

# CAPITALISE ON THE FUTURE

Insights into the evolving landscape of the UK real estate market



**BNP PARIBAS  
REAL ESTATE**

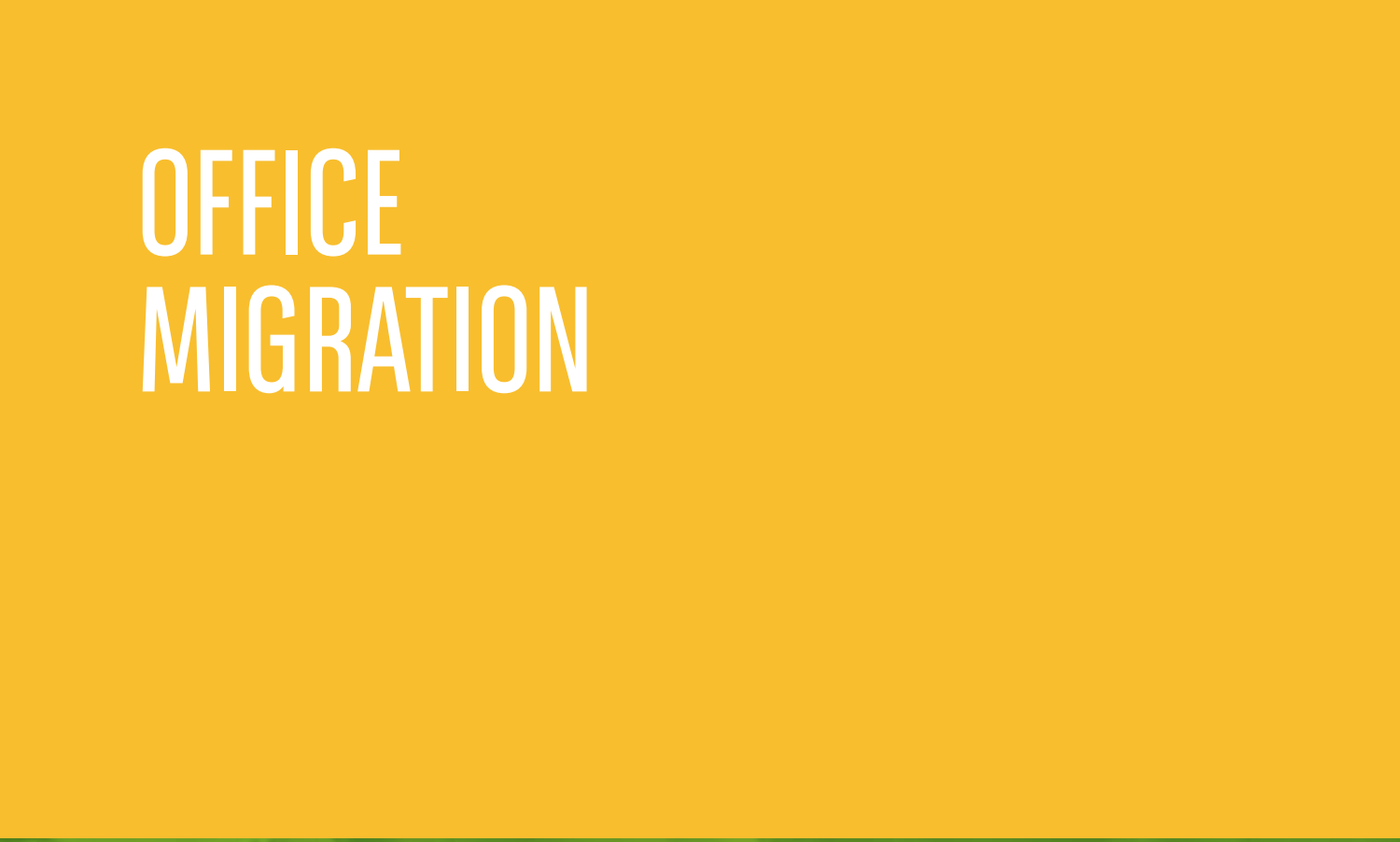


BNP PARIBAS GROUP 

Real Estate for a changing world



# EXECUTIVE SUMMARY



# OFFICE MIGRATION



# PLANNING AND POLITICS



# PROPERTY AND CLIMATE



# DATA CENTRES



# Executive Summary

**As the Head of Research and Strategy, I am pleased to present this inaugural publication in our “Capitalise on the Future” series, which provides critical insights into the evolving landscape of the UK real estate market. This collection of papers explores key themes that highlights the interplay of economic, environmental, and social factors that are shaping the real estate industry.**



## **DATA CENTRES:**

With the relentless rise in digitalisation and the growth of artificial intelligence, data centres are at the forefront of real estate investment opportunities. Our analysis indicates robust demand for data storage and processing capabilities as businesses are ramping up their tech infrastructure, so those who tap into this trend could reap rewards.

## **CLIMATE IMPACTS:**

We cannot ignore climate change—it is reshaping our industry. As climate change continues to pose risks, understanding its implications on real estate is critical. Properties demonstrating sustainability and environmental compliance will perform better and are likely to command higher value and tenant retention rates.

## **OFFICE MIGRATION:**

Office migration is being shaped by wider economic pressures facing businesses, the ongoing drive for more sustainable and well-connected buildings as well as appropriate space to fulfil flexible working arrangements. In turn, this is presenting both challenges and opportunities for landlords and investors.

## **PLANNING AND POLITICS:**

The evolving political landscape and planning regulations in the UK will significantly impact the real estate market. Our comprehensive review highlights the necessity for investors and developers to stay informed and engaged with policy developments, ensuring alignment with governmental initiatives and frameworks for sustainable development.

In short, 2024 held plenty of opportunities for those ready to seize them. Our findings aim to equip investors, developers, and policymakers with the insights needed to navigate these changes and capitalise on emerging trends for sustained growth.

I encourage you to dive into each chapter for a deeper understanding of the strategic implications that will continue to shape our industry in the coming year.



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# Office Migration

March 2024



# Who's following who? The movement of real estate development, employers and employees

By Josh Arnold, UK Office Research



## Executive summary:

- 1** Lifestyle changes have centralised office occupier demand to new, centrally-located office space in an attempt to earn employees commute.
- 2** The drive to net zero extends from developers to occupiers, generating premium rents for developments with strong ESG credentials.
- 3** Clustering of growth industry sectors continues, centred largely on the hunt for talent.

# Office migration aligning with employee and sustainability demands

The office market has historically been shaped by tenant demands, whether that be movements towards more affordable space during economic downturns, seeking best-in-class office space for client/employee requirements or moving to locations with larger talent pools. While all these trends have been observed since the pandemic, perhaps the most prevalent is the migration towards new and well-connected buildings.

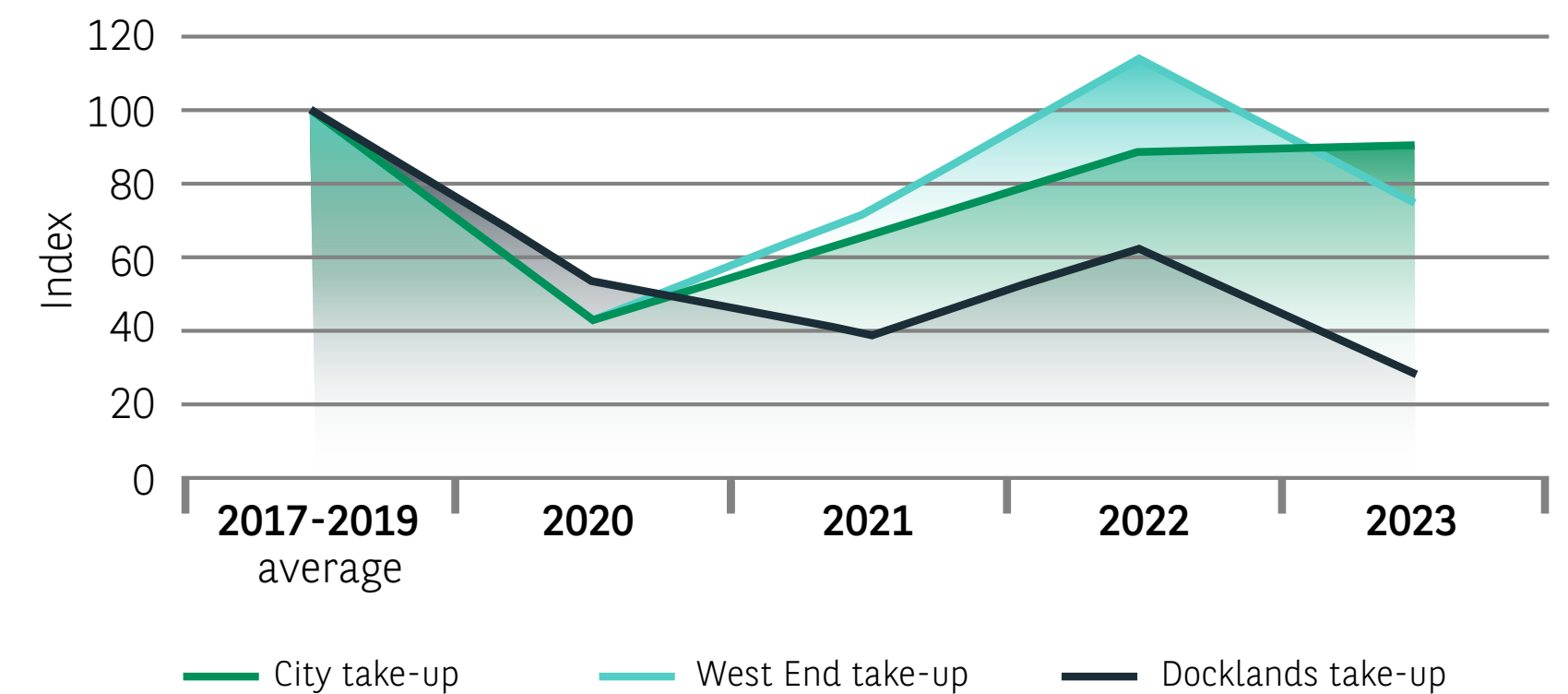


## CENTRALISATION: DODGING THE DOUGHNUT EFFECT

The pandemic fundamentally reshaped how employees interact with offices. In our latest Housing Futures survey, 32% of respondents stated that they will spend more days working from home than in the office over the next year (down marginally from 38% in 2021), while only 54% reported that being 'close to work' was an important factor when moving home. To maintain staff presence, office employers are adapting requirements to align with employee demands of amenity-rich, flexible and commutable spaces. This has subsequently ignited demand for the best-in-class city centre spaces.

A London-based example is the raft of law firms moving from second-hand space in Midtown to the City of London, where the vast majority of new office development is located. Consequently, the wider professional services sector (largely driven by the legal sector) has remained one of the most resilient occupier sectors in terms of Central London take-up post-pandemic.

FIGURE 1: TAKE-UP (INDEXED TO PRE-COVID 3-YEAR AVERAGE) FOR CITY, WEST END AND DOCKLANDS



Source: BNP Paribas Real Estate

Indeed, while market migration supports demand in some locations, others have become challenged. Peripheral locations would perhaps fall into the latter category as major office employers opt to shift their headquarters in favour of centrally-located premium schemes in the City, prioritising quality over budget. In turn, this has

resulted in recovering take-up (figure 1), driven largely by major corporations such as Barclays, Clifford Chance and more recently HSBC confirming upcoming moves to new schemes in the City.

## THE DRIVE FOR NET-ZERO LED BY NEW DEVELOPMENTS

Regardless of the upcoming MEES EPC regulation deadline speculation<sup>1</sup>, it remains pertinent that office employers, landlords and developers continue reducing carbon footprints in the push to achieve net-zero targets. As of October 2023, over half of the Forbes2000 company index have 2050 net zero targets (an increase of 42.9% already since June 2022)<sup>2</sup>. Therefore, office employers must associate themselves with more sustainable buildings, fuelling demand for new, more energy efficient offices to remain competitive and to be seen as an attractive employer.



THE NUMBER OF COMPANIES WITHIN THE FORBES2000 INDEX WITH 2050 NET ZERO TARGETS INCREASED BY

42.9%

BETWEEN JUNE 2022 AND OCTOBER 2023.

To evidence this, new office buildings achieving sustainability accreditation are experiencing high demand across the UK.

- Leeds was the clear regional outperformer in 2023, with city centre take-up increasing by 4.5% year-on-year. Driven predominantly by the completion of three sizeable (and sustainable) developments, creating new office hubs for global corporates like Lloyds, Irwin Mitchell and JLL.
- No.1 St Michael's, Manchester's first fully net zero commercial development due in 2024, is attracting pre-lets from major law firms like Pinsent Masons and Hill Dickinson (also at record rental levels).
- Halo in Bristol (BREEAM Outstanding and net zero upon completion in 2022) achieved significant pre-let deals at high rental levels.
- Maidenhead's upcoming Tempo building, targeting BREEAM Outstanding by using no natural gas for heating and incorporating 5,500 sq ft of solar panels to reduce energy usage, has achieved record rent of £51 per sq ft on a pre-let signed by Black and Decker in November 2023. This reflects a rental uptick of 25% on the previous record for the town.
- In London City, 8 Bishopsgate achieved significant leasing demand upon completion in Q3 2023, with 88% of the office space currently let and a further 25,000 sq ft under offer, at the time of writing. Demand has been driven by its environmental credentials, achieving BREEAM Outstanding, boasting London's highest solar panels and over 5,000 tonnes of CO2 saved in construction due to analytical modelling leading to 30% less structural carbon than the London tall buildings benchmark, as well as its extensive social provision, equipped with 75,000 sq ft of amenity space.

# Looking ahead – where can we see future movement?

To predict which locations might experience a mass movement of occupiers, we can examine upcoming development and infrastructure projects.

In terms of office development across both key London markets (West End and City) and Big Six regional cities\*, total stock (c.307m sq ft as of Q4 2023) is expected to increase 6.6% according to buildings currently under construction. Unsurprisingly, London City accounts for the vast majority of this, with over 9.5 million sq ft of space currently under construction – most of which is tied up in the 11 upcoming skyscrapers<sup>3</sup>.

The only regional market to exceed the average growth rate is Manchester, with current stock forecast to increase 7.4% by 2026, assuming all buildings under construction complete. Subsequently, we can expect corporates to continue establishing hubs in the city, with demand already resulting in 39% of office space under construction to be pre-let. This is supported by years of extensive residential development, averaging over 10,000 units under construction per year between 2015 and 2022<sup>4</sup>.

\*Big Six markets consists of Bristol, Birmingham, Leeds, Manchester, Edinburgh and Glasgow.  
<sup>3</sup>Source: Bloomberg News  
<sup>4</sup>Source: Deloitte



## TRANSPORT-LED GROWTH & CLUSTERING

Despite the announcement to scrap HS2's extension to Manchester<sup>5</sup>, the wider project remains poised to provide significant uplift in certain locations. For example, Birmingham's new Curzon Street district is expected to bring 36,000 jobs and a further £724 million in regeneration following the 2026 completion date, according to Birmingham City Council's Curzon Street Investment Plan<sup>6</sup>.

