apparent from our interviews.

> " ... there's a fear of sharing, unfortunately... We're trying to make our motivations clear but there is still this landlord tenant tension that is a challenge for this.

British Land

> " ... there were still a big proportion of customers [occupiers] for whom privacy is very important, and the perception of data as being something that is theirs that they do not want shared, even if it's something relatively anonymous and intangible like emissions data... Trust is an issue for tenants sharing data.

A residential landlord

Executive Summary   Introduction   Context   Why Collect Energy Data?   How is Energy Data Collected?   **Data Collection Barriers and Enablers**   Good Practice and Case Studies   Conclusions and Recommendations   Next Steps   References and Appendices

‹   21/48   ›

5.2.6.   Some interviewees believe that commercial tenants were concerned about the impact of sharing data on their reputation. This may be linked to a lack of understanding or trust in how the property owner will use the data or how the tenant's anonymity will be protected.

The Disincentive of Cost

5.2.7.   The energy and cost of living crises have encouraged some tenants to review their own energy consumption. Anything that represents an additional cost to occupiers, either directly or indirectly, is likely to receive push back and means that requests to share data are simply not acted on. This can include concerns about the time and labour costs involved in collecting and sharing data. Where there is also a lack of trust, some occupiers may fear that providing owners with better data will result in an increase in the occupiers' costs. This can further reinforce tenants' reluctance to share energy data.

> "
>
> The biggest incentive is a reduction in their energy bills. But you can only do that with energy data that relates to their individual premise.
>
> M&G Real Estate

5.2.8.   Occupiers who are sensitive to costs may therefore be reluctant to share data. Occupiers are likely to be more inclined to share data if they understand how this will benefit them from a financial perspective, for example, by resulting in lower energy bills.

Environmental Awareness and Misaligned Priorities

5.2.9.   Willingness to share data and collaborate with a property owner may also come down to the occupier's environmental awareness or their own environmental priorities. Some occupiers do not see their buildings' energy consumption as a priority to address, compared to the emissions generated by their supply chains or vehicles, and may be reluctant to prioritise resources to tackling this source of emissions as a result.

5.2.10.   Those occupiers who understand why data is needed to drive down the energy consumption of their buildings or those who have sustainability strategies in place are more likely to engage with property owners. Some tenants are increasingly interested in accessing and sharing building performance data, and are asking landlords for data, such as data on the energy consumption in shared parts in a building. This interest is partly driven by occupiers' own sustainability agendas and partly by pressure from their clients and customers.

The Role of Asset and Property Managers

5.2.11.   Asset teams and property managers, both on the owner and occupier side, play a crucial role in gathering data, by building relationships and collecting data at a site level. Property or building managers can also have a good understanding of a building's operation and can help with the analysis of data and with the implementation of interventions to help reduce energy emissions.

5.2.12.   These intermediaries are therefore essential stakeholders in collecting and analysing data, and they can act as a main point of contact with tenants for property owners. However, they can also inadvertently act as a barrier to the exchange of data due to reasons including: a lack of environmental awareness; a lack of knowledge about the role of data in energy management; and a narrow focus on the commercial aspect of leasing spaces.

5.2.13.   A key enabler of data collection is "knowing the right person to ask for data in an organisation" (commercial property investor and asset manager). While this can be resource intensive and time consuming, the need to build relationships with key individuals representing tenants can help build trust and facilitate the exchange of data.

> "
>
> Sometimes we will be contacting [an occupier's] local asset manager who might never have been asked to share energy data before, who doesn't know what their company's position is on sharing, and then just to be on the safe side says "no". Other times the individuals we engage locally seek to obtain permission to share, which can take some time, causing a delay. We also find that when our local contacts change, sometimes a "no" will turn into a "yes" and vice versa.
>
> SEGRO

5.3. Technological Solutions: The Way Forward but with Challenges

5.3.1. Technological solutions, such as the automation of the data collection process, can help overcome many of the cultural, behavioural and organisation challenges linked with manual data collection. Nevertheless, technological tools are not without their challenges too.

Benefits of Smart Meters and Automation

5.3.2. Automation and smart meters are a key tool to get detailed, frequent and accurate data collection. Property owners and investors describe the use of smart meters providing half-hourly data and automated meter reads as the "ideal case scenario" (SEGRO).

5.3.3. These also help optimise a building's energy performance and can deliver cost savings down the line, offsetting any upfront costs. For instance, "The role of energy demand reduction in achieving net-zero in the UK" (CREDS, 2021) report suggests that the digitalisation of household and workplace energy systems will improve the capture and use of energy system data which will in turn enable energy service providers to better understand consumption patterns and more efficiently meet users' needs[12]. Consumers will also benefit from better management

of their energy services and consequently control of their energy consumption, opening the potential for increased consumption efficiency. The use of smart meters and automated systems can also play a part in delivering "smart buildings", where a variety of datasets are used to monitor and improve a building's operations, to make them more efficient.

5.3.4. Despite these benefits, smart meters can be expensive, challenging to install, and may still lead to errors in case of inaccurate recording.

Who Should Pay for Smart Meters?

5.3.5. Smart and sub meters can be costly to install and operate, and this was raised by interviewees. There are different views on the issue of payment and interviewees did not all share comparable experiences.

5.3.6. A commercial property investor and asset manager argued that although it is beneficial "… *it does come at a relatively high cost per unit*". The asset manager noted that "*some clients don't want to spend money*" and "*…generally tenants seemed to be OK about it as long as we pay*".

Smart Meter Installation and Operational Challenges

5.3.7. Installing smart meters can pose challenges that may limit their roll out. Smart meters need to be installed in specific conditions to operate properly. For example, there needs to be a "power down" of the electricity in buildings in order for smart meters to be installed. This power down can be disruptive for some tenants who then refuse their installation. For some assets, such as education spaces or hospitals, a power down is very challenging, while power downs in offices often need to take place during weekends. This results in many property owners delaying the installation of smart meters until a refurbishment is planned or the building becomes vacant. Similar challenges exist in the residential sector. The typical situation where residential landlords can easily install smart meters is when a residential tenancy becomes void, which usually only leaves a couple of weeks for the installation given the short turn around between tenancies. For old fit-outs, the cabling infrastructure may not exist to enable a smart meter to be installed.

"

Nothing's perfect. The automated solutions are best, but they do again require calibration, as you can get meters that need servicing.

M&G Real Estate

[12] CREDS (2021) The Role of Energy Demand Reduction in Achieving Net-zero in the UK, available from: https://www.creds.ac.uk/wp-content/uploads/CREDS-Role-of-energy-demand-report-2021.pdf

5.3.8. The installation of smart meters can also be slowed down by wider issues in the industry, such as by a lack of qualified installers. A recent global SIM card shortage has, until recently, also caused the installation to slow down.

