LICHFIELDS

# Buckinghamshire's Modern Economy

Final Report
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# Contents

# Introduction

# 1.0 Introduction

## The December 2024 update to the National Planning Policy Framework introduced the requirement to plan for development that meets the needs of a 'modern economy'.

1.1 The December 2024 update to the National Planning Policy Framework (NPPF) introduced the concept of planning for a 'modern economy'[1]. In Paragraph 86c, the NPPF states that planning policies should:

*"...pay particular regard to facilitating development to meet the needs of a modern economy, including by identifying suitable locations for uses such as laboratories, gigafactories, data centres, digital infrastructure, freight and logistics."*

1.2 This report has been prepared by Lichfields on behalf of Buckinghamshire Council (the 'Council') to review the development potential for the 'modern economy' uses identified within the NPPF. The report considers the existing representation of these modern economy sectors in Buckinghamshire before subsequently reviewing their growth potential within the area and the extent to which their particular location drivers indicate potential for future growth and the associated planning policy implications.

1.3 The assessment within this report draws upon Lichfields' specially designed framework, based on three stages of analysis:

1. Define the modern economy;
2. Identify areas of growth potential; and
3. Establish planning and delivery implications.

1.4 The modern economy sectors cannot necessarily be analysed using a conventional 'predict and provide' approach, or by using forecasts, owing to the often rapidly evolving nature of the need for space for the modern economy. As such, the framework applies a comprehensive approach that is sensitive to the individual attributes of each modern economy sector, acknowledging the synergies between these sectors and the wider local and national economy.

1.5 The framework pays particular attention to the comparative local advantages within individual sectors of the modern economy, recognising that the objective of development in the modern economy is to support the national growth agenda. As such, emphasis should be placed on development that supports modern economy sectors for which Buckinghamshire demonstrates strong existing supply and demand conditions, in addition to future growth potential.

1.6 This report considers the existing representation of these sectors in Buckinghamshire and reviews the extent to which there is potential for future growth within the area.

1.7 While a standalone document, this report is designed to be read alongside the Buckinghamshire Employment Land Evidence Study. The strategic requirements of planning for most of the modern economy sectors (except for laboratories which are included as a class E research and development use) are considered to be in addition to the indigenous requirements for employment floorspace and land considered within the Employment Land Evidence Study.

1.8 This introductory section sets out the definition of the modern economy and an overview of alignment with both national- and local-level policy and strategy (Sections 2.0 and 3.0). Subsequently, the remainder of this report is structured as follows:

**Baseline Position**

- **Section 4.0** defines the extent and demand for each industry associated with the modern economy.
- **Section 5.0** analyses the supply chains and clusters of activity present locally.
- **Section 6.0** presents historic and future projected employment figures across the four industries.

**Growth Potential**

- **Section 7.0** looks at the foundations for growth in Buckinghamshire in terms of labour, skills and comparative advantage.
- **Section 8.0** considers the industry outlook across the four sectors, including a review of planning applications in Buckinghamshire.

**Conclusions**

- **Section 9.0** sets out overall conclusions and policy implications.

# 2.0 Defining the Modern Economy

National planning policy and the UK Industrial Strategy both establish the need to support development that enables growth of high-potential sectors.

2.1 The 'modern economy' forms part of the Government's drive to achieve a greater quantum of commercial development in high-growth sectors. To achieve this, the NPPF now requires local planning authorities to proactively support and encourage the development of these sectors through the planning system, in both policy-making and decision-making.

## The Modern Economy within National Strategy and Policy

### National Planning Policy Framework

2.2 The Government's December 2024 update to the NPPF[2] requires planning policies to:

*"(a) set out a clear economic vision and strategy which positively and proactively* ***encourages sustainable economic growth****, having regard to the national industrial strategy and any relevant Local Industrial Strategies and other local policies for economic development and regeneration;…*

*"(c) pay particular regard to facilitating development to* ***meet the needs of a modern economy****, including by identifying suitable locations for uses such as* ***laboratories, gigafactories, data centres, digital infrastructure, freight and logistics;*** *…*

*"(e) be flexible enough to* ***accommodate needs not anticipated in the plan****, and allow for new and flexible working practices and spaces to enable a rapid response to changes in economic circumstances."* (paragraph 86, emphasis added).

2.3 It further establishes that planning policies and decisions *"should recognise and address the specific locational requirements of different sectors"* (paragraph 87). This includes:

*"(a) clusters or networks of knowledge and data-driven, creative or high technology industries; and for new, expanded or upgraded facilities and infrastructure that are needed to support the growth of these industries (including data centres and grid connections);*

*(b) storage and distribution operations at a variety of scales in suitably accessible locations that allow for the efficient and reliable handling of goods, especially where this is needed to support the supply chain, transport innovation and decarbonisation; and*

*(c) the expansion or modernisation of other industries of local, regional or national importance to support economic growth and resilience."*

2.4 Within the supporting NPPF consultation guidance and outcome[3], paragraph 3 of Chapter 7 defines the four "*key industries"* of the modern economy:

a. Laboratories

b. Gigafactories (battery cell manufacturing plants)

c. Digital infrastructure (including data centres)

d. Freight and logistics

2.5 This report considers the modern economy to be characterised by these four industries and their associated land uses. In terms of employment land implications, 'digital infrastructure' is taken to refer to data centres.

### The UK's Modern Industrial Strategy

2.6 The UK's Modern Industrial Strategy[4] establishes eight growth-driving sectors, known as the 'IS-8': advanced manufacturing; clean energy; creative industries; defence; digital and technologies; financial services; life sciences; and professional and business services.

2.7 The IS-8 broadly overlap with the modern economy sectors set out within the NPPF with the exception of freight and logistics; this sector is instead recognised for its *"vital contribution to the UK economy and the competitiveness of the IS-8"* (p.89).

2.8 The Industrial Strategy places its focus on *"sectors with the greatest potential to raise national levels of investment in productivity"* and to *"spread prosperity to all parts of the country"* (p.18). It takes a place-based approach, targeting efforts *"on the city regions and clusters with the highest potential to support our growth-driving sectors"* (p.22).

2.9 Clusters are acknowledged for their role in supporting *"capital-intensive sectors, often with significant demands for land and power"* and their influence on *"the*

*competitiveness of the IS-8 and national economic resilience"* (p.95). However, industry consultation responses noted the need to overcome constraints from a lack of sufficient grid connections and investment-ready sites.

2.10 The Industrial Strategy also addresses skills shortages within 'foundational and frontier' industries, citing a low proportion of vocational learners in engineering, manufacturing and construction compared to the OECD average, in addition to a lack of flexibility and adaptability within the current skills profile. To tackle this, the Strategy sets out a range of proposed interventions across skill levels and age groups with a focus on the skills required for the IS-8.

2.11 In alignment with the December 2024 update to the NPPF, the Industrial Strategy sets out the Government's planned interventions within the planning sector to remove barriers and encourage investment. This includes a focus on the modern economy land uses identified within the NPPF, introducing an opt-in scheme for gigafactories, laboratories and data centres to be designated as Nationally Significant Infrastructure Projects (NSIPs), in addition to reducing pre-application timescales for infrastructure projects and the establishment of AI Growth Zones to fast-track development.

**Plan for Change: Milestones for mission-led government**

2.12 In tandem with the additions to the NPPF, the modern economy is reflected in the Government's Plan for Change[5] which cites that Britain *"lacks other key infrastructure that we should be able to rely on such as transport and energy, or gigafactories and data centres needed for industries of the future"* (p.23).

2.13 The long-term mission within the Plan for 'Rebuilding Britain' includes making it easier to *"build vital infrastructure such as roads, railways, broadband connections and laboratories needed for a modern economy to thrive"* (p.23). Despite its stated ambitions to 'kickstart economic growth', there are no 'milestone' commitments for the development of modern economy facilities and infrastructure – reflecting the nuance and sensitivities in aligning local development decisions with the national growth agenda.

## Defining modern economy industries

2.14 The modern economy as defined within the NPPF relates to land uses rather than defined economic activities. For example, the activities conducted in a laboratory can vary greatly between 'wet labs' focusing on life sciences and pharmaceuticals and 'dry labs' specialising in computing and robotics.

2.15 While a focus on land use is appropriate for planning purposes, it needs to be 'translated' to typical industrial definitions to establish the existing footprint and growth potential of the modern economy in a particular area. Official statistics from the ONS and other government sources are primarily based on the 2007 Standard Industrial Classification (SIC 2007) system, and data from these sources are required to gain a deeper picture of prevailing conditions and for analysing industry forecasts.

2.16 **Table 2.1** presents the SIC 2007 group definitions which are applied throughout this report: these sectors represent a best-fit to the direct activities associated with the modern economy. It should be noted that no one data source will be able to provide a fully comprehensive view of the existing presence or future growth potential of the modern economy sectors. As such, these SIC definitions are applied to a range of datasets.

2.17 It is also important to establish upstream and downstream linkages and interdependencies within the modern economy supply chains. Identifying the presence of these activities is important to understanding the locational factors for modern economy businesses, as clusters do not solely relate to firms within the same sector, but also those within the wider industry supply chains. These supply chains are identified using input-output tables from the ONS[6] which show supply and use linkages between the outputs of different industries in the economy.

2.18 Within the Lichfields framework, industries that feed into to the four modern economy industry groupings are defined as 'Tier 2' feeder industries to the modern economy. The Tier 1 sectors are provided in **Table 2.1**, and the Tier 2 sectors for each modern economy industry are shown in **Appendix 1**.

**Table 2.1** Modern economy sectors

| Industry | Sector (SIC 3-digit) |
|---|---|
| Laboratories | 72.1: Research and experimental development on natural sciences and engineering |
| Gigafactories | 27.2: Manufacture of batteries and accumulators<br>29.1: Manufacture of motor vehicles |
| Digital Infrastructure | 63.1: Data processing, hosting and related activities; web portals |
| Freight | 49.2: Freight rail transport<br>49.4: Freight transport by road and removal services<br>50.2: Sea and coastal freight water transport<br>50.4: Inland freight water transport<br>51.2: Freight air transport and space transport |
| Logistics | 52.1: Warehousing and storage<br>52.2: Support activities for transportation |

# 3.0 Local Policy and Strategic Alignment

The priorities of Buckinghamshire's emerging economic strategy exhibit strong synergy with the development of modern economy land uses.

**Emerging Buckinghamshire Economic Strategy**

3.1 The Economic Strategy, under development as of April 2025, is to provide a refresh and update to the 2019 Buckinghamshire Local Industrial Strategy. The overarching economic vision to 2035 includes leveraging *"locational advantages"* and *"globally leading industries,"* while the aim of the Strategy is to *"increase Buckinghamshire's economic growth through improved productivity."*

3.2 The Strategy highlights existing challenges on both the demand-side and supply-side of the economy. Demand-side factors include weak investment, in both the public and private sectors, and the high concentration of small and medium-sized enterprises (SMEs) restricting growth and innovation, and which lack the resources to successfully bid for innovation grants. Supply-side factors listed include labour skills gaps and mismatches, weak public transport links and high levels of congestion, and a lack of the *"right mix"* of commercial premises for businesses.

3.3 Particular attention is paid to the role of Pinewood, Silverstone and Westcott in research and innovation activity within Buckinghamshire. The comparative advantage of each cluster is mapped against the eight priority sectors identified within the Industrial Strategy. Of relevance to the Modern Economy sectors, all three sites are identified for their specialism in technological advances, while Westcott and Silverstone are particularly noted for their capabilities in space and advanced manufacturing. In addition, Woodlands EZ focuses on the MedTech industry.

3.4 Based on the existing challenges and identified opportunities, the Strategy establishes five strategic priorities:

1. Growing our high-value sectors
2. Enhancing place and infrastructure
3. Investing in people and skills
4. Fostering innovation
5. Supporting partnerships and collaboration

3.5 These strategic priorities are well-suited to promoting the development of facilities and infrastructure to support a modern economy within Buckinghamshire. In particular, an emphasis on high potential clusters will be of particular importance to building modern economy capabilities, as is noted throughout the remainder of this report.

**Buckinghamshire Productivity Review**

3.6 Linked to the emerging Economic Strategy, in 2024 the Council commissioned a review of productivity in Buckinghamshire to understand the sharp decline in Gross Value Added (GVA) per hour worked in recent years[7]. The hypothesis put forward by the review suggests that productivity declines could be a result of the sectoral structure of the Buckinghamshire economy, with a skew toward higher growth in low productivity sectors, or alternatively due to underperformance of high value sectors in Buckinghamshire.

3.7 The review identifies low levels of investment, skills gaps and mismatches, and a high proportion of SME businesses as key explanatory factors for recent trends in productivity performance. In addition, Buckinghamshire has lower levels of innovation – as measured by Innovate UK funding – than the national average. However, pockets of innovation are located within the Enterprise Zones at Silverstone, Woodlands and Westcott, and at Pinewood Studios.

3.8 Relevant recommendations of the review include intervention to encourage research and innovation and unlocking available sites, in addition to connectivity improvements and increasing the supply of affordable housing.

**The Buckinghamshire Economy: Industry, Cluster and Innovation Strengths**

3.9 Published in March 2025, the *Industry, cluster and innovation strengths* report seeks to identify success factors among firms and innovators in Buckinghamshire, while also addressing areas where economic activity would benefit from improved efficiency or quality[8]. The report identifies highly-specialised clusters of activity in the wholesale of pharmaceutical goods and of computer equipment and software. Related to the modern economy, the report highlights that by business count Buckinghamshire has an established presence in life sciences, medical technology ('MedTech'), IT, telecoms and data.

3.10 Buckinghamshire's 'unique strengths' include the three key innovation clusters at Pinewood, Westcott and Silverstone, as also highlighted within the Productivity Review. In particular, Silverstone is noted for its growing capabilities related to

electric vehicles and battery technology. The report advices that ongoing focus should be placed on building life science and MedTech capabilities, given Buckinghamshire's *"locational advantages"* on the Oxford to Cambridge Corridor (p.9).

**Buckinghamshire Freight Strategy 2018-2036**

3.11 The Freight Strategy is centred upon recognition of the sector's role in servicing local industry and communities, and hence supporting economic growth and development, while also managing the potential adverse impacts of freight movements across Buckinghamshire[9].

3.12 Recent strong performance in economic growth and labour market outcomes are accredited with increases in Light Goods Vehicle (LGV) and Heavy Goods Vehicle (HGV) freight activity in Buckinghamshire. The Strategy cites that *"an educated and economically active society has greater buying power; necessitating more freight deliveries"* (p.28). The economic impact of local freight was estimated to be £67.5 million in GVA in 2016, employing approximately 2,000 people.

3.13 Of the planned and proposed transport infrastructure upgrades referenced in the Strategy that may influence the freight sector within Buckinghamshire, while the M4 Smart Motorway upgrade was completed before the Government's cancellation of new smart motorway projects, the Oxford-Cambridge Expressway has been cancelled. The remaining projects relate to passenger rail only. Despite these changes in supply-side conditions, demand for freight will continue to grow and the preferred options to manage freight are broadly still applicable. These include maximising rail freight opportunities, mitigating the impact of freight from new development and major infrastructure schemes, and responding to future opportunities for freight sector development in decision-making.

**Buckinghamshire Digital Infrastructure & Connectivity Strategy 2025-2030**

3.14 The aim of the Digital Infrastructure & Connectivity Strategy[10] is to *"advance the current digital infrastructure provision to deliver maximum connectivity and speeds for residents, communities, and businesses across the county"* (p.8). While the Strategy is primarily focused on improving broadband and mobile connectivity and does not refer to data centres or related infrastructure, it targets having *"enhanced connectivity"* in place at the Westcott and Silverstone clusters by 2030 (p.8).

**Buckinghamshire Skills and Employment Strategy 2024-2029**

3.15 The vision for the Skills and Employment Strategy[11] is to establish Buckinghamshire as: *"a place with a future-focused, agile and dynamic employment and skills system that assures the needs of employers, individuals and communities are met in order to contribute to the growth and productivity of the local economy"* (p.7).

3.16 The current Buckinghamshire context is one of declining worker productivity, falling from above the national average in 2011 to hovering at or below the national average by 2021. Buckinghamshire's residents are highly skilled with a high employment rate, but inequalities between areas result in pockets of higher levels of unemployment, lower wages, and job insecurity.