Birmingham is already considered a start-up hotspot, crowned the UK's regional start-up capital for seven consecutive years (2014-2020) according to the Centre for

Entrepreneurs<sup>7</sup>, while major corporates including HSBC and National Express already hold headquarters in the city. HS2, and subsequent regeneration projects, will help new and existing businesses to prosper from improved connection to broader catchments.

Completed transport improvement projects of a similar ilk can provide insight into the potential impact on tenant demand, migration and clustering. London's Elizabeth Line prompted widespread regeneration, creating c.200,000 new office jobs according to London Property

Alliance<sup>8</sup>, whilst boosting office lease take-up, achieving above-market rents and creating new occupier clusters. Tottenham Court Road witnessed an influx of media-tech operators (Facebook, Outernet, Epic Games) whilst attracting new tenant sectors to the area, including GSK's upcoming headquarter relocation to New Oxford Street (from Brentford). Meanwhile, Bond Street's redeveloped district has seen the arrival of largescale private banking and luxury retail operators as Chanel, Blackstone and PIMCO all recently securing pre-lets.

FIGURE 2: MANCHESTER OFFICES UNDER DEVELOPMENT AS OF FEBRUARY 2024



<sup>5</sup>Source: UK Government  
<sup>6</sup>Source: Birmingham City Council Curzon Street Masterplan

<sup>7</sup>Source: StartUps Magazine  
<sup>8</sup>Source: London Property Alliance

## THE HUNT FOR TALENT: WHAT'S DRIVING KNOWLEDGE-INTENSIVE SECTORS?

For the fastest emerging sectors in the UK, including AI technology and life sciences, access to the best talent is crucial. Subsequently, clustering of such companies has resulted in the emergence of new innovation districts.

Bristol and Newcastle have experienced an influx of both home-grown (GraphCore, MignonAI) and multi-national (Ezoic, Monstarlab, Thoughtworks) technology companies which deem these markets as hotspots for well-educated and younger populations, supported by new supply of high-quality offices. The UK's AI growth prospects, set to reach £2.4 trillion by 2027<sup>9</sup>, will more than likely result in the expansion of such clusters.

The development of the Cambridge-Oxford arc continues, driven by a wealth of knowledge deriving from the universities which act as incubators for research, technology and start-up businesses, coupled with a strong investor base providing businesses with capital for growth opportunities.

Investment into this arc is therefore unsurprising. Residential development triggered a 17% population growth between

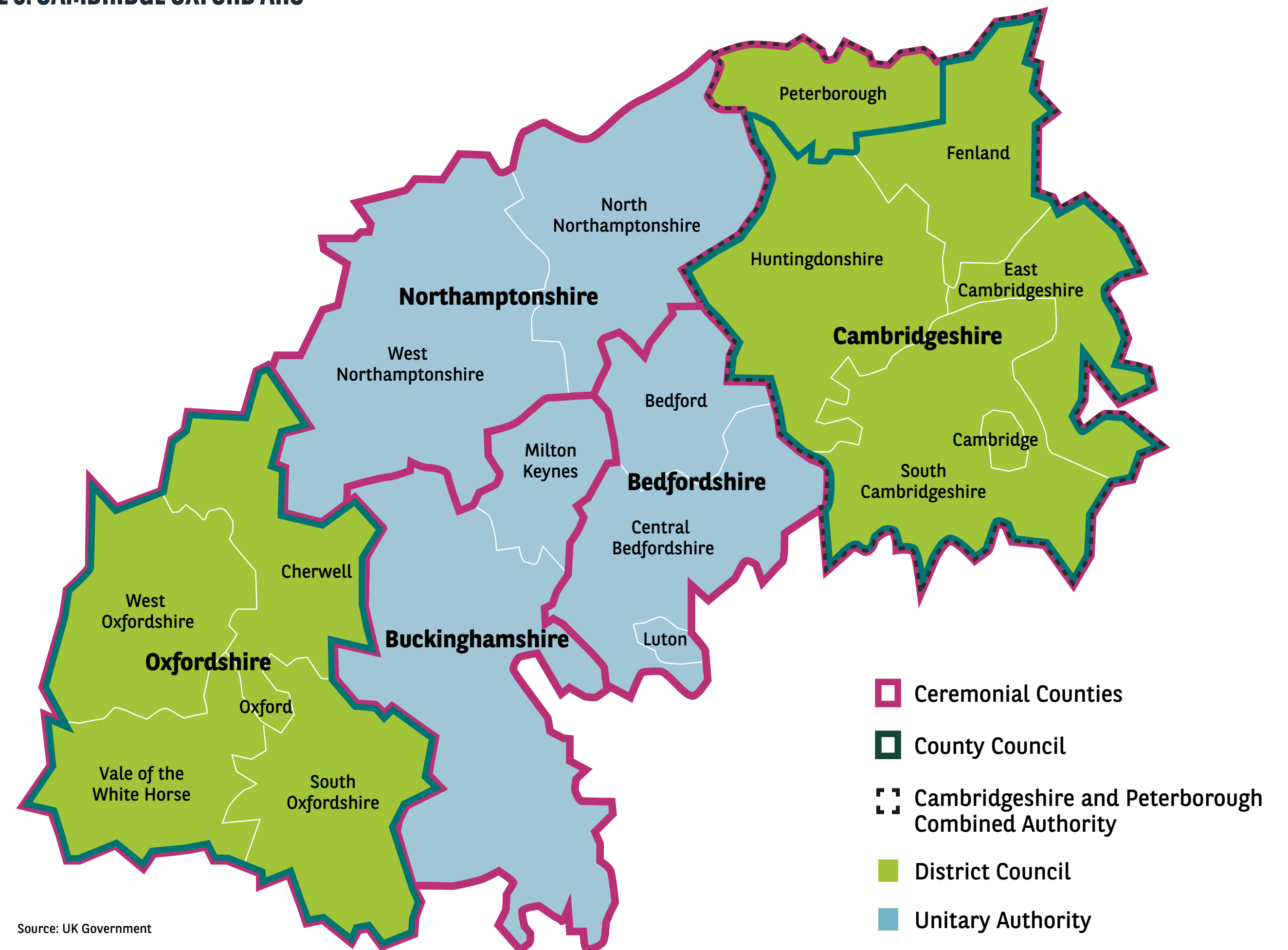
2011 and 2021 in Cambridge – treble the national average, with demand bolstered by strong job and education opportunities. Corresponding investment into business has cemented Cambridge's position as a life science hotspot, housing over 400 companies that provide £2.9 billion to the UK economy<sup>10</sup>. Meanwhile, Oxford boasts one of the fastest growing office markets in the UK, forecasting stock growth of 7.6% by 2027, calculated according to buildings currently under construction as at February 2024.

Growth into the region shows no sign of slowing, with the government pledging improved East-West rail and road connectivity, environmental objectives, and place-making schemes via its Spatial Framework 2050<sup>11</sup>.

### IN SUMMARY

The rapid expansion of growth sectors, alongside major infrastructure projects, is likely to generate further movement of occupiers between now and 2027. Whether it be chasing the newest available space, areas of significantly improved connectivity or access to the strongest talent pools, business migration across the UK looks set to continue.

FIGURE 3: CAMBRIDGE OXFORD ARC



Source: UK Government

# Planning and Politics

June 2024



# Shaping Tomorrow - What's the plan?

By Rebecca Shafran, Alternatives Research

**With a General Election now scheduled for 4th July 2024, it can be expected that planning will feature highly on all party manifestos, with any shifts in policy having the potential to shape the entire term of a new government. This outlook piece looks at the economic backdrop, current real estate challenges and the planning system changes a new government might focus on in the first 100 days in office.**

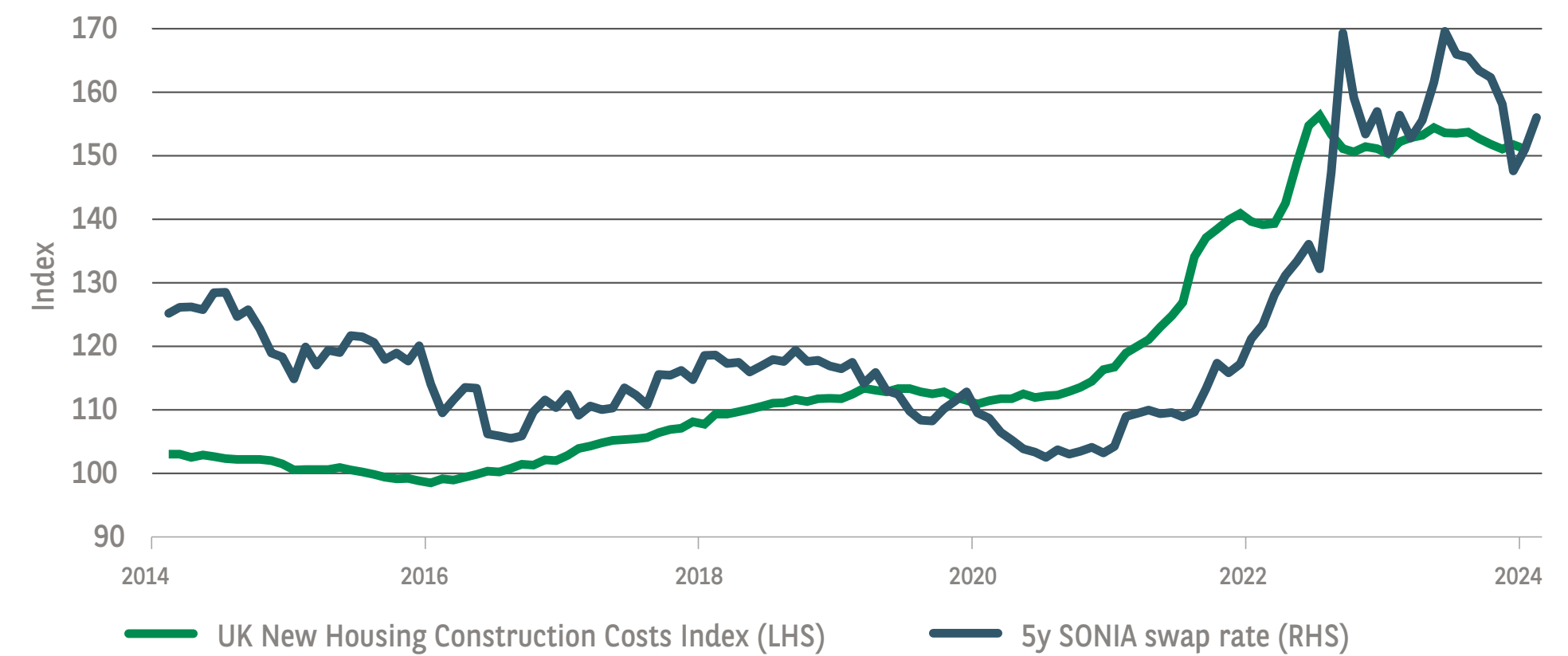


As investors await the implementation of the Levelling Up & Regeneration Act (LURA) and grapple with changes to the National Planning Policy Framework, real estate markets are at a crucial juncture after years that have lacked stability. The COVID-19 pandemic, followed by the war in Ukraine, supply chain disruption and the significant rise in the UK inflation rate forced the Monetary Policy Committee to increase the Bank of England base rate, and the challenging economic backdrop particularly impacted on the real estate development market.

High debt costs, a significant rise in the cost of materials and wage growth, and declining property values, have directly hit the viability of construction projects. Glenigan reported that the value of underlying work starting on-sites during the three months to April 2024 fell 9% against the preceding three-month period and 21% lower than a year earlier.

But it's not just the macro-economic climate that impacts on delivery. The UK planning system, which is there to ensure that development happens

## NEW HOUSING CONSTRUCTION COSTS INDEX AND 5-YEAR SONIA SWAP RATE



Source: UK Government, Bank of England, Macrobond

in the right place at the right time to benefit communities and the economy, provide strong protections to conserve and enhance the valuable natural and historic environment, is complex and is slowing down the delivery of projects. In this rapidly changing cost environment, a slowdown can further impact the viability of schemes, often making them unfeasible.

Since the Covid-19 pandemic, when local authorities had to pause planning services, cancel site visits and were unable to keep

applications progressing due to inadequate virtual infrastructure, a backlog grew and is still being worked through. For some sectors, where timing of delivery is key, e.g. purpose built student accommodation, where practical completion ties to the start of an academic year, a slowdown or pause in planning can be highly detrimental. Add in the significant rise in pre-application and planning application fees charged by local authorities in England and cost pressures become a real issue for some developers.

Summarising a 2020 government White Paper on planning reform, the then Prime Minister Boris Johnson in describing “the outdated and ineffective planning system as a relic from the middle of the 20th century”, also wrote: “Thanks to our planning system, we have nowhere near enough homes in the right places. People cannot afford to move to where their talents can be matched with opportunity. Businesses cannot afford to grow and create jobs.”

The planning system makes the environment we live in better, but it is also outdated which affects the entire economy; its poor performance has consequences, both direct and indirect, on all sectors across commercial and residential real

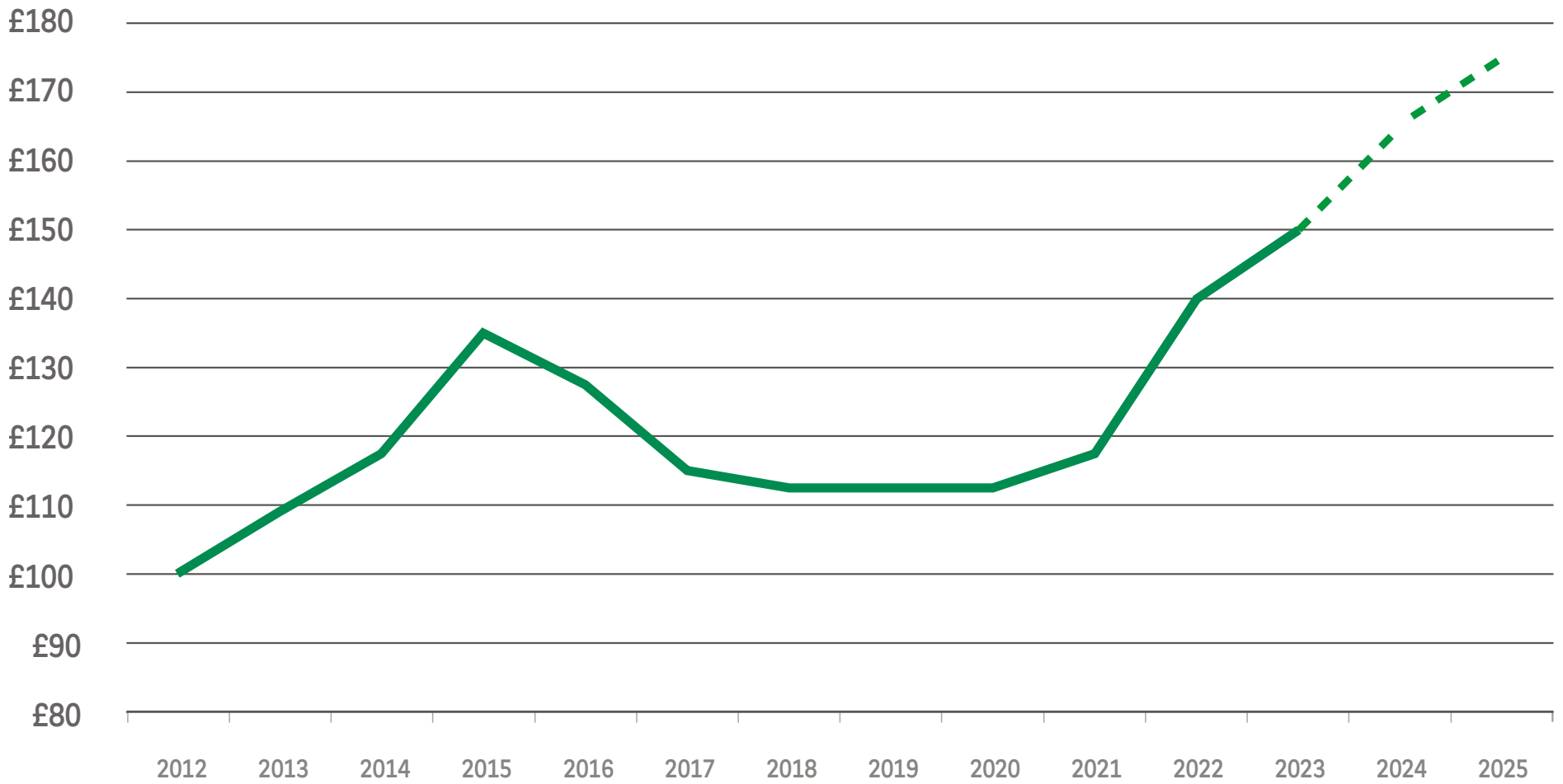
estate. One such consequence has been an under delivery of critical infrastructure projects which have a significant role to play in levelling up as well as assisting with the roadmap towards a pledge of net zero carbon for 2050. Energy infrastructure requires rural as well as urban locations, and is hampered by a lack of vision and regional spatial planning and policy constraints such as the protection of the greenbelt.