5.3.9. Smart meters have a shelf life and require inspection to ensure they remain up-to-date and continue to send accurate data. There is a risk that older meters may not be compliant with the latest rules, which may cause issues if these readings are used to recharge electricity costs to tenants.

5.3.10. Smart meters may not always work correctly. They may not connect to the network properly because of problems with the signal, resulting in some meters not actually sending any data.

5.3.11. To benefit from the installation and operation of smart meters therefore requires property owners and others to put in place systems to check the meters are working, ensure the data provided is accurate and to identify any problems or concerns. Additionally, the large volume of data collected by smart meters, compared to manual collection, would require organisations to further leverage more comprehensive technological tools such as data analytics software if they wish to efficiently use and maximise the benefits of the high quality collected data.

The Benefits of Third-Party Software and Data Providers

5.3.12. To support the collection and analysis of data, property owners will typically use technological solutions from third party software and data providers. Some organisations use such services to collect and process the data centrally, and then use various tools to analyse the data, to create dashboards and reports or for billing purposes.

5.3.13. Owners also use the services of third-party providers to collect the data that is the most challenging to collect manually. Those providers can obtain licenses to acquire meter data reported by metering and utility companies on behalf of property owners.

> ❝
>
> ## A lot of platforms exist but none seem to be offering the whole package of collecting and analysing data in a helpful way.
>
> A commercial property investor and asset manager

> ❝
>
> ## In terms of new technologies and prop-tech, we get approached a lot from companies who invent tools and want to test them.
>
> A residential landlord

Limitations and Issues with Data Collection Platforms

5.3.14. Despite the benefits that third party services can provide, the impact of these services can be limited in some circumstances, particularly if tenants refuse to give consent which then results in the use of aggregated data only.

5.3.15. The use of technological solutions can also be challenging because of the proliferation of services, their costs, and the lack of inter-operability between the services of different providers (e.g. with different systems not communicating easily with each other).

5.3.16. With regards to the proliferation of services, across the thirteen interviews carried out with property owners, we recorded references to fourteen different services, with four of those mentioned across multiple interviews.

> ❝
>
> ## It's every week someone phones us up around a new software platform, accessing data, trend analysis. The challenge with that is like picking the winners.
>
> British Land

5.3.17. One challenge noted with this proliferation of services is the impact that this can have on tenants. Tenants may be asked to report their energy consumption in different properties to different landlords through different platforms or tools. This may result in some push-back and in a reluctance to share data.

5.3.18. There is a lack of inter-operability across different platforms which can be a challenge for some property owners. Some platforms are used for data collection and storage, some are used for reporting and analysis and not all provide a holistic service. Similarly, the use of these services may still need input from other systems, such as those used to collect gas or electricity consumption data. These platforms tend to be designed as rigid products, with a fixed set of outputs, offering users with limited opportunity for bespoke data analysis. In short, there is a lack of integration across the different technological and software solutions on the market. The use of platforms can also represent a significant financial cost to property owners and investors who choose to use such services.

5.4. Legal Constraints and Tools

5.4.1. Legislation on data privacy, including GDPR, can act as a barrier to accessing energy data, particularly for residential landlords. In the commercial sector, there has been a growth in the use of green leases although these are not a silver bullet when it comes to mandating data sharing.

> ❝
>
> ## At the moment residential landlords just have no visibility to how much energy is actually being used in their buildings.
>
> Grainger

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | **Data Collection Barriers and Enablers** | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | References and Appendices

24/48

The Hurdles of Data Privacy

5.4.2. GDPR and other data protection and privacy legislation in the UK govern how data can be used. As property owners are not licensed by Ofgem to directly access energy data, they require consent from their occupiers to access and use their energy data. The privacy bar is particularly high for residential landlords where residents' metering data is considered personal data. As a result residential landlords note that they are only able to directly access energy data for the common parts of buildings, which they typically procure themselves. This only represents a minor proportion of the total energy consumption of a building, maybe 1-2% of an apartment building, based on the comments provided by a residential landlord. Property owners and investors agree that there should be proper safeguards and protections in place when it comes to tenant and resident data, but the current legal framework does present a challenge to data collection. In newbuild schemes, particularly Build-to-Rent and student accommodation, it is possible to build-in centralised metering, which is then referenced in the leases, although this does not address the challenge for the vast majority of existing buildings.

5.4.3. Most residential occupiers have the right to procure their own energy, from the provider of their choice. As such, utility consumption data is owned by the resident and not the landlord – which is similar to the situation in many retail units. With no legal basis to access the data, landlords need full written consent from residents.

5.4.4. As a result, residential landlords typically need to rely on meter readings or survey responses provided by the resident, where the resident is willing and able to share the data, or rely on meter readings provided by inventory clerks when properties become vacant. Data collection can be even more challenging in older properties, which are less likely to have smart meters, and for properties which are acquired by the landlord while still being occupied. These challenges mean that residential landlords can really struggle to access up to date, accurate and timely data.

5.4.5. In response, we have heard of the work undertaken by residential landlords to engage with their residents to raise awareness on consumption and energy efficiency, to provide advice and to encourage tenants to install smart meters and share data.

Green Leases

5.4.6. Green leases are commercial leases that contain specific clauses that relate to a building's environmental performance. The Better Buildings Partnership (BBP) has developed a Green Lease Toolkit, with the aim of improving collaboration on environmental measures, including data sharing, between property owners and occupiers, primarily for commercial properties. First developed in 2009[13], green leases have since become more widespread in the commercial real estate sector, although there is recognition that these are not a silver bullet. All interviewees mentioned the inclusion of data sharing clauses in their leases, and many referred to the BBP Green Lease Toolkit.

[13] The BBP released its latest Green Lease Toolkit on 29th January 2024. At the time of holding interviews and writing this report, the previous iteration of the Toolkit was in use. Any changes in the effect of green leases in facilitating data collection should be kept under review.

Executive Summary · Introduction · Context · Why Collect Energy Data? · How is Energy Data Collected? · **Data Collection Barriers and Enablers** · Good Practice and Case Studies · Conclusions and Recommendations · Next Steps · References and Appendices

< 25/48 >

Tenants' Reaction to Green Leases Vary Widely Across Asset Classes

5.4.7. Our research suggests that green leases are generally well received in the office sector, but less so in the retail sector where green leases are still a sensitive subject. The acceptance of green leases in the industrial and logistics sector is mixed. Green leases are less common in the residential sector.

5.4.8. Where green lease clauses are proposed they can be refused by the tenant, and even where green lease clauses are in place, the various provisions, including on data sharing, are not always adhered to.

5.4.9. Despite these challenges, many property owners confirm that they have used green leases in the last 10-15 years. Some interviewees also noticed an up-take in demand from tenants for the inclusion of such clauses.