3.17 The Strategy is underpinned by a 'whole system' approach, with a focus on vocational initiatives including apprenticeships, skills bootcamps and T-Levels to match local skills with the needs of the businesses. The 'Boosting Business' component of the Strategy recognises Buckinghamshire's key assets in the creative industries, high-performance technology, space, and MedTech. To address challenges in skills gaps, recruitment and retention, the Strategy commits to supporting employers through up-skilling the existing workforce, developing 'Buckinghamshire-specific' career pathways, and establishing a 'place-based' approach to apprenticeships, among other interventions.

**Buckinghamshire Local Skills Improvement Plan (LSIP)**

3.18 Aligned with the overarching Skills and Employment Strategy, the 2023 LSIP establishes five primary focus sectors: engineering; construction; film & TV; digital; and health & social care[12].

3.19 Of relevance to the modern economy, the skills shortages in the digital sector include analysts, software, website and content developers, AI experts, and cyber security specialists, among others. Skills gaps within the sector primarily relate to the fast pace of technological development. Proposed interventions to resolve skills shortages and gaps within the sector include dedicated skills bootcamps, collaboration with employers when delivering T-Levels, promoting apprenticeships, and developing short courses for upskilling those already within the industry.

# Baseline Position

# 4.0 Extent and Demand

Each of the industries related to the modern economy have an established presence within Buckinghamshire, but to varying extents and with different determinants of demand.

4.1 The factors influencing supply of, and demand for, the modern economy industries are not limited in their geographic scale: many factors are UK-wide, if not global. This section considers the key factors influencing demand for the individual modern economy sectors in turn, analyses the existing concentration and distribution of each sector and reveals the spatial interrelationships between them where relevant.

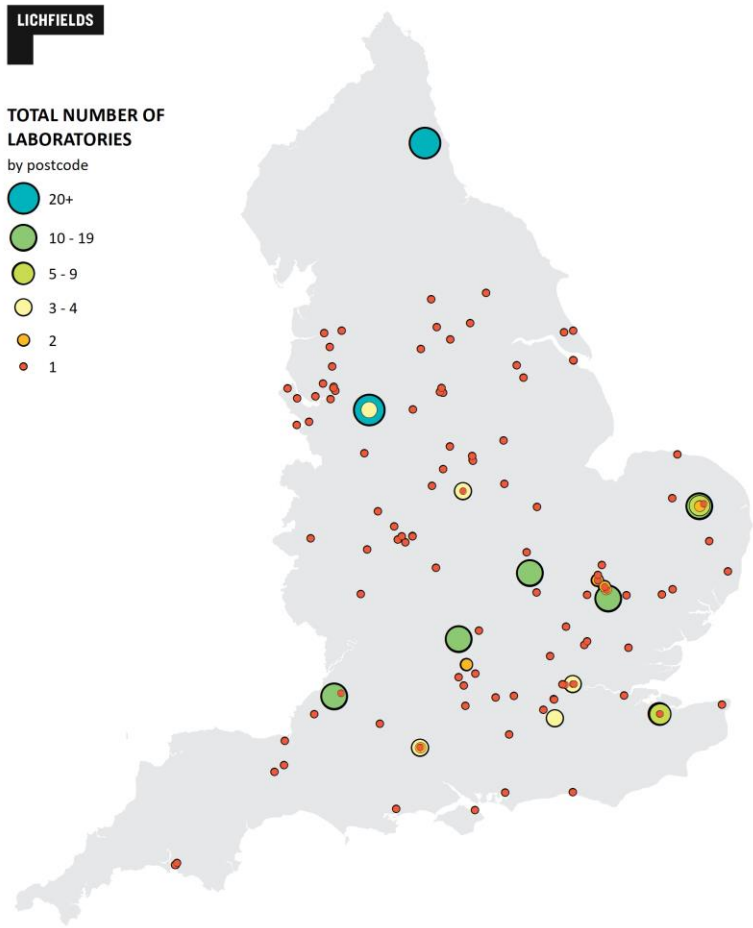
## Laboratories

4.2 The laboratories sector can be broadly divided between 'wet labs' focusing on medicine, pharmaceuticals, and life sciences and 'dry labs' specialising in robotics, computing and related activities. The split of laboratory demand between wet and dry labs is in a state of flux. While London in particular has seen high demand for wet lab space in recent years[13], advances in Artificial Intelligence ('AI') technology have increased demand for dry lab spaces in the life sciences sector[14]. Globally, demand for laboratories in the life sciences sector stems from a growing and ageing population in tandem with rapid technological and scientific advancement.

4.3 British Land highlight that while the 'Golden Triangle' for laboratories between Oxford, Cambridge and London has the skills, academic strength and research and development (R&D) spend to compete with major international players in the laboratory sector, in particular the US, there is an acute shortage of laboratory space in the region[15]. Given the region's long-established research centres firms gravitate towards the Golden Triangle, resulting in excess demand locally. Buckinghamshire is positioned in the middle of this area, and along the Oxford to Cambridge Corridor; this suggests there is potential for strong demand for laboratory space in Buckinghamshire.

4.4 **Figure 4.1** shows the locations of laboratories in England based on Valuation Office Agency (VOA) rating list records. Note that the VOA list is not exhaustive and may exclude laboratories within the public or education sector, for example at hospitals and universities. This demonstrates the prevalence of the life sciences 'Golden Triangle' between Oxford, Cambridge and London. Other clusters are present in and around major university cities including Manchester, Bristol, Norwich and Newcastle.

**Figure 4.1** Location of laboratories in England
(Source: VOA, 2023)



4.5 Despite Buckinghamshire's positioning, there are no recorded laboratories on the VOA rating list. However, the re-launch of the Oxford to Cambridge Corridor and the delivery of East-West Rail may present an opportunity to meet future need for laboratory space, which is considered further in Sections 7.0 and 8.0.

4.6 **Figure 4.2** identifies laboratory-related businesses in Buckinghamshire based on their employment size as recorded by the ONS IDBR (2024). As defined in Section 2.0, for the purposes of this report laboratory-related businesses fall within SIC group 72.1: Research and experimental development on natural sciences and engineering.

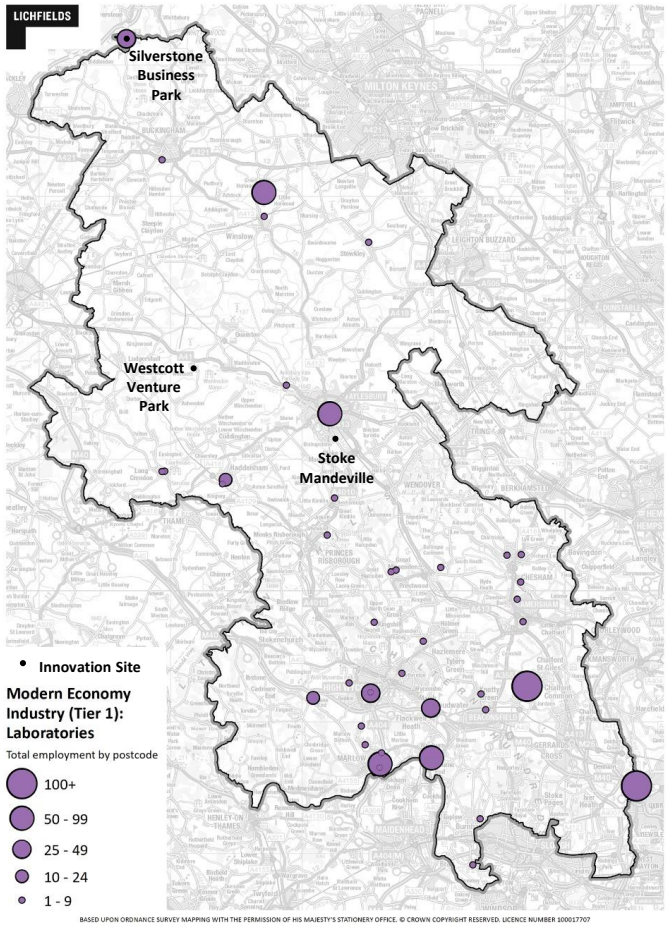
4.7 Many of the businesses identified within the laboratory-related sector in Buckinghamshire specialise in pharmaceuticals, life sciences and medical research. However, it is of note that the majority of these premises relate to office-based activities, rather than laboratories for research and development purposes.

4.8 The most prominent presence in Buckinghamshire by employment is the UK head office of Parexel, a clinical research organisation, based at Uxbridge Business Park. Other office-based locations include Revvity (formerly PerkinElmer), specialising in technology for the life sciences sector; Renesas Electronics in Bourne End, a semi-conductor manufacturer; and the Marlow offices of pharmaceutical company Kyowa Kirin International. Together, these four sites employ around 1,000 people, of which 94% are full-time employees. The Buckinghamshire Employment Evidence Study further highlights that the pharmaceutical and health sector has stood out in recent take-up activity of office space, showing there is continued interest in locating office-based activity within Buckinghamshire.

4.9 Not represented in the data from the VOA and ONS are public and education sector laboratory facilities. Most prominently, the Buckinghamshire Health Research & Innovation Centre at Stoke Mandeville Hospital was opened in 2021. It focuses on various areas of healthcare research, with clinical rooms, wet and dry laboratories, and collaborative working spaces[16]. More broadly, Stoke Mandeville Hospital is one of the leading spinal research centres in the country. Stoke Mandeville's role in MedTech research, including digital health, life sciences and advanced AI, is recognised in the recent Oxford to Cambridge: Science, Innovation, and Technology Business Premises Study[17], noting MedTech's inclusion as a strategic priority in the Local Industrial Strategy.

4.10 Related to the research, development and innovation activities conducted at laboratories is the Westcott Space Cluster and Westcott Venture Park, located on the A41 between Aylesbury and Bicester, focusing on space innovation including rocket propulsion, 5G and 6G, and autonomous systems research. Facilities include the National Space Propulsion Test Facility and the headquarters of Nammo UK, specialising in spacecraft propulsion of Earth orbit, Moon and interplanetary missions[18]. Their Westcott base includes offices, laboratories and specialist clean rooms, in addition to a separate rocket testing site at Westcott. Meanwhile, as shown in **Figure 4.2**, at Silverstone Business Park is the design, research and development hub of the NIO 333 Formula E team, including a 'mission control' room and advanced driving simulators[19]. This demonstrates the overlap between the industries of the modern economy, in this instance, between businesses reliant on both gigafactory (EV) and laboratory (R&D) activities.

**Figure 4.2** Laboratory-related businesses and key innovation sites in Buckinghamshire (Source: ONS IDBR, 2024)



## Gigafactories

4.11 Gigafactories are large-scale manufacturing facilities for the production of batteries for electric vehicles (EVs). The growth in demand for EVs in the UK has gained pace in recent years as we approach the 2030 phase-out date for new petrol and diesel vehicles[20].

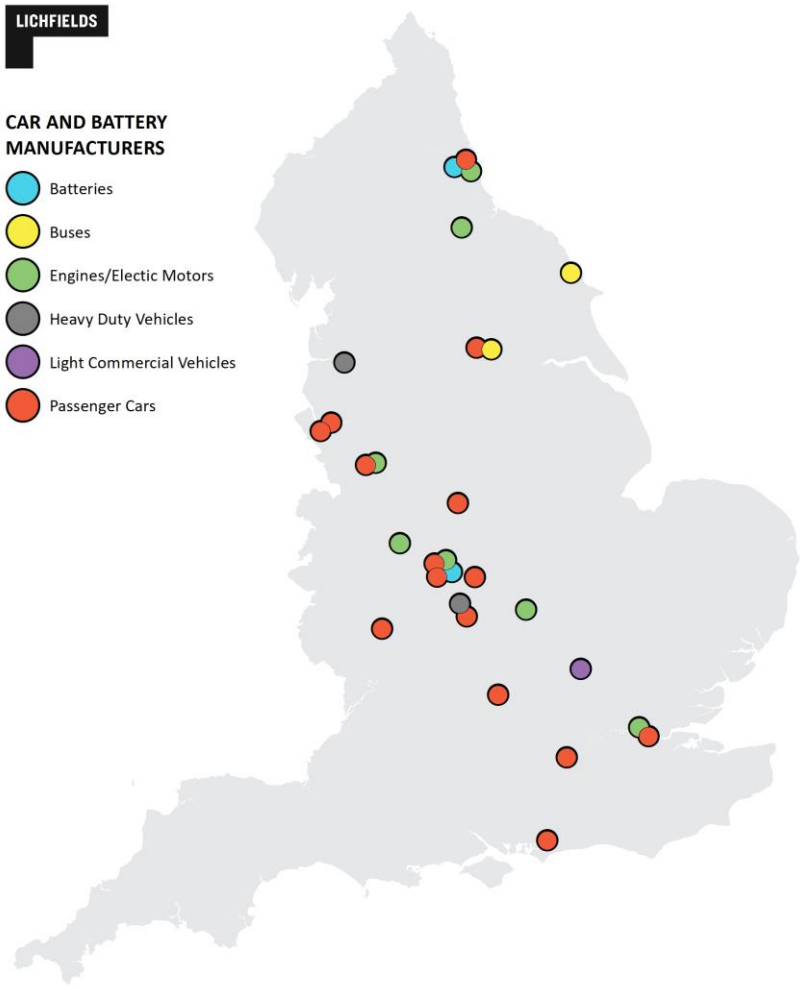
4.12 **Figure 4.3** shows the locations of car and car battery manufacturers in England. At present, the UK has just one operational gigafactory, located in Sunderland and owned by AESC, Nissan's EV battery partner. This facility opened in 2012 to produce batteries for the Nissan LEAF and covers a floor area of 25,000 sq.m, with a production capacity of 1.8 GWh per year[21]. There are three gigafactories due to open in 2025 and 2026, namely an additional AESC plant in Sunderland, Agratas in Somerset, and the UK Battery Innovation Campus in Coventry, taking UK capacity to approximately 66 GWh per annum. The new AESC gigafactory is to be significantly larger than the existing Sunderland site, with a capacity of 15.8 GWh per annum and covering an area of just under 200,000 sq.m.

4.13 The Faraday Institution estimate the UK will require at least six gigafactories by 2030 and a further four by 2040 to meet forecast battery demand of 200GWh per annum[22], assuming an average plant capacity of 20 GWh per annum. As the demand for gigafactories is intrinsically related to the demand for EVs, many proposed gigafactories are located in established car manufacturing hubs. However, given the physical scale of gigafactories, this is not always the case: the Tata Group Agratas facility, supplying Jaguar Land Rover (JLR) and covering an area 35% larger than Wembley Stadium, is to be located at the Gravity Smart Campus in Somerset despite the nearest JLR plant being in Birmingham. This demonstrates that the scale and urgency of demand for batteries in the energy transition can spatially decouple gigafactories from car manufacturing plants.

4.14 Analysis of IDBR data reveals there are just two businesses in Buckinghamshire within the Tier 1 gigafactory-related sectors as defined in Section 2.0: group 27.2 Manufacture of batteries and accumulators, and group 29.1 Manufacture of motor vehicles. This includes battery systems manufacturer Danecca, based at Silverstone Business Park, and the offices of recreational and utility vehicle manufacturer Moke International.

4.15 The Silverstone area is host to several businesses specialising in advanced engineering, electronics and software, often related to high-performance technologies and motorsport given its proximity to the Silverstone Circuit. According to the Buckinghamshire Employment Evidence Study[23], the Silverstone Park Enterprise Zone (EZ) offers a range of industrial accommodation ranging from small workshop units on flexible terms to large units on longer leases suitable for more established firms, while the Silverstone Park Innovation Centre provides start-up space. Although major car and battery manufacturing activities are not prevalent in the area, it is an important cluster of businesses within the wider motor vehicle – and, increasingly, electric vehicle – ecosystem.

