2026 EDITION

UK Semiconductor Sectoral Analysis

Contents

I. Executive Summary

This report presents findings from research undertaken to produce an updated analysis of semiconductor-related economic activity in the UK. Commissioned by the Department for Science, Innovation and Technology (DSIT) in 2026, the study is intended to enable a better understanding of the composition, scale, opportunities and challenges affecting semiconductor-related activity in the UK.

- Semiconductors are foundational infrastructure for the 21st century economy, enabling markets worth over $10 trillion globally and underpinning every UK priority growth sector identified in the UK's Modern Industrial Strategy, particularly advanced manufacturing, digital & technologies, clean energy and defence. Global semiconductor sales have grown by ~39% since 2022 to $796bn in 2025, driven primarily by AI compute[i].
- The study identifies 703 UK semiconductor companies (295 dedicated, 408 diversified), up from 623 at baseline[ii]. 70% of dedicated companies are UK-headquartered and 92% are SMEs; activity remains concentrated in twelve recognised regional clusters spanning design strength (Cambridge, London, Bristol, Southampton) and manufacturing / materials depth (South Wales, Scotland, North East).
- Dedicated companies generated an estimated £10.6bn in revenue, £7.5bn in GVA and directly employed approximately 16,350 people in 2025 - up 7%, 9% and 9% respectively since the baseline study. The sector is estimated to support up to ~32,550 jobs across the economy.
- Economic activity is concentrated within a small number of large companies, which are estimated to account for 75% of revenue and 61% of employment (up from approx. 66% and 53%).
- There is evidence of greater government support for the sector since the publication of the National Semiconductor Strategy, at both national and regional levels, spanning R&D, skills and use of public finance institutions.
- Investment activity has been strong since the 2024 study. Grants and fundraising across the baseline cohort increased by 16% to £1.73bn, with newly identified dedicated companies securing a further ~£400m - heavily weighted to design-led, seed/venture-stage firms in the East of England, London and the South East.
- Industry sentiment remains overwhelmingly positive - 83% of surveyed firms expect growth over the next three years and 47% expect rapid growth of >20% p.a. (up from 38% in 2024) - but persistent barriers risk constraining delivery, including the availability of talent, access to scale-up capital, and UK operating costs, particularly energy.

1 Introduction and Background

DSIT commissioned Perspective Economics (PE) and a consortium of advisors including TechWorks (TW), IfM Engage (IfM), the UK Electronic Skills Foundation (UKESF) and independent technologists to conduct a follow-up study into the UK semiconductor sector published in 2024. The research presented in this report seeks to provide further detail regarding semiconductor sectoral activity in the UK.

1.1 STUDY OBJECTIVES

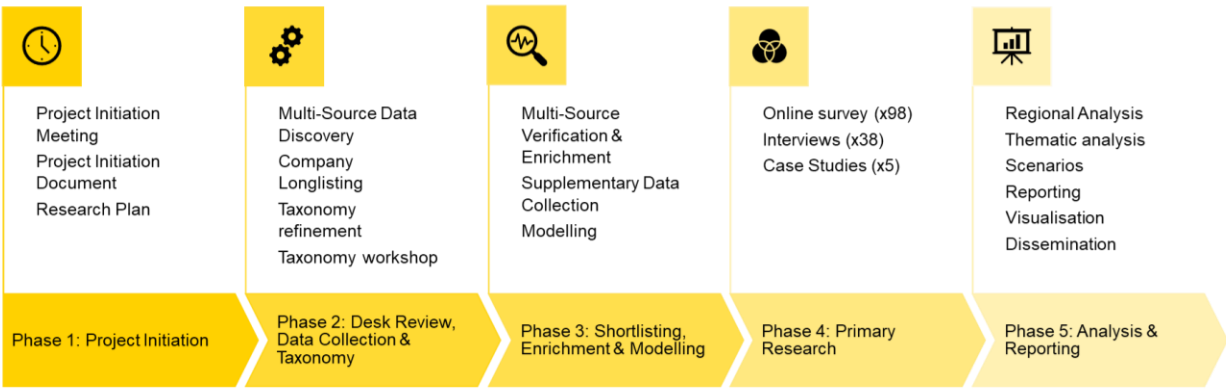
This second iteration of the semiconductor sector study seeks to build on the baseline sector study to further DSIT's understanding of the UK semiconductor sector, including:

- How much the UK's semiconductor sector contributes to the UK economy?
- What the UK's position is within international semiconductor trade?
- How mature / dynamic the UK semiconductor sector is?
- What the implications of UK semiconductor activity are on other UK policy areas?
- What the future trends, risks and opportunities may be for the UK semiconductor sector?

1.2 METHODOLOGY & APPROACH

The study follows an approach that is consistent with, and builds upon, that used to produce the baseline semiconductor sector study, and similar evidence regarding the UK's cyber security and artificial intelligence (AI) sectors. The approach is summarised in Figure 1.1 below and described in detail in the report appendices.

FIGURE 1.1 – OVERVIEW OF METHOD



The overall approach and methodology used to produce this iteration of the study is consistent with the 2024 version but the analytical tools and techniques available to gather and analyse sectoral evidence have continued to evolve.

1.3 ACKNOWLEDGEMENTS

The study team would like to extend its sincere thanks to its panel of expert advisors, and to all who gave their time to contribute to the research by completing the survey, or taking part in consultations and / or workshops.

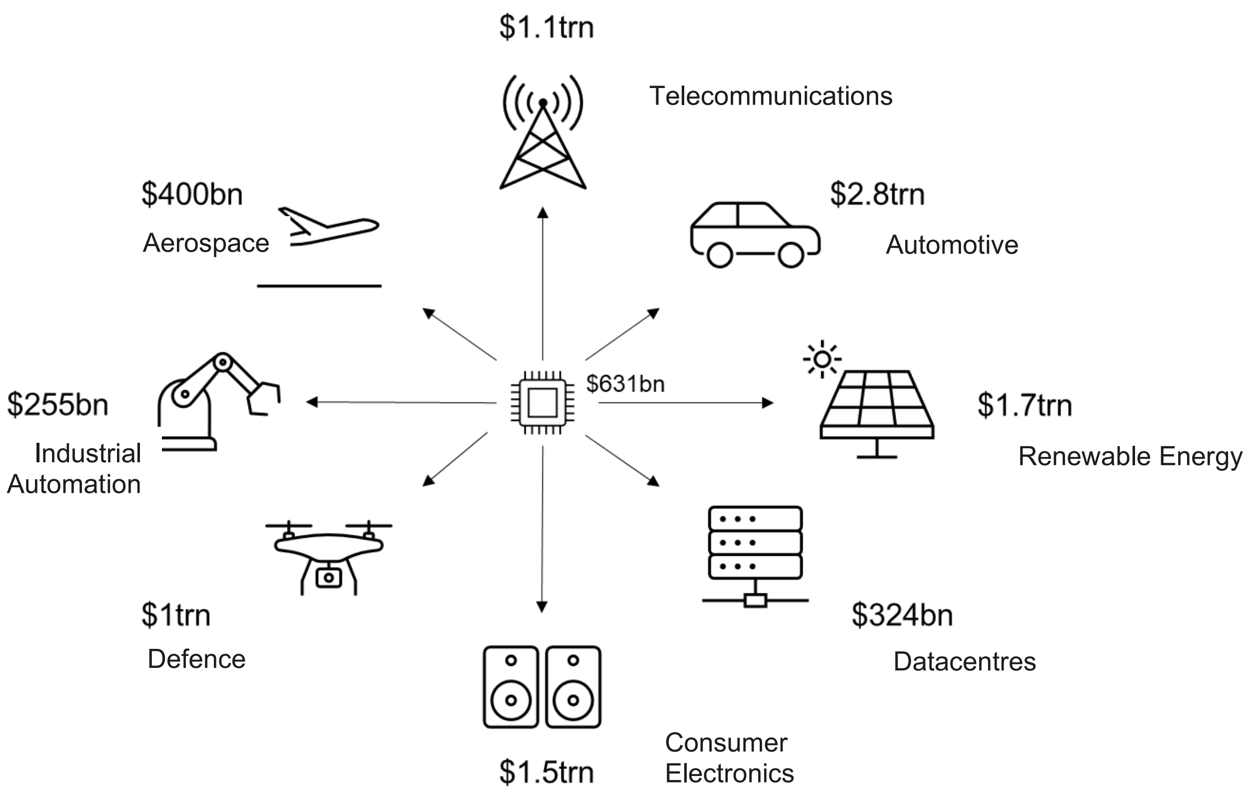
2 Semiconductor-Enabled Industries

Semiconductors are highly specialized components that provide the essential functionality for electronic devices to process, store and transmit data[iii]. Most of today's semiconductors are integrated circuits, also referred to as "chips" composed of active discrete devices, passive devices and the interconnections between them, layered on a thin wafer of semiconductor material.

Semiconductors are a marvel of modern technology and the foundation of our digital world*.

Semiconductor technology underpins virtually every modern industry, acting as a foundational, enabling capability which drives economic growth, productivity and innovation in that industry. From computing infrastructure and telecommunications to automotive, healthcare, defence and energy systems; semiconductors provide the processing, sensing, power management and connectivity functions that define how products and services operate. As digitalisation, automation and ubiquitous connectivity accelerate, the demand for semiconductor technologies is increasing rapidly, reflecting their central role in enabling real-world systems. Recently published global estimates for markets to which semiconductors are integral total more than $10trn (Figure 2.1), including aerospace, industrial automation, defence, consumer electronics, compute, renewable energy, automotive and telecommunications[iv].

FIGURE 2.1 – SEMICONDUCTOR ENABLED GLOBAL MARKETS



Source: Perspective Economics, Various (*SIA 2025 State of Semiconductor Industry)

> In the age of AI, it's often said that data is the new oil. Yet the real limitation we face isn't the availability of data, it's processing power*.

Innovations in semiconductor technology and devices are the fuel powering major emerging transformational technologies, including AI, automation, robotics, future communications, med-tech and clean energy. None of these sectors can exist without advances in semiconductor performance, efficiency and integration.

Semiconductors are the backbone of AI systems, driving their computational power and efficiency. The immense computational demands of AI tasks, like training complex machine learning models or processing real-time data, far exceed the capabilities of traditional computer processors. This has led to the development of specialised processors and custom AI accelerators specifically designed to handle AI workloads. These AI-focussed processors rely on cutting-edge semiconductor technology[v]. In the automotive sector, semiconductors are central to the transition toward electrification and autonomous driving, enabling power management, battery control, advanced driver assistance systems, and in-vehicle connectivity. Telecommunications infrastructure, including 5G and emerging 6G networks, depends on advanced chips to deliver high-speed, low-latency connectivity that underpins digital economies. Similarly, in energy systems, semiconductors are critical for efficient power conversion, grid sensing and management, and the integration of renewable energy sources.