> **We are… seeing customers actually want to include more green clauses that put both an onus on them to continue to improve the way their space is operated and an onus on us as a landlord.**
>
> A commercial landlord

Green Leases are Easily Refused and not Enforced

5.4.10. The key challenges with green leases are that: (i) they can be refused by tenants; and (ii) even when accepted by tenants, they can be difficult (or commercially unattractive) to enforce.

5.4.11. The inclusion of green clauses can create tension between the sustainability, commercial and legal teams of both property owners and occupiers. For instance, green leases may result in "commercial challenges" with new retailers where those clauses can "get in the way". Particularly in difficult or tenant-friendly markets, the commerciality of the deal comes before all else, with the result that a tenant's refusal to accept green lease provisions is unlikely to prove a barrier to closing a deal.

5.4.12. Green clauses can often be rejected by commercial or legal teams, including to "mitigate risk", avoid data breaches or simply because some tenants may be concerned about potential cost implications associated with the inclusion of certain environmental clauses.

5.4.13. Even where green leases are agreed by tenants, they do not always carry significant weight. Where tenants fail to comply with various provisions, such as those on data sharing, property owners may be reluctant to seek to enforce the requirement. As above, the commerciality of the deal tends to carry the day and landlords typically lack the appetite for the cost and difficulty of enforcement, not to mention the potential void and reputational risks that could follow. In addition, the introduction of green lease provisions into commercial leases are not typically treated as reasonable modernisations within the context of the Landlord and Tenant Act 1954 and, therefore, tenants can resist them.

5.4.14. As a result, property owners are using a variety of terminology around green leases, partly with the intention of preventing negative reaction from tenants. Instead, some property owners refer to "environmental clauses", "sustainability clauses", "environmental data sharing", or "green terms within our leases". Some owners also try to shift the focus away from data sharing clauses to broader environmental clauses such as those which seek to encourage the tenant to procure green energy tariffs (when the energy is contracted on the tenant side) or clauses relating to maintaining a property's EPC or BREEAM (Building Research Establishment Environmental Assessment Method) rating.

Green Leases as a Tool to Encourage Cultural Shifts

5.4.15. Despite the challenges, some argue that green leases start a healthy conversation between owners and occupiers about a building's environmental performance and can improve collaboration between landlords and tenants. The use of green leases can also lead to better conversations during lease negotiations, can facilitate greater collaboration and partnership and can deliver better outcomes in terms of understanding and compliance with the various green clauses.

> **[Green leases] are useful to set up the collaborative relationship between building owner and customer. But at the end of the day, they're one of many tools, and it is all about that relationship piece.**
>
> GPE

5.5. Summary

5.5.1. There are a range of organisational, behavioural, technological and legal factors which can help or hinder the sharing and analysis of energy data. There are also resources and tools available to property owners which can help facilitate the collection of data.

5.5.2. Behavioural and organisational issues and factors include:

- The over-reliance on manual data collection, which results in significant organisational challenges for both property owners and occupiers who then need to allocate valuable resource to data collection. Manual processes are also likely to result in incorrect, inaccurate and incomplete data.

- Although it is improving, there is still a strong behavioural and cultural reluctance to data sharing in the real estate industry, which limits the ability to collect data. This appears to be most particularly challenging in the retail sector, where tenants typically procure their own energy supply.

- Asset and property managers have an essential role to play in data collection, due to their relationship with occupiers and properties. However, a lack of education or awareness on the topic of data and on wider environmental policies may act as a deterrent for some managers to promote data sharing.

- Building good relationships between the asset teams and the sustainability teams across property owners and occupiers is essential to facilitate the exchange of data.

5.5.3. Technological issues and factors include:

- Smart meters and automated systems have been widely used by most landlords, are often well received by tenants, and are critical in addressing organisational issues linked with manual collection.

- The installation of smart meters can be costly and challenging, requiring a power down of electrical systems that is not always possible. Smart meters are not fool-proof either and require management and maintenance to ensure they continue to send out accurate and frequent data.

- Data collectors and aggregators are important in providing landlords with access to data that would otherwise be challenging to obtain. However many landlords argue that "picking the winners" across the numerous technological solutions is a challenge, which comes at a cost and offers limited interoperability.

5.5.4. Legal barriers and tools include:

- In the residential sector, UK data privacy laws mean that residential landlords have particular challenges in gathering their residents' data and cannot do it without their consent. The processes are reliant on manual data collection, at infrequent intervals and for a small proportion of their housing stock.

- While effective in the office sector, in the retail sector green leases have been challenging to implement. They are not always enforced and can be refused by tenants without becoming a deal breaker for the lease.

- However the use of green leases can be beneficial in facilitating further discussions between property owners and occupiers and enabling collaborative approaches.

06

Good Practice and Case Studies

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | **Good Practice and Case Studies** | Conclusions and Recommendations | Next Steps | References and Appendices

< 28/48 >

6. Good Practice and Case Studies

6.1. Introduction and Summary

6.1.1.   In this chapter we consider some examples of good practice and case studies to help inform our recommendations.

6.1.2.   The good practice examples are in addition to those reviewed in chapter 5. These emphasise the benefits of property owners demonstrating to tenants the advantages of sharing information and the value of communication across stakeholders.

6.1.3.   The three case studies are:

01
Ice Breaker One and Perseus which illustrates how a governance framework and automated energy and carbon data sharing can be set up to facilitate corporate sustainability reporting.

02
The French Décret Tertiaire legislation which is an example of a new regulation that mandates landlord and tenant sharing of information and development of joint strategies.

03
NABERS UK which is an example of a performance rating tool which uses actual energy data to inform low carbon strategies.

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | **Good Practice and Case Studies** | Conclusions and Recommendations | Next Steps | References and Appendices

29/48

6.2. Good Practice

Sharing Information with Tenants and Demonstrating Benefits

6.2.1. British Land referred to initiatives aiming at clearly demonstrating to customers the energy savings that they can realise as a result of sharing data, ultimately reducing their operational costs. Other interviewees mention how beneficial sharing advice on how to reduce energy consumption or providing reports on the tenants' own performance can be. Landsec have for example implemented a programme where they provide their occupiers with energy audits including recommendations for energy efficiency measures. While these can be costly and time consuming, they can contribute to building trust between parties and to reassuring occupiers that the data requested is put to good use.

The Value of Communication

6.2.2. Investors can play a part in encouraging data sharing. An investor involved with both property owner and occupier is perfectly placed to emphasise the importance of data sharing and remove any reluctance by either party. For instance, SEGRO has found that engaging at different levels and with different stakeholders to find alternative avenues for data sharing can be very beneficial.

6.2.3. Where there is no formal legal route to facilitate data sharing between owners and occupiers, it may be necessary to engage at different levels and with different stakeholders to find alternative avenues for data sharing and to improve the quality and quantity of data shared.