**Figure 4.3** Car and battery manufacturers in England (ACEA, 2025)



## Digital Infrastructure

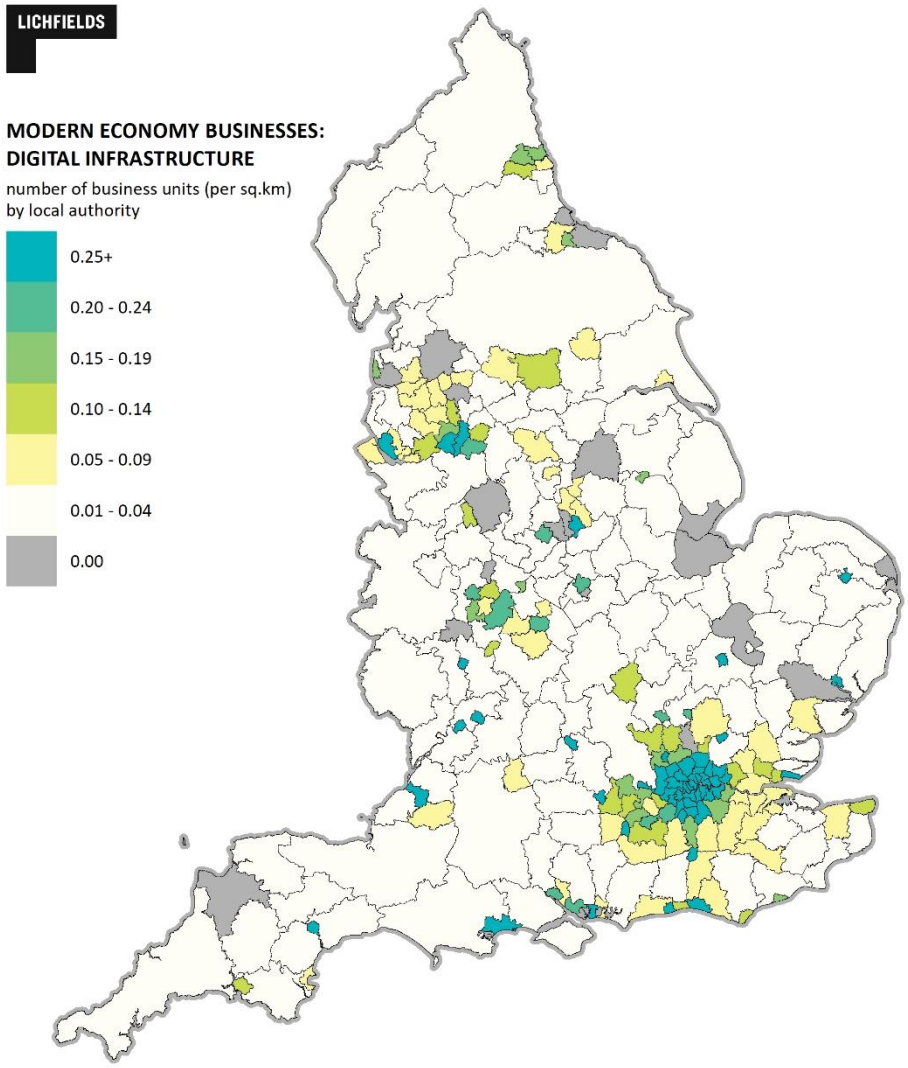
4.16 As defined in Section 2.0, for the purposes of this study, 'Tier 1' digital infrastructure businesses are those within SIC Group 63.1: data processing, hosting and related activities; web portals. As such, these businesses cover a range of activities, with some related to data centres while others are within the wider data processing and management sectors.

4.17 Data centres will form a key focus when planning to meet the future digital infrastructure needs of both businesses and consumers. Data centres are physical locations storing computing machines and related hardware[24]. Increasing digitalisation and demands on cloud storage, coupled with the growing use of Artificial Intelligence (AI) and other intensive computing processes, has led to a sharp rise in demand for data centres. Globally, data centre capacity is projected to grow by 15% in 2025, yet this will not be sufficient to meet growing demand[25].

4.18 Digital infrastructure is not dissimilar to conventional infrastructure networks, particularly in that the further data travels, the longer it will take: this is known as latency. As the primary sources of demand for data centres are businesses located in major cities, to minimise latency data centres will cluster within and around these cities; this clustering is also seen within the broader digital infrastructure sector. **Figure 4.4** shows the number of Tier 1 digital infrastructure business units per sq.km by local authority in England, based on data from the ONS. The dominance of London as the primary digital infrastructure hub in the country is apparent, while other clusters are emerging in the Manchester-Liverpool region and the West Midlands.

4.19 Cloud Service Providers rely on networks of data centres, which are locationally constrained by 'Availability Zones' formed of one or more data centres. Each Availability Zone has its own power supply to reduce the likelihood of simultaneous failure[26]. This is a further factor influencing the spatial clustering of data centres, at present particularly prevalent in Slough and East London. Of relevance to Buckinghamshire is within the Slough Availability Zone ('SAZ'), which has emerged as a key strategic cluster of data centres serving the London and the South East. Data centres need to be within a 15km to 20km fibre-cable radius of this area to form part of the SAH, which has driven substantial demand for data centres along the Slough-Hayes corridor[27].

**Figure 4.4** Tier 1 digital infrastructure business units per sq.km by local authority, England (Source: ONS, 2024)



4.20 The locations of existing data centres in London and the South East, as of March 2025, are shown in **Figure 4.5**. From its overlap with the SAH, South East Buckinghamshire – in particular Iver and the surrounding area – could become a key strategic location for the development of new data centres. Despite this positioning, there is currently only one data centre in Buckinghamshire, namely the Tata Communications Cressex facility at Cressex Business Park, High Wycombe – outside the core area of the SAZ.

4.21 Data centres, and the growing number of 'hyperscale' data centres, have significant space and power requirements that influence where demand is realised. The National Grid's electricity transmission network, shown in **Figure 4.6**, demonstrates the proximity of Buckinghamshire's key towns to the network, and particularly along the M25 corridor at Iver. A new substation, Uxbridge Moor, is to be built north of the existing Iver substation to meet growth power demand from data centres in the region.

**Figure 4.5** Existing data centres in London and the South East (CoStar, 2025)

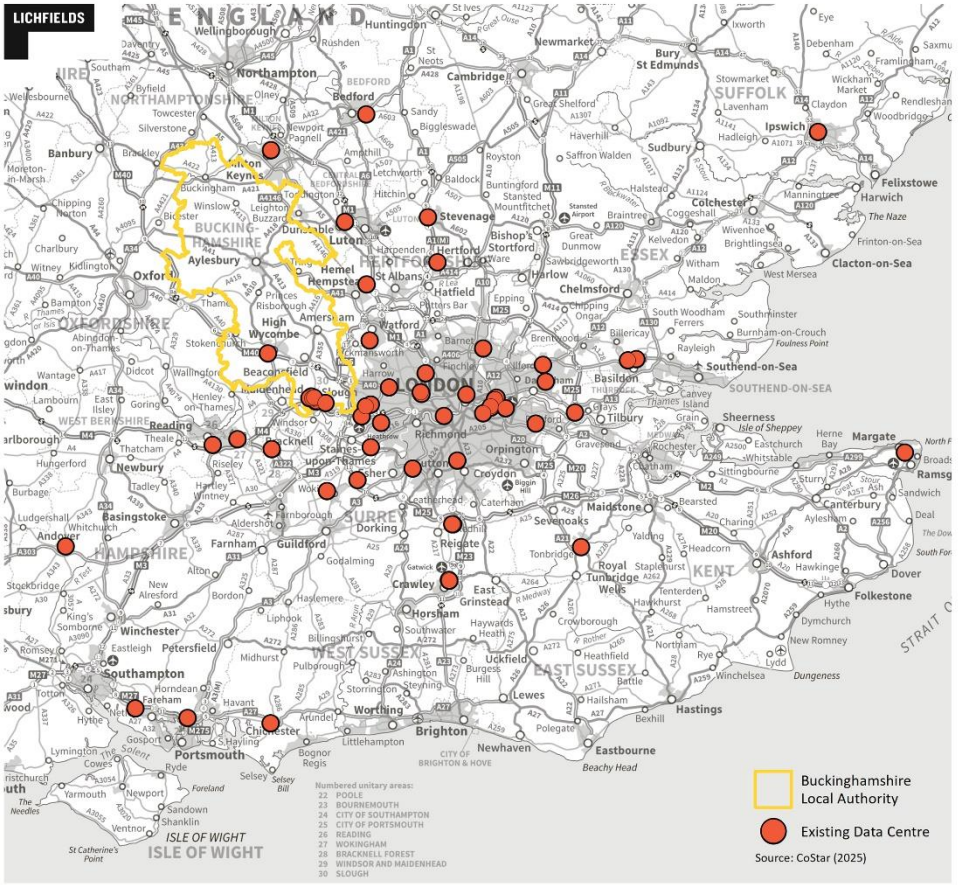
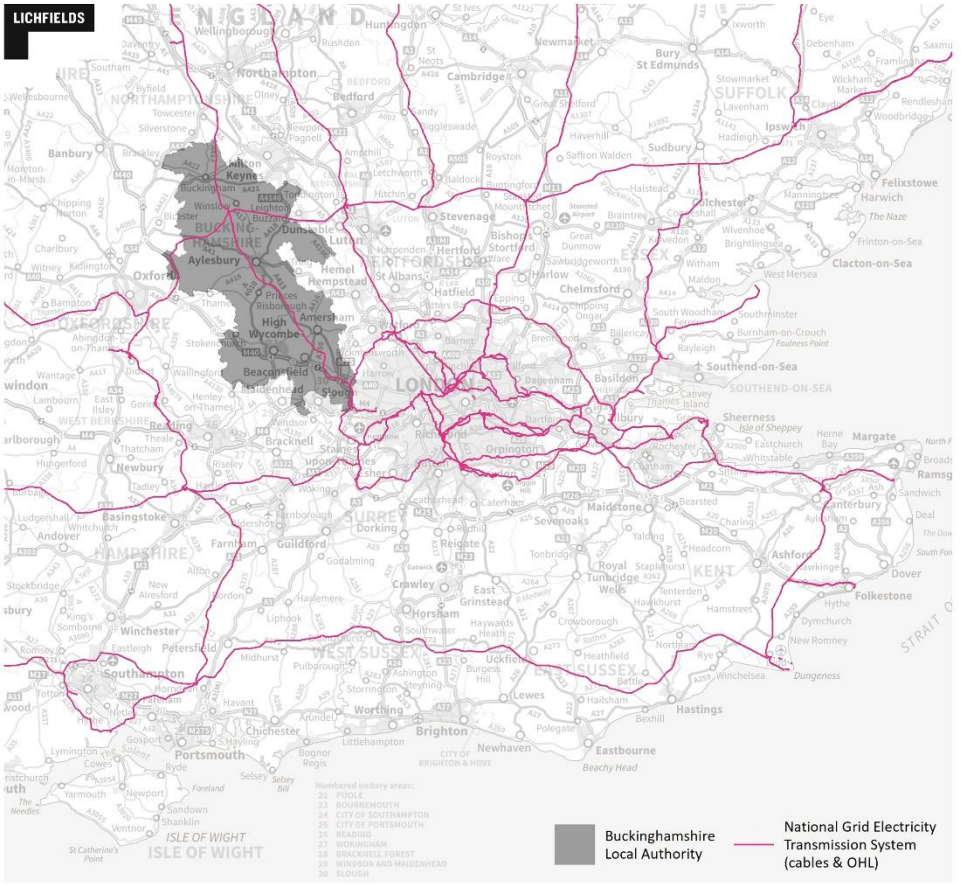



**Figure 4.6** Electricity transmission network in London and the South East (National Grid, 2025)



## Freight & Logistics

4.22 In the built environment, demand for freight and logistics manifests itself in warehousing, storage and distribution centres, in addition to transport hubs and infrastructure. One key source of the growing demand for freight and logistics solutions is the rise of e-commerce, in part accelerated by the Covid-19 pandemic lockdowns. As a facilitator to other industries, and an established sector in its own right, the freight and logistics industry is both a growth enabler and a growth driver.

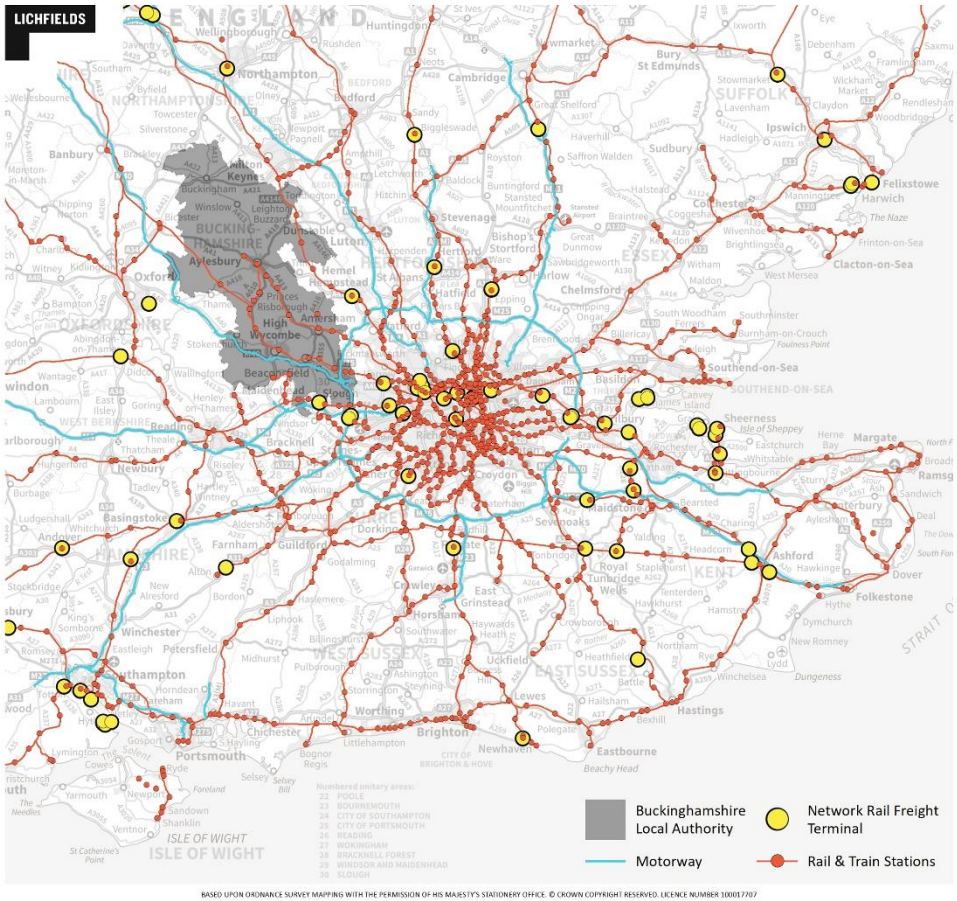
4.23 In terms of the modern economy, the role of freight and logistics' can be taken to related to the next generation of warehousing and distribution centres. New 'smart' warehouses are powered by advanced robotics and AI, transforming supply chains and distribution networks, but also placing a new layer of requirements on the specification of class B8 spaces[28].

4.24 Demand for these facilities is spread across the country, with more acute demand at key transport interchanges. Buckinghamshire is well-connected by road, with direct links to the M4, M25 and M40 motorways. In addition, there are passenger rail connections, as shown in **Figure 4.7,** but there are no rail freight terminals within Buckinghamshire (of note, there are plans to revive inactive rail sidings and potentially to provide upgraded infrastructure to serve the area, but timescales are not specified at the time of writing). The Colnbrook terminal – the closest rail freight terminal - is located south of the study area. However, much of the southern extent is subject to multiple land constraints, including both Green Belt and Chilterns National Landscape, limiting the development potential for space-intensive uses linked to transport and logistics.

4.25 Buckinghamshire is host to a range of freight and logistics businesses and hubs, as demonstrated in VOA rating list data shown in **Figure 4.8** overleaf. The majority are concentrated in Aylesbury, High Wycombe and other key employment locations. However, the location of the most prominent cluster in the freight sector is within the southern part of Buckinghamshire, particularly in and around High Wycombe, reflecting its proximity to the M4, M25 and M40, and Heathrow Airport.

4.26 The Buckinghamshire Employment Evidence Study highlights the increased demand for industrial, and in particular distribution space, in the area based on macroeconomic trends and forecasts, and commercial property agent intelligence. The area is perceived as an attractive industrial location with a consistently tight supply of industrial space across all sizes and types, with an emphasis on larger-scale units. Further consideration of the future space requirements of the sector is presented in Section 8.0.