The planning system needs to support and bring forward more supply in infrastructure, commercial and residential sectors across the UK real estate market, which is grappling with significant shortfalls or imbalances.

In the office market, occupiers have voted with their feet, where lack of supply in Grade A office space has significantly increased rents, particularly in Central London but elsewhere existing stock is missing the mark in terms of both environmental efficiency and amenity offering.

A focus on energy performance and a flexible planning system will be needed to support improvements or changes to existing office building stock. The environmental impact and regulation of buildings in the form of Minimum Energy Efficiency Standards has moved to the top of both investor and occupier decision making.

**PRIME WEST END OFFICE RENTS (£PSF)**



Source: BNP Paribas Real Estate



Planning and Politics

**19%** of the UK's carbon footprint is from operational emissions, from energy needed to heat, cool and power our buildings and

**25%** of UK emissions are directly attributable to the built environment

Source: UKGBC



From an investor perspective, the challenge has been to deliver required returns alongside delivering on sustainability targets across their portfolios. In some cases, this means upgrading existing stock to bring it up to necessary standards. In other cases, the obvious solution for unlettable or obsolescent stock is to look at change of use, repurposing the existing stock into a different use class.

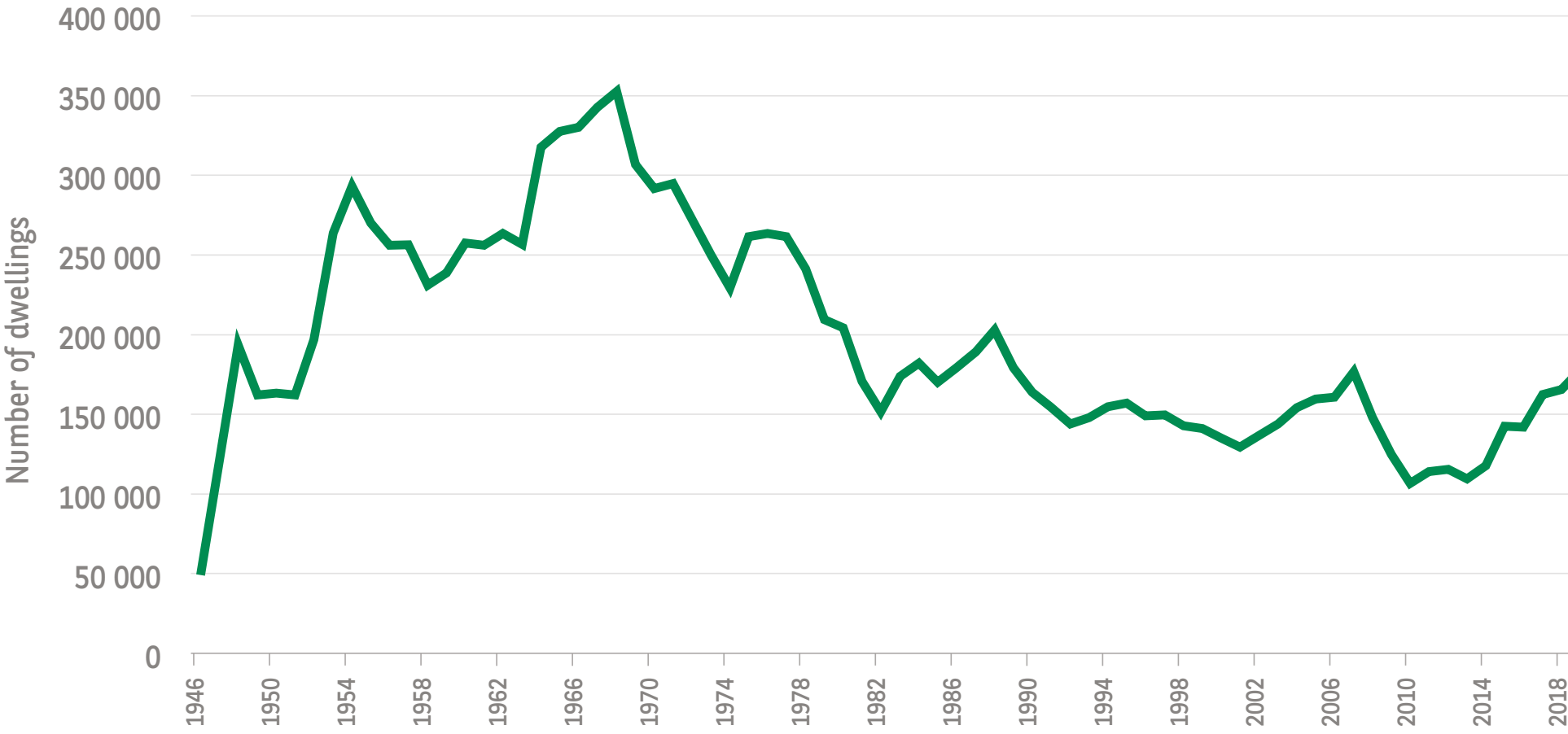
In February 2024, the then Secretary of State for Housing Michael Gove announced an extension to the permitted development rights in force from 5th March 2024 to allow and encourage the conversion of commercial properties into residential use. This will help facilitate a small percentage increase in housing stock

but the planning system needs to be more flexible to accommodate change. The government’s announcement on the brownfield first presumption in favour of development will also go some way to assisting this, albeit this strategy has been seen before. This flexibility needs to be reflected in local decision making by local politicians and planning officers.

In the residential market, planning reforms will need to address the large supply and demand imbalance. Worth £7.2 trillion, the UK housing market needs more supply built at a much faster pace than has ever been delivered since the end of the Second World War. Population growth, immigration, and urbanisation trends, as well as shifts in lifestyles has resulted

in an increasing demand for quality and sustainable homes. Alongside this growing demand for homes, the quality of existing stock is hugely concerning. The UK has some of the oldest housing stock in Europe. The Home Builders Federation (HBF) analysis of OECD (Organisation for Economic Co-operation and Development) data showed that 38% of UK’s housing stock was built before 1946, and 78% was built before 1980. The HBF notes that this means that a significant proportion of stock is likely to be less energy efficient, less resilient to extreme weather conditions and generally in poorer state of repair than newer homes. This is highlighted by the English housing survey 2021/2022 which identified that 14%, or 3.4 million existing occupied dwellings, failed to meet the Decent Homes Standard.

**HOUSE BUILDING: PERMANENT DWELLINGS COMPLETED, ENGLAND 1946 - 2022**



Source: Department for Levelling Up, Housing and Communities

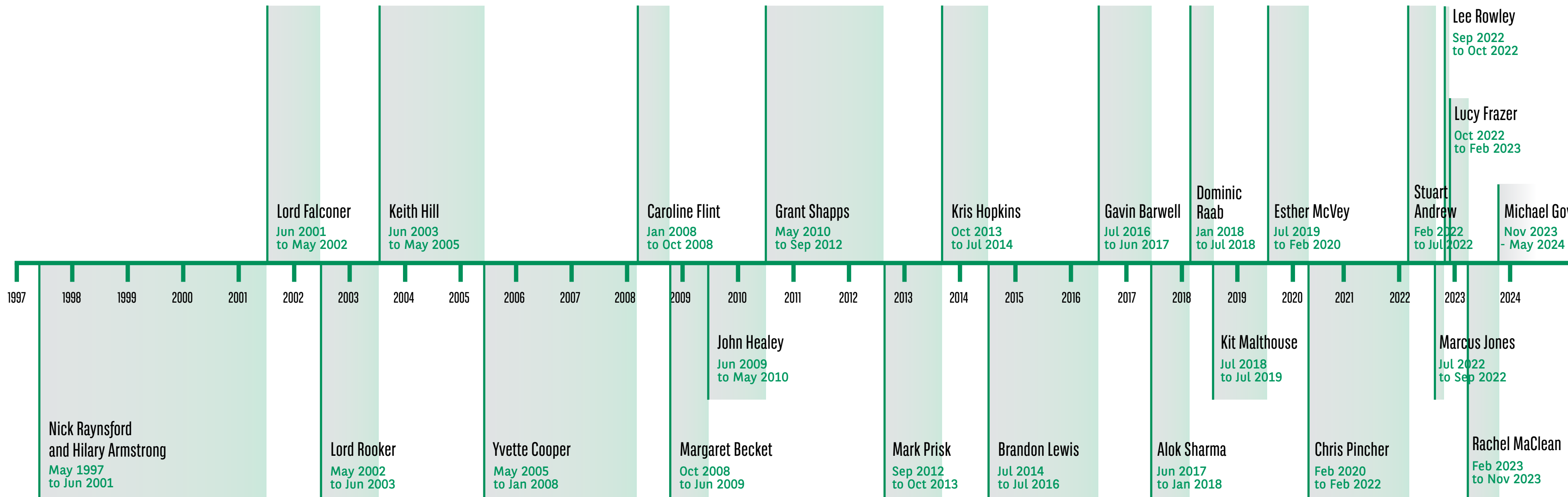


ENGLISH HOUSING SURVEY 2021/2022 WHICH IDENTIFIED THAT

**14%**

**3.4 MILLION OCCUPIED DWELLINGS, OF EXISTING STOCK, FAILED TO MEET THE DECENT HOMES STANDARD.**

## HOUSING MINISTERS



The most direct consequence of the shortfall in quality net additions in housing supply, has been the impact on house prices that have increased 131% over the last 20 years<sup>1</sup>. This has had huge impacts on affordability and is changing the tenure profile of the housing market. Median house prices were 8.16 times median gross annual residence-based earnings in England and Wales at the end of 2022 and were 13.3 times in London<sup>1</sup>.

Since 1997 there have been over 20 housing ministers and this lack of consistency can go some way to explaining the lack of cohesion, long-term thinking and profile of the planning system and subsequent shortfall in the delivery of new housing supply. This is further bound up by funding and resourcing challenges in local authority planning departments. The Royal Town Planning Institute (RTPI) reports that the number of planners working in the

Source: <sup>1</sup>ONS

public sector shrunk by a quarter between 2009 and 2020. This shortfall of planners contributes to the slowdown in delivery of planning permissions and ability to get on site. The Department for Levelling Up, Housing and Communities (DLUHC) has been addressing this through the Planning Skills Fund, but more and consistent funding of planning departments is required.

Looking ahead, and with a General Election now scheduled for 4th July 2024, all parties will have planning reforms high on their agenda. Whilst an overhaul of the planning system is not required, it needs to be properly funded, flexible and responsive to meet these changing times in order to support the economy and provide consistency to deliver confidence to investors.

Our recommendations for any future government:

- ✓ Implement Levelling Up and Regeneration Act, in particular streamlining local plans and providing a national set of policies.
- ✓ Review Green Belt in appropriate places.
- ✓ Implement presumption in favour of brownfield sites underpinned by funding.
- ✓ Resource planning authorities adequately to deliver and upskill and provide support for technical improvements.
- ✓ Decentralise decision making to help drive local success such as has been achieved in Manchester Boost Affordable Housing Programme.
- ✓ Build and deliver a digital and data enhanced planning system.

This will not be an easy task for any incoming government, irrespective of political party. They will be adopting huge economic pressures that may stifle decision making and their ability to change or introduce new policies. However, the planning system is an enabler which, if supported and funded properly, can have a positive economic effect.

# Property and Climate

October 2024



# C is for climate and crisis

By Jason Beedell, UK Rural Research

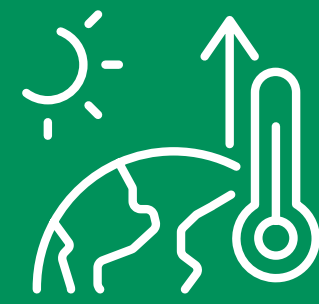
**2023 was the hottest year on record globally – and probably the hottest year for 125,000 years<sup>1</sup>.**

The effects of climate change – heatwaves, floods, extreme weather – are becoming more frequent and more severe, not just elsewhere in the world but throughout the UK too<sup>2</sup>.

Analysis for the Climate Change Committee indicates that at least eight climate change risks may each have a cost to the UK of more than £1 billion a year by 2050<sup>3</sup>. This includes risks to businesses from flooding and risks to health and wellbeing from high temperatures.



## UN INTERNATIONAL PANEL ON CLIMATE CHANGE (IPCC) 6TH SYNTHESIS REPORT<sup>4</sup>



SEA LEVEL RISE IS NOW UNAVOIDABLE; DEATHS FROM FLOODS, DROUGHTS AND STORMS ROSE SHARPLY IN THE LAST DECADE AND AN ESTIMATED 3.6 BILLION PEOPLE ARE ALREADY HIGHLY VULNERABLE TO THE EFFECTS OF GLOBAL WARMING.



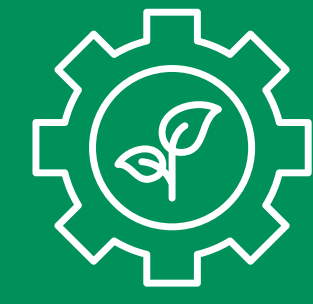
LARGE CONTRIBUTIONS TO EMISSIONS REDUCTIONS WITH COSTS LESS THAN \$20 (US) PER TONNE OF CO2 EQUIVALENT COME FROM SOLAR AND WIND ENERGY, ENERGY EFFICIENCY IMPROVEMENTS, AND METHANE EMISSIONS REDUCTIONS (MEDIUM CONFIDENCE).