6.3. Case Study 1: Ice Breaker One and Perseus

6.3.1. Ice Breaker One (IB1) is a UK not-for-profit organisation with the aim of creating a governance framework for the sharing of carbon data to facilitate reaching net zero. It involves a range of industry and Government stakeholders. One specific programme they have initiated, called Perseus, aims to replicate the open banking process for energy data sharing[14]. The Perseus programme will automate the creation and flow of carbon data to the tenant/occupiers' bank so that the bank is able to automate its obligations to report on the carbon intensity of its client base. This automation process seeks to create trust between the tenants or occupiers and the banks.

6.3.2. This demonstrates that setting up a governance framework and automated processes to build trust between stakeholders and to facilitate data sharing is possible from the perspective of the finance and banking industry. A similar framework might also be applied to the real estate sector to facilitate data sharing between tenants and their landlords, while ensuring that the data will be shared securely and used for the sole intended purpose of enabling the net zero transition.

[14] Ice Breaker One (n.d.) Perseus: automating SME emissions reporting, available from https://icebreakerone.org/perseus/

Energy Data, Buildings and Net Zero: Closing the Data Deficit

6.4. Case Study 2: Décret Tertiaire

Reduced Energy Consumption Target

6.4.1. Voted in on the 23rd of July 2019, the "Décret Tertiaire", or Tertiary Decree, seeks to reduce the energy consumption of tertiary space over a certain size. It concerns activities undertaken in "tertiary space", such as offices, retail, healthcare, public administration, education, transport, information, or communication. This therefore excludes industrial spaces and residential spaces. The reduction in energy consumption is targeted in three stages, relative to a baseline year (2010 at a minimum), and adjusted for climate effects:

- A 40% reduction by 2030
- A 50% reduction by 2040
- A 60% reduction by 2050

6.4.2. In order to ensure progress against these targets is recorded, the Tertiary Decree has mandated data sharing and reporting of the energy consumption for all buildings used for tertiary economic activities under any of the following categories:

- Any space in tertiary use located within a building that has a floorspace greater than or equal to 1,000 sq.m.
- Any building in tertiary use with a floorspace greater than or equal to 1,000 sq.m.

- Any set of tertiary buildings with a floorspace below 1,000 sq.m but located within a same site where the cumulative floorspace is greater than or equal to 1,000 sq.m.

Requirements for Landlord and Tenant Cooperation and Data Sharing

6.4.3. To ensure the reporting requirements are met, the Tertiary Decree requires close collaboration between landlords and tenants. As part of lease agreements, the parties are required to identify who is responsible for the reporting of energy data, depending on their agreed contractual relationships. Landlords and tenants are required to share with each other the relevant energy data for which it is their responsibility to procure.

6.4.4. Reporting is carried out on an annual basis, by the 30th of September at the latest, on a centralised platform ("OPERAT" – Observatory for Energy Performance, Renovation and Tertiary Actions). The platform is held by the government agency ADEME (literally "Agency for the Environment and the Management of Energy"). For each relevant property, this requires the reporting of the floorspace occupied by the landlord or tenant, type of tertiary activity, and the annual consumption of energy by type (i.e. electricity, gas, etc). The reporting can be done either by the tenant, the landlord, or any third party on their behalf. Tenants can also choose to delegate

the reporting responsibility to their landlord, which would require them to share data. In addition to its reporting purpose, the platform is also meant to be used as a benchmarking tool for stakeholders involved in that sector, as well as for the annual evaluation of a building's energy performance which is available to the building's owners and managers.

6.4.5. As part of the Tertiary Decree, landlords and tenants are also required to work jointly to prepare action plans identifying relevant measures to be implemented to reduce energy use and identify who is to be responsible for which measure. Such measures can target:

- Improvements in the building's energy efficiency.
- The installation of new equipment with better energy performance, in addition to "smart" control systems to improve the use of the equipment.
- Behavioural changes of the users.

6.4.6. In cases of non-compliance and failure to report energy consumption by the deadline in a given year, landlords and tenants are given three months to submit the data. Failure to provide this data will lead to the responsible party (either the tenant or landlord) being identified in a list of stakeholders who failed to comply with these requirements, which will be made publicly available on a government website, in a "name and shame" approach.

6.4.7. Failure to evidence energy reductions will also result in punitive actions. If energy reduction is not evidenced in time, landlords and tenants will be given six months to prepare an action plan identifying measures to be taken to reduce energy consumption. This plan will be monitored and approved by local government authorities. Failure to provide this action plan could result in a fine of up to 1,500 euros for individuals (who occupy the tertiary space in their own name) and up to 7,500 euros for businesses. In addition, further "name and shame" publicity will be undertaken.

Summary of Benefits and Drawbacks

6.4.8. Cost-sensitiveness and reputational risks have been presented in chapter 5 as barriers to data sharing. The "Décret Tertiaire" seeks to leverage these concerns to drive action, via a platform to "name and shame" and to fine those who do not comply with the data sharing requirements or who fail to reduce their energy consumption.

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | **Good Practice and Case Studies** | Conclusions and Recommendations | Next Steps | References and Appendices

31/48

6.5. Case Study 3: NABERS UK

6.5.1. NABERS UK (National Australian Built Environment Rating System) is a performance-based scheme for rating the energy efficiency of office buildings across the UK. The scheme helps property owners to understand their building's performance versus other similar buildings, providing a benchmark for progress.

6.5.2. Unlike design-based ratings, NABERS ratings measure and verify the actual energy use of offices, helping building owners to accurately track and communicate the energy performance of their buildings. NABERS Design for Performance (DfP) is a framework for developers to help ensure projects deliver against their design expectations. DfP embeds energy performance targets within the delivery supply chain and provides the checks and assurance measures to help the landlord to achieve the target rating in operation. It helps ensure the design meets the needs of the building's future occupants and minimises lifetime energy use and emissions.

6.5.3. Under the NABERS rating system, the number of stars awarded to an office is calculated by benchmarking energy consumption and comparing it against buildings of the same category, using 12 months of actual data. Key factors influence this consumption, such as building area, hours of use and climate. NABERS Energy for Offices ratings only cover the energy consumed in supplying building central services to the Net Internal Area (NIA) and common spaces, referred to as the "Base Building".

6.5.4. In order to formally achieve a "Base Building" energy rating under NABERS UK, it is necessary to verify the building energy consumption using meter data. As such it is of significant importance that the right meter strategy is in place. The required minimum energy coverage is energy consumed in supplying building central services to office NIA and common spaces during the rating period.

6.6 Conclusion

6.6.1. The above good practice and case studies illustrate ways in which the collection and use of energy data could be improved.

6.6.2. Ice Breaker One and Perseus illustrate how a governance framework and automated energy and carbon data sharing can be set up to facilitate corporate sustainability reporting. The NABERS UK example is an example of a performance ratings tool which prioritises accurate energy data to inform low carbon strategies.