**Figure 4.7** Motorways, passenger rail and rail freight terminals
(Source: Network Rail, Ordnance Survey)






4.27 As highlighted, it is not feasible to accurately identify the need for smart or next-generation warehouses that would fall under the definition of the modern economy as compared to more conventional storage and distribution space. Both co-exist and supplement each other, and it is expected that many

warehouses, following their last life-cycle, will eventually operate using new and emerging technologies to enhance performance and efficiency. However, considering the sectoral trends and Buckinghamshire's locational advantages, in addition to evidence of constrained supply, it is expected that the sector will continue to be a key driver of the local economy and will need to ensure it can adapt to the rapid pace of technological advancement.

## Summary of Extent and Demand

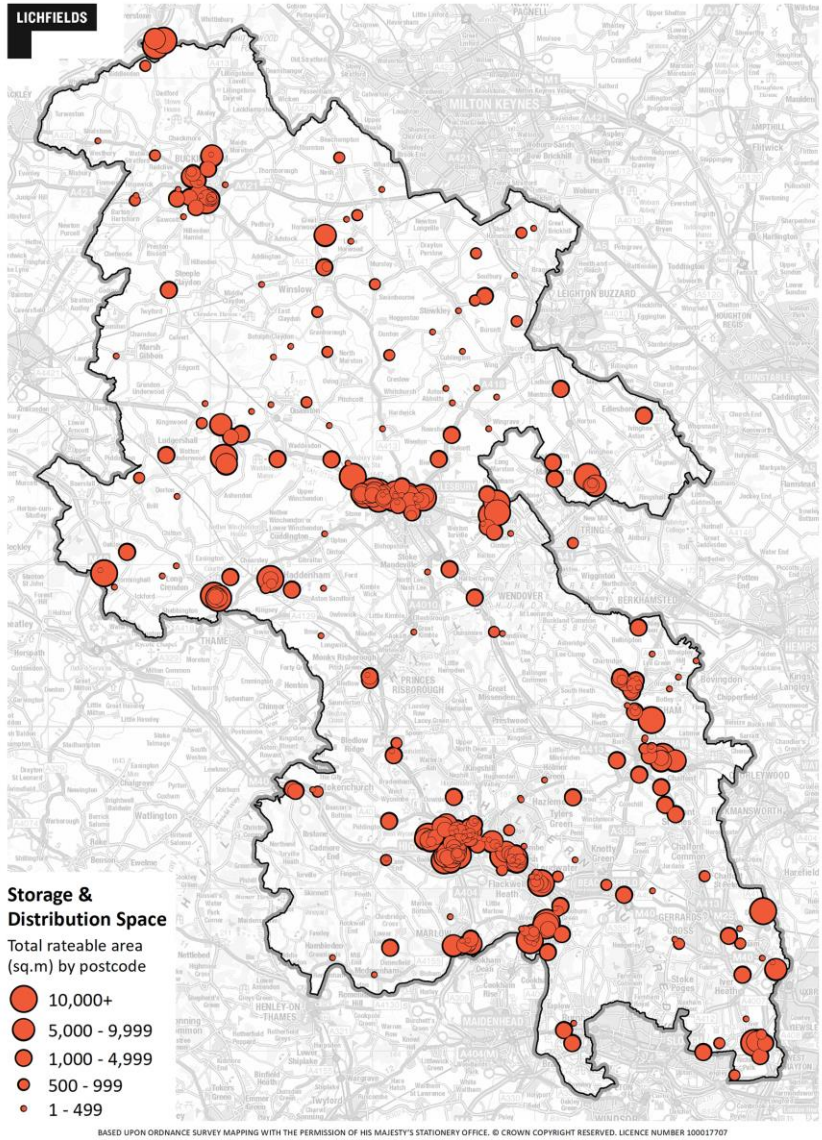
4.28 The laboratory-based sectors in research and development, including for both life sciences and engineering, have received a recent boost from the revival of the Oxford-Cambridge Corridor, which stretches across the north of Buckinghamshire. However, while Buckinghamshire has an established presence of businesses within the pharmaceuticals industry, their locations are primarily office-based, providing support for innovation and research rather than hosting these activities directly and therefore specifically requiring laboratory premises.

4.29 Batteries for electric vehicles are in high and growing demand both across the country as the phase-out date for petrol and diesel cars approaches; this has resulted in substantial increases in the UK's requirement for gigafactory capacity. Estimates from the Faraday Institution suggest the UK will require six new gigafactories by 2030, and a further four up to 2040. While there is an established automotive cluster at Silverstone Park, the focus of these firms is primarily related to research and development, and pioneering new battery and high-performance technology, rather than the land- and energy-intensive process of battery manufacturing.

4.30 Of the four modern economy industries, the digital infrastructure (data centres) sector has experienced the most rapid pace of development, both nationally and in and around Buckinghamshire. The south of Buckinghamshire is an important strategic location for data centre infrastructure given its position on the Slough-Hayes corridor, a well-established Availability Zone for many Cloud Service Providers. However, there is a limited presence of data centres within the study area at present.

4.31 Finally, Buckinghamshire is well-connected by road, and as such has an established presence of freight and logistics firms. Over the past decade, there have been net gains in distribution floorspace in Buckinghamshire, with strong take-up and low levels of availability, indicative of a high level of demand for both freight and logistics services. In addition to growing volumes of freight is an increased demand for ever-faster fulfilment and delivery, necessitating efficiency improvements in the sector backed by a modern economy.

**Figure 4.8** Storage and distribution space (sq.m rateable area) in Buckinghamshire (Source: VOA, 2023)



# 5.0 Existing Clusters and Supply Chains

Firms within the modern economy are likely to base their locational decisions on existing and evolving clusters, in addition to supply chain partners, to benefit from agglomeration economies.

5.1 The existing clusters also have an influence on the locational decisions of businesses within the modern economy industries. Clusters of firms in the same industry and of those within the supply chain or wider ecosystem enable actors to benefit from agglomeration economies (economic efficiencies from co-location).

5.2 The UK Innovation Clusters Map from the Department for Science, Innovation and Technology (DSIT) provides a useful tool for identifying clusters of modern economy sectors[29]. The industry groupings applied to the innovation clusters use Real-time Industrial Classifications (RTIC) from The DataCity[30] based on data from Inter-Departmental Business Register (IDBR), Innovate UK, and UK Research and Innovation (UKRI), among other sources.

5.3 The RTIC sectors relate to emerging industries that are not fully covered by the SIC system, last updated in 2007. RTICs are grouped into 48 'emerging' sectors, including sectors for Artificial Intelligence, Advanced Manufacturing and Data Infrastructure that are separate from the broader SIC code they would typically be classified under. **Table 5.1** considers the RTIC definitions relevant to the modern economy industries to identify existing innovation clusters in Buckinghamshire. In particular, DataCity identifies a significant number of firms in the life science industry. However, all three clusters have a relatively small contribution to the overall national picture.

**Table 5.1** Modern economy clusters within Buckinghamshire (Source: DSIT)

| Cluster | Modern Economy Sector Match | Distinct Companies | Estimated Turnover | Share of UK Sector |
|---|---|---|---|---|
| Life Sciences | Laboratories | 144 | £470 million | 0.38% |
| E-Commerce | Freight and Logistics | 28 | £138 million | 0.85% |
| Artificial Intelligence | Digital Infrastructure | 28 | £44.5 million | 0.62% |

5.4 The type and location of clusters depends on the availability of resources (including land and labour) for the sector: 'knowledge-intensive' activities in the laboratories sector are more likely to require access to *"large and diverse labour pools and therefore concentrate in denser urban environments and occupy a smaller spatial footprint"*[31].

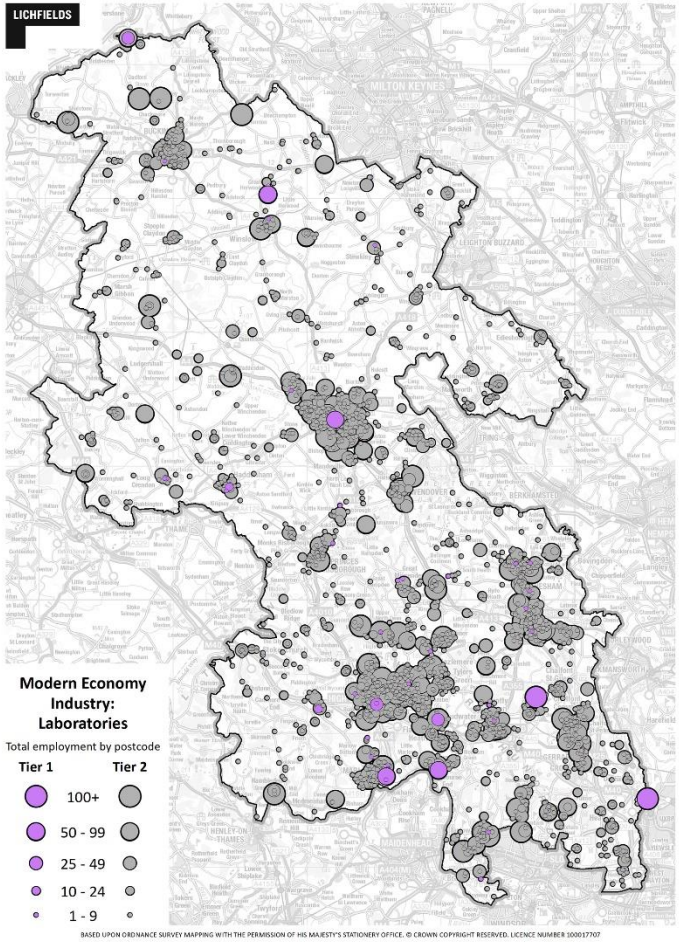
5.5 Meanwhile, gigafactories, data centres and logistics will require both land and skilled labour. Industries such as these, which require more space, *"are more likely to co-locate in suburban locations where office parks and manufacturing sites are more prevalent"*. This is similarly noted in the 2025 Oxford to Cambridge: Science, Innovation and Technology Business Premises Study[32], which highlights that Science, Innovation and Technology (SIT) businesses prefer to be located within clusters with high-quality, modern facilities and nearby amenities, in addition to good public transport accessibility.

5.6 However, the RTIC sector clusters do not capture all facets of the modern economy as set out within the NPPF. SIC-based definitions – established in Section 2.0 (and Appendix 1) – can be used to map both Tier 1 and Tier 2 supply chain businesses, as shown in **Figures 5.1 to 5.4** overleaf. These maps reveal areas with a strong presence of businesses within, or supporting, the modern economy; these are most prevalent in Buckinghamshire's major towns and in particular within the southern extent. It is important to note that only certain activities within these Tier 2 businesses, upstream or downstream, will be directly linked to the modern economy.

5.7 These figures also demonstrate the relative size of the firms within the modern economy supply chains in Buckinghamshire: while business units in the digital technology supply chain are more likely to have just a handful of employees – with an average employment of 5 FTE – upstream and downstream firms in laboratory-related sectors are generally larger[33].

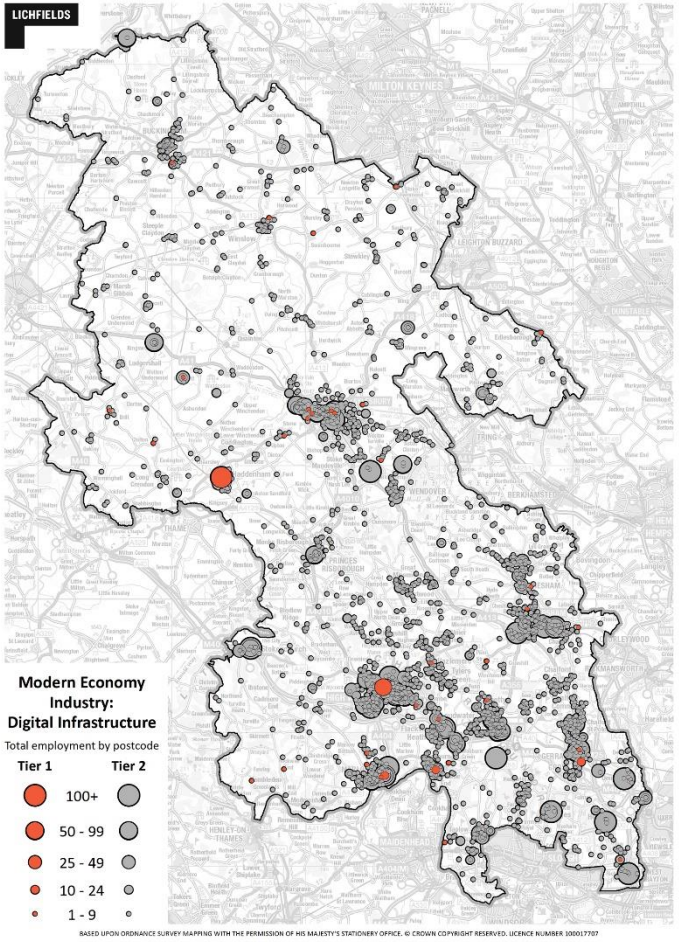
5.8 There are a range of activities across Buckinghamshire that are dependent on, or feed into, scientific research and development. Shown in **Figure 5.1**, Tier 2 activities related to laboratories (and research, development and innovation more generally) include education; professional, scientific and technical activities; and architecture and engineering, among others.

**Figure 5.1** Tier 1 & 2 laboratory-related business units in Buckinghamshire (Source: ONS IDBR, 2024)



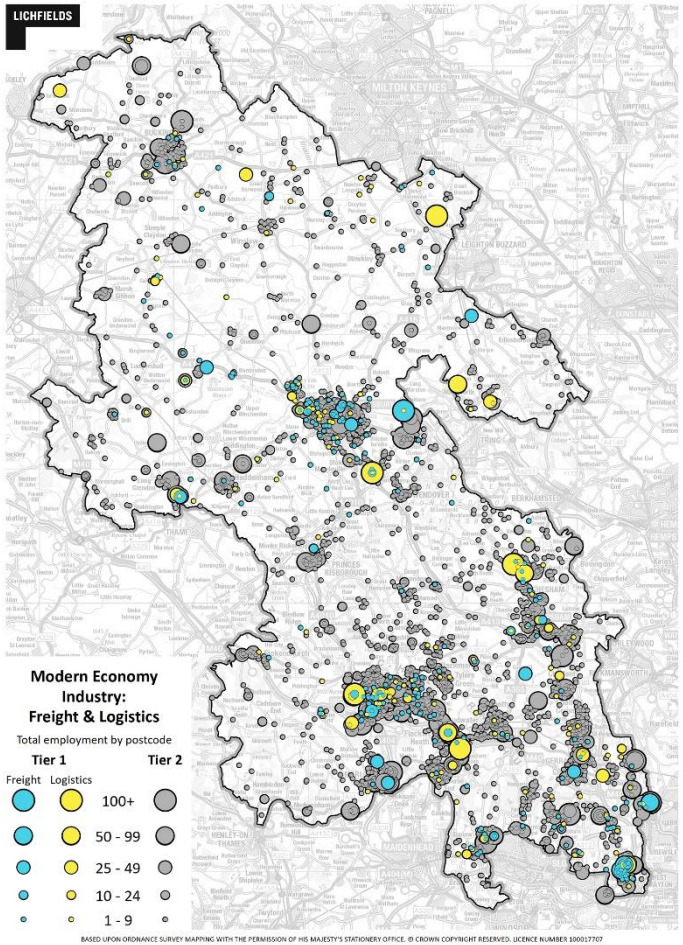

5.9 Shown in **Figure 5.2**, firms within the digital infrastructure supply chain are clustered within Buckinghamshire's main towns, including Aylesbury and High Wycombe, with smaller clusters in the south-east towards Greater London and Slough. More predominant are forward linkages within the supply chain, including management consultancy and financial management, activities of head offices, and accounting and audit activities.