For the UK, this makes semiconductor capability a matter of strategic economic importance. As well as being a significant source of economic value in their own right, generating high-value jobs, strong productivity gains and widespread spillover benefits across the wider economy, semiconductors are critical to the UK's priority growth sectors. Advanced manufacturing, digital technologies, clean energy and defence are all either directly driven by, or critically dependent on, semiconductor technology. *"Without a strong domestic ecosystem spanning design, materials, equipment and specialised manufacturing, the UK risks constraining its ambitions in these sectors and increasing reliance on external supply chains in a geopolitically uncertain environment."* [Industry Stakeholder]

3 Sector Profile

Since the previous sector study was published in 2024, semiconductors have been identified as one of the five critical technologies identified within DSIT's science and technology framework[vi], and as one of six 'frontier technologies' within the UK Industrial Strategy[vii].

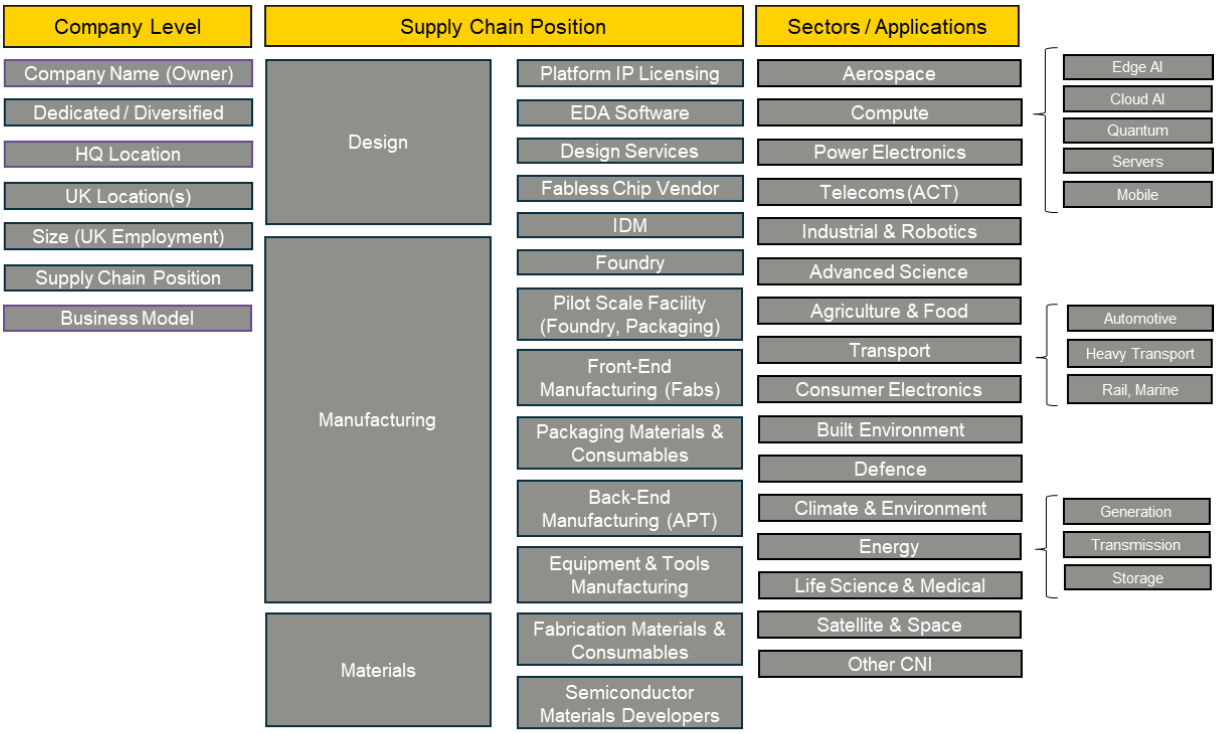
Semiconductors underpin all of the other five strategically significant technologies, including artificial intelligence and quantum technologies. This recognition provides a foundation from which the UK semiconductor sector can further build. Since the publication of the National Semiconductor Strategy in 2023, greater government support for the sector has been evident at both national and regional levels, spanning R&D, skills and use of public finance institutions. Table 2.1 below explains how semiconductor companies are defined for the purposes of the study, including with respect to the primary focus of company activity, the geographic footprint of in-scope companies and the size of in-scope companies.

TABLE 3.1 – SEMICONDUCTOR COMPANY DEFINITIONS

Parameter		Definition
Company Activity	Dedicated	Companies that **specialize** in the design, development, and manufacture of semiconductors, or in the provision of materials exclusively to the semiconductor sector. Including companies across the semiconductor supply chain spanning design, materials and manufacturing that have at least one technical employee in the UK. To avoid inflating estimates of productive UK activity the definition of 'dedicated' semiconductor companies excludes large companies that do not undertake any design or manufacturing activity in the UK.
	Diversified	Companies operating across a wide range of industries and sectors, of which the semiconductor industry is one. In-scope companies must have descriptive evidence of active engagement in semiconductor-related activity e.g., supply of products or services to the semiconductor industry, ongoing semiconductor related research or development / integration of chips as part of a broader product or service offering. These companies may have technical semiconductor employees but technical employment is not a pre-requisite for inclusion.
Geographic Footprint	UK Headquartered	Companies with registered headquarters in the UK and may also have international operations.
	Foreign Headquartered	Companies with registered headquarters outside of the UK but with UK operations.
Size	SME	Consistent with the Companies Act 2006, the term SME is defined based on UK headcount: Micro companies (1 – 9 employees); Small companies (10 – 49 employees); Medium sized companies (50 – 249 employees).
	Large	Consistent with the Companies Act 2006 large companies are defined as having staff headcount of more than 250 employees.

Figure 3.1 overleaf illustrates the taxonomy used to categorise the sector for this year's study. It builds on the baseline categorisation, seeking to add additional detail regarding supply chain positions, manufacturing capability, materials information, product types and application areas.

FIGURE 3.1 – HIGH-LEVEL SEMICONDUCTOR SEGMENTATION (2026)



Source: Perspective Economics, DSIT, Advisory Panel

3.1 SECTORAL CHANGES 2022/23 – 2024/25

A review of more than 30 strategic reports filed at Companies House by the UK's largest dedicated semiconductor companies in late 2024 and early 2025 returned the following observations:

- **Growth driven by AI compute, memory and licensing:** Companies involved in AI compute supply chains, memory and licensing performed strongly. Some of the UK's foremost semiconductor companies grew global revenues substantively due to increased demand for AI-driven design and licensing, hyperscaler demand for GPUs and memory, and increased demand for semiconductor equipment.
- **Inventory corrections:** Conversely, companies exposed to broad analogue, mixed-signal and consumer end-markets saw reductions in turnover (despite continued underlying demand) as customers continued to work through existing stock.
- **Government intervention:** Strategic reports provide evidence of UK government support for the sector, at both national and regional levels, spanning R&D, skills, public procurement, and use of public finance institutions.

- **Geopolitical risks:** Every strategic report flagged geopolitical risk, including trade uncertainties due to the impact of tariffs, US export controls on advanced compute hardware, and international conflicts.
- **UK fab and compound-semi capacity investment:** Nexperia increased its Manchester 200mm (8-inch) silicon wafer production line by ~7% by the end of 2025; PragmatIC opened FlexLogic-003 cleanroom at Durham which is expected to create 500 additional highly skilled jobs by 2030[viii]; Plessey upgraded its 200mm (8-inch) line in Plymouth; and Octric is rebuilding GaN capability with some public finance contributions.
- **Talent retention and skills competition:** Across all of the strategic reports reviewed, engineering-talent retention and competition for AI-skills were the most-cited human resource risks.

Overall, review of annual reports suggests that the semiconductor sector was leaner in FY2025, with a clearer split between companies involved in AI compute and licensing, and those supplying higher-volume markets such as automotive. Since the 2024 study there is evidence of substantive government involvement and increased emphasis among semiconductor companies on geopolitical risks. Sovereign-capability drivers, compound-semiconductor capacity expansion, and AI-related strategic transactions are structural shifts that may prevail across 2025 and 2026.

3.2 NUMBER OF SEMICONDUCTOR COMPANIES

This second iteration of the study has identified a total of 703 companies involved in the UK semiconductor sector. This includes 295 dedicated semiconductor companies and 408 diversified companies[ix].

TABLE 3.2 – DEDICATED AND DIVERSIFIED SEMICONDUCTOR COMPANIES

Dedicated / Diversified	2024 (n, %)	2026 (n, %)
Dedicated	210 (34)	295 (42)
Diversified	413 (66)	408 (58)
Total	623 (100)	703 (100)

Source: Perspective Economics

Within the dedicated cohort of companies 70% are headquartered in the UK and 30% are headquartered internationally (n=209, 88 | baseline 66% and 34% respectively).

3.2.1 REGISTERED COMPANIES BY SIZE

The overall size profile of all companies identified (both dedicated and diversified) has not changed substantively since the baseline study. 89% of all companies identified are micro, small or medium sized (SME) (baseline = 92%). As in the 2024 study, dedicated semiconductor companies are smaller than diversified companies on average, with 92% of dedicated companies classified as SMEs (baseline = 95%), compared to 88% of diversified companies (baseline = 91%). The 24 companies classified as large in the dedicated segment (8% of 295) account for 75% of estimated UK revenues and 61% of employment (baseline = 63% and 53% respectively)[x].

There are more micro and small-sized companies among the dedicated cohort (73% of dedicated companies are micro or small-sized (n=215), compared to 66% of diversified companies, n=267). These micro and small-sized semiconductor companies employ approximately 3,000 people and have 13 employees on average.

FIGURE 3.2 – UK SEMICONDUCTOR SIZE PROFILE

Estimated Size	Dedicated	Diversified
Large	8.1% (n=24)	12.5% (n=51)
Medium	19.0% (n=56)	22.1% (n=90)
Small	33.9% (n=100)	30.6% (n=125)
Micro	39.0% (n=115)	34.8% (n=142)
Grand Total	100.0% (n=295)	100.0% (n=408)

Source: Companies House, Perspective Economics

Dedicated, UK headquartered companies are typically smaller than their international counterparts. 81% of UK headquartered companies are either micro or small, compared to 54% of internationally headquartered UK entities (baseline = 79% and 55% respectively).

3.2.2 SEMICONDUCTOR COMPANY REGISTRATIONS

The constant rate of new dedicated company incorporations has continued since the baseline report, with an average of 9 new company incorporations each year since 2016 (baseline average = 8 new incorporations per year). Nine of the 10 new company incorporations in 2024 and 2025 are UK headquartered and are estimated to employ more than 100 people.