THERE IS A RAPIDLY CLOSING WINDOW OF OPPORTUNITY TO SECURE A LIVEABLE AND SUSTAINABLE FUTURE FOR ALL (VERY HIGH CONFIDENCE IN THIS PREDICTION).



DEMAND-SIDE MEASURES (SHIFTING TO SUSTAINABLE HEALTHY DIETS AND REDUCING FOOD LOSS/WASTE) AND SUSTAINABLE AGRICULTURAL INTENSIFICATION CAN REDUCE ECOSYSTEM CONVERSION, AND METHANE AND NITROUS OXIDE EMISSIONS, AND FREE UP LAND FOR REFORESTATION AND ECOSYSTEM RESTORATION.



THE CHOICES AND ACTIONS IMPLEMENTED IN THIS DECADE WILL HAVE IMPACTS NOW AND FOR THOUSANDS OF YEARS (HIGH CONFIDENCE).

“

*Humanity is on thin ice and that ice is melting fast. The climate time bomb is ticking. But today's IPCC report is a how-to guide to defuse the climate time bomb. It is a survival guide for humanity. The 1.5C limit is achievable but it will take a quantum leap in climate action.*

**UN secretary-general António Guterres**

1- Source: Copernicus Climate Change Service, 24th October 2023. 2 - For example, for Scotland, see Rivington et al (2023) Summary of the Climate Trends, Future Projections and Extremes in Scotland. 3 - National Audit Office. Government resilience: extreme weather. 6 December 2023. 4 - Source: UN International Panel on Climate Change (IPCC) 6th synthesis report. This report is the first comprehensive assessment of the state of climate published since 2014.

# Property's reaction

**The past three years have seen much greater awareness and activity about the effects of climate change on property.**

Many large property owners and managers have now set net zero targets to try to lessen their contribution to climate change. However, the action happening is still well behind the action needed. They are now working on how to achieve them and for many it will be challenging.

Discussions about emissions reductions, residual emissions and being 'nature positive'<sup>5</sup> are now much more common than even three years' ago.

The short-term challenge (but in reality, to at least 2030 and probably 2040) is how to put the plans into action.

The effects of climate change on property are multiple and significant; it is hard to think of a property sector or property type or property owner who will not be severely affected by the climate change that is already locked into the global climate system.

The following table shows the range and magnitude of risks to business, residential property, agriculture and food and land use. It is based on analysis done for the third Climate Change Risk Assessment for the UK government by the Climate Change Committee<sup>6</sup>.

It includes risks that will need to be adapted to as well as the opportunity to reduce emissions to mitigate climate change.

It can be used as a tool to analyse risks to your business(es) and to plan mitigation and adaptation strategies.

5 - Nature positive means to 'halt and reverse nature loss measured from a baseline of 2020, through increasing the health, abundance, diversity and resilience of species, populations and ecosystems so that by 2030 nature is visibly and measurably on the path of recovery'. Source: <https://www.naturepositive.org/>.

6 - Source: <https://www.ukclimaterisk.org/>



# Effect of climate change on...

High Medium Low Not Known

## BUSINESS

	Type of risk	Type of risk to property	Current risk <sup>7</sup>	Expected future risk
<p><b>Flooding</b> - current annual damages from flooding are £670m pa. This is from damage to property, business interruption and other losses.</p> <p>This is expected to increase by 27-44% by 2050 and 40-75% by 2080. <b>The availability of insurance and costs of capital could increase</b> the magnitude even further<sup>8</sup>.</p>			Medium	High
<p><b>Access to capital, investment and insurance</b> - risks to the UK's financial stability from the climate are currently moderate but expected to increase due to the scale of physical damage affecting assets, products, and services in the UK and abroad. <b>In a 4°C warming scenario, climate change impacts could be largely uninsurable</b> due to the scale of damages.</p>	Adaptation	Financial Regulatory	Medium	High
<p><b>Water scarcity</b> - water is expected to become scarcer in many parts of the UK. It <b>may not be available, at current or desired levels, for all users</b> in the future.</p>	Adaptation Mitigation	Physical Financial Regulatory	Low	Medium
<p><b>Reduced staff productivity</b> due to infrastructure disruption and higher temperatures in working environments - this risk is expected to rise, especially in England. Health-related impacts from diseases transmitted by mosquitoes, flies and ticks are also expected to increase.</p>	Adaptation Mitigation	Physical Financial Regulatory	Low	High

	Type of risk	Type of risk to property	Current risk <sup>7</sup>	Expected future risk
<p>Opportunities due to <b>change in demand for goods and services - this could increase due to the UK's physical location</b>, compared with other countries that will be more affected by climate change.</p>	Adaptation Mitigation	N/A	Low	Medium
<p><b>Supply chain and distribution disruption - nearly 60% of businesses surveyed reported productivity losses due to extreme weather in 2018.</b> The future magnitude of this risk is assessed as unknown but could be very large.</p>	Adaptation Mitigation	Physical Financial	Not Known	High
<p><b>Subsidence</b> - the area of Great Britain that is highly or extremely likely to see increased risk of clay-related subsidence, due to the ground under buildings shrinking and cracking, increases by a third from 2020 to 2030 and triples by 2050, according to the British Geological Survey<sup>9</sup>.</p>	Adaptation Mitigation	Physical Financial	Not Known	Not Known
<p><b>Coastal change and erosion, flooding and extreme weather events</b> - without further adaptation, <b>damages are expected to rise by 30-82% by 2050</b> and 73-181% by 2080.</p>	Adaptation	Physical Financial	N/A	High

High Medium Low Not Known

## HOUSING

	Type of risk	Type of risk to property	Current risk <sup>7</sup>	Expected future risk
<p><b>Health due to high temperatures</b> - the number of <b>heat-related deaths could triple to 6,000 a year in the UK by the 2050s.</b> The <b>risk of a '2018 type' summer will almost certainly increase to a 50% probability in any one year by 2050.</b> Health-related impacts from diseases transmitted by mosquitoes, flies and ticks are also expected to increase.</p>	Adaptation Mitigation	Physical Financial Regulatory	High	High
<p><b>Flooding</b> - this is <b>already a severe risk and it will increase.</b></p>	Adaptation Mitigation	Physical Financial Regulatory	High	High
<p><b>Building fabric</b> - risks to buildings from moisture, wind and rain will <b>remain at medium.</b></p>	Adaptation Mitigation	Physical Financial	Medium	Medium
<p><b>Water scarcity</b> - higher incidences of water scarcity in the future <b>could increase interruptions of housing water supplies.</b></p>	Adaptation Mitigation	Physical Financial Regulatory	Not Known	Not Known
<p><b>Heating and cooling buildings</b> - warmer winters are expected to <b>reduce heat demand in the winter but demand for air conditioning is likely to increase</b> due to hotter summers.</p>	Adaptation Mitigation	Physical Financial Regulatory	Not Known	Not Known
<p><b>Indoor air quality</b> - lack of evidence of likely change.</p>	Adaptation	Physical Regulatory	Not Known	Not Known



High Medium Low Not Known

## FARMING, FOOD AND LAND USE

	Type of risk	Type of risk to property	Current risk <sup>7</sup>	Expected future risk
<b>Food safety and security (domestic production)</b> - this risk is already assessed as high and <b>will remain high</b> <sup>10</sup> .	Adaptation Mitigation	Physical Financial Regulatory	High	High
<b>Food safety and security (for food imports into the UK)</b> - this risk is also already assessed as high. <b>The UK has already experienced shortages</b> (in fresh vegetables and fruit) due to heat waves in Europe.	Adaptation	Physical Financial Regulatory	High	High
<b>Soils</b> - there is a <b>risk of major threshold effects such as lack of moisture and also flooding at higher levels of warming</b> (i.e. in a 4°C scenario). This risk is expected to rise to high by the 2050s across the UK.	Adaptation Mitigation	Physical Financial Regulatory	Medium	High
Farming and forestry productivity from <b>extreme events</b> - the risks (from droughts and flooding) and opportunities (from fewer frosts) are <b>expected to increase by the 2050s, across the UK</b> . A comprehensive assessment is needed.	Adaptation Mitigation	Physical Financial Regulatory	Medium	High
<b>Pests and disease effect on farming - more are expected.</b>	Adaptation Mitigation	Physical Financial Regulatory	Medium	High
<b>Pests and disease effect on forestry - more are expected.</b>	Adaptation Mitigation	Physical Financial Regulatory	Medium	High

	Type of risk	Type of risk to property	Current risk <sup>7</sup>	Expected future risk
<b>Opportunities due to new plant species</b> - there is limited evidence on this opportunity but it <b>could increase by the 2050s.</b>	Adaptation	Physical Financial Regulatory	Medium	High
<b>Landscape character</b> - is <b>expected to be negatively affected</b> by climate change.	Adaptation Mitigation	Physical Regulatory	Medium	High
<b>Peatland and forests as natural carbon stores - carbon losses are expected to increase due to increased oxidation from warmer and sometimes drier conditions</b> , as well as runoff from intense rainfall events. A more strategic approach to land use is needed to reduce these negative impacts.	Adaptation Mitigation	Physical Financial Regulatory	Medium	High
Opportunities for <b>UK food exports due to climate change</b> - this opportunity is <b>viewed as remaining low.</b>	Adaptation	Physical Financial Regulatory	Low	Low
<b>Risks to water from saltwater intrusion</b> - are likely to remain low.	Adaptation Mitigation	Physical Financial Regulatory	Low	Low

<sup>10</sup> - In 2024 the UK is facing food shortages and price rises as extreme weather linked to climate breakdown has caused low yields on farms in the UK and abroad. Source: Guardian, 16 April 2024.

# Some deeper dives

## RESIDENTIAL PROPERTY

The UK has some of the oldest and least energy efficient housing stock in Europe, which means it uses significant amounts of energy to heat.

Key government advisers, including the National Infrastructure Commission and the Climate Change Committee, have said that heating powered by electricity – not gas or oil - is the most effective way to cut emissions from housing.

The challenge for housing is that this can have high initial costs and it can be invasive – fitting a heat pump is sometimes more complicated than simply replacing a gas boiler with another one. However, installation skills and costs are coming down and a higher proportion of people are satisfied or very satisfied with heat pumps than with gas boilers<sup>11</sup>.



## HOUSING FUTURES

The latest data from our long-running survey on what people want from their houses is that the majority of people want to make their home 'greener' but that a significant majority only have a loose idea of how to do it (50% of the 2,023 respondents).

When asked which 'sustainable features' they would seek in a NEW primary home, the responses showed that the respondents are more comfortable with established technology that does not need maintenance input (i.e., is passive, like insulation and triple glazed windows). There is less desire for non-traditional heating systems, such as heat pumps, geothermal and battery storage (although, positively, this was still sought by over 50% of people).

Most recent government schemes to increase the energy efficiency of housing or to encourage the switch from fossil fuel heating systems to lower carbon ones (like heat pumps

Which of the following sustainable features will you seek in your NEW primary home?

Over 80% say it is a requirement or like to have	60% to 80%	50% to 60%
<ul style="list-style-type: none"> <li>• High levels of insulation</li> <li>• Triple glazed windows</li> <li>• Smart heating controls</li> </ul>	<ul style="list-style-type: none"> <li>• Solar panels</li> <li>• Rainwater harvesting</li> <li>• Eco-friendly building materials</li> <li>• Permeable driveway</li> <li>• Heat pumps (air or ground-source)</li> <li>• Wind energy</li> <li>• Battery storage</li> <li>• Natural antimicrobial materials</li> <li>• Electric car charging points</li> </ul>	<ul style="list-style-type: none"> <li>• Greywater harvesting</li> <li>• Geothermal energy</li> <li>• Photovoltaic panels</li> <li>• Passivhaus type design</li> </ul>

powered by electricity) have either failed or not delivered at the scale needed. This will be a critical area for policy to succeed in the short- to medium-term.

There is also a challenge in adapting houses to the changed climate, in particular flooding and keeping houses cool during longer periods of very hot weather.

<sup>11</sup> - A report for the MCS, the body which certifies the technology, found that 80% of people were either satisfied or very satisfied with their heat pump, which is higher than for gas boilers. Sky News, 200124.

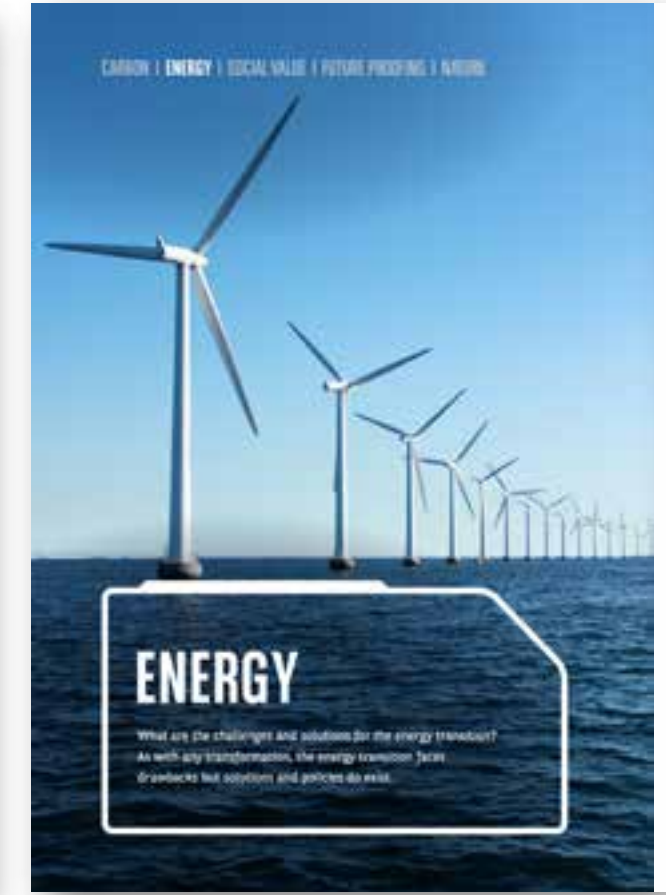
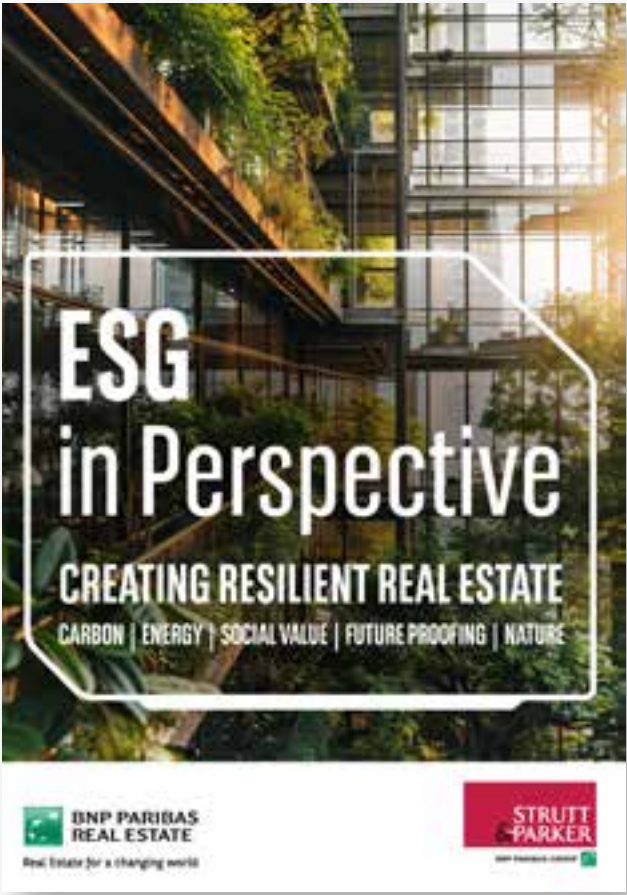
# COMMERCIAL PROPERTY

The challenge for commercial property is similar to residential property – how to reduce energy use, as it is the greatest contributor to climate change from this type of property, and to switch to lower-carbon sources of energy.