6.6.3. An UK equivalent of the French "Décret Tertiaire" could be used to address all four reasons for collecting energy data:

- It has required owners and occupiers to work together to collect data on their properties to define the relevant baseline and reference year, while setting fixed energy reduction targets.

- It creates a form of compulsory stakeholder engagement, by requiring owners and occupiers to work together on a regular basis.

- It requires the preparation of action plan, akin to a net zero pathway, that owners and occupiers need to collaborate on and prepare jointly, identifying a range of potential measures to reduce energy consumption.

- The monitoring and data sharing platform enables stakeholders to report on their progress and measure the impact of their interventions.

6.6.4. This is explored further in our recommendations set out below.

Executive Summary

Introduction

Context

Why Collect Energy Data?

How is Energy Data Collected?

Data Collection Barriers and Enablers

Good Practice and Case Studies

Conclusions and Recommendations

Next Steps

References and Appendices

32/48

07

Conclusions and Recommendations

Energy Data, Buildings and Net Zero: Closing the Data Deficit

7. Conclusions and Recommendations

7.1. Introduction

7.1.1. This chapter sets out conclusions and key recommendations to address the challenges explored in this report. These account for the cultural, organisational, behavioural, technological and legal barriers examined. Where relevant we also identify how these recommendations could differ across asset classes.

7.2. Conclusions

7.2.1. To enable property owners to transition their assets to net zero, access to data on their occupiers' energy consumption is essential. As set out in chapter 3 the data is critical for four main reasons:

Baseline and targets

It enables owners to calculate their baseline emissions and set appropriate emission reduction targets, by using the carbon factors of their energy usage to estimate the property's carbon intensity.

Prioritisation

Access to data allows owners to prioritise assets in need of improvements and to define relevant interventions and net zero strategies to reduce energy consumption and carbon emissions, such as installing more energy efficient equipment, etc.

Detailed pathways

Good quality detailed data enables property owners to engage with occupiers on net zero pathways and energy reduction strategies, prioritising high energy users, and to evidence the scale of the challenge and the opportunities for action.

Reporting

Data enables landlords to measure the impacts of their interventions and to report against their targets and carbon commitments.

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | **Conclusions and Recommendations** | Next Steps | References and Appendices

‹ 34/48 ›

7.2.2. The need for change in processes for data collection is closely linked to the purposes for collecting the data. The three main ways of improving data collection and sharing that are apparent from our review are:

- Mandating data sharing.

- A more extensive roll-out of smart metering.

- Encouraging increased collaboration between owners and occupiers.

7.2.3. These are the main themes of our recommendations, set out in section 7.3 below.

7.2.4. Whether more general and less frequently collected data, or more granular, frequent and detailed data is needed depends upon the purpose for which it is being used.

7.2.5. In general, mandating data sharing and a more extensive roll-out of smart metering are more relevant to baselining and targets, prioritisation, and reporting. While it would be valuable for the data gathered to be granular, accurate and frequently collected, in general these purposes can make do with less frequent and more aggregated data.

7.2.6. Fine grain data is more relevant for the purposes of developing detailed net zero pathways. Such energy reduction strategies typically will require close collaboration between landlords and tenants to share information, assess options and agree actions between the parties. While mandatory data collection would help this process it is probably not essential in those cases where there is good collaboration between owners and occupiers as in such cases the parties will already tend to be willing to share information.

7.2.7. The relationship between ways of improving data collection and sharing and the purposes for which the data is needed is summarised in Table 7.1 below.

Table 7.1 Contribution of Recommendations to Reasons for Data Collection

Ways of improving data collection and sharing	Purpose for which data is used			
	Baselining & Setting targets	Measuring	Detailed pathways	Reporting
Mandatory data sharing	Helps achieve comprehensive coverage. Generally, data can be more aggregated and less frequently collected.		Can help provide better information. However not as important as collaboration.	Useful. Generally, data can be more aggregated and less frequently collected.
Improving smart meter roll-out	Helps improve accuracy, efficiency and coverage. Generally, data can be more aggregated and less frequently collected.			
Improving collaboration	Useful but unlikely to achieve comprehensive data coverage and accuracy.		Collaboration is essential to define detailed pathways.	Unlikely to achieve comprehensive data coverage and accuracy.

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | **Conclusions and Recommendations** | Next Steps | References and Appendices

‹ 35/48 ›

7.2.8.   The trade-offs between basic less frequent data and detailed more frequent data are set out in Table 7.2 below.

Table 7.2 Trade-offs of Mandating Data Sharing

	Compulsory	Voluntary approach based on partnership
Basic data, less frequent	Useful for baselining, defining general targets and carbon emissions monitoring. Allows comprehensive coverage.	Can be difficult and inefficient to collect. Not comprehensive. Not fully accurate.
Detailed data, more frequent	Costly for some organisations. Issues over confidentiality. To maximise value needs to be combined with joint net zero strategies, which require voluntary partnerships.	This information is most useful for the definition of detailed net zero strategies. This requires collaborative working.

7.2.9.   We consider more specific points below.

What Level of Data Should be Shared: Building/Estate versus Demise-Level?

7.2.10.   For purposes of baselining, setting targets and carbon reporting, our assessment is that data aggregated at a building or estate level would usually be sufficient to provide owners with the information they need.

7.2.11.   With regards to the definition of net zero pathways and strategic interventions, mandating data sharing at an aggregated level for buildings or estate could enable owners to target specific properties, by prioritising highest energy consuming assets. However, the absence of more granular data at the demise level would limit owners' ability to identify specific interventions, to prioritise high energy users within a multi-tenanted property, to engage with their tenants in a specific and detailed manner.

Purpose and Frequency of Data Collection

7.2.12.   While monthly or annual energy consumption data would facilitate baselining, target setting and carbon reporting, receiving half hourly, or daily data, in real time or within a "day plus one" timeframe would enable the implementation of targeted and tailored strategies in collaboration with occupiers. These tailored strategies though will usually depend on close collaboration between landlords and tenants, although having the data can be a precursor to building trust and engagement, as demonstrated in the case studies above. There may be additional costs, in terms of technological infrastructure, systems or tools, and personnel required to host and analyse such a detailed level of data, which may be compensated by energy costs savings over time.

Executive Summary   Introduction   Context   Why Collect Energy Data?   How is Energy Data Collected?   Data Collection Barriers and Enablers   Good Practice and Case Studies   **Conclusions and Recommendations**   Next Steps   References and Appendices

36/48

How Useful is Anonymised Data?

7.2.13. Anonymising data would protect the occupiers and provide them with confidence that their identity will be protected, helping to build trust and to alleviate concerns about reputational risks and security risks. Anonymised data is unlikely to hinder an owner's ability to define their baseline, set targets and meet their carbon reporting requirements.