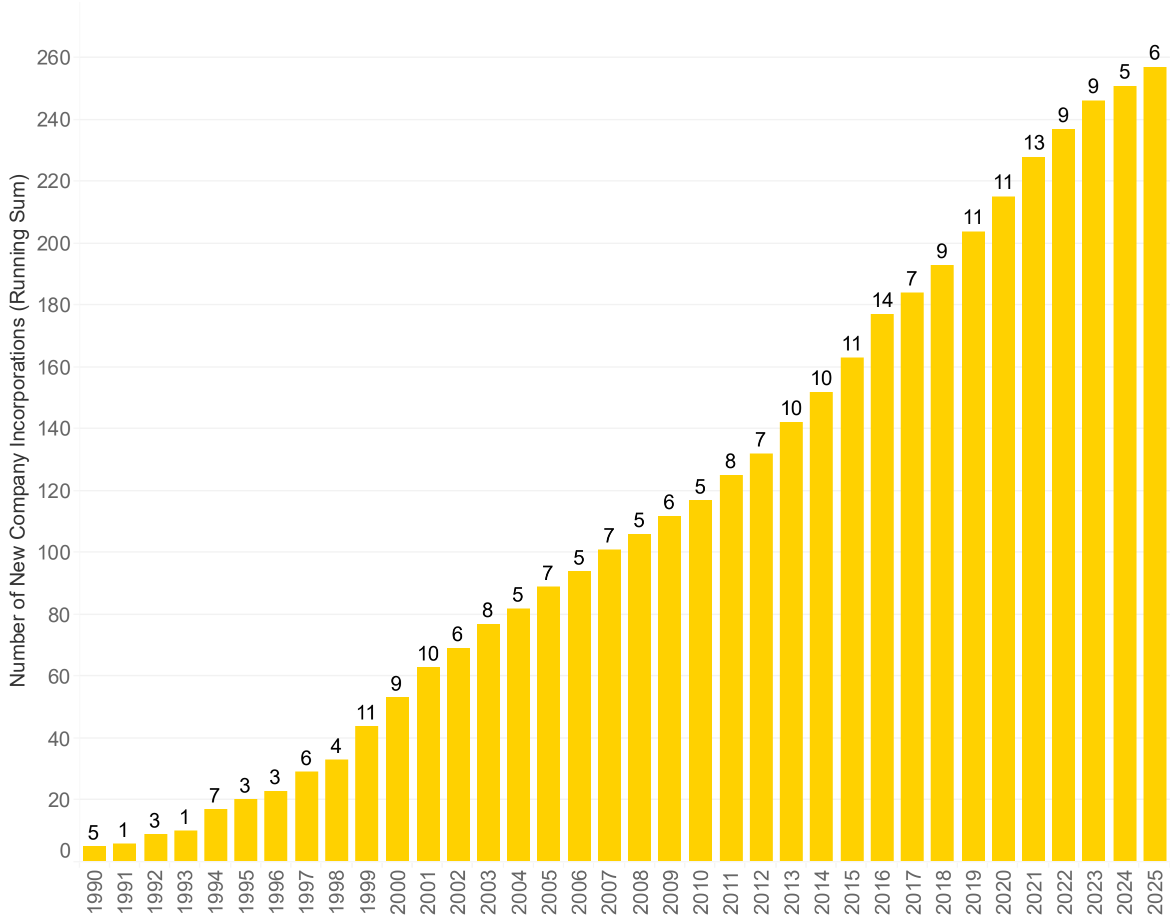
TABLE 3.3 – EXAMPLE NEW COMPANY INCORPORATIONS

Company	Focus
FRACTILE	Fractile is building chips, systems and software to radically improve the speed and cost of running frontier AI inference via a new approach to fusing computation with memory.
OLIX	OLIX Computing is developing a new paradigm for AI compute infrastructure through its optical digital processor with a novel memory and interconnect architecture.
Novomorphic	Novomorphic designs secure edge AI electronic systems from architecture to silicon where design parameters are constrained by power, thermal limits, RF coexistence, latency or security.
KELVIN QUANTUM	Kelvin Quantum develops semiconductor-based cryogenic-capable electronics (ASICs, integrated circuits, electronic systems) for quantum applications.

chipletti	Chipletti is a fabless semiconductor design company focused on advancing AI inference performance through innovative 3D memory solutions.
convergent labs	Convergent Labs is building next-generation compound semiconductors for photon-counting imaging applications, including manufacture of CdTe detectors using proprietary crystal growth processes.

Source: Companies House, Perspective Economics

FIGURE 3.3 – SEMICONDUCTOR COMPANY INCORPORATIONS (1990 – 2025)



Source: Companies House, Perspective Economics

3.3 SEMICONDUCTOR ACTIVITY BY SUPPLY CHAIN SEGMENT

The study team applied tailored frontier large language model (LLM) scripts to descriptive company information to categorise semiconductor companies according to the supply chain taxonomy set out in Figure 3.1. Categorisations were manually reviewed and updated where relevant based on expert sectoral knowledge. Each dedicated semiconductor company was assigned a *'best-fit'* supply chain category. While this approach offers a degree of clarity within the analysis, it is recognised that in many cases companies undertake activity across more than one segment of the supply-chain. Table 3.4 provides some illustrations of these overlaps.

TABLE 3.4 – DESIGN & MANUFACTURING ACTIVITY OVERLAPS (ILLUSTRATIVE)

Company	Description	Supply Chain Best Fit
Texas Instruments	Texas Instruments (TI) is a leading global semiconductor company that has been driving progress through innovation for decades. Specializing in the design, manufacture, testing, and sale of analog and embedded processing chips.	Design: Globally Texas Instruments operates across multiple segments of the semiconductor supply chain its UK activity is predominantly R&D related.
KLA	KLA (formerly SPTS), is a global leader in designing, manufacturing, selling, and supporting advanced etch, deposition, and thermal processing equipment and technologies for the semiconductor and microdevice industries.	Manufacturing: Globally SPTS is involved in the design and manufacture of semiconductor equipment and tools. The company undertakes both R&D and manufacturing activity in the UK. The company has significant manufacturing activity at its Newport site.
Dynex Semiconductor	Dynex Semiconductor Ltd specializes in designing, manufacturing, and supplying high and low power semiconductor devices and modules, including power diodes, thyristors, IGBT modules, and integrated power assemblies.	Manufacturing: Dynex undertakes both R&D and manufacturing activity in the UK. The company has significant manufacturing activity at its Lincoln site.
IQE	Specializing in the development, manufacture, and supply of compound semiconductor wafers, IQE leverages advanced epitaxy technology to produce bespoke 'epi-wafers' tailored to specific electronic or optical properties required by major chip manufacturers.	Materials: IQE is a leading global supplier of advanced semiconductor materials (wafer products) and services. It also has several manufacturing sites across the UK.
ST Microelectronics	STMicroelectronics is a leading global semiconductor company that designs, manufactures, and markets a wide array of microelectronics products, focusing on delivering intelligent and energy-efficient solutions.	Design: ST Microelectronics is a multinational company headquartered in Switzerland. It has manufacturing sites across Europe and Asia and a strong R&D presence in the UK.

Source: Perspective Economics

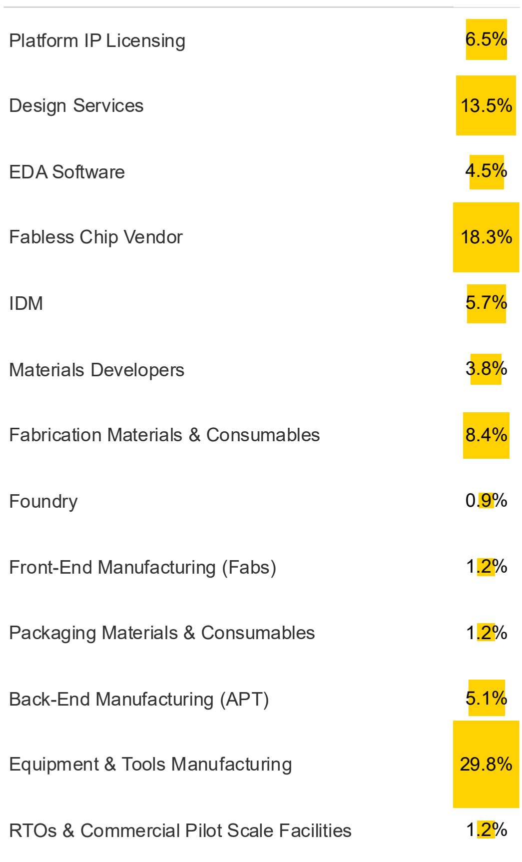
Acknowledging the ‘best-fit’ caveat, the supply chain analysis suggests that:

- 60% of dedicated semiconductor companies active in the UK are primarily involved in research and development, design and IP related activities (n=177, baseline 67% n=140)[xi]. Example companies include Arm, Synopsys, Ensilica, Cambridge GaN, XMOS, Novomorphic, Chipletti.
- 32% are involved primarily in semiconductor manufacturing activity, including both front and back-end manufacturing and the manufacture of semiconductor equipment and tools. Example companies include KLA, Vishay, Diodes, Seagate, Clas-SIC Wafer Fab, PragmatIC, CIL, Octric, and RAM Innovations (n=94, baseline 28% n=59).
- 8% are primarily involved in the supply of materials to front or back-end manufacturing. Example companies include Shin-Etsu, IQE, Porotech, Photronics, and SmartKem (n=24, baseline 5% n=11).

As in the 2024 study, the supply chain profile of dedicated, UK headquartered companies is not significantly different to these overall proportions. 60% of UK headquartered companies are primarily involved in research, development, design and IP activities, 31% are involved in manufacturing and 9% are involved in the provision or development of semiconductor materials.

The baseline study noted that the UK has a substantive cohort of companies involved in the manufacture of equipment and tools used by the semiconductor sector in the UK, and internationally. Analysis of SME company counts across the updated dataset (including both dedicated and diversified SMEs) reinforces the significance of this segment in the UK. Figure 3.4 opposite shows that while design and IP makes up a relative majority of total SME activity (including IP, design services, EDA and Fabless Chip Vendors), equipment and tools manufacturing is the second largest SME supply chain component, followed by the provision of materials and consumables to front or back-end manufacturing.