**Figure 5.2** Tier 1 & 2 digital infrastructure business units in Buckinghamshire (Source: ONS IDBR, 2024)



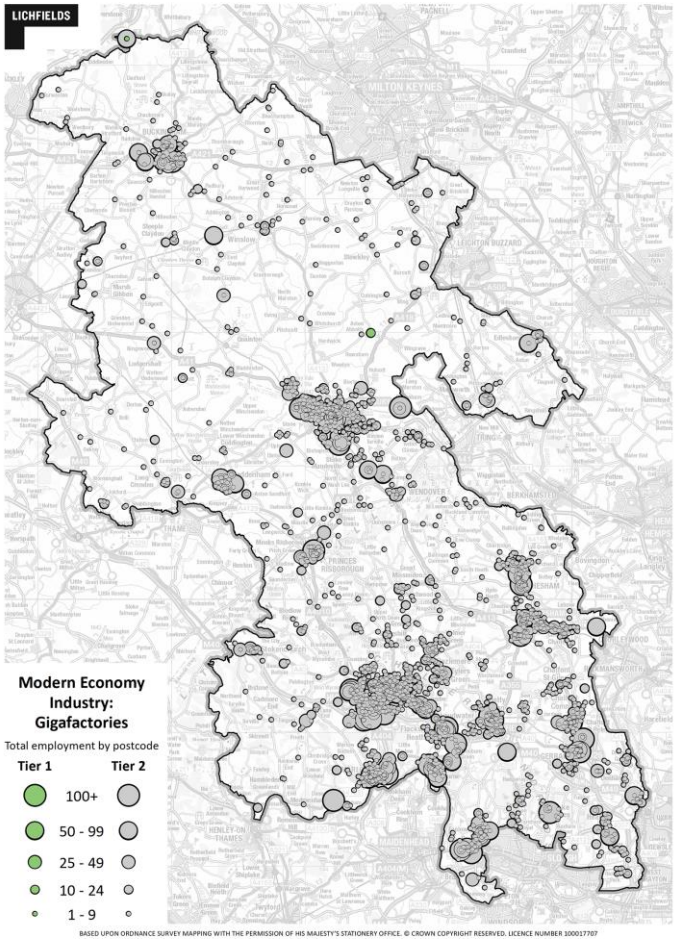
5.10 As the most established modern economy presence within Buckinghamshire, there are many businesses within the wider freight and logistics supply chain; these are shown in **Figure 5.3**. Most prominently, these businesses are wholesalers, including of pharmaceuticals, food and agricultural products, and office machinery and equipment. These businesses positioned along key road connections, with clusters in and around the main settlements and business parks.

**Figure 5.3** Tier 1 & 2 freight and logistics business units in Buckinghamshire (Source: ONS IDBR, 2024)




5.11 As highlighted in Section 4.4 and shown in **Figure 5.4**, there are only two businesses in Buckinghamshire directly related to car and battery manufacturing, however, there is an established wider supply chain ecosystem across the study area. Most predominant – by number of businesses and total employment – are firms specialising in computer consultancy and software development.

**Figure 5.4** Tier 1 & 2 gigafactory-related business units in Buckinghamshire (Source: ONS IDBR, 2024)



# 6.0 Employment and Labour Supply

There has been an upward trend in employment in the modern economy sectors in Buckinghamshire over the past decade.

## Historic trends

6.1 **Figure 6.1** shows employment in (Tier 1) modern economy industries, as defined in Section 2.0, in Buckinghamshire and England nationally between 2015 and 2023.

6.2 A total of 6,765 jobs, representing 2.7% of total employment in Buckinghamshire, are within the broad modern economy industries. As shown, freight and logistics dominates the employment figures at both the Buckinghamshire and national level, representing 72.1% of modern economy roles in Buckinghamshire in 2023. Gigafactory-related employment, which as highlighted in Section 5.0 is particularly limited within Buckinghamshire, formed just 0.7% of total modern economy jobs in the study area in 2023, while digital infrastructure and laboratory-related sectors accounted for 7.2% and 20.0%, respectively.

6.3 This distribution results from the nature of freight & logistics as a well-established industry across the area and within the UK more widely, in addition to the labour-intensity of their operations. Meanwhile, both data centres and gigafactory-related activities (i.e., EV battery manufacturing) are relatively new to the UK economy. While laboratories are not a new form of land use, the life sciences sector has seen increased interest in recent years.

6.4 Overall, employment growth in the modern economy industries in Buckinghamshire (5.1%) outstripped the average growth rate across all sectors over the period 2015-2023 (0.7%). The highest annual growth rate in Buckinghamshire was seen in the digital infrastructure sector, with employment rising 14.7% year-on-year over the period, albeit from a much lower base compared to other industries. This is in contrast to the national level, where average annual digital infrastructure employment growth was just 0.7% over the period, lower than the growth rate across all sectors of 1.1%.

6.5 Meanwhile, employment in freight and logistics in Buckinghamshire grew at an average annual rate of 6.3% over the period, equating to c.220 additional jobs annually. By 2023, employment in freight and logistics in the study area had increased by 72.8% on 2019, demonstrating the high representation of – and demand for – the sector.

**Figure 6.1** Employment by modern economy industry by year, Buckinghamshire and England (Source: ONS, 2024)

6.6 Employment in laboratory-related and gigafactory-related industries in Buckinghamshire has remained broadly constant over the period. A similar trend was seen in gigafactory-related employment nationally, declining by 8.0% between 2015 and 2023. However, year-on-year growth in laboratory-related employment in England between 2015 and 2023 was 2.9%, greater than the overall national growth rate across all sectors of 1.1%.

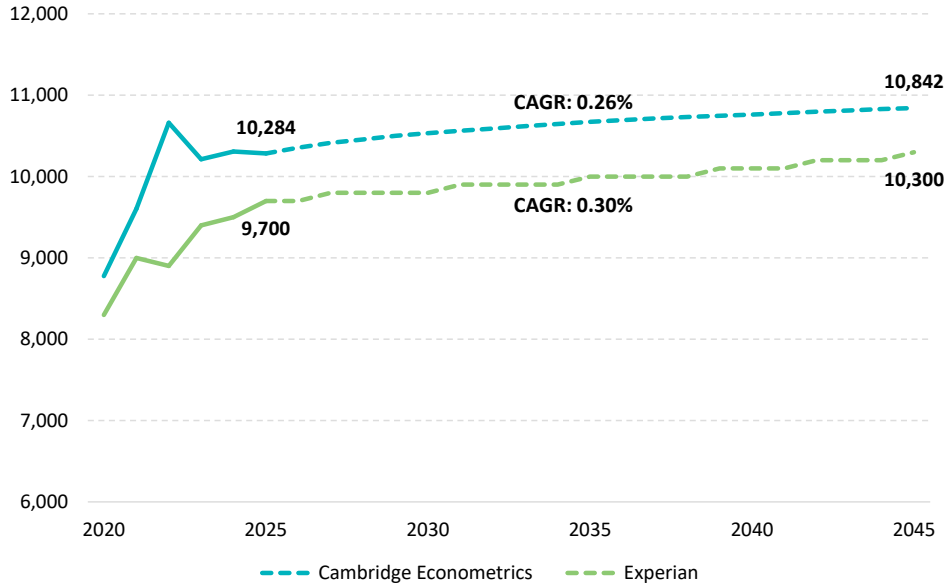
## Baseline projections for freight & logistics

6.7 As highlighted previously, compared to the other industries within the modern economy, the freight and logistics sector is long-established within both the local and national economy. Its inclusion within the December 2024 NPPF as sector requiring support through the planning system to meet the needs of a modern economy reflects its role as a growth-enabler across the economy. It is the only sector for which employment projections at the Buckinghamshire level are readily available from forecast providers Experian and Cambridge Econometrics, shown in **Figure 6.2**. These forecasts consider a 'status quo' or 'business as usual' growth based on past trends and the overall macroeconomic outlook at the national and regional levels.

6.8 Both forecasts show sharp increases in employment in the sector between 2020 and 2022, likely a result of increased demand for freight transport and deliveries to consumers during the Covid-19 pandemic. The trends have since stabilised, with Cambridge Econometrics data showing a sharp reduction in sector employment forecasts between 2022 and 2023.

6.9 Despite strong performance in the last five years – with growth of 3.2% per annum between 2020 and 2025 under both projections – the long-term outlook for freight and logistics is subdued, with annual growth at just 0.3% between 2025 and 2045. This conservative future outlook for the sector – and indeed across the Buckinghamshire economy – was previously noted within the Buckinghamshire Employment Evidence Study. However, not reflected within these forecasts is the renewed focus on this sector now prompted by the December 2024 NPPF, which may result in a stronger growth outlook for freight and logistics employment in the coming years.

**Figure 6.2** Employment forecasts for the land transport, warehousing and postal sectors in Buckinghamshire, 2020-2045 (Source: Cambridge Econometrics, Experian)




*Cambridge Econometrics forecasts refer to the Land Transport and Warehousing and Postal sectors, while Experian considers a combined Land Transport, Storage and Post sector.

# Growth Potential

# 7.0 Foundations for Growth

While Buckinghamshire has a significant proportion of residents within highly-skilled occupations, there are relatively few operatives available for more manual roles. This, among other factors, influences its comparative advantage in the modern economy.

## Labour and Skills

7.1 The diverse nature of the activities within the modern economy industries implies a need for labour across a range of occupations and skills. The individual industries of the modern economy vary in labour intensity and requirements. Shown in **Table 7.1**, data from the 2021 Census at the national level on occupation by industry has been matched to the definitions of the modern economy, to establish the key occupations associated with modern economy activities. Key modern economy occupations are shown in **bold**. This demonstrates that a variety of occupation groups are required within each industry, in particular, elementary occupations, drivers and machine operatives are most closely related to the operation of gigafactories, freight and logistics.

7.2 The Faraday Institution cite growing demand and competition for electrical engineers and technicians as the gigafactory industry develops; approximately half of the jobs at a typical gigafactory are 'production staff' in loading and assembly roles who require on-the-job, rather than formal, training[34].Conversely, the occupations associated with laboratories and digital infrastructure are generally higher-skilled, professional occupations, including science, research, engineering and technology professionals; corporate managers and directors; and business, media and public service professionals and associates.

7.3 At the Buckinghamshire level, the data demonstrates an underrepresentation of the manual occupations required in certain areas of the modern economy. This reflects the underlying structure of the Buckinghamshire economy, which is primarily focused on the tertiary sector. All occupations within Standard Occupational Classification (SOC) 2010 groups 7 to 9 have a location quotient below one, indicating these occupations are underrepresented at the Buckinghamshire level compared to nationally.

7.4 Occupations over-represented in Buckinghamshire compared to the national average include corporate managers and directors, other managers and proprietors, and science, research, engineering and technology professionals. This suggests that the prevailing labour supply and skills conditions within Buckinghamshire display greater synergy with the laboratories and digital infrastructure industries of the modern economy rather than those industries associated with more manual activity, namely gigafactories, freight and logistics.

**Table 7.1** Share of occupations in the modern economy compared to the Buckinghamshire and England averages (Source: ONS, 2021)

| Occupation Group (SOC 2010) | Modern economy | England average | Bucks | Location Quotient |
|---|---|---|---|---|
| **11 Corporate managers and directors** | **5.6%** | **8.6%** | **13.0%** | **1.51** |
| **12 Other managers and proprietors** | **5.2%** | **4.3%** | **5.5%** | **1.27** |
| **21 Science, research, engineering and technology professionals** | **6.5%** | **5.1%** | **5.9%** | **1.16** |
| 22 Health professionals | 0.3% | 4.5% | 4.3% | 0.96 |
| 23 Teaching and other educational professionals | 0.3% | 4.2% | 4.6% | 1.09 |
| 24 Business, media and public service professionals | 4.7% | 6.5% | 7.7% | 1.18 |
| 31 Science, engineering and technology associate professionals | 2.4% | 1.9% | 1.9% | 1.03 |
| 32 Health and social care associate professionals | 0.2% | 2.1% | 1.8% | 0.86 |
| 33 Protective service occupations | 0.3% | 1.3% | 1.4% | 1.08 |
| 34 Culture, media and sports occupations | 0.6% | 2.0% | 2.5% | 1.24 |
| **35 Business and public service associate professionals** | **5.8%** | **6.0%** | **7.4%** | **1.23** |
| **41 Administrative occupations** | **6.9%** | **7.2%** | **7.2%** | **0.99** |
| 42 Secretarial and related occupations | 0.8% | 2.0% | 2.2% | 1.10 |
| 51 Skilled agricultural and related trades | 0.1% | 1.0% | 1.2% | 1.20 |
| **52 Skilled metal, electrical and electronic trades** | 5.4% | 3.4% | 3.0% | 0.88 |
| 53 Skilled construction and building trades | 0.6% | 3.8% | 3.5% | 0.92 |
| 54 Textiles, printing and other skilled trades | 0.4% | 2.0% | 1.6% | 0.81 |
| 61 Caring personal service occupations | 1.3% | 7.1% | 6.0% | 0.84 |
| 62 Leisure, travel and related personal service occupations | 2.5% | 2.0% | 1.8% | 0.88 |
| 63 Community and civil enforcement occupations | 0.2% | 0.1% | 0.1% | 0.88 |
| 71 Sales occupations | 0.9% | 5.9% | 4.9% | 0.82 |
| 72 Customer service occupations | 2.2% | 1.5% | 1.2% | 0.77 |
| 81 Process, plant and machine operatives | 4.9% | 2.8% | 1.6% | 0.56 |
| **82 Transport and mobile machine drivers and operatives** | **30.3%** | **4.1%** | **3.1%** | **0.75** |
| 91 Elementary trades and related occupations | 1.4% | 1.6% | 0.9% | 0.56 |
| **92 Elementary administration and service occupations** | **10.4%** | **8.8%** | **5.8%** | **0.66** |

## Comparative Advantage

7.5 The modern economy uses are identified within the NPPF, and the growth sectors more broadly within the Industrial Strategy, for their ability to drive economic growth and development at the national level. When planning for the modern economy, there is no local need to inform the location or scale of development. Instead, it falls to local authorities to decide how they can take proactive decisions within the planning system that enable and facilitate the national growth agenda.

7.6 To maximise efficiencies, and hence the potential economic benefits, an area should assess its comparative advantage in providing for the modern economy industries, and in what form. This requires consideration of the demand and supply conditions across the country to establish:

a) Where best to locate development for the distinct industries of the modern economy; and

b) Which industries each local authority should be most proactively supporting.

7.7 This approach recognises that no area will be able to effectively support all modern economy industries – given their varying industrial, spatial and skills requirements – but that each area can take a proactive stance to support the modern economy in the sectors most aligned to their local economy.

7.8 To assess Buckinghamshire's potential to host modern economy industries, in addition to the research and analysis presented previously, Lichfields' bespoke framework for planning for the modern economy has been applied. The framework brings together demand and supply factors to assess the relative suitability – the comparative advantage – of individual local authorities to host the modern economy industries, based on the definitions outlined above. In this instance, freight and logistics are considered separately, owing to their distinct development, infrastructure and labour requirements.

7.9 Data inputs to the framework model include the existing stock of data centres, laboratories and warehousing across England from the Valuation Office Agency (VOA) and CoStar, statistics on air and sea freight tonnage, and the locations of key rail freight interchanges, motorway junctions as a proxy indicator for road freight, and major car and battery manufacturing plants. This is triangulated with data from the ONS, including UK business counts and Census 2021 occupations data as a proxy for skills.

7.10 The results of the framework correspond to a high-medium-low ranking of opportunity on both the demand-side and supply-side, which are brought together to provide an overall ranking out of all local authorities in England. Demand-side factors include the number of premises and business units in the industry per sq.km (as an indicator of existing demand), while the supply-side considers the labour skills profile and, for relevant industries, transport and freight linkages.

**Table 7.2** Comparative advantage of Buckinghamshire in the modern economy industries

| Modern Economy Industry | Demand conditions | Supply conditions | Overall ranking (/308 authorities) |
|---|---|---|---|
| Laboratories | High | High | **High – 36th** |
| Gigafactories | Medium | Medium | **Medium – 126th** |
| Digital infrastructure | High | High | **High – 56th** |
| Freight | Low | Medium | **Low – 217th** |
| Logistics | High | Medium | **Medium – 102nd** |

*Based on the former Local Authority District boundaries as of April 2019

7.11 Shown in **Table 7.2**, Buckinghamshire has a strong comparative advantage in laboratory-related activities and in digital infrastructure (data centres). While both demand and supply conditions are favourable, the factors primarily influencing Buckinghamshire's relative performance in the laboratories and digital infrastructure sectors are supply-side. This is primarily attributable to the occupations and skills profile of Buckinghamshire's residents with 7.0% of employed residents being in the top five occupations associated with laboratories, while 9.7% are engaged in the top five roles associated with digital infrastructure compared to the England average of 3.8% and 5.5%, respectively.