7.2.14. However, anonymised data would prove challenging for owners to efficiently define net zero pathways and interventions tailored to specific demises or tenants. Anonymised data would not allow owners to directly engage with their occupiers and would therefore act as a barrier to further collaboration between stakeholders.

Who Should be Mandated to Share Data?

7.2.15. Requiring occupiers and owners to share data could help those stakeholders who are less knowledgeable about questions of net zero, energy consumption, and the role of data become more familiar with these topics. In turn this could foster further collaboration between tenants and landlords, promote better conversations, and turn the attention towards opportunities for more data sharing and energy reduction measures. To ensure compliance with a data sharing mandate, owners and occupiers would likely need to engage with their own facilities team, which may contribute to an upskilling and cultural shift within intermediary stakeholders.

7.2.16. The exchange of data should be required to go both ways. Owners should be required to share data they have on their occupiers' energy consumption from smart meters and the energy consumption of common parts. This could be done by providing occupiers with log-in access to the data management platforms of the owners' choice upon starting a new lease, to enable occupiers to gain access to the data whenever they need to. Mandating a bi-directional exchange of data would encourage buy-in and acceptance from occupiers.

Knowledge Sharing and Collaboration

7.2.17. Property owners face similar challenges but have very different experiences in overcoming them. Some have been more successful than others at building trust, enabling collaboration and partnership with stakeholders, and leading occupier-engagement strategies.

7.2.18. In this context owners can substantially benefit from working together and learning from each other to develop industry guidance on best practices. However, a concern expressed by some owners is the lack of exchange in the real estate industry when it comes to energy data, even when other types of data are shared (i.e. construction costs via the Building Cost Information Service).

7.2.19. Better knowledge sharing could assist in improving information and transparency in the energy sector with regards to the available technology solutions, their effectiveness, their inter-operability and their costs. This data-oriented part of the prop-tech sector is a relatively new sector, and it is expected that better and more integrated technological solutions will become available over time. Improved knowledge sharing could assist with identifying effective solutions – enabling resource-tight stakeholders to benefit from the experiences of others. Better collaboration between the real estate and energy sector could also result in the development of more effective technological solutions.

> "
>
> …anonymised data would prove challenging for owners to efficiently define net zero pathways and… would not allow owners to directly engage with their occupiers and would act as a barrier to further collaboration.

Energy Data, Buildings and Net Zero: Closing the Data Deficit

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | **Conclusions and Recommendations** | Next Steps | References and Appendices

37/48

7.2.20. The following examples from the research process also demonstrate possible innovation that could be promoted and circulated:

Collaboration

Provided occupiers have given their consent to share data, owners could put them in contact with similar occupiers with different energy consumption levels to share knowledge about best practices in energy reduction.

Opportunities for cost savings

Demonstrating to occupiers that sharing data can result in energy cost savings, either by enabling property owners to carry out interventions or by allowing owners and occupiers to work together to identify means of reducing energy usage.

Sharing insights

For the most environmentally aware occupiers, owners can aim to demonstrate how sharing data, despite any associated costs, can enable them to undertake energy or net zero audits of the occupier's property. Occupiers can then display and advertise their energy consumption levels and environmental credentials to appeal to potentially environmentally conscious customers. This could also include owners readily sharing the data they have access to with their occupiers, for instance for the common parts of the building or for the occupier's demise if the owner has control over the supply contract. This could be done in a manner which gives occupiers independent access, for instance by providing occupiers with log-in access to the owners' data management system to gain access to their and common parts' data at any time.

Gamification

This could include competition between occupiers of a multi-tenanted space to decrease their own energy consumption relative to the average consumption in the property. It might be necessary to preserve anonymity of the public results and not share actual consumption data, but rather present rankings on a leader board, emphasising the best performers rather than worst performers. Gamification from a data collection perspective could include competitions between asset management teams, based on the level of data they collect or the number of consents they gain from occupiers agreeing to share their data.

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | **Conclusions and Recommendations** | Next Steps | References and Appendices

38/48

Recommendations

7.2.21. Below we set out our recommendations structured around:

A   **Mandatory data sharing**

B   **Encouraging smart meter roll-out**

C   **Promoting collaboration in the real estate and energy industries**

D   **Green leases**

E   **Performance based metrics**

Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | **Conclusions and Recommendations** | Next Steps | References and Appendices

< 39/48 >

A — Mandatory data sharing

7.2.22. Government policy mandating data sharing could go a long way to address some of the most critical data challenges faced by property owners in the transition to net zero. There is a considerable inefficiency in terms of time spent and poor quality of data obtained from the current time-intensive and ineffective system. Mandatory data sharing could therefore shift the action and resources away from merely collecting data to being able to use it strategically. In this context, the following recommendations are made.

Recommendation A1/C1

The Government should explore new and innovative ways of requiring mandatory data sharing between owners and occupiers combined with requirements for joint low carbon strategies. This could for instance be along the lines of France's Décret Tertiaire.

7.2.23. France's Décret Tertiaire, subject to certain thresholds, lays out mandatory requirements for baselining, setting targets, data collecting and monitoring in "tertiary space". It also requires property owners, managers and occupiers to work jointly to define net zero pathways for their properties to meet targeted energy consumption reductions. The application of such a system to the UK can be reviewed and appraised against alternatives and if found beneficial then introduced.

Recommendation A2

The Government should encourage minimum data sharing requirements in commercial leases. This should include reforming the Landlord and Tenant Act 1954.

7.2.24. The Government should require a minimum level data sharing, to provide property owners in the commercial sector with the level of data required for baselining, target setting and carbon reporting purposes. The forthcoming review of the Landlord and Tenant Act 1954 would be a useful way of helping to deliver on this recommendation, by ensuring that Government requirements find their way into lease renewals and not just on the grant of new leases. Without reform in this area, tenants will be able to resist the introduction of data sharing and green lease provisions into renewal leases.

7.2.25. The sector has already been working up proposals on how this might be achieved. This would involve a two-way exchange of data, where both owners and occupiers are required to share the energy consumption data they have access to with each other.

7.2.26. The Government should explore further how non-anonymised granular data could be mandated for sharing to facilitate tenant engagement and the definition of net zero strategies. This might target larger occupiers who are less likely to be receptive to cost burdens. It is acknowledged that there would likely be exceptions, for those land uses where energy consumption data is commercially sensitive or a matter of national security.

Recommendation A3

The Government should explore whether energy data could be considered a "legitimate interest" within GDPR.

7.2.27. If energy data can be considered a "legitimate interest" this could substantially facilitate residential property owners' ability to collect the data they need about their properties, without having to rely on less accurate benchmarks.