FIGURE 3.4 – SME SUPPLY CHAIN

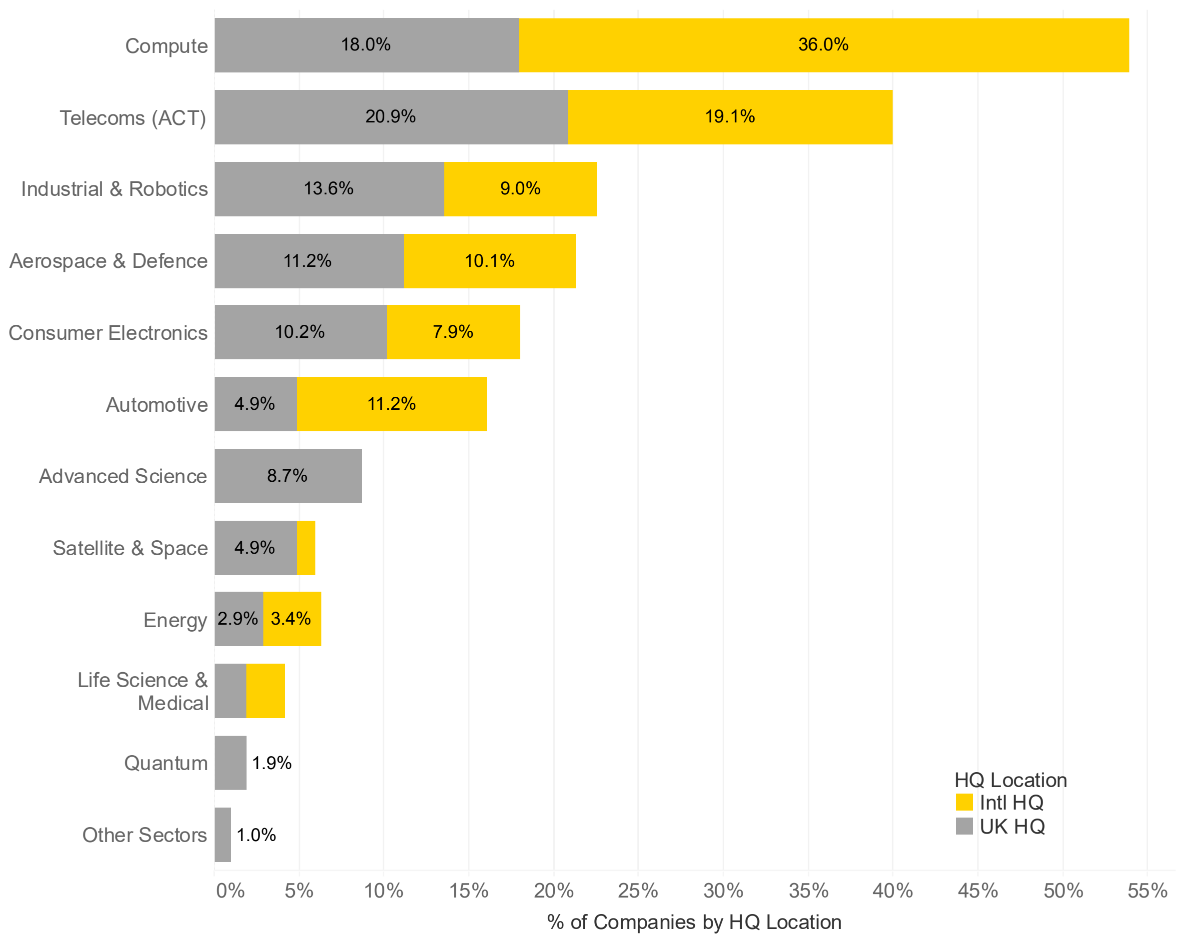


Source: Perspective Economics (n=584 of 630 SMEs with Level 2 Supply Chain Tags)

3.3.1 SEMICONDUCTOR ACTIVITY BY TARGET END-MARKETS

The study uses descriptive company information to understand which end-use markets are targeted by UK semiconductor companies[xii]. While semiconductor companies often target multiple end-markets, applying the same *'best-fit'* caveat described previously suggests that compute and telecoms are the two most prominent target markets overall. Compared to the baseline study, compute has overtaken telecoms as the most prominent end-market. Telecoms and compute are also the most prominent target markets for UK headquartered companies (Figure 3.5). Industrial & Robotics, Aerospace & Defence and Consumer Electronics make up the top 5 target markets (a key focus for 12%, 11% and 10% of dedicated companies respectively). These key target markets remain consistent when the analysis focusses on SMEs only. It is worth noting that Advanced Science and Quantum only feature as target markets for UK headquartered companies – emphasising their relevance to the domestic semiconductor sector.

FIGURE 3.5 – KEY END MARKETS (UK & INTL HQ DEDICATED COMPANIES)



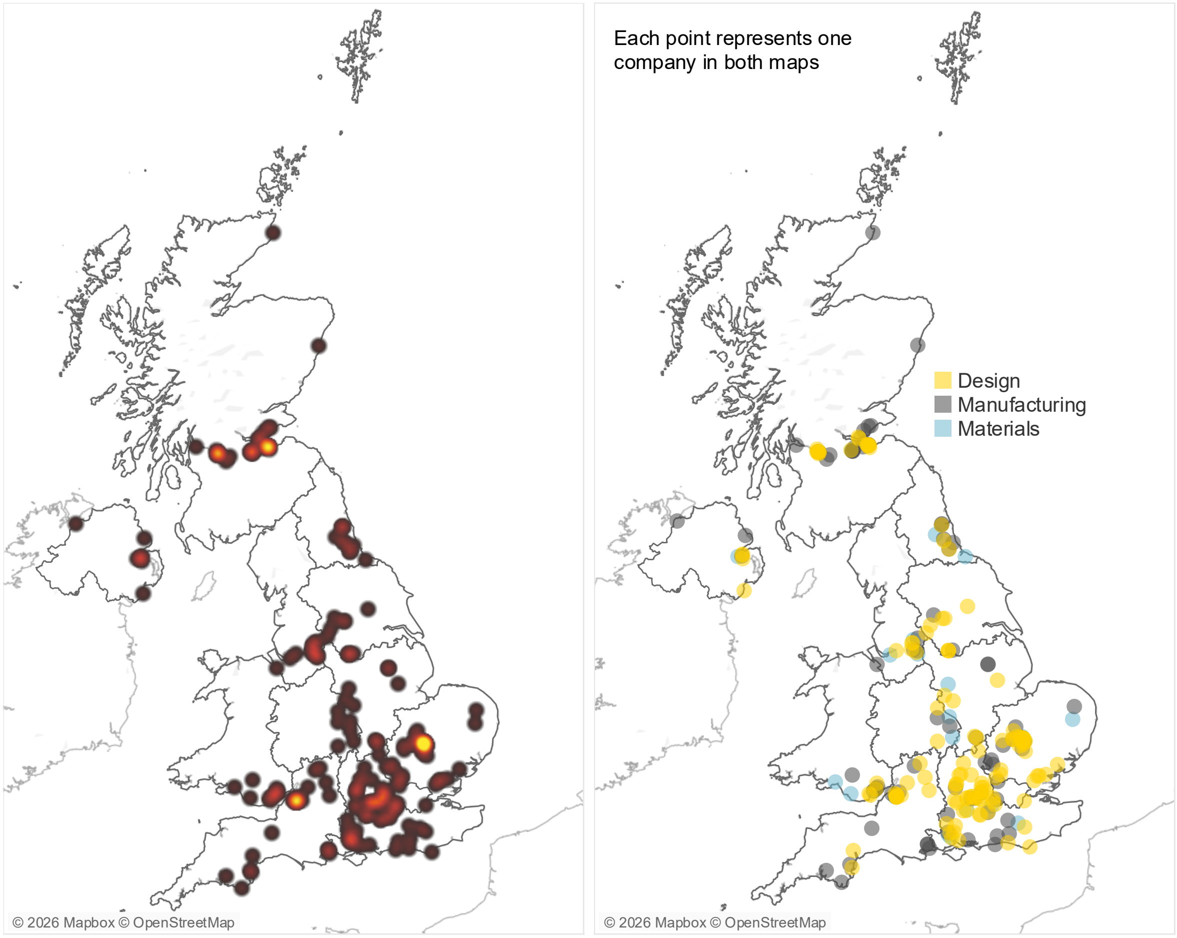
Source: Perspective Economics (n=295)

3.4 LOCATION OF DEDICATED SEMICONDUCTOR COMPANIES

Analysis of UK location data shows known clusters of semiconductor companies in Bristol, Cambridge, the North East of England, Northern Ireland, Scotland and South Wales. It also shows clusters in the North West, the Midlands and along the south coast of England.

Main manufacturing clusters are in Scotland, Wales and the North East. There are design clusters in and around London, particularly in Cambridge, and along arterial routes between London and Bristol, Oxford and Southampton.

FIGURE 3.6 – UK SEMICONDUCTOR CLUSTERS (DEDICATED COMPANIES)



Source: Companies House, Perspective Economics

4 Economic Contribution

This section provides an updated analysis of the contribution that semiconductor activity makes to the UK economy.

4.1 ESTIMATED REVENUE

Since 2022 global semiconductor sales have soared, reaching a total of $796bn (~£584bn) in 2025 (+39%)[xiii]. Estimated UK revenues among the same set of dedicated companies have grown by 7% from £9.6bn in 2022/23 to £10.3bn in 2024/25.

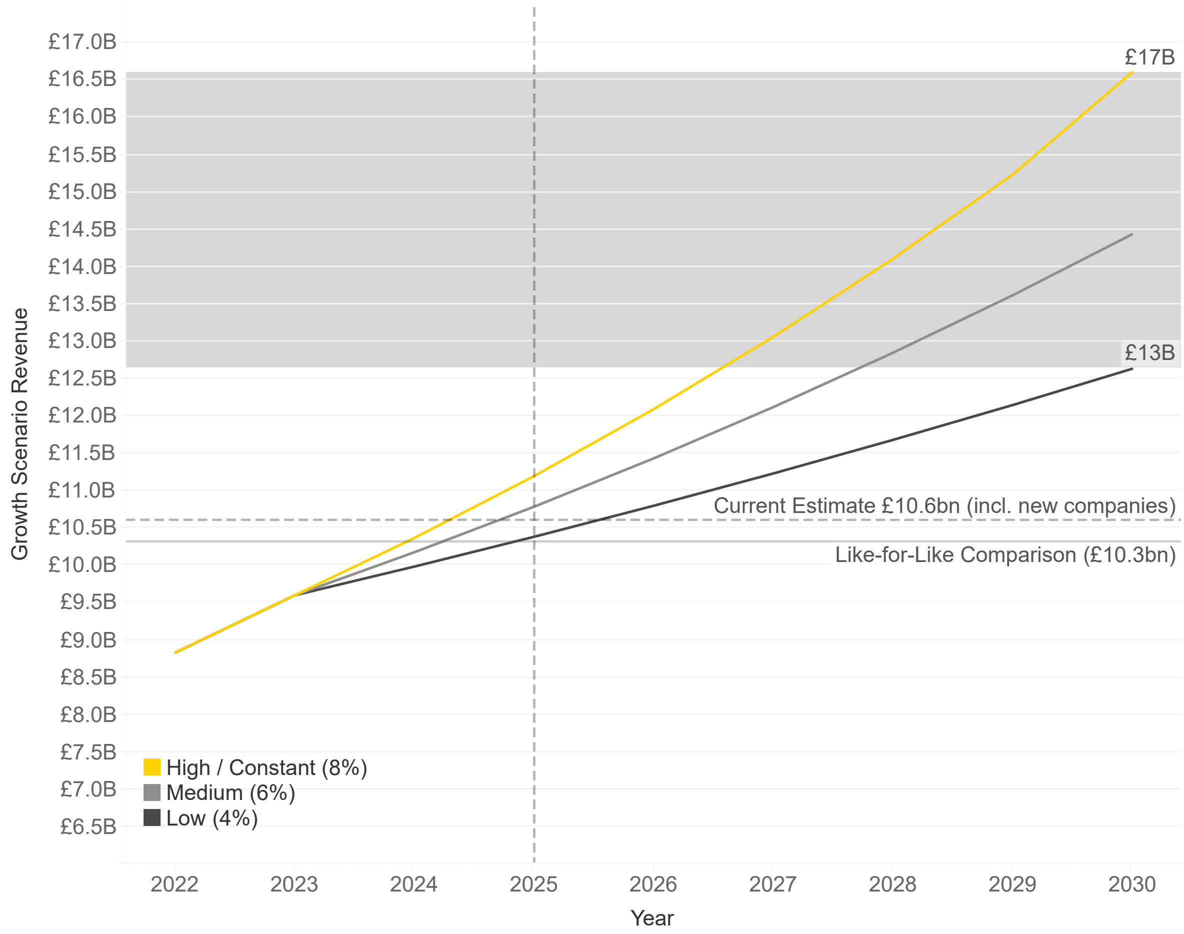
Improvements in the analytical tools the techniques available to identify and classify companies means that additional dedicated companies have been identified. If estimated UK revenues for those companies are also included, then total estimated revenues generated by dedicated semiconductor companies in the UK total £10.6bn (i.e. by ~10%)[xiv].