7.12 For **laboratories**, these occupations include business, research, and science professionals, and science and engineering technicians, while in **digital infrastructure** occupations include information technology and business professionals and administrative roles. Strong supply-side indicators suggest there is potential to expand these sectors in Buckinghamshire, as national demand for data centres and laboratory facilities continues to grow.

7.13 Meanwhile, Buckinghamshire's relative lack of strategic **freight** infrastructure such as ports, airports and rail freight terminals places limits its potential comparative advantage in the sector. Conversely, **logistics**, which includes warehousing and storage, demonstrates considerably stronger demand conditions, indicative of excess demand for logistics services.

7.14 Land availability and values constrain Buckinghamshire's potential for **gigafactory** development, however, as addressed in Section 8.0, the established presence of the Silverstone and Westcott clusters may enable Buckinghamshire to contribute to the sector through innovation and research. Therefore, while large-scale battery manufacturing may not be on the horizon for Buckinghamshire, beyond the central definition of gigafactory-related activity assessed in **Table 7.2**, there may be scope to influence the future development of battery technology.

# 8.0 Industry Outlook

There is a strong outlook in the medium-term at the national level, but within Buckinghamshire each sector performs differently, with data centres appearing the strongest sector, followed by laboratories and logistics.

## Laboratories

8.1 The short- to medium-term national outlook for the life sciences sector – the key industry most closely associated with (wet) laboratory space – is strong, with demand for space outstripping current available supply[35]. Investor sentiment in the laboratory sector has been positive, buoyed by public sector support with the UK continuing to have the second-highest budget allocation for health R&D among comparator countries[36].

8.2 CBRE estimates suggest that approximately 185,000 sq.m (2 million sq.ft) of laboratory space was to be delivered in 2024, primarily within the Cambridge-Oxford-London 'Golden Triangle'. However, take-up of space to date has been constrained by the level of available supply. Within Oxford and Cambridge, prime laboratory rents rose by 36% and 15%, respectively, over the course of 2023 with vacancies in Cambridge particularly low at just 3% in 2024[37].

8.3 Meanwhile, Savills cite that R&D investment strategies are placing increased focus on technology development, including hardware and software, which is driving firms toward major cities – especially London – in order to tap into the existing labour pool at technology companies[38]. This is driven by the rise of AI and its applications in scientific research. However, in London and across the Golden Triangle, poor housing affordability is likely to constrain further the ability of life sciences and laboratory-based firms to attract skilled labour from elsewhere in the UK and overseas.

8.4 At the Buckinghamshire level, both Cambridge Econometrics and Experian are conservative in their forecasts of employment in the pharmaceuticals sector (as the closest proxy to laboratories) between 2025 and 2045. While Experian projects a plateau in workforce jobs in the sector within Buckinghamshire, Cambridge Econometrics suggest that the workforce will steadily decline over the period. This reflects an outlook where Buckinghamshire does not exploit its competitive positioning in the centre of the Golden Triangle. Of note, there has been a limited number of applications for laboratory space in Buckinghamshire in the last five years. Most recently, in June 2024, a permission was granted for new laboratory space in Westcott Venture Park as part of a mixed-use commercial development totalling 6,800 sq.m.

8.5 As highlighted in Section 4.0, Stoke Mandeville is a key research and laboratory hub for MedTech in Buckinghamshire, with a specialisation in spinal research. To enhance the productivity and effectiveness of the MedTech sector in Buckinghamshire in the future, the Buckinghamshire Productivity Review highlights potential to create links between healthcare simulation R&D at Westcott and Augmented Reality (AR) and Virtual Reality (VR) technology at Pinewood with 'complementary expertise' at Stoke Mandeville[38].

8.6 Meanwhile, more widely within scientific and engineering-based R&D, the 'Westcott Launchpad Programme' is a fund developed by Buckinghamshire Enterprise Zone and Buckinghamshire Council, supported by the Satellite Applications Catapult and their partners[39]. The programme includes grants for start-ups, SMEs and large businesses alike, in addition to access to the advanced facilities on offer at Westcott and strategic advice and support. This initiative is designed to support the space sector and the wider knowledge economy within Buckinghamshire and is intrinsically linked to the NPPF's drive to support the development of laboratories, and by extension R&D facilities more generally.

8.7 In January 2025, it was announced that Pinewood Studios will host the CoSTAR National R&D Lab, opening in early 2026[40]. While not a 'traditional' laboratory for scientific research and development, the CoSTAR lab will be the UK's first national R&D facility for the creative industries. The facilities will include a sound stage and a series of labs for spatial audio, volumetric capture and multisensory devices, in addition to a cloud-based 'Creative AI Compute' facility and an incubation and partner business space. This development couples Buckinghamshire's established presence in the film sector with cutting-edge research and development activity, backed by Royal Holloway and UK Research and Innovation (UKRI).

8.8 Future development may be encouraged by the recent revival of the Oxford to Cambridge Growth Corridor[41], in addition to the delivery of East-West Rail. As demonstrated by the existing stock of laboratory and laboratory-related premises and businesses within Buckinghamshire, supporting the modern economy can be in the form of conventional office units to host the operations of firms conducting scientific (in particular life sciences, MedTech and pharmaceutical) research. Laboratory, R&D or incubator spaces can be of varying size and located within key research clusters such as Westcott and Stoke Mandeville, or further afield to best suit the bespoke needs of laboratory-related businesses in Buckinghamshire.

## Gigafactories

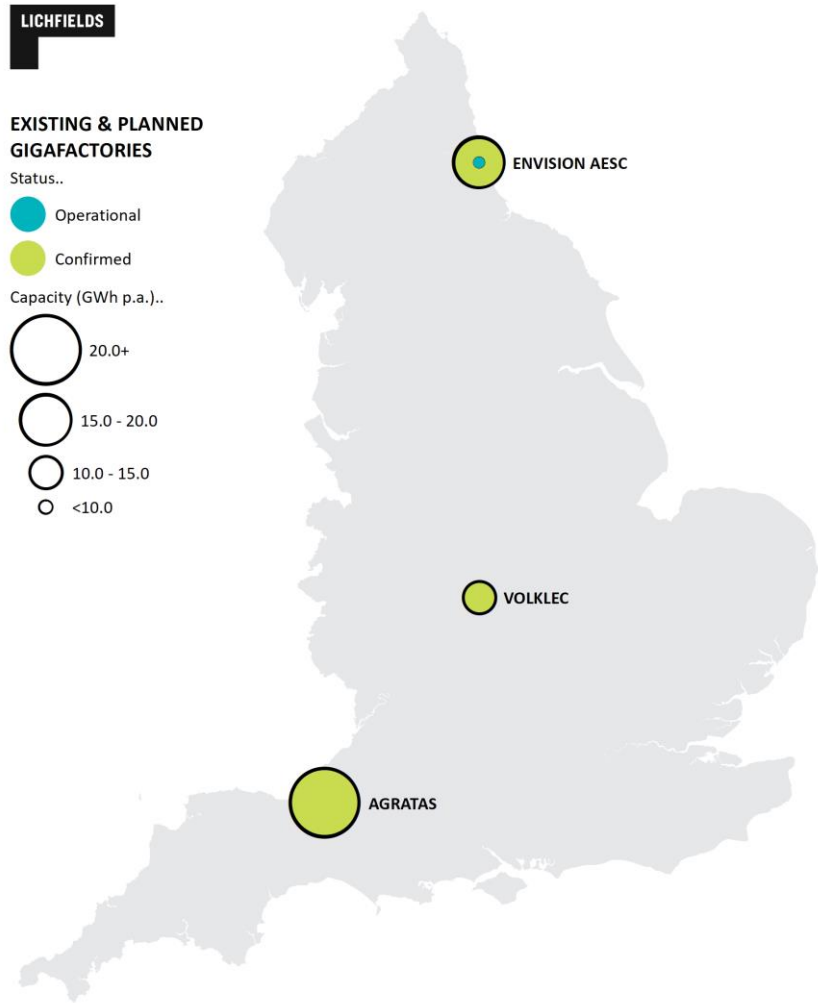
8.9 The demand, and hence outlook, for gigafactories is closely linked to the EV market. AutoTrader's *Road to 2030* report highlights strong year-on-year growth in EV sales in the UK between 2019 and 2024, reaching 382,000 new EV registrations in 2024, up 21% on 2023[42]. The UK is now the third-largest EV market globally by volume of transactions. However, at present battery manufacturing is not domestic, with the exception of the AESC (Nissan) plant in Sunderland.

8.10 As highlighted in Section 7.0, the Faraday Institution project a need for domestic production capacity of 200 GWh per annum by 2040, compared to the UK's current capacity of just 2 GWh per annum[43]. As shown in **Figure 8.1**, confirmed capacity is to be located in Sunderland and Somerset, while battery manufacturer Volklec has recently announced plans to begin producing batteries at the UK Battery Industrialisation Centre (UKBIC) near Coventry[44]. Together, these three facilities would have a production capacity of just under 66 GWh per annum, however, this falls far short of the Faraday Institution's estimated required UK capacity of 110 GWh by 2030. Closer to Buckinghamshire, BMW Mini have announced plans to upgrade their Oxford factory to enable EV production, however, it is likely that they will choose to source their batteries from continental Europe owing to their long-term supply agreement with Northvolt[45], limiting the potential for a gigafactory in South East England.

8.11 Nevertheless, this does not preclude Buckinghamshire from participating in the gigafactory and EV ecosystem. The growth of the industry in the UK is not solely dependent on developing manufacturing plants but also on establishing the domestic supply chain, both upstream (e.g., raw materials and cell components) and downstream (e.g., recycling). Existing activity in the wider EV-ecosystem within Buckinghamshire is predominantly concentrated in the Silverstone cluster, with firms such as SAIETTA innovating and designing electric motors at Silverstone Business Park[46]. Of note are the labour skills at SAIETTA's Buckinghamshire base: up to 70% of the 50 jobs on site are engineering roles, which is more closely aligned to Buckinghamshire's skills strengths than the conventional skills make-up of a gigafactory, as highlighted in Section 7.1.

8.12 In March 2025, the Battery Tech and Hydrogen Tech Expos were hosted at Silverstone Circuit with speakers and exhibitors from a wide variety of organisations across battery research, development and manufacturing. This demonstrates the Silverstone Cluster's established position and continued relevance to automobile innovation. Looking to the future of Silverstone Park, the site has extant permission for 157,000 sq.m of employment floorspace, focusing on high-tech manufacturing and research and development, in addition to facilities for vocational training and apprenticeships[47]. As such, to support the development of the gigafactory and electric vehicle industries at the national scale, Buckinghamshire should focus on how it can provide suitable employment land sites across office and light industrial uses for research and development.

**Figure 8.2** Existing and confirmed future gigafactories in England
(Source: Faraday Institution/Lichfields research)



## Data Centres

8.13 Projections of data centre market growth to 2030 range between 19% and 27% at the international level, with strong growth prospects of 25% per annum through 2027 in the Europe, Middle East and Africa (EMEA) region[48,49].

8.14 AI places significant demand on data centre capacity – already taking up 25% of global data centre workloads – and is continuing to build momentum. It is estimated that approximately 70% of future demand is for data centres capable of hosting advanced AI, and by 2030 up to 65% of AI workloads will be hosted within 'hyperscale' data centres, primarily those belonging to Cloud Service Providers (CSPs).

8.15 While there is no established definition of a 'hyperscale' data centre, floorspace is typically not the defining metric: instead, data centres are often measured by their power consumption or cooling loads[50]. Average data centre power consumption increases with demand, and as such, grid infrastructure has become a binding constraint on data centre development. According to RLB, the power density of data centres has doubled from 2kW per sq.m to 4kW per sq.m in recent years[51]. Rising energy demand, and hence heat generation, may also fundamentally alter the design of data centres in a shift to liquid cooling from conventional heating, ventilation and air conditioning (HVAC) systems.

8.16 The future of technology is fundamentally uncertain: there is extensive discourse surrounding whether the data centre as we know it today will soon become obsolete, or whether advances in technology will allow us to host the same workloads in significantly smaller spaces. The latter has already been reflected in the emergence of smaller 'edge' data centres, located close to end-users, designed to reduce latency and take the strain from hyperscalers[52]. Common across the data centre sector is a need to plan against obsolescence, by ensuring facilities are built with a lifecycle approach and are suitable for retrofit[53].

8.17 London and its surroundings represent one of the largest clusters of data centres, both nationally and internationally. The Slough-Hayes and East London corridors are evolving further, and as shown in **Figure 8.2,** new and proposed data centres are continually being added to these clusters. The south east of Buckinghamshire, particularly the Iver area, is located within the Slough Availability Zone (SAZ). This zone is a primary strategic cluster serving London and the South East.

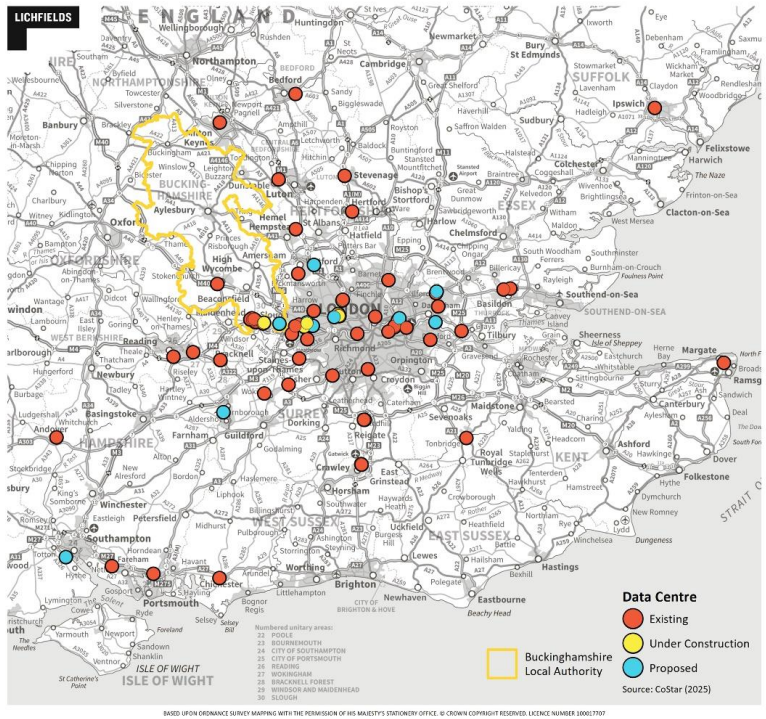
8.18 There have been a number of planning applications for data centres in Buckinghamshire in recent years, mostly within Iver and Iver Heath (**Figure 8.3** overleaf), demonstrating the demand in the Slough-Hayes corridor for data centre development. To support this growth, a new Uxbridge Moor substation is planned by National Grid north of the existing Iver substation to meet the increasing power demands of data centres in the region.

8.19 Of the determined applications, one site was granted (at Thorney Business Park) and two were allowed at appeal (Court Lane Industrial Estate) and recovered appeal (Woodlands Park Landfill Site).

8.20 Thorney Business Park has been subject to two planning applications[54], together covering the entire site, to build a series of data centres alongside housing, social infrastructure and commercial development, replacing the existing employment uses, scrubland and former landfill[55].

8.21 The redevelopment of Thorney Business Park is supported within The Ivers Neighbourhood Plan 2021-2040 (2022) for mixed-use and data centre development, while Court Lane was allocated as a major development site in the Green Belt in the South Buckinghamshire Core Strategy (2011). Wycombe Air Park was allocated as a Strategic Employment Area within the Wycombe District Local Plan and as such removed from the Green Belt. It is of note that of the five data

**Figure 8.2** Existing, under construction and proposed data centres (CoStar, 2025)



centre applications refused permission by the relevant LPA (Link Park Heathrow, Woodlands Park (three times) and Court Lane) all decision notices cited harm to the Green Belt as a reason for refusal. This is despite the allocation of Court Lane as a major development site as part of the South of Iver Opportunity Area Core Strategy Policy CP16.

8.22 As shown in **Table 8.1**, the size of facility ranges from 55,000 sq.m to over 100,000 sq.m, in some instances across several buildings. However, the recently approved data centre at Dromenagh Farm is the only one of the seven to describe itself as a 'hyperscale' data centre. Further demonstrating market interest in developing data centres in the south of Buckinghamshire are the proposals from Pinewood Studios to revise its most recent expansion plans to include a data centre[56]. As of March 2025, the size of this facility has yet to be confirmed. The planning application is anticipated in summer 2025.