> "Without reform [of the Landlord and Tenant Act 1954] tenants will be able to resist the introduction of data sharing and green lease provisions into renewal leases.

B   Encouraging smart meter roll-out

7.2.28.   Access to detailed, granular half-hourly data from smart meters is beneficial to get accurate and reliable data while moving away from slow, costly, and labour-intensive manual collection processes.

Recommendation B1

The Government should explore how owners and occupiers can be encouraged to work together to install smart meters and share smart meter data.

7.2.29.   The obligation to install smart meters for small energy users is put on the energy suppliers. However, residential users are able to refuse the installation of the meters, and there have been delays for non-domestic users. Additional avenues for incentivising their adoption should be explored, such as financial incentives and further awareness campaigns.

7.2.30.   Overcoming constraints on smart meter roll out should also be explored, such as addressing skills shortages and mitigating the negative impacts of required electrical power-downs on occupiers' activities.

Recommendation B2

The Government, in partnership with Ofgem and key stakeholders in the energy sector, should explore additional ways in which smart meter data might be shared directly with certain authorised property owners.

7.2.31.   There are existing platforms and processes in place for "licensees" of Ofgem to access energy consumption data, and this could be extended to authorised property owners, using the MPAN from the meters at their properties. This could therefore prevent data collection being a burden on occupiers or asset managers and provide owners with a quick access to the data they need for baselining, target setting and carbon reporting purposes. To preserve security, routes should be explored within the energy sector to find a means for owners to be able to solely access the data of the property they own, through a dedicated platform.

C — Promoting collaboration in the real estate and energy industries

7.2.32. A lot can be gained from improved knowledge sharing and collaboration, not only within the real estate sector but also in the energy industry. Ways of promoting collaboration could be combined with mandatory data sharing, as illustrated by France's Décret Tertiaire (see chapter 6). For this reason our recommendation C1 duplicates Recommendation A3.

Recommendation C1/A1

The Government should explore new and innovative ways of requiring mandatory data sharing between owners and occupiers combined with requirements for joint low carbon strategies. This could for instance be along the lines of France's Décret Tertiaire.

7.2.33. France's Décret Tertiaire lays out mandatory requirements for baselining, setting targets, data collecting and monitoring. It also requires property owners, managers and occupiers to work jointly to define net zero pathways for their properties to meet targeted energy consumption reductions. The application of such a system to the UK can be reviewed and appraised against alternatives and if found beneficial then introduced.

Recommendation C2

The Government should create a new Building Energy Data Taskforce, bringing together representatives from all sides, to ensure a common understanding of the challenges and explore solutions.

7.2.34. Stakeholders in the real estate and energy industries should work together. This should include both owners and occupiers' representatives, trade bodies, Government agencies and key stakeholders in the energy sector. The taskforce should be chaired by a minister to help raise awareness and drive action within Government.

7.2.35. The taskforce should explore avenues to promote knowledge sharing, collaboration and engagement on data collection and sharing. All stakeholders should be involved in this knowledge transfer and collaborative process, from property owners, occupiers, and managers, but also players in the energy industry, such as software providers and meter operators. Trade bodies, professional institutes and Government agencies should also step in to facilitate knowledge transfer, through the creation of new platforms, benchmarks and systems to share best practice and energy data.

7.2.36. As part of improved knowledge sharing and collaboration, it is also necessary to promote data compatibility across platforms and system providers, so that owners and occupiers can easily share data with each other regardless of the third-party services they have chosen.

7.2.37. Further knowledge sharing should be pushed within the real estate industry with regards to technological solutions. A wide range of technological solutions and innovations have been developed to facilitate data collection or analysis. This has represented a challenge for owners to identify the best and most cost-effective solutions.

> "
> [Under France's Décret Tertiaire], landlords and tenants are required to share with each other the relevant energy data for which it is their responsibility to procure.

D Green leases

Recommendation D1

The real estate sector should continue to expand the use of green leases.

7.2.38.   The recent release of an updated Green Lease Toolkit is likely to strengthen the use of green leases. All stakeholders in the real estate sector should be encouraged to become more familiar with the Green Lease Toolkit, its role and its goals, which would help raise awareness on energy data sharing and net zero.

7.2.39.   The sector could also explore how green leases might be applied in the residential sector to encourage individuals to share energy data.

Recommendation D2

The Government should show leadership by making all new commercial leases for Government buildings green leases.

7.2.40.   The Government can lead by example. This would help create best practice case studies. It would enable commercial occupiers to recognise the role green leases play, the value of data sharing and the benefits it can bring them.

E Promoting the Use of Performance-Based Energy Metrics

7.2.41.   In 2021, the Department for Energy Security and Net Zero and Department for Business, Energy and Industrial Strategy ran a consultation on the introduction of a performance-based policy framework in large commercial and industrial buildings[15]. This framework aimed to move away from EPCs for these properties and towards an actual energy usage metric. As part of the proposed process for defining the performance rating, data collection is identified as the first step, including data gathered both from the building's users and from utility companies.

7.2.42.   However, the Government shared no conclusion, only announcing that the roll out of a pilot scheme was being paused. The Government commented that it remained interested in exploring how to incorporate operational energy use within Government policy.

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Despite the challenges, some argue that green leases start a healthy conversation between owners and occupiers about a building's environmental performance and can improve collaboration between landlords and tenants.

Recommendation E1

The Government should encourage the adoption of performance-based rating schemes, such as NABERS UK.

7.2.43.   The adoption of performance-based rating schemes would encourage property owners and occupiers to work jointly towards data sharing while diverting away from reliance on EPCs and other suboptimal metrics.

7.2.44.   The Government should explore how the take-up of performance-based rating schemes, such as NABERS UK, can be encouraged across commercial asset classes, including office, retail, and industrial spaces. It should be explored how applicable they might be to residential properties, including both blocks of flats or single-tenanted dwellings. The Government should also work with the sector to encourage continual improvements in data quality, such as reducing data aggregation, reporting intervals and latency, while promoting the accuracy of measurement and reporting.

1.1.87.   Recommendation E2 The Government should show leadership by adopting performance-based rating schemes, such as NABERS UK, for new and existing office buildings leased by Government.

Recommendation E2

The Government should show leadership by adopting performance-based rating schemes, such as NABERS UK, for new and existing office buildings leased by Government.

7.2.45.   The Government can lead by example. This would help create best practice case studies. This would enable commercial occupiers to recognise the benefits of performance-based and energy intensity metrics.

[15] DESNZ & BEIS (2021) Introducing a performance-based policy framework in large commercial and industrial buildings, available from:
https://www.gov.uk/government/consultations/introducing-a-performance-based-policy-framework-in-large-commercial-and-industrial-buildings

Executive Summary

Introduction

Context

Why Collect Energy Data?

How is Energy Data Collected?