Within this figure, dedicated companies involved in ChipStart, and other dedicated companies incorporated in 2024 and 2025 contribute ~£23m.

The baseline study used historic (10-year) revenue data for 40 dedicated semiconductor companies to calculate average compound annual growth rates. The resultant average growth rate of 8% was used as a basis to produce straight-line growth scenarios that assumed low growth (4%), moderate growth (6%) and constant or high growth (8%).

The current estimate of £10.6bn in sector revenues positions growth between the baseline low and moderate growth scenarios (Figure 5.1).

FIGURE 4.1 – GROWTH SCENARIOS (DEDICATED COMPANY UK REVENUES)



Source: Perspective Economics

The 2024 study estimated that approximately 66% of UK revenues were generated by large companies. Based on the latest available data, the large company share of revenues has increased to approximately 75%. Revenue per employee ranges from ~£240k among micro companies (baseline = £225k) to ~£675k among large companies (baseline = £750k).

Analysis of estimated UK revenues by headquarters location shows a ~50/50 split between UK headquartered companies, and companies headquartered internationally – consistent with the baseline study. Table 5.1 provides a breakdown of estimated UK revenues by company size and headquarters location.

TABLE 4.1 – REVENUE BY HQ LOCATION & SIZE

Estimated Size	Intl HQ (£m)	Intl HQ	UK HQ (£m)	UK HQ
Large	3,378	70.7%	4,217	79.0%
Medium	1,370	25.6%	584	10.9%
Small	183	3.4%	436	8.2%
Micro	16	0.3%	104	1.9%
Total	5,347	100%	5,341	100%

Source; Perspective Economics

The split in revenues across high-level supply chain categories (design, manufacturing and materials) are also broadly consistent with the baseline study, with design accounting for ~79% of revenues (driven by a small number of very large design firms) and materials and manufacturing accounting for 17% (baseline = 85% and 15% respectively).

4.1.1 FUTURE GROWTH

Responses to the baseline survey of semiconductor industry representatives returned very positive expectations for future growth. At that stage, 90% of respondents (n=59) expected to see some level of business growth in the short-term (3 years). According to this year's survey data, growth projections continue to be positive, with 83% of respondents (n=54) expect their UK semiconductor business to experience growth over the next three years[xv]. Almost half of all respondents this year (47%) expect rapid growth of more than 20% per annum, compared to 38% in 2024.

As with the 2024 study, growth sentiment among design-oriented businesses tended to be more optimistic than among manufacturing or materials businesses. 57% of design-oriented businesses expect to see rapid growth in the next 3 years, compared to 35% of manufacturing businesses and 43% of materials businesses. Overall, however, growth sentiment among both manufacturing and materials businesses is also overwhelmingly positive, with approximately three quarters of respondents in both industry segments expecting to see business growth in the next 3 years.

When asked to identify significant barriers to business growth in the next 3 years. Talent availability is the most frequently cited growth barrier among design companies, appearing in approximately two thirds of responses – consistent with context set out in strategic reports filed with Companies House. Qualitative survey data also suggests that the concern is not only graduate supply but also challenges with finding experienced engineers at senior level, particularly in digital and mixed signal design. Respondents continue to cite Brexit as a compounding factor, suggesting that the UK is a less attractive proposition post-Brexit than other EU countries for international talent.

Access to capital was cited as another barrier to growth by respondents from different industry segments. Design companies, particularly early-stage and fabless businesses, reported difficulty securing growth equity and grant funding for hardware focused businesses. Lack of access to growth capital is also likely to be a contributing factor to broader structural concerns raised in qualitative survey responses that 'success' in UK fabless semiconductor endeavours tends to result in acquisition rather than sustained independent scaling, which several respondents describe as undermining long-term depth in the sector. Manufacturing companies cited scale-up capital as the primary growth constraint, with several respondents noting that government support is concentrated in R&D rather than more capital-intensive scale-up of production.

Lastly, UK operating costs, particularly energy costs, were a recurring theme among manufacturing respondents, some of whom suggested that current energy cost pressures are damaging global competitiveness, including with the Republic of Ireland.

4.2 ESTIMATED EMPLOYMENT

The baseline study estimated that dedicated UK semiconductor companies employed ~15,000 people in the UK, and that UK headquartered companies accounted for more than 60% of that total (n=9,313).

Like-for-like comparison of estimated employment among companies included at both timepoints suggests that sector employment has grown by 9% to ~16,350, with UK headquartered companies still accounting for ~60% of this total[xvi].

Applying weighted employment multipliers to this direct employment base suggests that UK semiconductor activity supports a further ~10,500 jobs through supply chain effects, and a further ~5,700 in the wider economy. This brings the total number of jobs supported by the sector to ~32,550[xvii].

4.2.1 EMPLOYMENT BY SIZE & HEADQUARTERS LOCATION

Among dedicated companies, around 66% of total employment is within large companies (up from 53% in the baseline study) and 23% of employment is within medium sized companies (down from ~33% in the baseline study). This change is driven by a combination of employment growth among large companies such as Vishay, Arm, Renesas and KLA, shifts from medium to large size categories between the baseline and current study (e.g., PragmatIC) and comparatively modest changes in either direction among medium sized companies. Table 5.1 provides a summary of employment numbers and percentages within dedicated semiconductor companies of different sizes, according to whether they are headquartered in the UK or internationally. The data suggests that the share of employment among large companies, headquartered in both the UK and internationally, is greater than estimated in the baseline study.

TABLE 4.2 – EMPLOYMENT BY HQ LOCATION & SIZE

Estimated Size	Intl HQ	Intl HQ	UK HQ	UK HQ
Large	4,099	57.2%	6,636	72.4%
Medium	2,412	33.6%	1,359	14.8%
Small	592	8.3%	933	10.2%
Micro	68	0.9%	237	2.6%
Total	7,171	100%	9,165	100%

Source: Companies House, Perspective Economics

Analysis of web data on technical employment within dedicated and diversified semiconductor companies suggests that ~51% of those employed in dedicated companies work in technical roles. Survey responses suggest that ~62% of employment is within technical roles, suggesting that the number of people employed in technical roles is between ~8,500 and 10,000, higher than the 2024 estimate of 33% (~5,000 employees).

4.2.2 REGIONAL EMPLOYMENT PROFILE

Web data was used to estimate the number of dedicated semiconductor employees across regions. Results of the analysis suggest that the East of England, Scotland and the South East account for the highest proportions of dedicated semiconductor employees, and that the East of England, Wales and Scotland have among the highest concentrations of semiconductor employees relative to the concentration nationally.

TABLE 4.3 – ESTIMATED EMPLOYMENT ACROSS REGIONS

Region	Percentage	Location Quotient[xviii]
East (England)	20.6%	2.29
East Midlands (England)	3.6%	0.52
London	12.6%	0.72
North East (England)	2.2%	0.65
North West (England)	8.5%	0.78
Northern Ireland	1.9%	0.74
Scotland	15.0%	1.94
South East (England)	11.9%	0.88
South West (England)	10.3%	1.22
Wales	8.6%	2.16
West Midlands (England)	1.9%	0.24
Yorkshire and The Humber	2.7%	0.35

Source: Perspective Economics, Lightcast

4.3 ESTIMATED GROSS VALUE ADDED

A like-for-like comparison of dedicated companies included across both datasets suggests that estimated GVA has fallen slightly from £7.4bn (2022/23 data) to £7.1bn (2024/25 data).

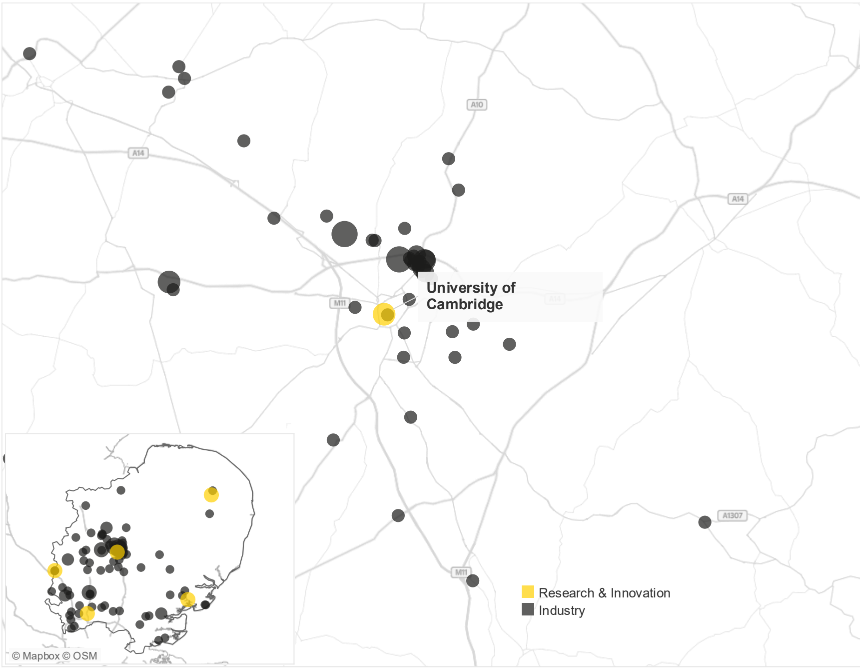
This is mainly due to reductions within one large internationally headquartered firm. Removing that one firm from both datasets reveals a positive underlying trend in which GVA has increased by 9%, from £5.8bn to £6.3bn.

Further, if newly identified dedicated companies are included in the GVA analysis, then dedicated sector GVA has increased from £6.6bn to £7.5bn (also by 9%).

5 Regional Foundations, National Capability

The UK semiconductor sector supports high-skilled, high-value jobs across every UK region. Activity across regions is led by business leaders and advocates with deep technical and sectoral knowledge. Every region brings distinct capabilities, from materials science and device physics through fabless design, IP, foundry, manufacturing, advanced packaging and process equipment. Regions connect through academic and industrial networks to create a national semiconductor capability that makes the UK an attractive global location for semiconductor research and development (across design and materials) and attracts substantive levels of foreign direct investment in manufacturing. The sub-sections below provide a summary of relative regional strengths. Full profiles are available in the report appendices.

5.1 EAST OF ENGLAND (CAMBRIDGE)



Cambridge hosts a globally leading semiconductor research and design ecosystem, with depth in fundamental semiconductor physics, world-leading GaN and advanced materials capability, and globally significant chip architecture expertise through Arm. The cluster is anchored by the University of Cambridge – the Cavendish Laboratory's Semiconductor Physics Group, the Cambridge Centre for Gallium Nitride, and the new CASCADE Computer Architecture and Semiconductor Design Centre, founded by a £3.5m Arm donation in 2024.