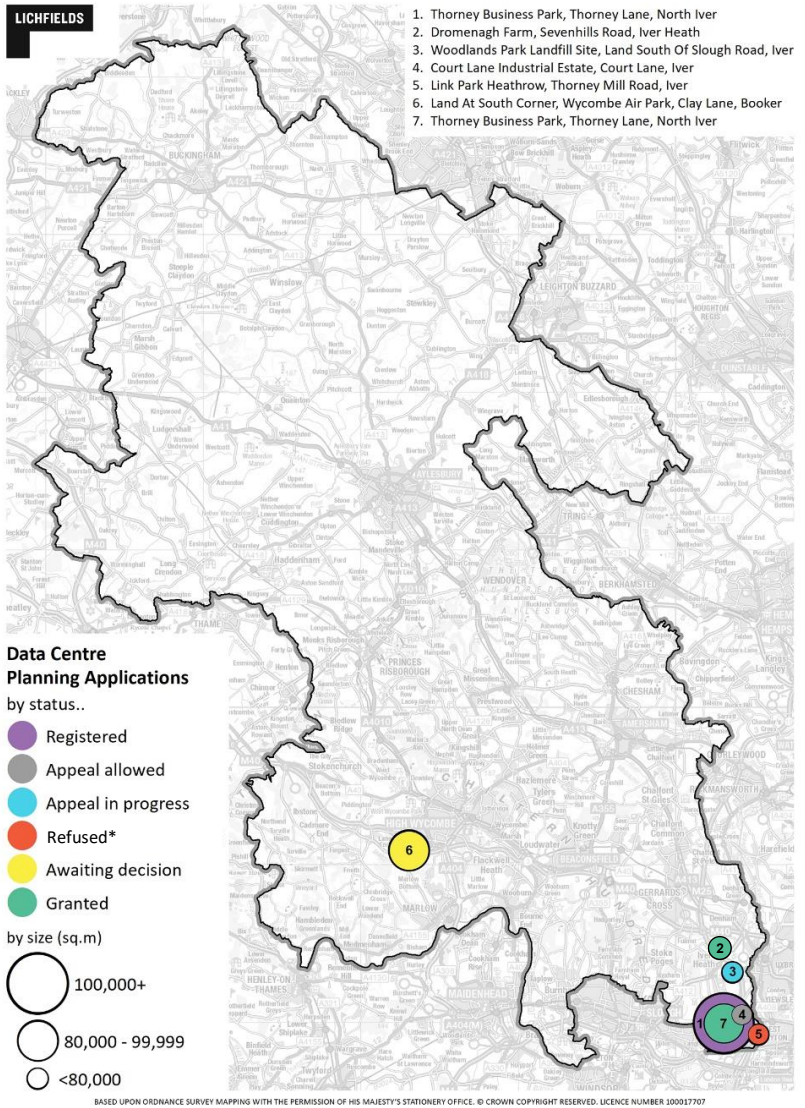
8.23 To support the increased demand for electricity from data centres within the Slough, the National Grid is to construct a new substation, Uxbridge Moor, to the north of the existing Iver substation which does not have capacity for new connections[57]. Alongside an Independent Distribution Network Operator, the connectors to the substation are anticipated to be data centres located in the vicinity. This demonstrates the strong outlook, and business confidence, for data centre development in the area. However, it is of note that the majority of data centres to be served by Uxbridge Moor are located outside of Buckinghamshire.

8.24 The existing applications demonstrate that data centre development would need to be situated on sizeable plots of land, primarily along the Slough-Hayes corridor in the south-east of Buckinghamshire. Data centre developers display an appetite for vacant brownfield sites, in addition to surplus or under-utilised employment land.

**Table 8.1** Applications for data centres in Buckinghamshire, 2020-2025 (Source: Buckinghamshire Council)

| | Data Centre | Size (sq.m) | Status as of 16 June 2025 |
|---|---|---|---|
| 1 | Thorney Business Park (DC2) | 106,616 | Registered |
| 2 | Dromenagh Farm | 63,968 | Granted |
| 3 | Woodlands Park | 72,000 | Appeal in progress (allowed in July 25) |
| 4 | Court Lane | 65,000 | Appeal allowed |
| 5 | Link Park Heathrow | 55,000 | Refused (Appeal decision quashed by the Court and then application was withdrawn) |
| 6 | Wycombe Air Park | 80,000 | Awaiting decision |
| 7 | Thorney Business Park (DC1) | 92,304 | Granted |

**Figure 8.3** Planning applications for data centres by size and status in Buckinghamshire, 2020-2025 (Source: Buckinghamshire Council, June 2025)




*Link Park Heathrow was initially refused, and the decision upheld at appeal. The High Court overturned the appeal decision, however, the applicant withdrew the appeal before it could be redetermined.

8.25 The scale of need in the SAZ has been highlighted within the recent decision by the Minister of State for Housing and Planning on behalf of the Secretary of State in relation to Land south of Slough Road, Iver (July 2025):

*'the Secretary of State agrees with the undisputed position that need within the Slough Availability Zone (SAZ) has continued to rise significantly, from a short to medium term need of 1700MW identified in the Court Lane decision to a mid-range estimate of some 2,486MW of additional capacity needed between 2024 and 2029, which will continue to rise to some 2,858MW'*[62].

## Freight and logistics

8.26 The sector has a large footprint in the national economy, contributing £185 billion to UK GVA. Logistics UK cite that, *"with appropriate investment, policy changes and the right partnerships with government"*, the sector could add £7.9 billion per year to GDP by 2030 from productivity gains[58].

8.27 BDO highlight the growing role of AI, digital and cybersecurity within the transport and logistics industry, which will optimise route planning, inventory management, and deliver cost savings, while also boosting the resilience of the industry[59]. As a result, labour requirements within the sector are shifting, resulting in increased demand for higher-skilled, manager- and director-level roles. With regard to land use and development implications, e-commerce is set to continue to place emphasis on the speed of delivery, with 'micro-fulfilment' centres enabling same-day or faster deliveries.

8.28 However, as presented in Section 6.2, both Experian and Cambridge Econometrics report subdued employment growth in the freight and logistics sector in Buckinghamshire to 2045. As noted, this reflects a continuation of past trends, rather than Buckinghamshire's full growth potential. These forecasts may also reflect the increasing level of automation in the sector, which increases productivity and reduces the labour intensity of the freight and logistics sector.

8.29 Noted in Section 4.0, the Buckinghamshire Employment Evidence Study[60] shows there was 2 million sq.m of industrial floorspace in Buckinghamshire in 2022. The Study notes that the clusters of industrial and distribution space are primarily located in designated employment locations and long key road corridors. By settlement, the greatest concentrations of storage and distribution floorspace are found in Aylesbury (207,000 sq.m) and High Wycombe (301,000 sq.m), reflecting their status as the main economic centres in Buckinghamshire.

8.30 According to authority monitoring data, over the period 2012/13 to 2023/24 gross completions of class B8 distribution floorspace in Buckinghamshire averaged at 19,200 sq.m per annum, with a total net gain of 150,000 sq.m over the period. This is in contrast to office and R&D floorspace, which recorded net losses over the period. Nationally, strong take-up of industrial floorspace in the year to Q1 2023 was observed among distribution firms and retail wholesalers.

8.31 Looking ahead, strong take-up and low availability means that Buckinghamshire has just 0.6 to 0.7 years of available supply of industrial floorspace, including distribution floorspace.

8.32 The net requirement for distribution floorspace over the plan period to 2045 is estimated to range between 180,000 and 320,000 sq.m. A review of extant permissions shows that just under 20% of emerging floorspace falls within the B8 use class. Much of this development capacity is located within north and central areas.

8.33 These estimates do not account for the nature of spaces, for example, the growing need for smart and next-generation warehouses and distribution facilities. According to the Employment Evidence Study, 30% of the existing stock of storage and distribution floorspace is within units built prior to 1980, and 68% pre-2000. Older elements of the stock may form prime candidates for upgrade and retrofit, improving their efficiency, sustainability and flexibility, while also reducing the embodied carbon impact associated with new development.

8.34 Efficiency, reliability, resilience and environmental sustainability are key focuses of the 'technology and data-enabled opportunities' within the national Future of Freight long-term plan[61]. Such an approach also aligns with paragraph 87b of the NPPF, which requires planning policies and decisions to make provision for *"storage and distribution operations at a variety of scales and in suitably accessible locations that allow for the efficient and reliable handling of goods,* ***especially where this is needed to support the supply chain, transport innovation and decarbonisation****"* (emphasis added).

8.35 Further, retrofit and refurbishment activity would enable development in the freight and logistics sector to exploit significant cost savings on the high land values within Buckinghamshire. Related to this, Buckinghamshire could become a candidate for micro-fulfilment centres to serve growing e-commerce sales and consumer demand for ever-faster fulfilment and delivery.

# Conclusions

# 9.0 Conclusions and Policy Implications

Planning for a modern economy requires aligning the national growth agenda with development decisions in the interest of the local community and economy.

9.1. The December 2024 NPPF[63] introduced the concept of planning for a 'modern economy' (Paragraph 86c), requiring planning policy and decisions to facilitate and enable development of laboratories, gigafactories, and digital infrastructure including data centres, to support the growth of the modern economy, in addition to recognising the evolving requirements of freight and logistics. Further, the UK Industrial Strategy[64] sets out the growth-driving sectors (known as IS-8) of the national economy, highlighting the importance of (inter-alia) advanced manufacturing, digital and technologies, and life sciences, which align with the modern economy uses identified in the NPPF.

9.2 Following the new direction of national policy, the objective of this report is to establish the current level of representation of the modern economy within the Buckinghamshire economy, where the greatest growth potential lies, and how local economic growth and development can be supported.

## Local Policy and Strategic Alignment

9.3 Enabling development that supports the growth of the modern economy is already woven-in to Buckinghamshire's economic policy documents. In particular, the emerging Economic Strategy and its focus on productivity and growing Buckinghamshire's 'high potential sectors' demonstrates strong alignment with the underlying objectives and principles of planning for a modern economy.

9.4 These factors are similarly noted within the Productivity Review and Industry, Cluster and Innovation Strengths report[65]. The Skills and Employment Strategy and Local Skills Improvement Plan can help ensure the labour market foundations are in place to effectively support the modern economy and drive productivity improvements more generally.

9.5 With regard to the individual focuses of the modern economy, it is of note that Buckinghamshire has already developed strategies for the freight sector and digital infrastructure and connectivity[66,67]. However, while the latter focuses primarily on providing high-speed digital connections to businesses and households, it lacks reference to the strategic importance of data centres as part of the digital infrastructure ecosystem.

## Baseline Position

### Extent and Demand

9.6 Among the four modern economy industries, the digital infrastructure (data centres) sector has experienced the most rapid pace of development, both nationally and in and around Buckinghamshire. Increased demand for data centres is attributable to growing computational loads associated with AI, in addition to an ongoing, longer-term increase in cloud storage demands. The south-east of Buckinghamshire is an important strategic location for data centre infrastructure given its position on the Slough-Hayes corridor, a well-established Availability Zone for many Cloud Service Providers.

9.7 In parallel, the laboratory-based sectors in research and development, including for both life sciences and engineering, has received a recent boost from the revival of the Oxford to Cambridge Corridor. The growth corridor, which stretches across northern Buckinghamshire between Oxford and Milton Keynes, will focus on anchoring *"cutting edge work"* in fields including AI, life sciences and semiconductors[68]. The Government acknowledges that growth sectors along the Corridor need to be *"nurtured and supported by the necessary infrastructure, investment and skills base"* – including increasing the available supply of laboratory space. However, while Buckinghamshire has an established presence of businesses within the pharmaceuticals industry, their locations within Buckinghamshire are primarily office-based, providing support for innovation and research rather than hosting these activities.

9.8 The products of gigafactories, namely batteries for electric vehicles, are in high and growing demand both across the country and globally. Estimates suggest the UK will require six new gigafactories by 2030, and a further four up to 2040[69]. While there is an established automotive cluster at Silverstone Park, the focus of these firms is primarily related to research and development, and pioneering new battery and high-performance technology, rather than the land- and energy-intensive process of battery manufacturing.

9.9 Finally, Buckinghamshire is well-connected by road and as such has an established presence of freight and logistics firms. In contrast to the other modern economy industries, these businesses are spread across Buckinghamshire, with clusters in

and around major towns. Over the past decade, there have been net gains in distribution floorspace, with strong take up and low levels of availability, indicative of a high level of demand for both freight and logistics services[70].

### Existing Clusters and Supply Chains

9.10 Clusters of activity in emerging, high-growth sectors have been identified using the UK Innovation Clusters Map from the Department for Science, Innovation and Technology[71]. This highlights three key clusters in Buckinghamshire in the life sciences, e-commerce and artificial intelligence sectors, as defined using the 'RTIC' classification system. However, these clusters are small in terms of their impact on the national economy.

9.11 In terms of spatial requirements and co-location of firms within the modern economy and their wider supply chains, both laboratories and data centres tend to form specialised clusters. For laboratories, clusters at science parks focus on shared resources, including labour, and leading institutions – primarily universities – for both research collaboration and funding. While data centres will cluster within the Availability Zones, the individual data centres within a zone are physically separated to ensure any infrastructure failures can be isolated to individual data centres.

9.12 Conversely, while freight and logistics hubs may form smaller clusters – for example, within industrial parks – a network of hubs across a wide area is required to be ever-closer to delivery partners and end-consumers, and ensure fast and efficient delivery. Gigafactories, given their size, will not cluster with each other but rather will be located close to car manufacturing plants to reduce transport time and costs. However, the significant land take associated with gigafactories means this is not always the case, as demonstrated at the upcoming Agratas gigafactory in rural Somerset.

### Employment and Labour Supply

9.13 The latest data from the ONS suggests that approximately 2.7% of the Buckinghamshire workforce is directly engaged in the modern economy industries. The freight and logistics sector has the largest representation, followed by laboratories: this is to be expected, given these are well-established sectors in the national economy compared to the evolving data centre and gigafactory industries. The latter are also less labour-intensive owing to a high degree of automation.

9.14 Consideration of employment forecasts from Cambridge Econometrics and Experian has focused on the freight and logistics sector, as the most well-established sector in the local and national economy and the only sector for which relevant employment forecasts are available. These indicate an update trend in employment in the sector between 2020 and 2025, recording growth in the region of 15%. However, between 2025 and 2045 employment in the sector is forecasted to plateau, with a compound annual growth rate of 0.3% per year. This, however, does not reflect the full growth potential of the sector in Buckinghamshire.

## Growth Potential

### Foundations for Growth

9.15 The structure of labour skills within Buckinghamshire, as indicated by data on occupations from the 2021 Census, is skewed toward higher-skilled, professional qualifications. While these skills align with the occupations profile of sectors associated with laboratories and digital infrastructure, there is a lack of manual skills required for operations at gigafactories and within the freight and logistics industries. As such, the labour supply conditions within Buckinghamshire are more favourable to laboratory and digital infrastructure development.

9.16 This report applies a dedicated, staged framework to consider Buckinghamshire's existing comparative advantage in each of the modern economy sectors relative to other local authority areas across England. The framework considers both demand-side and supply-side factors influencing an area's suitability for hosting the modern economy sectors, using a high-medium-low ranking system.

9.17 Buckinghamshire's strongest comparative advantage lies within the digital infrastructure (data centres) and laboratories sectors. Both demonstrate favourable supply conditions within Buckinghamshire, resulting from a high proportion of the existing workforce in relevant, higher-skilled occupations. While more limited, the existing presence of firms in these sectors across Buckinghamshire and neighbouring areas also suggests strong demand for such facilities. Looking to the future, Buckinghamshire can capitalise upon its location along key strategic corridors for both industries, namely the Slough-Hayes data corridor and the Oxford-Cambridge-London 'Golden Triangle' for life sciences, in addition to established innovation clusters at Silverstone and Westcott.

9.18 Conversely, Buckinghamshire's comparative advantage in gigafactories and logistics (considered separately to the freight sector in this instance) was ranked as medium. While there is a high level of demand for logistics – evidenced in low availability and strong take up of distribution floorspace in recent years – supply is restricted by high land values, planning constraints, and a lack of labour within relevant occupations or skill groups. Meanwhile, the potential for gigafactories is constrained by both land availability and labour market skills. Finally, the freight sector in Buckinghamshire was judged to have the lowest comparative advantage across the modern economy industries, owing to a lack of strategic transport nodes such as ports, rail freight terminals, and airports.