Data Collection Barriers and Enablers

Good Practice and Case Studies

Conclusions and Recommendations

Next Steps

References and Appendices

43/48

08

Next Steps

Energy Data, Buildings and Net Zero: Closing the Data Deficit

8. Next Steps

8.1. Consultations

8.1.1. Further engagement and research should be undertaken with stakeholders in Government and in the real estate and energy industries to identify the most appropriate form and approach to implement the policy recommendations identified above, accounting for the cultural, financial, ethical, legal and technological implications of data collection.

8.2. Government Policy and Programme Formulation

8.2.1. The Government has a well-defined process for policy and programme formulation, appraisal and monitoring[16]. The Government should apply this process to the recommendations in this report.

8.2.2. As part of the process of developing and testing policy, given the cultural, organisation and behavioural challenges identified in this report, it is important that proposed policy solutions meet criteria including:

- The policy solution should take into account the purposes of collecting energy data and appraise implications of this for the frequency, detail and comprehensiveness of data collection and consequent implications for costs and benefits to stakeholders and society.

- The policy solution should be easy to implement and to be followed by property owners, occupiers and managers.

- The policy solution should account for the cost-sensitiveness of property occupiers. Any proposition that represents an increased cost burden and time-consuming process should be carefully reviewed.

[16] For example including HM Treasury "Green Book" 2020 and HM Treasury "Guide To Developing The Programme Business Case", 2018

Executive Summary

Introduction

Context

Why Collect Energy Data?

How is Energy Data Collected?

Data Collection Barriers and Enablers

Good Practice and Case Studies

Conclusions and Recommendations

Next Steps

References and Appendices

45/48

References and Appendices

Energy Data, Buildings and Net Zero: Closing the Data Deficit

Executive Summary   Introduction   Context   Why Collect Energy Data?   How is Energy Data Collected?   Data Collection Barriers and Enablers   Good Practice and Case Studies   Conclusions and Recommendations   Next Steps   **References and Appendices**

46/48

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Executive Summary | Introduction | Context | Why Collect Energy Data? | How is Energy Data Collected? | Data Collection Barriers and Enablers | Good Practice and Case Studies | Conclusions and Recommendations | Next Steps | **References and Appendices**

47/48

Appendix A: Abbreviations

ADEME	Agency for the Environment and the Management of Energy
AI	Artificial intelligence
AMR	Automated Meter Reader
BACS	Building Automation Control Systems
BBP	Better Buildings Partnership
BEGES	Greenhouse Gas Emission Summary
BEIS	Department for Business, Energy and Industrial Strategy
BPF	British Property Federation
BREEAM	Building Research Establishment Environmental Assessment Method
BRE	Building Research Establishment
CIBSE	Chartered Institute of Building Services Engineers
CO2	Carbon dioxide
CO2 eq	Carbon dioxide equivalent
CRE	Commercial real estate
CRREM	Carbon Risk Real Estate Monitor
CSRD	Corporate Sustainability Reporting Directive
DBP	Data Best Practice guidance
DESNZ	Department for Energy Security and Net Zero
DSAP	Digitalisation Strategy and Action Plan guidance
EA	Environment Agency
ECO	Energy Company Obligation
EPC	Energy Performance Certificate
ESG	Environment, Social and Governance
ESOS	Energy Saving Opportunity Scheme
EU	European Union
EUI	Energy Use Intensity
GDPR	General Data Protection Regulation

GHG	Greenhouse gas
GPE	Great Portland Estate
GRESB	Global Real Estate Sustainability Benchmark
I&L	Industry and Logistics
IMF	International Monetary Fund
IStructE	Institution of Structural Engineers
IT	Information technology
kWh	Kilowatt hours
LETI	Low Energy Transformation Initiative
LLP	Limited liability partnership
MEES	Minimum Energy Efficiency Standards
OPERAT	Observatory for Energy Performance, Renovation and Tertiary Actions
PV	Photovoltaic
RIBA	Royal Institute of British Architects
RICS	Royal Institute of Chartered Surveyors
Scope 1	Emissions directly owned or controlled by an organisation or consumer
Scope 2	Emissions linked to the consumption of electricity by an organisation or consumer
Scope 3	Indirect emissions relating to an organisation or consumer's activities, but that are outside of their control
SECR	Streamline Energy and Carbon Reporting
SIM	Subscription Identification Module
SMEs	Small and medium sized enterprises
Sq.m	Square metre
TCFD	Taskforce on Climate-related Financial Disclosure
UK	United Kingdom
UKGBC	United Kingdom Green Building Council

Appendix B: Research Methodology

Introduction

This appendix summarises the methodology and process followed for this research. This included a literature review and a series of semi-structured interviews with a cross-section of relevant stakeholders.

Literature Review

A literature review was first undertaken to identify key questions and themes linked to energy data in the property sector, drawing on academic literature, on publicly available research from the real estate industry and on government policy.

This informed the questions and topics to be explored during interviews with key stakeholders. Parallel to the literature review a series of discussions were held with Savills staff with experience in different contexts of data sharing in the real estate industry. This has enabled to the research team to gather a wider overview of the topic.

Semi-Structured Interviews

Semi-structured interviews were held with members of the BPF and with key stakeholders in the data and energy sector. In preparation for the interviews the research team worked closely with the BPF to define a list of key standardised open-ended questions to ask interviewees. This aimed to enable interviewees to discuss this topic while freely responding to these open-ended questions.

The list of interviewees was chosen in collaboration between the BPF and the research team. The aim was to include owners and investors operating across a range of asset classes, enabling the collection of views of the situation in both residential and commercial sectors, the latter including office, retail and logistics space. We also interviewed stakeholders in the data and energy sector to provide a different perspective to the research questions.

The list of interviewees is summarised in Table A2.1 below.

Table A2.1 List of Interviewees

Itw #	Organisation	Sector
1	SEGRO	Big box logistics owner and investor, some data centres
2	Undisclosed	Commercial Property Investor and Asset Manager, Office and retail, some residential
3	Get Living	Residential
4	Thriving Investments	Residential
5	New River	Retail – Shopping centres and retail parks
6	Grainger	Residential
7	GPE	Office and retail, some residential
8	Canary Wharf Group	Office and retail, some residential
9	British Land	Office and retail, some residential
10	Undisclosed	Energy procurement
11	Undisclosed	Property owner and manager, Office and retail, some residential
12	St Modwen	Big box logistics
13	Landsec	Office and retail, some residential
14	M&G	Office and retail, some residential
15	ZTP	Data aggregator
16	Ice Breaker One	Non-profit intersecting data and sustainability
17	Undisclosed	Big box logistics occupier, some retail and office

The responses of the interviewees were compared and contrasted across each interview topics, to extract the broad themes. This has allowed us to identify where views are shared across multiple interviewees and contrarily where interviewees' view on a theme differ.

Contacts

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