Key capabilities include hafnium-oxide memristors for energy-efficient AI hardware, MOCVD GaN growth and porous nitrides (commercialised via Porotech), 2D materials work generating spin-outs such as Paragraf, CamGraPhIC and Molyon, and CASCADE/CHERI chip architecture leadership. Cambridge collaborates extensively across UK regions including as part of the Henry Royce Institute, via the UK-Ireland cross-border ANAM nanotube initiative, in Wales through IQE's Cambridge-rooted supply relationships, and with Bristol and Warwick via REWIRE, Cambridge GaN Devices and Paragraf.

Business activity centres on design, IP and fabless semiconductor activity. Arm's HQ anchors a base that includes Qualcomm, Imagination Technologies, MediaTek, AMD and Synaptics design centres.

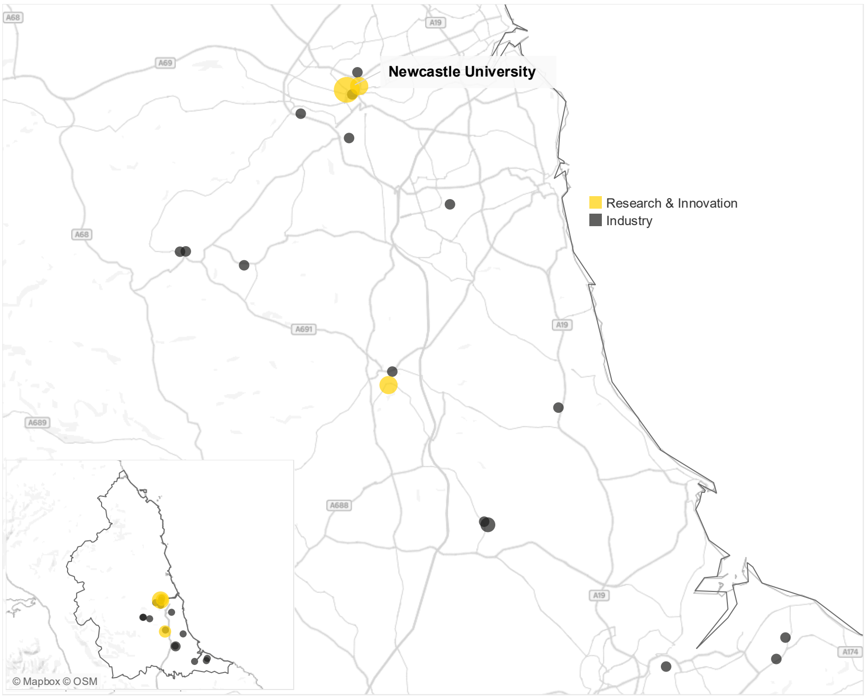
5.2 LONDON

London is the strategic centre of the UK semiconductor sector, as the location for national coordination bodies, startup programmes and proximity to government and capital markets. The newly established UK Semiconductor Centre at the Institute of Physics convenes national policy, with team members distributed across the UK to support regional clusters.

Research is led by UCL and Imperial College London. UCL has unique national strength in neuromorphic computing, hosting the Neuroware IKC dedicated to its commercialization, alongside the London Centre for Nanotechnology. Imperial leads on MEMS, terahertz optics and single-atom silicon quantum electronics.

The Knowledge Quarter at King’s Cross offers proximity to Google, DeepMind, Meta and Advanced Research and Invention Agency (ARIA). Business activity focuses on fabless design, IP and research-led spin-outs, including Fractile, Olix, Allegro, Semtech and Nanoco.

5.3 NORTH EAST

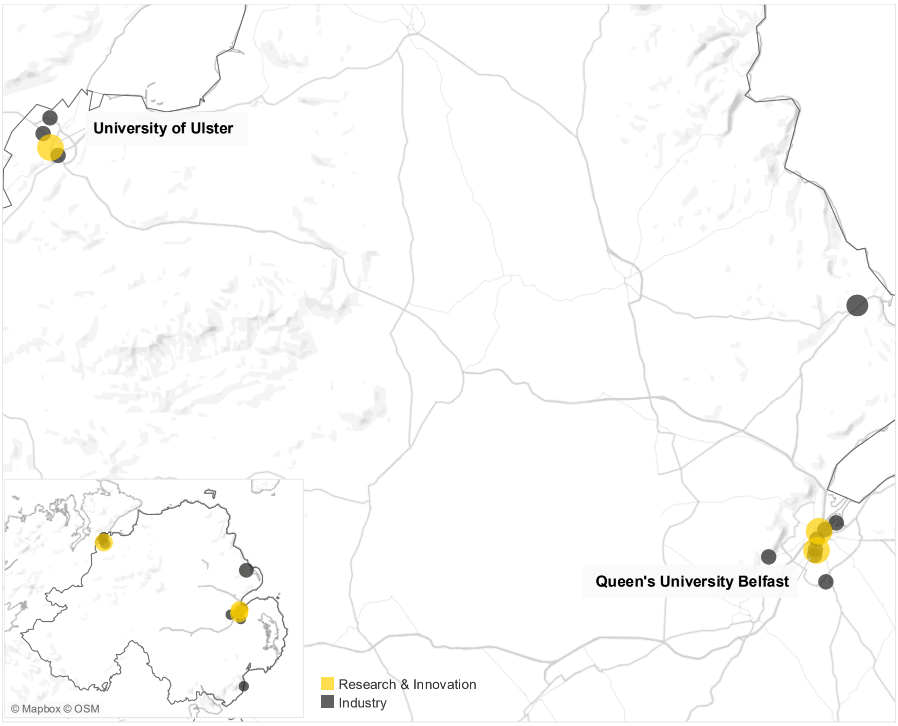


The North East is a business-led advanced electronics cluster focused on capabilities that go beyond conventional silicon to compound semiconductors, two-dimensional materials, polymer and organic materials, and hybrid approaches. The cluster is organised around the North East Advanced Material Electronics (NEAME) cluster body and grounded in long industrial heritage, with member companies spanning the full value chain from electronic materials manufacture through device development, fabless design and product integration.

Distinctive regional capabilities include compound semiconductor RF and millimetre-wave components, MEMS manufacturing, photonics for space and aerospace, and frontier flexible/organic and radiation detection electronics. Newcastle University's research, hosted within the CHIMES² IKC, focuses on next-generation integrated circuits.

Through CHIMES² the cluster connects to joint leads Sheffield and Southampton, and to Manchester. The Compound Semiconductor Applications Catapult's NETPark site links the North East to South Wales' national compound semiconductor infrastructure, and PragmatIC's North East operations tie the cluster to Cambridge's flexible electronics ecosystem. Regional semiconductor companies include Filtronic, Coherent, INEX, Isocom, Tosoh Quartz, aXenic, Mignon, Nascent Semiconductor and EpiValence.

5.4 NORTHERN IRELAND



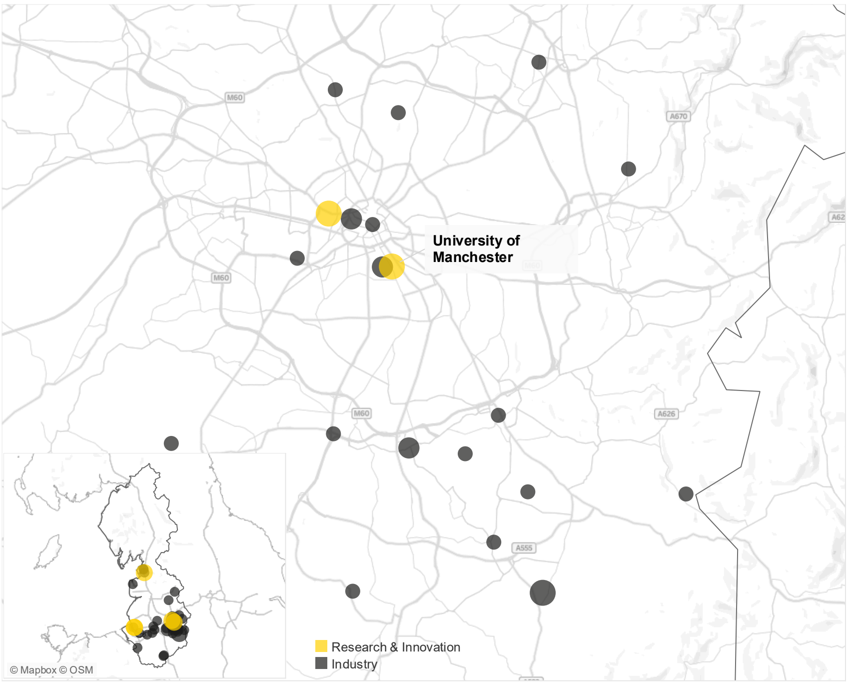
Northern Ireland is home to nationally influential hardware security research base. Regional capability is anchored by Seagate Technology – a global leader in mass-capacity data storage and lead partner within the £42m Smart Nano NI consortium. Smart Nano NI is also supported by Queen's University Belfast, Ulster University, and the Queen's Advanced Micro-Engineering Centre (QAMEC), with cluster coordination through the Northern Ireland Photonics Innovation Cluster (NIPIC).

Distinctive technical strengths include integrated photonics and nano-manufacturing, hardware security and secure-by-design research at Queen's Centre for Secure Information Technologies, and novel materials work via Ulster's involvement in the Cambridge-led Advanced Nanotube Application and Manufacturing Initiative (ANAM). The cross-border Semiconductor Photonics Education and Research (SPEAR) Centre acts as a UK–Ireland innovation hub.

Business activity is anchored by Seagate's 20-acre advanced manufacturing plant – critical to the global heat-assisted magnetic recording head supply chain – and ICEMOS Technology (silicon-on-insulator and MEMS foundry). Specialist firms include Raptor Photonics, Wolfspeed, Arralis, Amphion Semiconductor, Brolis Photonics, AntennaWare, Silansys, and Causeway Sensors.