**Industry Outlook**

9.19 **Laboratories:** There is strong industry and developer interest in the life sciences sector across the UK, driving demand for both wet and dry laboratory facilities, in particular within the 'Golden Triangle' between Cambridge, Oxford and London of which Buckinghamshire forms part. The pharmaceuticals sector has an established presence in Buckinghamshire, while Stoke Mandeville and the Westcott Space Cluster are leading centres for research in MedTech and space propulsion, respectively.

9.20 Meanwhile, the announcement of the new CoSTAR National Lab at Pinewood Studios highlights that research, development and innovation activities within the modern economy in Buckinghamshire need not be restricted to scientific research[72]. Future development may be encouraged by the Government's support for the Oxford to Cambridge Corridor, and as the Oxford-Milton Keynes leg of East-West Rail is set to open later in 2025.

9.21 To support the laboratory-based/laboratory-related and wider scientific research sector, provision can be in the form of supporting office spaces, which Buckinghamshire already hosts for key firms in the pharmaceutical industry, among others, and conventional laboratory and R&D spaces primarily located in and around existing clusters such as Westcott and Stoke Mandeville.

9.22 **Gigafactories:** New gigafactory development has been confirmed in Sunderland and Somerset, as car manufacturers strike a balance between co-location with car manufacturing plants and the large space requirements for gigafactories. However, the capacity of these sites, in addition to the commencement of battery manufacturing at UKBIC in Coventry later in 2025, will fall short of the projected national annual requirement for 2030[73].

9.23 While development of a full-scale gigafactory is unlikely to be on the horizon for Buckinghamshire, owing to the constraints identified previously, Buckinghamshire's established automotive expertise, particularly at Silverstone Park, suggests it may be able to contribute to researching, developing and innovating the next generation of batteries and electric vehicle technology. As such, the development requirements are likely to manifest in office and light industrial spaces that can host research within the battery and electric vehicle sectors, in particular at the Silverstone Park cluster, complementing its existing expansion plans.

9.24 **Data Centres:** There are a growing number of data centres across London and the South East, with clusters now established in Hayes/Slough and East London. The southern extent of Buckinghamshire, in particular the Iver area, are within the Slough Availability Zone, which is a prime strategic location for data centre development. Infrastructure resilience is of particular importance as demand grows, and in recognition of this, the National Grid have announced the installation of a new substation at Uxbridge Moor to serve the energy demands of existing and future data centres in the area[74].

9.25 A review of planning applications reveals a high degree of developer interest in data centres in the south of Buckinghamshire. Further, Pinewood Studios announced plans in February 2025 to develop a data centre at the Land to the South of Pinewood Studios in direct response to "national economic and planning policy"[75]. However, despite strong investor sentiment, a number of data centre applications have been refused since 2020, all citing inappropriate development in the Green Belt as a reason for refusal. However, a number have since been allowed on appeal, with decisions giving weight to the need for new data centres.

9.26 The land requirements for data centres are variable, but the majority of future development can be expected in the southern parts of Buckinghamshire along the Slough-Hayes corridors. Suitable sites would need to be able to accommodate a centre of at least 50,000 sq.m, and can be disused brownfield sites, or underutilised or surplus employment land, and in particular those with existing digital and energy infrastructure connections.

9.27 **Freight and Logistics:** The Buckinghamshire Employment Evidence Study sets out the requirement for class B8 distribution floorspace over the plan period, citing the existing supply of less than one year based on past take-up[76]. However, it is the nature of the distribution spaces, not reflected within the Study, that is of relevance to the modern economy.

9.28 While it is not possible to quantify a need for smart and next-generation warehousing, the majority of the existing distribution floorspace in Buckinghamshire was constructed pre-2000. There is an emerging opportunity to retrofit these spaces to improve their efficiency through digitalisation and automation; this has a reduced environmental impact and financial cost compared to new-build facilities. Further, this approach is in accordance with the aim of the Government's 'Future of Freight' long-term plan[77] to exploit "technology and data enabled opportunities" (p.95) in the sector, in addition to paragraph 87b of the NPPF[78].

## Policy Implications

9.29 In light of the December 2024 update to the NPPF, planning policy and decisions should consider Buckinghamshire's role in supporting the modern economy, and the national growth agenda more widely, through exploiting Buckinghamshire's comparative advantages and associated economic growth potential.

9.30 As part of building a strong, competitive economy in Buckinghamshire, planning policy could pay attention to the spatial and locational requirements of both established and emerging industries. It is already recognised within the Council's emerging strategy and economic evidence base that there is existing potential within the digital infrastructure and laboratories sectors. In particular, a key objective of the emerging Local Plan's vision and objectives draft[79] is *"economy and jobs*" which states that the Local Plan will aim to *"support and enhance Buckinghamshire's strengths in high tech, medical tech, space innovation and creative and digital"* (p.5).

9.31 It will also be appropriate to integrate consideration of the laboratory-related industries – including life sciences, MedTech, pharmaceuticals, space research and high-performance technology – within Buckinghamshire's emerging economic strategy, as cross-cutting activities of the modern economy that require support through both planning policy and decisions.

9.32 Conversely, while the development of a **gigafactory** in Buckinghamshire may not be on the horizon, given the area's relatively weak comparative advantage and the small number of gigafactories required across the country, Buckinghamshire can continue to contribute to the wider automotive and electric vehicles industry. Buckinghamshire has an established presence within this sector, in particular at the Silverstone cluster, and through this both businesses and the local economy can tap into the growth of the gigafactories sector.

9.33 This report has highlighted that infrastructure connections and Availability Zones form a key determining factor in the location of **data centres**. Buckinghamshire has significant potential to host data centres, particularly within the Iver area, owing to the high and growing demand for locations along the strategic Slough-Hayes data centres corridor (Slough SAZ). The Council may consider allocating suitable sites for data centre development to ensure that locations strike a balance between meeting the needs of industry and minimising harm to the Green Belt.

9.34 In particular, provisions for 'grey belt' in the December 2024 NPPF may help to facilitate data centre development. A proactive policy approach with clear guidance and/or allocations would give greater certainty to the market, and help realise what is clearly strong market demand, but in a way which means the Council can give greater policy direction as opposed to responding to 'ad hoc' planning applications and/or appeals.

9.35 Facilities and infrastructure to support the **freight and logistics** industry should be recognised for their role as an enabler of growth in the local economy. As identified within the Employment Evidence Study, additional floorspace will be required across Buckinghamshire to support a range of businesses and to effectively serve consumers. The locations of these units will be influenced by transport accessibility, land supply and land availability. In relation to the modern economy, however, an emerging focus may be the retrofit of some of Buckinghamshire's older class B8 stock, using technological improvements to drive efficiency gains and extend their lifespan, and in turn making best use of existing land.

9.36 Based on the findings of this report, it is concluded that the existing clusters or future growth potential of the modern economy sectors would not influence the existing Functional Economic Market Area (FEMA). While some activity, for example, gigafactory-related sectors at Silverstone or data centres in the Iver area, may spill over the existing FEMA boundary, it is not considered that future growth of these clusters would fundamentally alter Buckinghamshire's economic geography.

9.37 While the focus of this report has been primarily placed upon paragraph 86c of the NPPF regarding considering the needs of the modern economy, it is pertinent to consider paragraph 86d, which states that planning policies should *"seek to address potential barriers to investment, such as inadequate infrastructure, services or housing, or a poor environment"*. As such, reducing any potential barriers to private sector investment in the modern economy, including planning constraints, infrastructure connections, and providing incentives, may form a central priority of Buckinghamshire's emerging economic strategy and overarching policy landscape.

## Overall Conclusions

9.38 In summary, this report highlights the economic potential of Buckinghamshire to leverage opportunities across the modern economy, and in particular its strong comparative advantage in the digital infrastructure (data centre) and laboratory-related industries.

9.39 In alignment with Buckinghamshire's economic aspirations and emerging planning policy direction, there is potential to develop further Buckinghamshire's established presence in science, research and digital technology. In particular, data centre development would offer an opportunity to attract inward investment across a range of high-value and digitally-backed sectors. More broadly, the emerging economic strategy can gear its five strategic priorities to explicitly reference how these relate to the modern economy and the national growth agenda, and in relation to Buckinghamshire's high-potential, high-growth clusters.

9.40 To meet the requirements of the 2024 NPPF, the plan-making process will need to consider how it can most effectively encourage these emerging sectors to grow further. A combination of evidence, including a detailed review of land suitable for development, in combination with relevant economic evidence, could release land for the modern economy, in turn supporting economic prosperity at the local level.

# References


**Introduction**

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# Appendix 1
## Tier 1 and Tier 2 modern economy sector definitions

| Industry | Tier 1 sectors | Tier 2 sectors (supply chain) |
|---|---|---|
| Laboratories | 72.1: Research and experimental development on natural sciences and engineering | 85.1: Pre-primary education<br>85.2: Primary education<br>85.3: Secondary education<br>85.4: Higher education<br>85.5: Other education<br>85.6: Educational support activities<br>62.0: Computer programming, consultancy and related activities<br>29.1: Manufacture of motor vehicles<br>29.2: Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semitrailers<br>29.3: Manufacture of parts and accessories for motor vehicles<br>70.1: Activities of head offices<br>70.2: Management consultancy activities<br>46.1: Wholesale on a fee or contract basis<br>46.2: Wholesale of agricultural raw materials and live animals<br>46.3: Wholesale of food, beverages and tobacco<br>46.4: Wholesale of household goods<br>46.5: Wholesale of information and communication equipment<br>46.6: Wholesale of other machinery, equipment and supplies<br>46.7: Other specialised wholesale<br>46.9: Non-specialised wholesale trade<br>84.1: Administration of the State and the economic and social policy of the community<br>84.2: Provision of services to the community as a whole<br>84.3: Compulsory social security activities<br>74.1: Specialised design activities<br>74.2: Photographic activities<br>74.3: Translation and interpretation activities<br>74.9: Other professional, scientific and technical activities n.e.c.<br>71.1: Architectural and engineering activities and related technical consultancy<br>71.2: Technical testing and analysis<br>73.1: Advertising<br>73.2: Market research and public opinion polling |

| Industry | Tier 1 sectors | Tier 2 sectors (supply chain) |
|---|---|---|
| Gigafactories | 27.2: Manufacture of batteries and accumulators<br>29.1: Manufacture of motor vehicles | 46.1: Wholesale on a fee or contract basis<br>46.5: Wholesale of information and communication equipment<br>46.6: Wholesale of other machinery, equipment and supplies<br>46.7: Other specialised wholesale<br>46.9: Non-specialised wholesale trade<br>64.1: Monetary intermediation<br>64.2: Activities of holding companies<br>64.3: Trusts, funds and similar financial entities<br>64.9: Other financial service activities, except insurance and pension funding<br>47.1: Retail sale in non-specialised stores<br>47.4: Retail sale of information and communication equipment in specialised stores<br>47.5: Retail sale of other household equipment in specialised stores<br>47.7: Retail sale of other goods in specialised stores<br>28.1: Manufacture of general purpose machinery<br>28.2: Manufacture of other general-purpose machinery<br>28.4: Manufacture of metal forming machinery and machine tools<br>28.9: Manufacture of other special-purpose machinery<br>53.1: Postal activities under universal service obligation<br>53.2: Other postal and courier activities<br>26.1: Manufacture of electronic components and boards<br>26.2: Manufacture of computers and peripheral equipment<br>26.3: Manufacture of communication equipment<br>26.4: Manufacture of consumer electronics<br>26.5: Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks<br>26.6: Manufacture of irradiation, electromedical and electrotherapeutic equipment<br>26.7: Manufacture of optical instruments and photographic equipment<br>26.8: Manufacture of magnetic and optical media<br>24.1: Manufacture of basic iron and steel and of ferro-alloys<br>24.2: Manufacture of tubes, pipes, hollow profiles and related fittings, of steel<br>24.3: Manufacture of other products of first processing of steel<br>25.1: Manufacture of structural metal products<br>25.2: Manufacture of tanks, reservoirs and containers of metal<br>25.3: Manufacture of steam generators, except central heating hot water boilers<br>25.5: Forging, pressing, stamping and roll-forming of metal; powder metallurgy<br>25.6: Treatment and coating of metals; machining<br>25.7: Manufacture of cutlery, tools and general hardware<br>25.9: Manufacture of other fabricated metal products62.0: Computer programming, consultancy and related activities<br>49.1: Passenger rail transport, interurban |

| Industry | Tier 1 sectors | Tier 2 sectors (supply chain) |
|---|---|---|
| Gigafactories (cont.) | | 49.2: Freight rail transport<br>49.3: Other passenger land transport<br>49.4: Freight transport by road and removal services<br>49.5: Transport via pipeline |
| Digital Infrastructure | 63.1: Data processing, hosting and related activities; web portals | 70.1: Activities of head offices<br>70.2: Management consultancy activities<br>69.1: Legal activities<br>73.1: Advertising<br>73.2: Market research and public opinion polling<br>35.1: Electric power generation, transmission and distribution<br>63.9: Other information service activities<br>69.2: Accounting, bookkeeping and auditing activities; tax consultancy<br>81.1: Combined facilities support activities<br>53.1: Postal activities under universal service obligation<br>53.2: Other postal and courier activities<br>61.1: Wired telecommunications activities<br>61.2: Wireless telecommunications activities<br>61.3: Satellite telecommunications activities<br>61.9: Other telecommunications activities |
| Freight | 49.2: Freight rail transport<br>49.4: Freight transport by road and removal services<br>50.2: Sea and coastal freight water transport<br>50.4: Inland freight water transport<br>51.2: Freight air transport and space transport | 52.1: Warehousing and storage<br>52.2: Support activities for transportation<br>49.1: Passenger rail transport, interurban<br>49.2: Freight rail transport<br>77.1: Renting and leasing of motor vehicles<br>77.3: Renting and leasing of other machinery, equipment and tangible goods<br>19.1: Manufacture of coke oven products<br>19.2: Manufacture of refined petroleum products<br>49.3: Other passenger land transport<br>49.4: Freight transport by road and removal services<br>49.5: Transport via pipeline<br>51.1: Passenger air transport<br>51.2: Freight air transport and space transport<br>50.1: Sea and coastal passenger water transport<br>50.2: Sea and coastal freight water transport<br>50.3: Inland passenger water transport<br>50.4: Inland freight water transport |

| Industry | Tier 1 sectors | Tier 2 sectors (supply chain) |
|---|---|---|
| Freight (cont.) | | 46.1: Wholesale on a fee or contract basis<br>46.2: Wholesale of agricultural raw materials and live animals<br>46.3: Wholesale of food, beverages and tobacco<br>46.4: Wholesale of household goods<br>46.5: Wholesale of information and communication equipment<br>46.6: Wholesale of other machinery, equipment and supplies<br>46.7: Other specialised wholesale<br>46.9: Non-specialised wholesale trade<br>78.1: Activities of employment placement agencies<br>78.2: Temporary employment agency activities<br>78.3: Other human resources provision<br>64.1: Monetary intermediation<br>64.2: Activities of holding companies<br>64.3: Trusts, funds and similar financial entities<br>64.9: Other financial service activities, except insurance and pension funding |
| Logistics | 52.1: Warehousing and storage<br>52.2: Support activities for transportation | 78.1: Activities of employment placement agencies<br>78.2: Temporary employment agency activities<br>78.3: Other human resources provision<br>64.1: Monetary intermediation<br>64.2: Activities of holding companies<br>64.3: Trusts, funds and similar financial entities<br>64.9: Other financial service activities, except insurance and pension funding<br>51.1: Passenger air transport<br>51.2: Freight air transport and space transport<br>49.3: Other passenger land transport<br>49.4: Freight transport by road and removal services<br>49.5: Transport via pipeline<br>68.1: Buying and selling of own real estate<br>68.2: Renting and operating of own or leased real estate<br>19.1: Manufacture of coke oven products<br>19.2: Manufacture of refined petroleum products<br>77.1: Renting and leasing of motor vehicles<br>77.3: Renting and leasing of other machinery, equipment and tangible goods<br>82.1: Office administrative and support activities<br>82.9: Business support service activities n.e.c.<br>35.1: Electric power generation, transmission and distribution |

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