Many of the larger asset managers have developed sophisticated carbon reduction plans and are also considering how to deal with the residual emissions that remain once they have taken all planned actions to reduce use. These plans are increasingly including collaboration between the owner and occupiers, and the use of green clauses in leases.

Businesses should also consider, soon and in detail, what climate risks they are facing and the amount of climate risk that they are willing to accept (risk appetite). This will help them to assess how much they are likely to have to spend on managing and adapting to the effects of climate change and the possible damage to their assets from extreme weather. Without doing this, there is a medium- to long-term risk to asset use and values.

Our magazine, ESG IN PERSPECTIVE, provides some strategic, pragmatic and staged approaches to creating resilient real estate.



# FARMING

The challenge for farming is to get widespread acceptance of an appropriate pathway to reduce emissions from farming and land use.

The debate about the contribution of livestock to greenhouse gas emissions needs to be resolved and the statement by Professors Godfray and Myles, both of Oxford University, is helpful<sup>12</sup>. The majority of emissions from livestock are methane, which has a greater greenhouse gas warming potential than carbon dioxide but is much shorter lived in the atmosphere. Therefore, any reductions in livestock numbers, which reduce methane below current levels, has a more immediate effect in terms of reducing additional

warming than actions to reduce carbon dioxide emissions. Godfray and Myles argue that farmers should be rewarded for reducing 'increases in global warming', whether through reducing the number of livestock or cutting emissions per animal, and it is a persuasive argument. Critics will say that animal rearing is increasing elsewhere in the world so anything we do is insignificant. Supporters will say that it is setting an example and will develop systems that can be applied in other countries.

We also expect new types of farming with lower emissions, pollution, land use and environmental impacts to become more popular and attract more capital

investment. Growing plants indoors in a controlled environment, which is often called vertical farming, is becoming more economically viable as it is linked to lower cost renewable energy. We expect this sector to grow significantly in the next 10 years.

In the next few years, we expect most farm products to be linked to emission reduction targets. The key question for land managers is whether they will be paid for the reductions or whether it will become a requirement to be able to enter markets.

## TREE PLANTING

**Tree planting is seen as having an important role in reducing climate change as trees absorb and store carbon dioxide from the atmosphere. Planting can be used as a method to offset residual emissions<sup>13</sup>.**

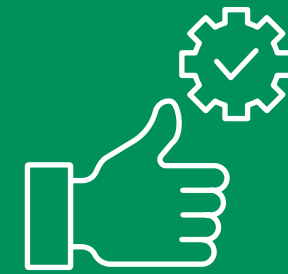
The challenges for forestry are whether enough trees will be planted. Readers may remember the bidding war at the 2019 General Election, when the main political parties stated that they would plant more trees than the others.

There is also the challenge of planting the right tree, in the right place for the right reasons. Some tree species will not survive the changes in climate that are already locked in, and some are more susceptible to the growing number of pests and diseases that are expected. Despite the risks, planting trees is one of the most rewarding things to do with land and more organisations are getting involved in buying land for planting or paying for trees to be planted.



## THE BNP PARIBAS REAL ESTATE AND STRUTT & PARKER APPROACH TO DECARBONISATION AND OFFSETTING

**Recommended best practice is that organisations should first cut emissions and then second use high quality carbon removal schemes for unavoidable residual emissions.**

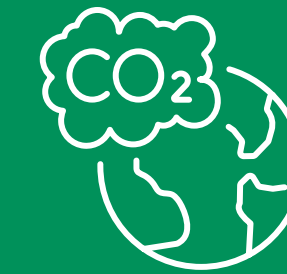


ORGANISATIONS SHOULD HAVE EVIDENCE THAT THEY ARE MAKING SERIOUS, CREDIBLE, AND RECORDED EFFORTS TO REDUCE THEIR OWN EMISSIONS.



THEY SHOULD USE CLEAR MESSAGING ABOUT THEIR USE OF CARBON REMOVAL SCHEMES I.E., THAT CARBON REMOVAL WITH SHORT-LIVED STORAGE, SUCH AS TREE PLANTING OR PEATLAND RESTORATION, CURRENTLY HAS A ROLE IN MITIGATING THEIR EMISSIONS WHILE THEY ARE ON THE JOURNEY TO NET ZERO AND DISCLOSE DISTINCTLY THEIR GROSS AND NET EMISSIONS.

Carbon removal schemes are sometimes called offsets or offsetting, or insets or insetting when the removal scheme is owned by the organisation. We expect many more organisations will develop plans for decarbonisation and offsetting in the next



CARBON REMOVAL IS DONE THROUGH HIGH QUALITY SCHEMES, SUCH AS THE WOODLAND CARBON CODE AND PEATLAND CODE.



THE ROLE OF SHORT-LIVED CARBON REMOVAL SCHEMES IS LIKELY TO DECLINE OVER TIME AS CARBON REMOVAL WITH LONG-LIVED STORAGE BECOMES MORE AVAILABLE AND AFFORDABLE. HOWEVER, MANY OF THE CARBON REMOVAL SCHEMES WITH SHORT-LIVED STORAGE, SUCH AS TREE PLANTING, ALSO PROVIDE OTHER VALUABLE BENEFITS, THAT ORGANISATIONS CAN MENTION IN THEIR OFFSETTING STRATEGIES.

five years than in the past five. If they do, the plans should follow best practice, in order to be effective and also reduce the risk of accusations of green washing. We recommend the following:

<sup>13</sup> - Although there are questions about the permanence of storage (as tree planting is considered to be carbon removal with short-lived storage), and timing of the sequestration of carbon dioxide by the trees (as it tends to be significant when the trees are 10-30 years old).

## WHAT YOU CAN DO

**The vast majority of credible national and global organisations think and state that climate change is an existential threat to humanity. The risk cannot be over-stated. It is not green scare-mongering.**

The effects on all aspects of living in the UK are now clear to see - extreme heat, flooding, food shortages, subsidence in buildings, changes in our plants and wildlife, and there are plenty more.

All businesses - and all people in their daily lives - can make changes for living with climate change and for reducing their contribution to it.

The main things to consider - for all businesses and all people - are how you heat buildings, what you eat and how you travel.

The best time to have started doing this was 20 years ago - like planting a tree - but the second-best time is now.



# Data Centres

December 2024



# Executive Summary

**The world has increasingly come to rely on data centres as central to our everyday practices as well as economic growth and technological advancement.**

The UK is no different. Demand for data centres has been driven by cloud computing, elevated internet usage and increased data usage through the rise of Artificial Intelligence (AI) and Internet Of Things (IOT). Even more pertinent is that these demand drivers continue to grow. The UK is currently failing to meet this growing demand with the existing supply of data centres, which are concentrated in London. Supply is hampered by significant challenges to new developments including

National Grid limitations, high energy consumption, access to power, cooling equipment requirements, and available development space in primary markets. The opportunity to overcome these challenges is massive and the UK has seen record levels of investment announced by private companies into crucial data centre development and an enhanced focus on the importance of this expanding real estate sub-sector from the new UK government.



# Data Centres: Central to Growth

In September 2024 the new UK Government classified data centres as critical national infrastructure, the same level of importance as water, energy, space and defence<sup>1</sup>.

These real estate units hold everything from smartphone data, NHS patient records and financial investment data and have been described by the UK Government as “the engines of modern life”<sup>2</sup>, to which critical incidents could have a devastating impact to the UK economy, not least because the data economy contributes over \$100 billion annually to the UK measured in job creation, efficiency savings and productivity gains<sup>3</sup>.

The growth of data centres in Europe is necessary to ensure data resiliency in health care, life sciences, government and education as all of these areas become more data and cloud centric<sup>4</sup>. And yet for every 100,000 citizens, Europe has 1MW of data centre space for every 12MW in the US. Europe must catch up with other major regions to avoid a technology crisis across all industries and to be able to compete globally, with a forecast 30-70% of Europe’s GDP at stake<sup>5</sup>.

## GLOBAL DATA CENTRE MARKET SIZE 2023 TO 2034 (\$ BILLION)

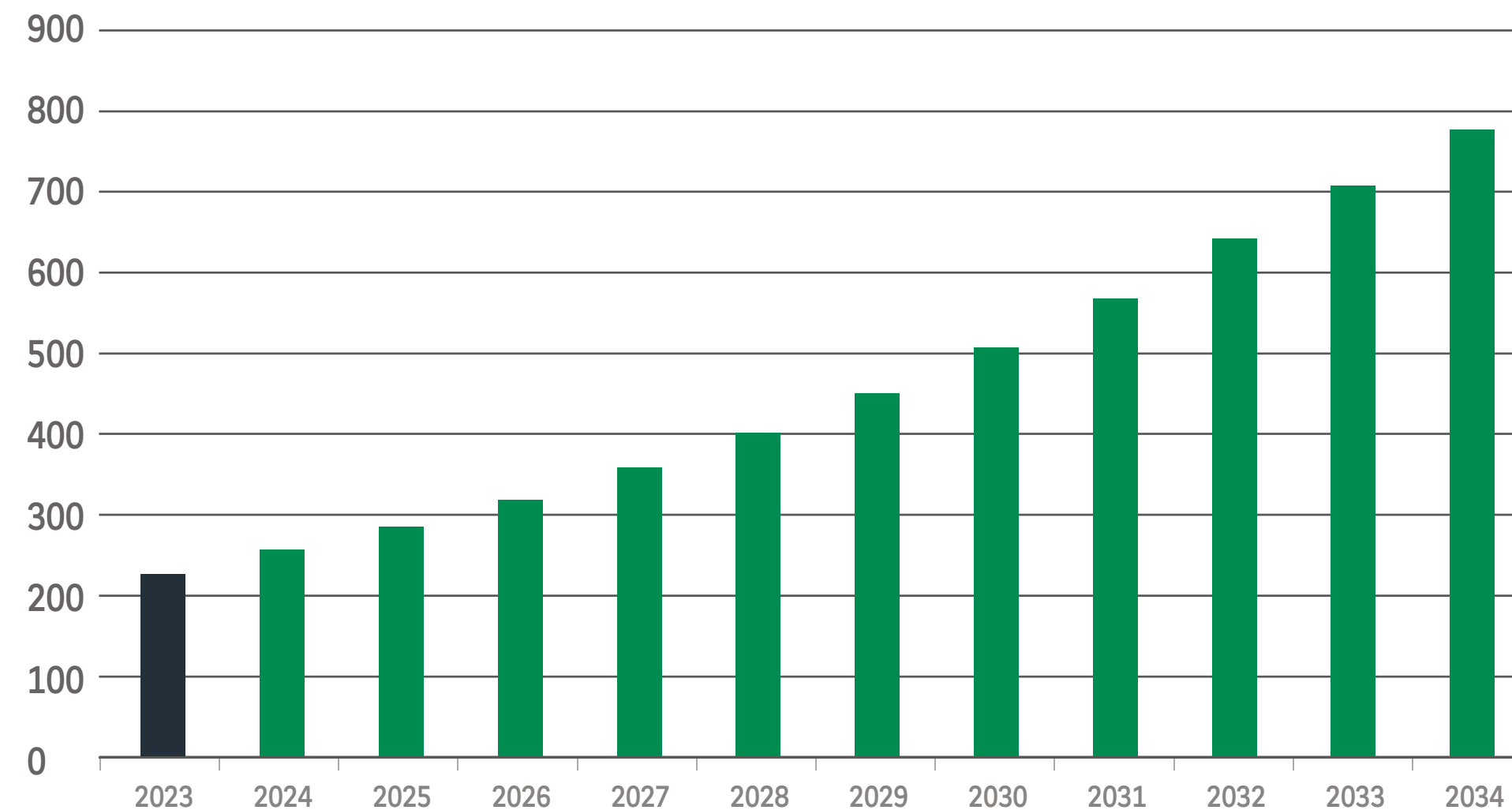


Figure 1: Data Centre market Size 2023 to 2034  
Source: Precedence Research (2024) Data Centre market Size 2023 to 2034  
[www.precedenceresearch.com/data-center-market#:~:text=The%20global%20data%20center%20market,11.72%25%20from%202024%20to%202034](http://www.precedenceresearch.com/data-center-market#:~:text=The%20global%20data%20center%20market,11.72%25%20from%202024%20to%202034)

Compared with the US, large European companies are less profitable, growing more slowly and spending 40% less on Research & Development (R&D). The proliferation of AI, the Bio Revolution and the cloud means that the UK and

Europe cannot fill the gap once met by strength in traditionally non-tech sectors which are now being transformed and advanced by technology, even including successful sectors in the UK and Europe like automotives and luxury goods<sup>6</sup>.