5.5 NORTH WEST

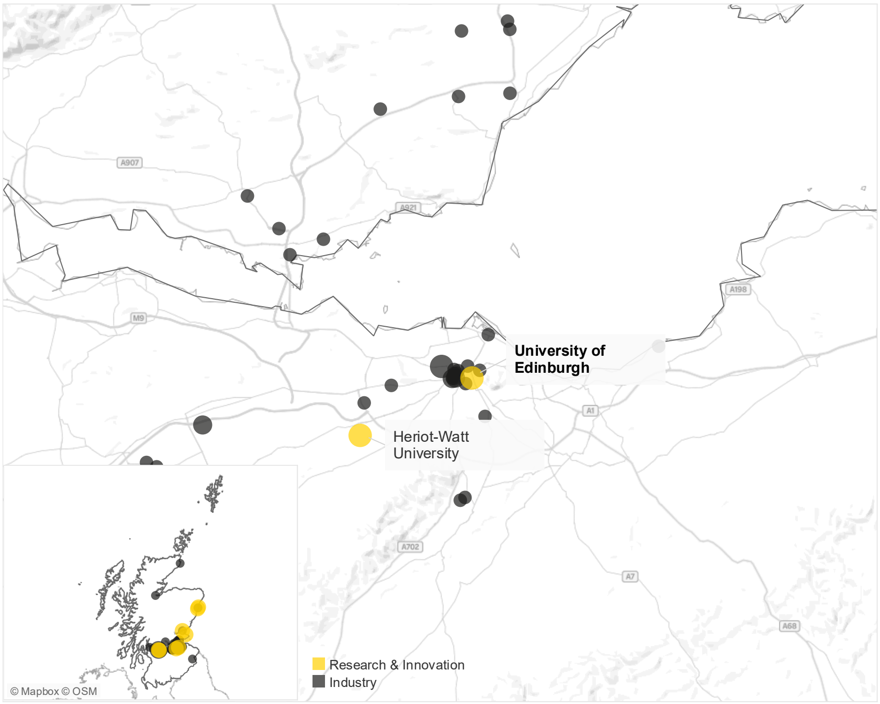
Manchester is home to an internationally significant semiconductor-adjacent materials research ecosystem. Its relevance to semiconductors is concentrated upstream in fundamental materials science, characterisation infrastructure and national coordination underpinning the UK's ability to move beyond silicon.



Regional capability is anchored by the University of Manchester through the National Graphene Institute (NGI), the Graphene Engineering Innovation Centre (GEIC), and the Henry Royce Institute, the UK's national institute for advanced materials which connects to Sheffield, Leeds, Liverpool, Cambridge, Oxford, and Imperial College London. Manchester is also a CHIMES² IKC member, linking it to Newcastle, Sheffield and Southampton. Industrial translation includes but is not limited to GEIC partnerships with BAE Systems, Honda, Haydale, Smart IR, Levidian and the National Physical Laboratory, alongside the Royce's "Atoms to Devices" programme spanning Cambridge, Imperial, Leeds and Manchester.

Regional businesses include but are not limited to Nexperia, Graphcore, Intel, Texas Instruments, and Diodes.

5.6 SCOTLAND (EDINBURGH)



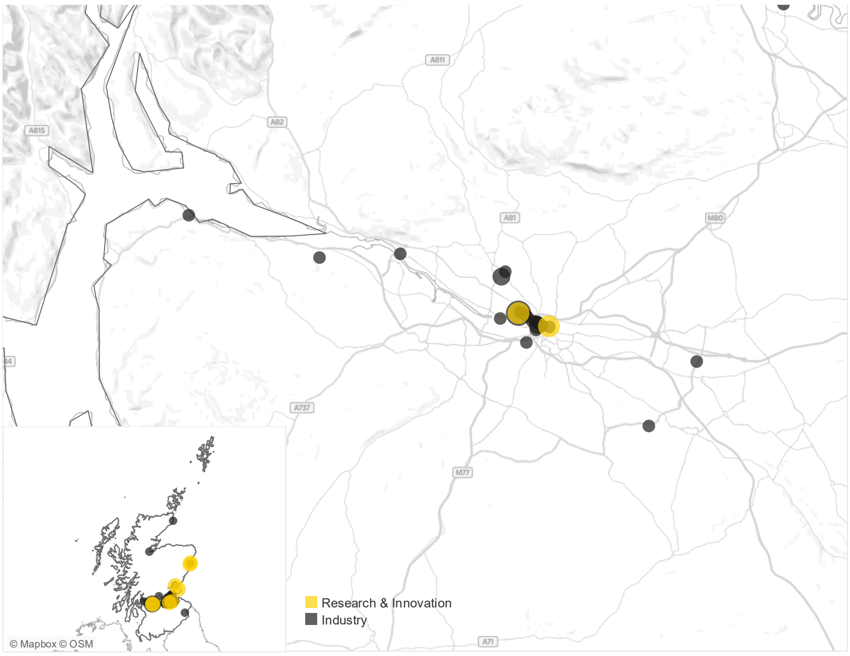
Edinburgh is a research-and-fabrication centre which enables the integration of physical fabrication capability, emerging device science and AI-hardware co-design. The Scottish Microelectronics Centre (SMC) provides an industrial-standard 250m² cleanroom delivering lithography, dry etching, metallisation, deposition, parametric testing and characterisation on wafers up to 200mm, supporting direct process transfer to industry.

The Centre for Electronics Frontiers (CEF) at the University of Edinburgh maintains relationships with over one hundred global companies, leading research on memristors, neuromorphic architectures, adiabatic computing, and silicon demonstrators.

Edinburgh anchors national-scale collaboration through the AI for Productive Research & Innovation in eLectronics (APRIL) hub, which links 20 universities and 30+ industry partners across five innovation pillars in an effort to apply AI systematically to the electronics supply chain from materials discovery through verification and testing.

Business activity centres on a cohort of dedicated semiconductor firms including but not limited to Shin-Etsu, Cirrus Logic, Semefab, Clas-SiC, Sivers Semiconductors, Dukosi and Alter Technology.

5.7 SCOTLAND (GLASGOW)



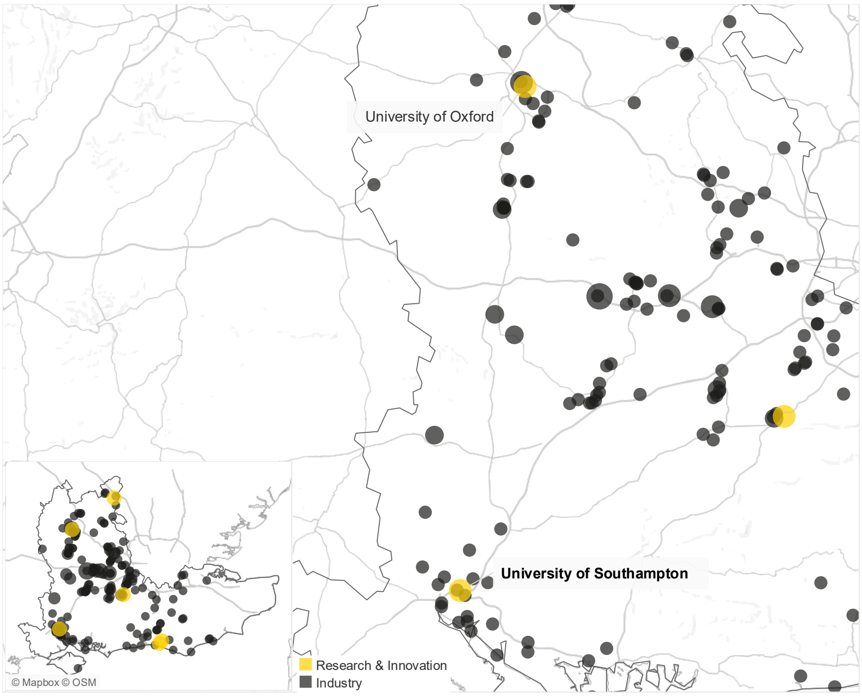
Glasgow hosts one of the UK's most substantial and historically rooted concentrations of semiconductor and photonics technology capability. The Scottish photonics sector – largely concentrated around Glasgow – generates over £1.2 billion in annual turnover, employs approximately 6,400 people, and exports 97% of its output. Photonics Scotland coordinates a community of over 50 companies alongside a globally recognised academic base at the Universities of Glasgow and Strathclyde (Institute of Photonics and the co-located Fraunhofer Centre for Applied Photonics).

Distinctive capabilities include the University of Glasgow's ANALOGUE advanced semiconductor packaging facility; silicon-compatible quantum-enabled sensing and mid-infrared photonics; GaN micro-LED leadership at Strathclyde's Institute of Photonics; and applied laser/photonic technology at Fraunhofer Centre for Applied Photonics (CAP).

Glasgow co-hosts the CORNERSTONE silicon photonics foundry with Southampton and STFC, partners the Integrated Quantum Network and QuantIC consortia, leads QT Assemble with Fraunhofer IAF, and anchors the TITAN national telecommunications hub.

Business activity is weighted towards photonics, quantum and design. Regional companies include but are not limited to FTDI, Coherent, Skylark Lasers, Ichor Systems, Retronix Semiconductor and Synaptec.

5.8 SOUTH EAST (SOUTHAMPTON)



Southampton hosts one of the UK's most strategically significant and infrastructure-rich semiconductor research. It is home to internationally-leading silicon photonics capability, including uniquely advanced fabrication infrastructure, and is a key partner in multiple national programmes. Regional capability is anchored by the University of Southampton's Optoelectronics Research Centre, the Zepler Institute, and the Southampton Nanofabrication Centre.

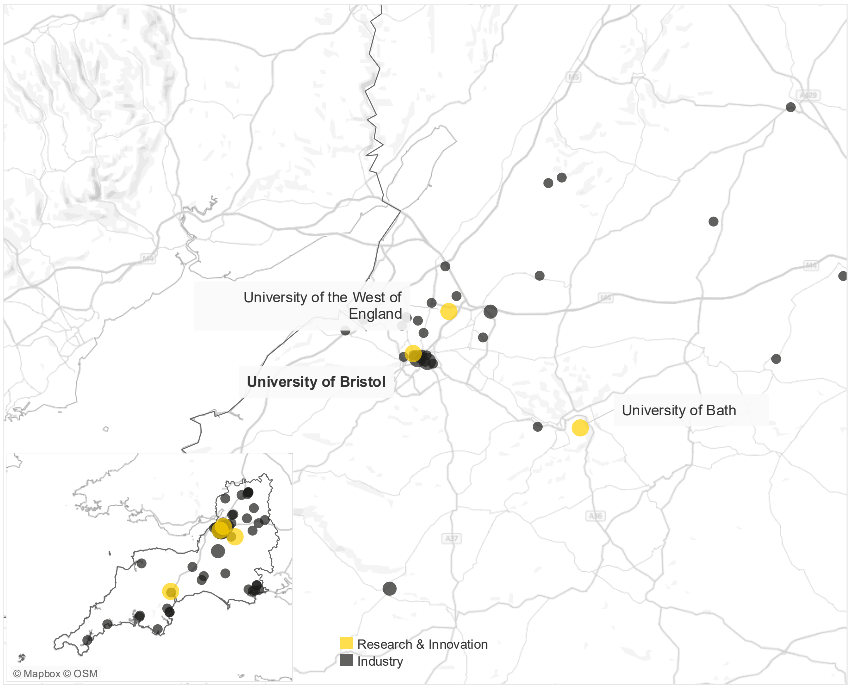
The CORNERSTONE silicon photonics foundry, operated jointly with the University of Glasgow and STFC, provides national rapid-prototyping capability.

Distinctive research strands span silicon photonics foundry services, advanced nanofabrication, nonlinear semiconductor photonics for wavelength conversion and entangled photon pair generation, and systems-level translation of fundamental research to foundry prototyping.

Southampton jointly leads the CHIMES² IKC with Sheffield, jointly leads the EXPRESS programme with Warwick (focused on growing next-generation semiconductor materials), partners with Sheffield's National Epitaxy Facility, contributes to the QuantIC consortium, and partners Glasgow's Fraunhofer CAP-led QT Assemble project.