1 - Source: Department for Science, Innovation and Technology (2024) Data centres to be given massive boost and protections from cyber criminals and IT blackouts; [www.gov.uk/government/news/data-centres-to-be-given-massive-boost-and-protections-from-cyber-criminals-and-it-blackouts](http://www.gov.uk/government/news/data-centres-to-be-given-massive-boost-and-protections-from-cyber-criminals-and-it-blackouts)  
2 - Source: Department for Science, Innovation and Technology (2024) Data centres to be given massive boost and protections from cyber criminals and IT blackouts  
3 - Source: Digital Realty (2018) Digital Realty Publishes Report on Value of Data Economy for G7 Countries

## DATA CENTRE MARKET SHARE

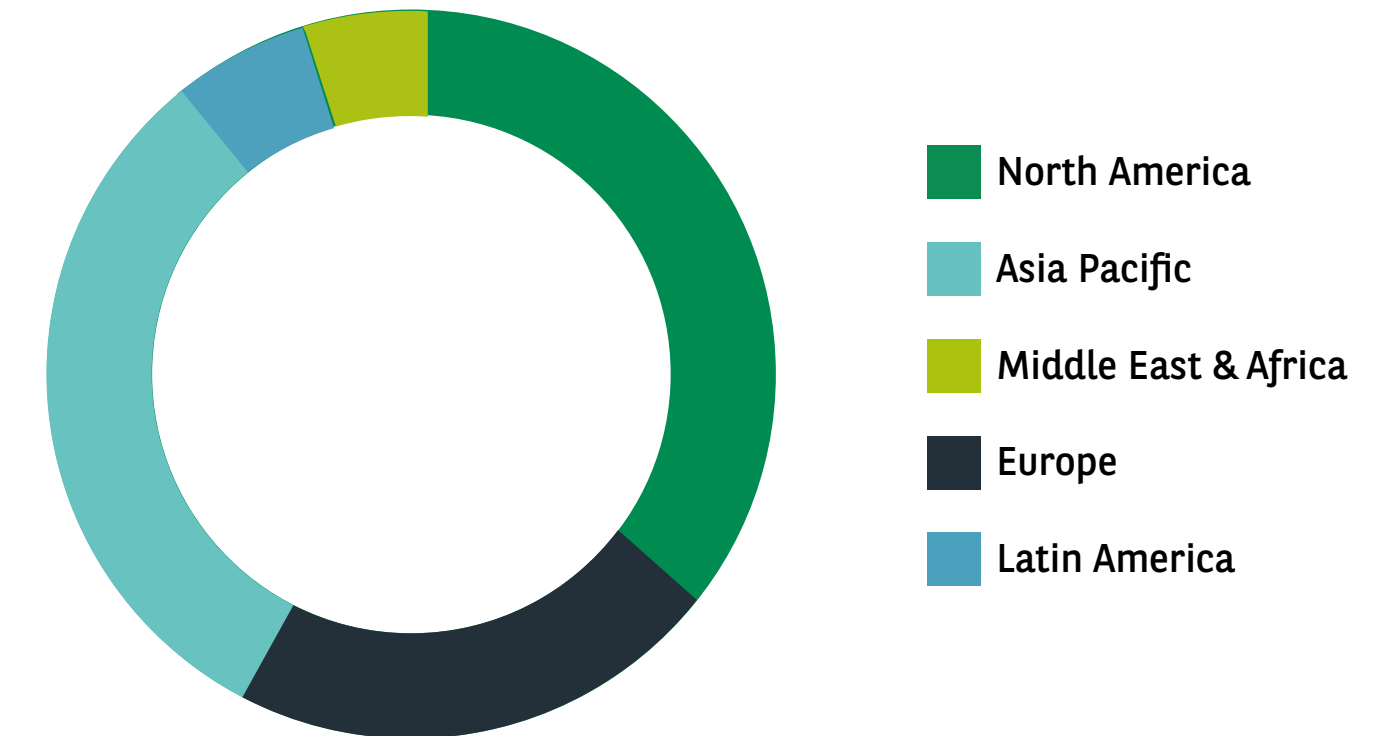


Figure 2: Data Centre Market Share by Region, 2023 Source: Precedence Research (2024) Data Centre market Size 2023 to 2034  
[www.precedenceresearch.com/data-center-market#:~:text=The%20global%20data%20center%20market,11.72%25%20from%202024%20to%202034](http://www.precedenceresearch.com/data-center-market#:~:text=The%20global%20data%20center%20market,11.72%25%20from%202024%20to%202034)

## PRIVATE INVESTMENT IN AI BY COUNTRY, 2023 (\$ BILLION)

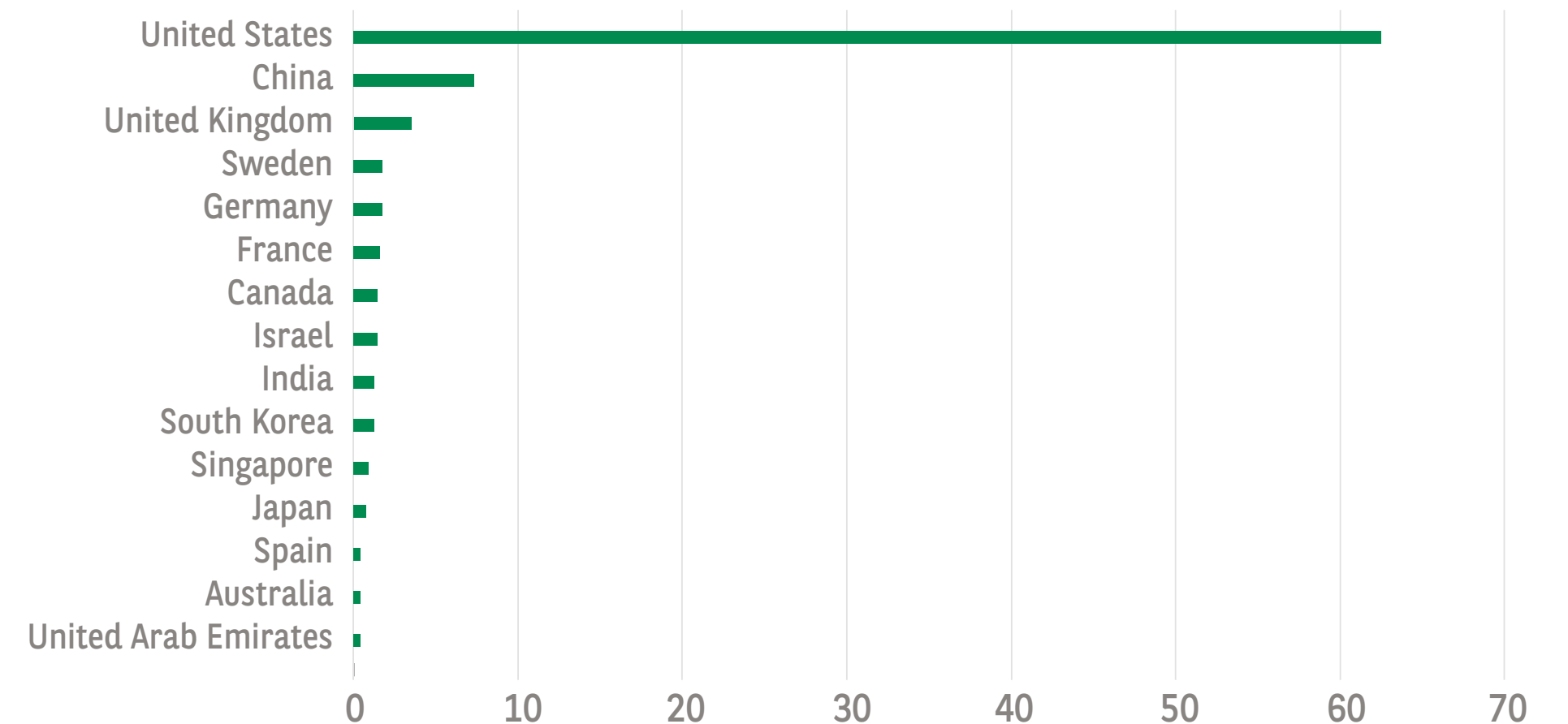


Figure 3: Private Investment in AI by Country, 2023 Source: European Parliament (2024) AI investment: EU and global indicators  
[www.europarl.europa.eu/RegData/etudes/ATAG/2024/760392/EPRS\\_ATA\(2024\)760392\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/ATAG/2024/760392/EPRS_ATA(2024)760392_EN.pdf)

4 - KPMG (2022) The Evolving Data Center Landscape - Source: [www.ukclimaterisk.org/](http://www.ukclimaterisk.org/)  
5 - McKinsey (2022) Securing Europe's future beyond energy: Addressing its corporate and technology gap  
6 - McKinsey (2022) Securing Europe's future beyond energy: Addressing its corporate and technology gap

European investment in technological R&D is lower than the US and China<sup>7</sup>, and private investment into AI in 2023 reached c.€9bn (EU and UK) compared to over €60bn in the US<sup>8</sup>. Presently, European investment cannot match that of Microsoft, Meta and Google into AI<sup>9</sup>. One reason for this is that the technology sector is inherent with risk and companies benefit in the US from being able to pivot on staffing to restructure as required. However, the recent announcement of investment into UK data centres may change this (see below).

## DATA OVERLOAD: ARTIFICIAL INTELLIGENCE AND REAL ESTATE

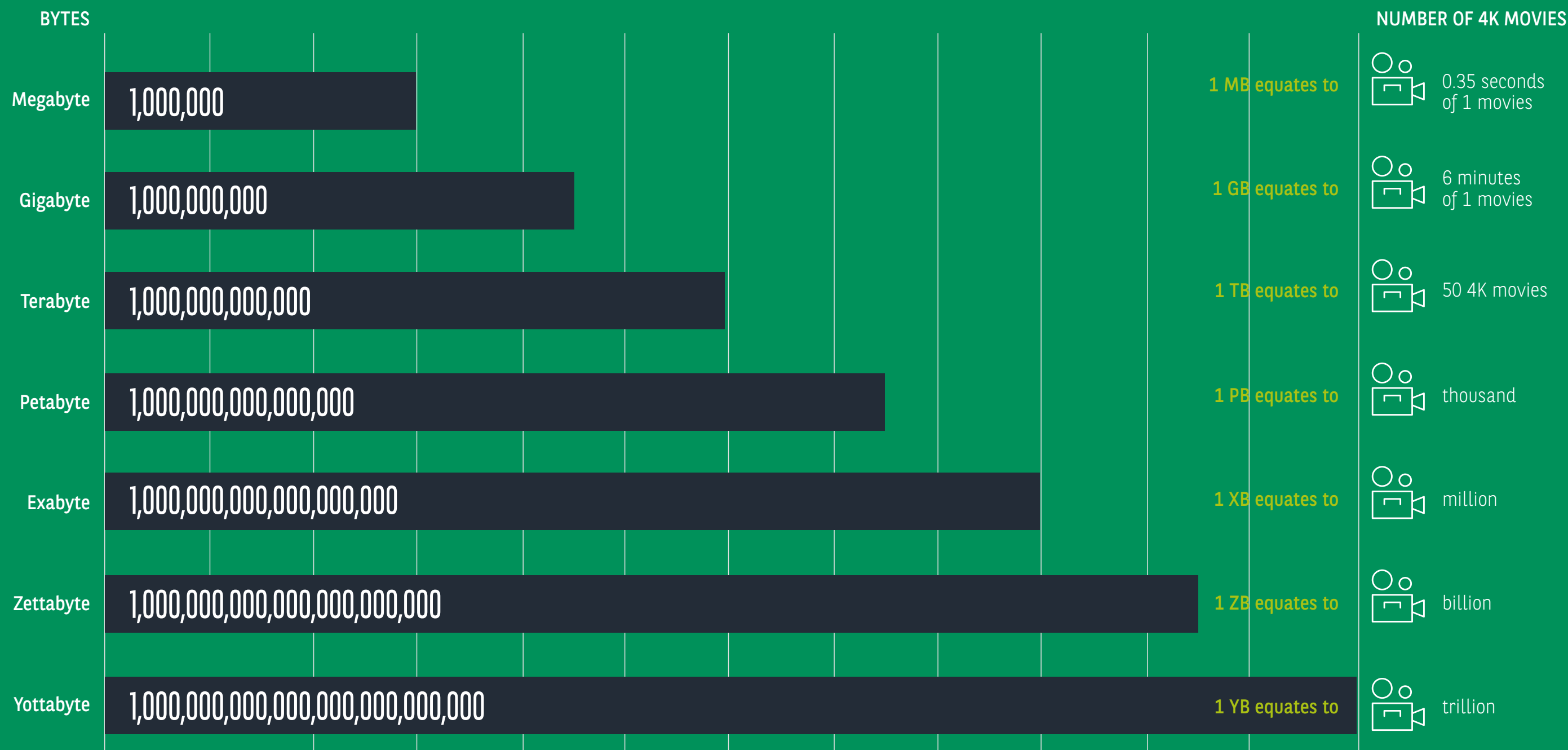


Figure 4: Data-driven products moving up the bytes scale Source: BNP Paribas Real Estate

Globally in 2020, 62.4 zettabytes of data was generated. This is expected to triple by 2025<sup>10</sup> and global total mobile network data traffic will grow to an estimated 466 exabytes per month by the end of 2029 (figure 5), with Western Europe in isolation growing 17% compound annual growth rate from 2023-2029<sup>11</sup>.

## GLOBAL MOBILE NETWORK DATA TRAFFIC (EB)

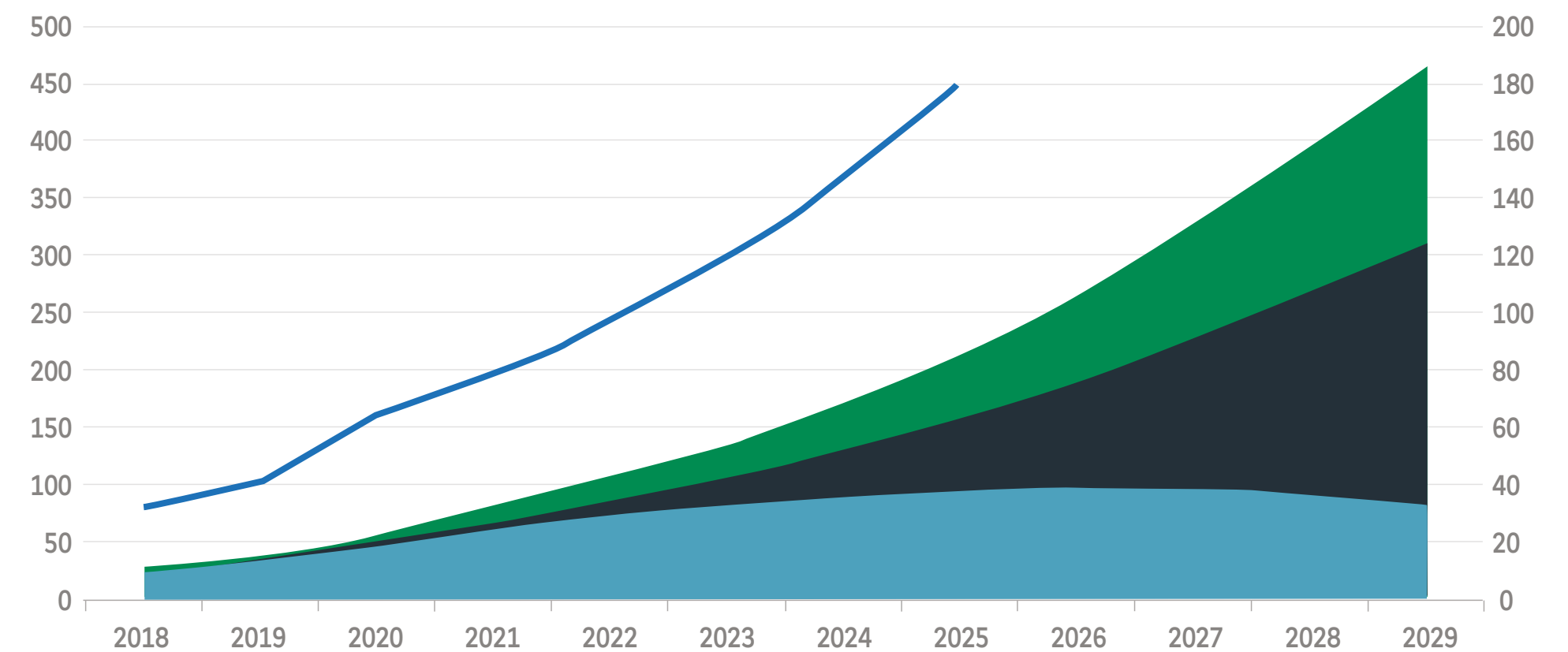


Figure 5: Mobile Data Traffic Outlook Source: Ericsson (2023) AI investment: EU and global indicators [www.ericsson.com/en/reports-and-papers/mobility-report/dataforecasts/mobile-traffic-forecast](http://www.ericsson.com/en/reports-and-papers/mobility-report/dataforecasts/mobile-traffic-forecast); Executive Summary IP Networks Research Service Source: Teleography (2024) Executive Summary IP Networks Research Service [www2.teleography.com/hubfs/assets/product-tear-sheets/product-page-content-samples/global-internet-geography/teleography-global-internet-geography-executive-summary.pdf](http://www2.teleography.com/hubfs/assets/product-tear-sheets/product-page-content-samples/global-internet-geography/teleography-global-internet-geography-executive-summary.pdf)

■ Mobile Data (2G, 3G, 4G)
 — Global data volume (zettabytes) (RHS)
 ■ Mobile Data (5G)
 ■ Fixed Wireless Access (3G, 4G, 5G)

Further demand for data centres in the UK will increasingly come from Generative Artificial Intelligence (Gen AI), which relies on high-performing, secure and stable data centres due to the large amount of data these models require. While predictive AI creates forecasts by using information user-fed into the model, Gen AI creates new, original content from users asking questions. AI apps will lead the next phase of data centres growth with millions of people using image generators and natural language processors<sup>12</sup>. For some context, the energy required to generate an image using AI is the same as charging a smartphone<sup>13</sup>. The energy requirements for these generative models are much more significant and impact on data centre growth forecast. In the US, which has nearly 40% of the global data centre market, future power consumption related to all AI could increase from 1GW in 2023 to 7GW by 2026<sup>14</sup>, and will offer further economic benefits<sup>15</sup>. For the UK, there are projected to be one million businesses with integrated AI-driven technologies by 2040<sup>16</sup>.

Further support for the growing demand in data centres in the UK comes from increased computer literacy post-pandemic. 96% of the UK can be described as 'online', around 50m people, which peaked in 2022 at 99% of the population<sup>17</sup>, which

can explain the considerable data usage from popular online activities (Figure 6.). Additionally, the global trend and forecast is for an increase in household devices being connected to the internet, which places more demand on data centre growth (Figure 7.). Furthermore, the UK government has committed that by 2030<sup>18</sup>, all populated areas in the country will have 5G access.

The National Grid must develop to allow further data centre growth in the UK where there are already 400-600 known data centres, strategically located to support London's financial sector which is data-intensive and requires data security<sup>19</sup>.

These already account for c.2.5% of the UK's electricity consumption, and AI is forecast to help raise this to c.6% by 2030 and could further rise to 35% of total electricity consumption by 2050<sup>20</sup>. The growth in cloud computing by UK businesses, the practice of hosting remote servers on the internet to store, process and manage data instead of a local server or PC<sup>21</sup>. The COVID-19 pandemic brought cloud computing into focus as a solution to workplace disruption, and the market for this in the UK (estimated at £41 billion in 2022) was expected to grow to £59 billion in 2024<sup>22</sup>.

## INTERNET OF THINGS CONNECTIONS WORLDWIDE (BILLIONS)

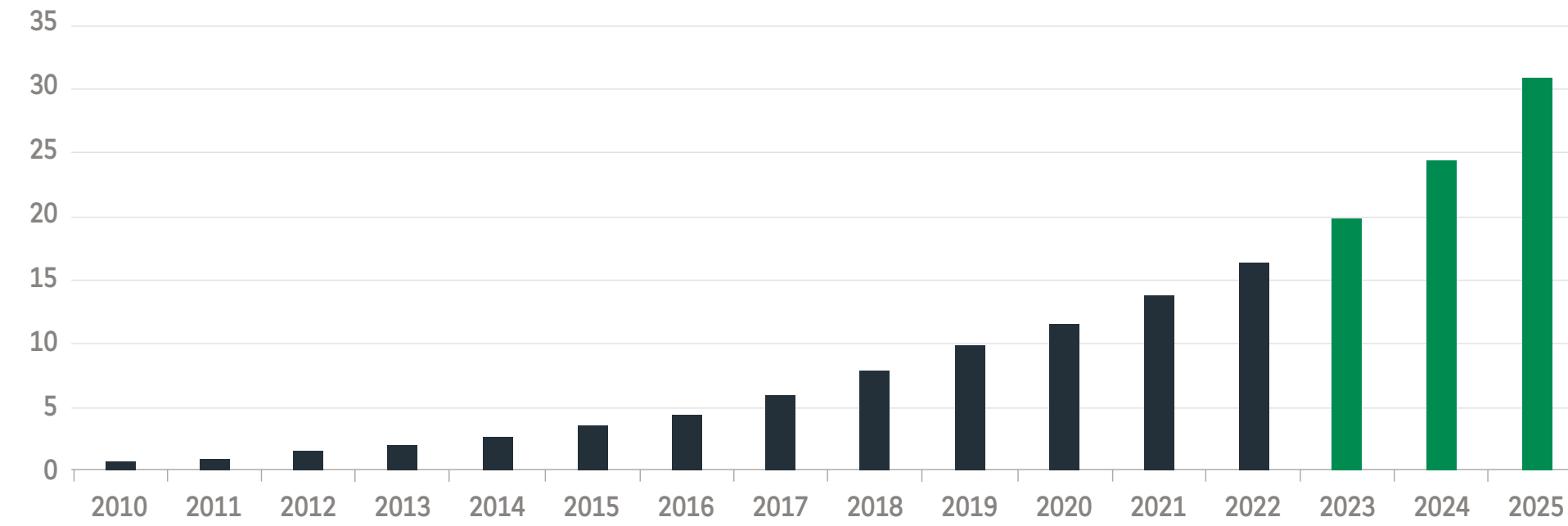


Figure 7: Worldwide devices connected to the internet' Source: Statista (2022) Internet of Things (IoT) and non-IoT active device connections worldwide from 2010 to 2025

	2015	2022	Change
<b>Internet users</b>	3bn	5.3bn	+78%
<b>Internet traffic</b>	0.6zb	4.4zb	+600%
<b>Data centre workloads</b>	180mn	800mn	+340%
<b>Data centre energy use (excluding crypto)</b>	200 Twh	240-340 Twh	+20-70%

Table 1: Internet and Data Centre Usage Source: International Energy Agency (2023) Tracking data centres and data transmission networks [www.iea.org/energy-system/buildings/data-centres-and-data-transmission-networks](http://www.iea.org/energy-system/buildings/data-centres-and-data-transmission-networks)

12 - EY (2023) Why data center industry operators need to keep up with growing AI demand  
 13 - MIT Technology Review (2023) Making an image with generative AI uses as much energy as charging your phone  
 14 - Schroders (2023) How AI is set to accelerate demand for data centres  
 15 - McKinsey (2024) Beyond the hype: New opportunities for gen AI in energy and materials  
 16 - Arizton (2024) United Kingdom Data Center Market - Investment Analysis & Growth Opportunities 2024-2029 [www.arizton.com/market-reports/uk-data-center-market-investment-analysis](http://www.arizton.com/market-reports/uk-data-center-market-investment-analysis)  
 17 - Lloyds Bank (2023) 2023 Consumer Index Survey

18 - UK Government (2023) UK Wireless Infrastructure Strategy  
 19 - Data Centres Today (2023) 5 Data Centre Considerations for the Financial Services Industry; <https://blog.vantage-dc.com/2023/11/09/5-data-center-considerations-for-the-financial-services-industry/>  
 20 - National Grid ESO (2022) Data centres: what are data centres and how will they influence the future energy system?  
 21 - European Commission (2017) Trends in data centre energy consumption under the European Code of Conduct for data centre energy efficiency  
 22 - Mintel (2022) UK Cloud Computing Market Report 2022 <https://store.mintel.com/report/uk-cloud-computing-market-report#accordion-subheading-1-product-toc>

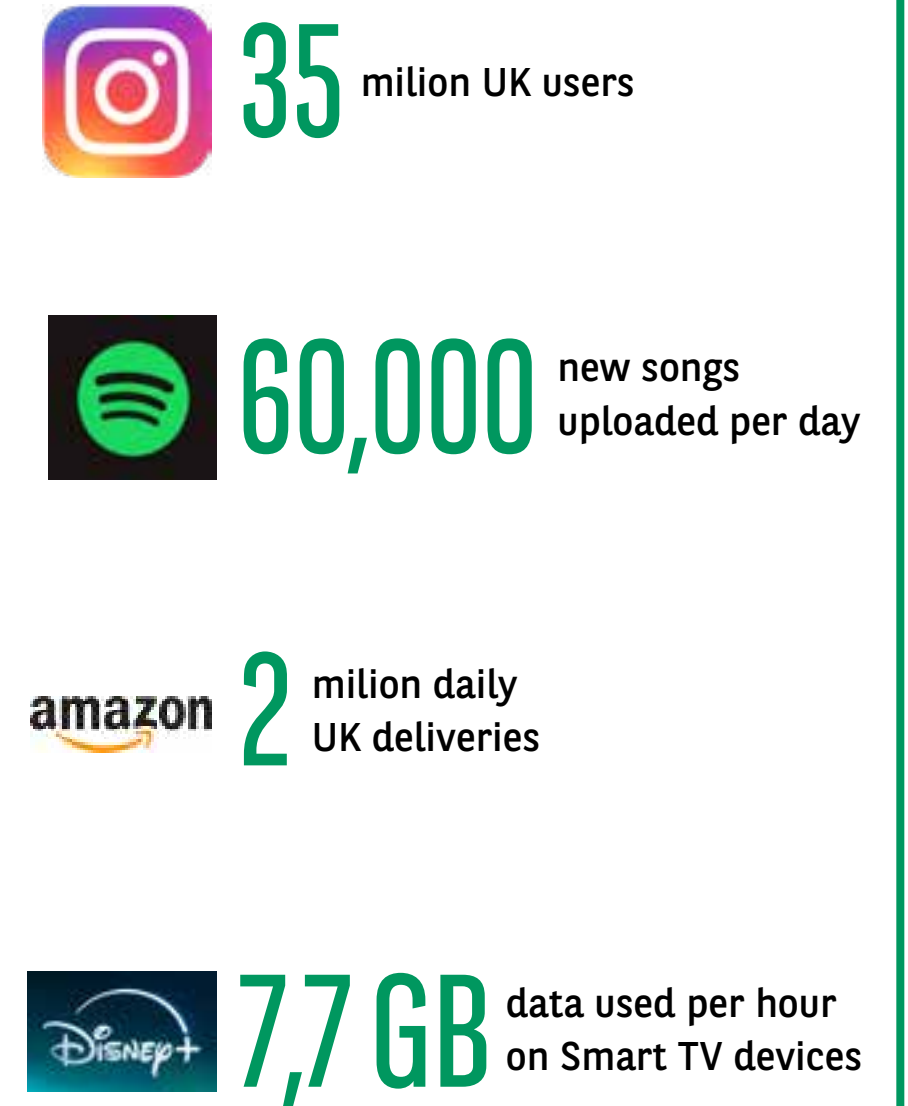


Figure 6: Examples of UK internet usage Source: Statista (2023) Number of Instagram users in the United Kingdom (UK) from September 2018 to June 2023; Music Business Worldwide (2021) Over 60,000 tracks are now uploaded to Spotify every day; The Guardian (2022) Amazon delivery drivers in UK raise alarm over real-terms pay cut; Disney (2023) Data usage and streaming quality on Disney+

# Obstruction to Construction

**What is clear is that demand is strong for data centres in the UK and Europe's FLAP-D markets, however there are numerous constraints, most notably the lack of availability of large development space required near dense urban areas on which to build them; urban land values; and strained grid capacities. The latter will define the next phase of data centre development, as both where and when these developments can happen is primarily dependent on access to power.**

Other challenges in the data centre economy come from cooling, decarbonising, energy efficiency and stacking servers more closely together<sup>23</sup>. Developments in cooling have come from immersion cooling, submerging components into fluids which absorb heat, thereby reducing the reliance placed on other mechanisms such as energy-consuming fans, and effective air flow management, creating corridors in data centre infrastructure to direct cold air to where and when it is needed most<sup>25</sup>. Development space constraints to Europe's prime data centre markets in the FLAP-D means that there is a strong possibility

that data centre construction will expand into other cities of Europe, particularly where low latency requirements are less vital, as can be the case with Gen AI. For the UK, development and operation costs are causing developers to look outside the M25. They may alternatively be attracted to secondary UK markets such as Manchester, characterised by a resilient grid network, modern electricity infrastructure, and strong fibre and transport connectivity<sup>26</sup>. Manchester also has available land to build on and available renewable power sources. Alternatively there may be opportunities in cities with low latency to London, such as Cardiff, further made attractive by lower land and development costs<sup>27</sup>.

The National Planning Policy Framework has been recently proposed to be amended by the new government to address restrictions in planning which prevent the development of commercial infrastructure on green belt land<sup>28</sup>. These proposed changes in planning would ease restrictions on where data centres can be built and would be welcomed in a sector with significant land requirements.

Despite the acceleration in internet usage and data centre workloads, improvements in IT hardware and cooling technology have meant that data centre energy use has been relatively minor (Table 1). This can also be explained by the development of smaller, more efficient nanochips required to operate data centres, which are being further developed by companies such as Nvidia, Amazon, Google and Microsoft in order to accommodate Gen AI<sup>29</sup>. Indeed, the benefit of having large data centres is to make these units as efficient as possible, as producing data centres at scale ultimately reduces energy consumption, increases reliability, reduces the total space data centres occupy and makes their maintenance easier<sup>30</sup>. Larger Gen AI models are more energy intensive than smaller models for specific tasks<sup>31</sup> therefore the development of these smaller models, along with increases in data centre efficiencies, could soften the considerable demand for data centres, and even allow users to run AI from their own computer without the need for data centres<sup>32</sup>.



However, the overwhelming evidence supports demand growth for the UK data centre sector, which must innovate in energy sourcing, cooling and planning to mitigate the challenges with power and land availability.

Addressing sustainability concerns through renewable adoption of cooling methods will be essential. Alongside this, diversifying the UK's location of data centres hubs will alleviate land pressures from London where demand is under-supplied (Table 2).

23 - McKinsey (2023) Investing in the rising data center economy

24 - Mytton (2021) Data centre water consumption; [www.nature.com/articles/s41545-021-00101-w](http://www.nature.com/articles/s41545-021-00101-w)

25 - Digital Realty The future of Data Center Cooling: Innovations for Sustainability ([digitalrealty.com](http://digitalrealty.com))

26 - Kaodata (2024) New Report Shows Greater Manchester is Sweet Spot for Data Centres

<https://kaodata.com/discover/news/new-report-shows-greater-manchester-is-sweet-spot-for-datacentres> [accessed 23/9/24]

27 - Vantage (2023) Why Castles and Data Centers Dot the Landscape in Wales Why Castles and Data Centers Dot the Landscape in Wales -

Data Centers Today | Vantage Data Centers ([vantage-dc.com](http://vantage-dc.com))

28 - UK Government (2024b) Proposed reforms to the National Planning Policy Framework Proposed reforms to the National Planning Policy Framework and other changes to the planning system - GOV.UK ([www.gov.uk](http://www.gov.uk))

29 - Financial Times (2024) Nvidia unveils powerful chip in push to extend dominance in AI market

30 - BNP Paribas Real Estate (2023) Note flash - Data Centres asset category set to flourish?

31 - MIT Technology Review (2023) Making an image with generative AI uses as much energy as charging your phone

[www.technologyreview.com/2023/12/01/1084189/making-an-image-with-generative-ai-uses-as-much-energy-as-charging-your-phone/](http://www.technologyreview.com/2023/12/01/1084189/making-an-image-with-generative-ai-uses-as-much-energy-as-charging-your-phone/)

32 - The Economist (2024) Meet the French startup hoping to take on OpenAI

# Crucial Investment into Critical Infrastructure

**SEGRO-owned potential sites across the UK and Europe forming their development pipeline (excluding under construction) and redevelopment of existing assets to provide a potential 1.2GW new data centre capacity.**

BNP Paribas Exane have taken the assumption that if 10MW roughly translates to 100,000 sq ft then then 1.2GW would mean that c.12m sq ft across Europe would be required from new or converted assets<sup>33</sup>.

Looking specifically at UK hyperscalers, if we consider these as units over 10,000 sq ft<sup>34</sup>, not only has the number of data centres being valued increased over time but the average rateable value of these units has almost doubled (see figure 10). Using the UK rating system as a measure for demand or forecasting growth is fraught with danger, however this c.50% increase in average rateable value between 2005 and 2023, along with long-term trends towards big data, would suggest that the sector will

remain attractive to investors looking for a return on investment. With an expected 10% pa growth in the UK data centre market and market vacancy rate expected to fall the market is in a strong position, particularly as over 50% of all space under construction is already pre-let<sup>35</sup>.

Major investments in the UK infrastructure (see Table 2) will come with Google's \$1 billion data centre in Waltham Cross<sup>36</sup> and Microsoft's £2.5bn investment in London locations<sup>37</sup>. Furthermore, Amazon plans to invest £8bn in UK data centres over a 5 year period to build, operate and maintain data centres in and around London, forecast to contribute £14bn to UK GDP by the end of 2028 and create 14,000 British jobs<sup>38</sup>. DC01UK have also submitted plans to build Europe's fastest data centre in Hertfordshire, which alone would provide over 13,000 jobs across the country<sup>39</sup>.

Investors are clearly comfortable that the opportunity in UK data centre development will lead to reward, and it's easy to see why given the surge in demand and insufficient supply. However, there are risks associated with any real estate sector. The initial capital deployment to build a data centre is considerable, reportedly between

## UK DATA CENTRE RATEABLE VALUE

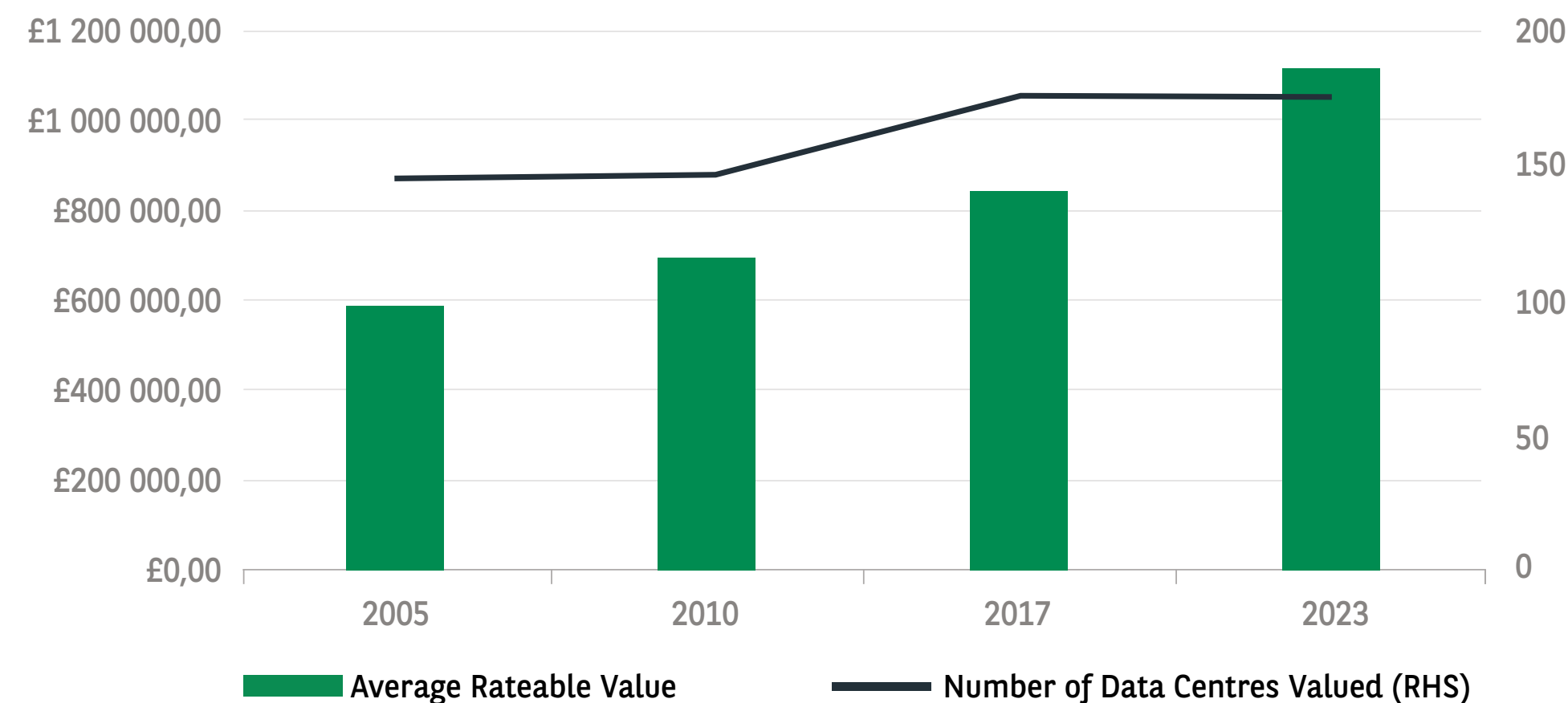


Figure 10: UK Data Centre Rateable Value Source: BNP Paribas Real Estate; Valuation Office Agency [www.gov.uk/government/organisations/valuation-office-agency](http://www.gov.uk/government/organisations/valuation-office-agency) [accessed 9/9/24]

Data Centre Developer	Data Centre Site Location	Planned UK Investment
Google	Waltham Cross	\$1 billion
Microsoft	Various London locations	£2.5 billion
Amazon	Various London locations	£8 billion
Blackstone	Blyth, Northumberland	£10 billion
DC01UK	Hertfordshire	£3.75 billion
CloudHQ	Didcot, Oxfordshire	£1.9 billion
ServiceNow	London and Northampton (expanding existing infrastructure)	£1.15 billion
CyrusOne	Various	£2.5 million
CoreWeave	Various	£750 million

Table 2: Planned UK Data Centre Investments Source: Business Matters (2024) Google to build new \$1bn data centre in Waltham Cross <https://bmmagazine.co.uk/news/google-to-build-new-1bn-data-centre-in-waltham-cross/>; Data Center Dynamics (2023) UK: Microsoft plans £2.5bn investment in AI data centers [www.datacenterdynamics.com/en/news/uk-microsoft-plans-25bn-investment-in-ai-data-centers/](http://www.datacenterdynamics.com/en/news/uk-microsoft-plans-25bn-investment-in-ai-data-centers/); Reuters (2024) Amazon to invest \$10 billion in UK data centres [www.reuters.com/technology/amazon-invest-10-billion-uk-data-centres-2024-09-10/](http://www.reuters.com/technology/amazon-invest-10-billion-uk-data-centres-2024-09-10/); Department for Science, Innovation and Technology (2024) Data centres to be given massive boost and protections from cyber criminals and IT blackouts; UK Government (2024) Tech Secretary welcomes foreign investment in UK data centres which will spur economic growth and AI innovation in Britain [www.gov.uk/government/news/tech-secretary-welcomes-foreign-investment-in-uk-data-centres-which-will-spur-economic-growth-and-ai-innovation-in-britain#:~:text=The%20investments%2C%20announced%20as%20part,growth%20by%20partnering%20with%20business.;](http://www.gov.uk/government/news/tech-secretary-welcomes-foreign-investment-in-uk-data-centres-which-will-spur-economic-growth-and-ai-innovation-in-britain#:~:text=The%20investments%2C%20announced%20as%20part,growth%20by%20partnering%20with%20business.;) UKREiF (2024) Blackstone announces £10bn investment into UK AI data centre [www.bobsguide.com/blackstone-to-invest-10bn-in-europes-largest-ai-data-centre/](http://www.bobsguide.com/blackstone-to-invest-10bn-in-europes-largest-ai-data-centre/); ServiceNow (2024) ServiceNow pledges \$1.5bn investment into UK business over five years [www.servicenow.com/company/media/press-room/uk-expansion-5-year-investment.html](http://www.servicenow.com/company/media/press-room/uk-expansion-5-year-investment.html)

\$10-12 million per megawatt<sup>40</sup>, therefore if end demand does not materialise the investor could make a substantial loss. This is brought into focus by the limited pool of tenants who will occupy hyperscaler data centres. Unlike other real estate sectors, the occupier requirements to lease this space is highly specialised, so investors have a smaller number of occupiers to fill their space.

Other concerns include the risk of obsolescence. In a sector which is constantly evolving and advancing it is foreseeable that data centre real estate, or just data centres, or that this type of real estate could be left behind at a rate much faster than other commercial properties. And finally, there is the considerable environmental risk relating to the production of carbon inherent with the sector, which data centre operators will have to either innovate to mitigate or spend to offset.



## SEGRO H1 2024 REPORT

**c.200m** additional rental opportunity from data centres

**£1,357m** asset value in the UK from data centres

**245,888sq m** of lettable space in the UK

**£233 per sq m** headline rent for UK data centres

Figure 9: Segro H1 2024 Report Source: SEGRO (2024) H1 2024 Report [www.segro.com/investors/financial-results-centre/2024-half-year-results](https://www.segro.com/investors/financial-results-centre/2024-half-year-results)

40 - Secure I.T. Environments Ltd What Does it Cost to Build a Data Centre <https://siteltd.co.uk>

Data Centre Provider	Investor
Cyrus One	BlackRock
Vantage Towers	BlackRock
Global Switch	EQT*
Equinix	GIC
Apto	Pimco
Yondr Group	Apollo Global Management
QTS	Blackstone
Global Technical Realty	KKR
Cyxtera	Brookfield
Compass	Brookfield

\*Proposed

Table 3 Data Centre Providers and their Investors Source: Cyrus One (2022) KKR and GIP Complete Acquisition of CyrusOne [www.cyrusone.com/resources/press-releases/kkr-and-gip-complete-acquisition-of-cyrusone](https://www.cyrusone.com/resources/press-releases/kkr-and-gip-complete-acquisition-of-cyrusone); Digital Bridge (2024) [www.digitalbridge.com/news/2024-06-13-vantage-data-centers-completes-92-billion-equity-investment-led-by-digitalbridge-and-silver-lake](https://www.digitalbridge.com/news/2024-06-13-vantage-data-centers-completes-92-billion-equity-investment-led-by-digitalbridge-and-silver-lake) Data Centre Dynamics (2023) EQT still interested in acquiring Global Switch - report EQT still interested in acquiring Glob Vantage Data Centers Completes \$9.2 Billion Equity Investment Led by DigitalBridge and Silver Lake; Data Centre Dynamics (2019) Equinix and GIC to form 'xScale' European hyperscale data center joint venture, target cloud giants Equinix and GIC to form 'xScale' European hyperscale data center joint venture, target cloud giants - DCD; GIC (2024) Equinix Agrees to Form Greater Than \$15B JV to Expand Hyperscale Data Centers in the U.S. and Support Growing AI and Cloud Innovation [www.gic.com.sg/newsroom/all/equinix-agrees-to-form-greater-than-15b-jv-to-expand-hyperscale-data-centers-in-the-u-s-and-support-growing-ai-and-cloud-innovation/](https://www.gic.com.sg/newsroom/all/equinix-agrees-to-form-greater-than-15b-jv-to-expand-hyperscale-data-centers-in-the-u-s-and-support-growing-ai-and-cloud-innovation/) Data Centre Dynamics (2023b) Real estate investor Pimco launches new European hyperscale provider Apto Real estate investor Pimco launches new European hyperscale provider Apto - DCD; Data Centre Magazine (2024) DigitalBridge Acquires Yondr Group to Meet Global AI Demands <https://datacentermagazine.com/hyperscale/digitalbridge-acquires-yondr-group-to-meet-global-ai-demands/>; Data Centre Dynamics (2023c) Blackstone & QTS to spend \$8bn building new data centers, as investor prepares for "once in a generation" AI boom Blackstone & QTS to spend \$8bn building new data centers, as investor prepares for "once in a generation" AI boom - DCD; Data Centre Dynamics (2020) KKR commits \$1bn to new hyperscale builder, Global Technical Realty [www.datacenterdynamics.com/en/news/kkr-commits-1bn-new-hyperscale-builder-global-technical-realty/](https://www.datacenterdynamics.com/en/news/kkr-commits-1bn-new-hyperscale-builder-global-technical-realty/); Data Centre Dynamics (2024b) Brookfield completes \$775m deal for bankrupt Cyxtera Brookfield completes \$775m deal for bankrupt Cyxtera - DCD

# Outside the Box Thinking

**The huge demand caused by drivers outlined above gives cause for thought on innovative solutions to the UK's lack of data centre supply.**

As the UK's manufacturing industry grows and develops, industrial properties which were once considered essential may fall into disuse. This leaves brownfield sites from former manufacturing sites, paper mills, power stations etc. which may be prime for redevelopment into data centres. What is key on these sites is not the properties themselves, rather the infrastructure which lies underground meaning that the necessary cabling to the nearest power substation is already in place. This access to power is likely to dominate data centre developers' considerations in the UK as readily available power becomes increasingly constrained.

Could the availability of land for development and its cost, along with above average access to renewable energy make Scotland the next hub for data centre development in the UK? The country benefits from a colder climate which reduces the need for carbon-producing cooling equipment. Furthermore, there is now a reduced importance in low latency for data centres because this is less of a requirement for Gen AI. This could mean that a more remote data centre development, away from data-heavy industries in London, is less prohibitive.

Other potential sites for data centre development may come from existing real estate which is no longer required or fit for purpose. There are shopping centres throughout the UK which are ripe for redevelopment, and while some of these will be successfully reimaged and have renewed life, others will not.

Business parks too have suffered from higher vacancy rates following on from the Covid-19 pandemic.

Both real estate sub-sectors are traditionally located relatively close to cities and yet would provide the lot size of land required for data centres. While these types of property would have to be demolished to allow for data centre development, they already benefit from having access to power.

As ESG concerns come to the fore for the UK government and for commercial property occupiers, data centres could be utilised more efficiently. The new Labour government has set targets for new homes to be built and these homes will require heating. Given the considerable heat produced from data centres, there is perhaps an opportunity for that heat to be captured and harnessed to heat local homes.



## Key Terminology



**Co-location** - A data centre owned by one company which rents out their facilities on a rack-by-rack basis such as Equinix and Digital Realty.



**FLAP-D** - This refers to the prime data centre markets in Europe, specifically located in Frankfurt, London, Amsterdam, Paris and Dublin.



**Hyperscaler** - Data storage on a gigantic scale containing critical computing and network infrastructure operated by companies such as AWS, Meta, Google, and Microsoft.

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If you have any queries or would like to discuss any of these topics further, get in touch with one of our experts.



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