The South East business base is weighted towards but not limited to multinational design and IDM activity, including companies such as Synopsys, Cadence, Broadcom, Renesas, NXP, Micron, STMicroelectronics and Microchip Technology.

5.9 SOUTH WEST (BRISTOL)

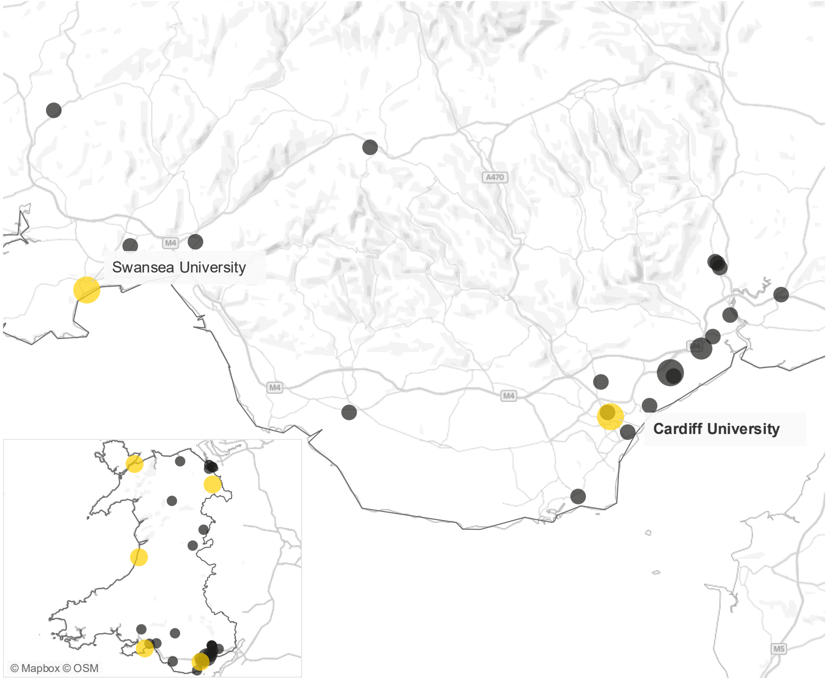


Bristol is emerging as a centre for semiconductor-related research and innovation. The cluster has distinctive capabilities in materials science, device design, RF and power electronics research, and characterisation infrastructure for translating novel materials into deployable devices. Three research strands are prominent including: next-generation power semiconductors through REWIRE,; RF and 6G work, including a May 2025 Nature Electronics paper on GaN amplifiers; and advanced materials characterisation.

Bristol is connected to Warwick and Cambridge through the REWIRE IKC, which is supported by a dense industrial partner network.

Business activity spans power, RF and photonics, including but not limited toPlessey Semiconductors, Infineon, Effect Photonics, XMOS, Blu Wireless, Swindon Silicon Systems, Codasip and Lew Techniques.

5.10 WALES (SOUTH WALES)

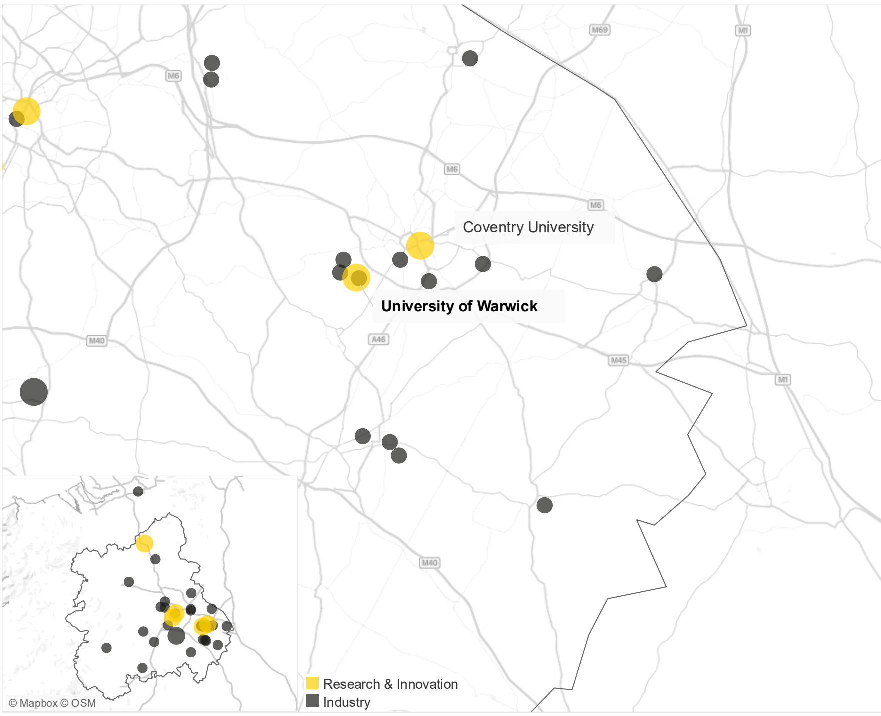


South Wales hosts one of the UK's most clearly defined and institutionally mature semiconductor clusters – internationally recognised as the world's first compound semiconductor cluster. Grown from a 2015 collective vision, it is now a strategic national asset with deep alignment between universities, industry, public sector and global investors. Over the past decade more than £850 million has been invested in research, pilot fabrication, manufacturing and innovation across a 70-mile Chepstow–Swansea corridor.

The region provides a near-complete vertical supply chain spanning epitaxial growth, prototyping, wafer manufacturing, device fabrication, advanced packaging, module integration and process tool / metrology equipment. Research activity takes place across South Wales, including within the Compound Semiconductor Centre, Cardiff's Institute for Compound Semiconductors, and Swansea University's £29.9m Centre for Integrative Semiconductor Materials (CISM), which houses the MOCVD Centre, the UK's only pilot line for Silicon Carbide (SiC) power components, and is the UK's only translational pilot fab designed on industrial principles.

Business activity centres on volume manufacturing and supply chain depth, including but not limited to the 'core 4' of IQE, Vishay Newport, KLA, and Microchip Technology, as well as Photronics, Novomorphic, Thalia, Irresistible Materials, Kubos, Ffotoneg and Space Forge.

5.11 WEST MIDLANDS (WARWICK)



Warwick hosts a focused and technically ambitious semiconductor research programme concentrated at the University of Warwick, focused on deep group-IV semiconductor materials physics, with a strong emphasis on silicon-compatible quantum and next-generation electronic materials, and shared nanofabrication infrastructure. Regional capability is anchored by the Semiconductors Research Group within the Department of Physics, the Nano Fabrication Research Technology Platform (an ISO class 6 cleanroom spanning deposition, lithography, etching, thermal processing and metrology), and the EXPRESS programme.

Distinctive technical capabilities include scalable electrodeposition routes, group-IV materials physics, the EPSRC Centre for Doctoral Training in Diamond Science and Technology, the Theoretical Physics Group, and Warwick Manufacturing Group's scale-up engineering.

Warwick is connected nationally to Southampton, Bristol and Cambridge through the EXPRESS and REWIRE initiatives, with industrial connections made via the Warwick Innovation District.

Business activity includes but is not limited to Active Silicon, Solsta, Transys Electronics, Advanced Epi, and Kopin UK.

5.12 YORKSHIRE & HUMBER (SHEFFIELD, LEEDS)

Sheffield has developed a distinctive semiconductor research and innovation base, combining national research infrastructure, a heterogeneous integration design centre, and an established advanced manufacturing capability – a combination that has positioned the region at the centre of the recently announced £50m Defence Growth Deal for South Yorkshire. The University of Sheffield anchors this base, with capability extending across the wider Yorkshire & Humber region through the School of Electrical and Electronic Engineering and the Semiconductor Materials and Devices group.

Sheffield's semiconductor strengths span four complementary strands, including III-V compound semiconductor materials and devices, heterogeneous microelectronic integration system design through CHIMES² IKC, millimetre-wave characterisation via the National Millimetre Wave Facility, and photonics, optoelectronics and quantum devices. The Bragg Centre at the University of Leeds adds distinctive fabrication strengths enabling electron-beam lithography and supporting bionanotechnology, microfluidics prototyping, and soft-matter device processing, positioning Leeds as a key partner for hybrid and unconventional device fabrication. Together these strands provide capability from epitaxial materials growth through heterogeneous system design to characterisation and test, with a route into production engineering through the University of Sheffield Advanced Manufacturing Research Centre (AMRC). AMRC's Digital team supports semiconductor packaging, heterogeneous integration assembly and defence supply-chain resilience via digital twins, AI-driven process optimisation and digital factory architectures, drawing on an industrial membership network that includes BAE Systems, Rolls-Royce and Boeing.

Sheffield is a key collaboration node: CHIMES² is jointly led with Southampton and has Newcastle and Manchester as members, the National Epitaxy Facility serves UCL, Cambridge and the wider UK research base, and Leeds' Bragg Centre operates within the Royce hub-and-spoke model. Business activity comprises Arm and EnSilica design centres in Sheffield, Optalysys in Leeds, Aegiq, Phlux Technology, Pixel-Flo and Sitehop. Research-linked firms includes Iceotope Technologies, Diamond Microwave, Apitronix Semiconductor in Huddersfield, Analogic in Halifax and Ngenics in York.

5.13 ROLE OF REGIONS IN UK SEMICONDUCTOR ACTIVITY

As highlighted in the baseline study, Arm accounted, and still accounts for a significant proportion of both total revenue, and total employment among dedicated, UK headquartered semiconductor companies. With its headquarters in Cambridge, Arm continues to make the East of England a focal point of semiconductor sector activity in the UK.

To better understand the geographic composition of semiconductor activity among other companies, the study looked specifically at a subset of dedicated UK headquartered companies excluding Arm[xix]. Analysis of this subset of companies emphasises the significance of regions outside London and the South East to the UK's semiconductor sector (Table 5.4). For example, within this subset, while Wales is home to less than 10% of dedicated, UK headquartered companies, it accounts for 11% of employment and 24% of revenues. Scotland accounts for 19% revenues and the South West accounts for 13% of employment.

TABLE 5.4 – ROLE OF REGIONS IN UK SEMICONDUCTOR ACTIVITY

Region	% Firms	% Revenue	% Employment
East (England)	26	27	26
London	14	5	16
Scotland	15	19	19
South East (England)	25	16	15
South West (England)	13	9	13
Wales	7	24	11

Source: Perspective Economics

6 Sector Dynamism & Maturity

This section provides insights regarding dynamism within, and maturity of the UK semiconductor sector. It draws on a combination of desk research, quantitative analysis of secondary data sources and consultations with 38 stakeholders from across the semiconductor ecosystem. Topics include perceived UK strengths, recent research and innovation activity, UK strategy and policy, investment, skills and future opportunities.

6.1 PERCEIVED UK STRENGTHS

> "I think we've got great technologists. I think that's a primary skill, we're very creative, very innovative."

A series of UKSC briefing reports produced as part of the Centre's roadshow initiative[xx] pointed to UK semiconductor strengths such as: design and IP (Cambridge), compound semiconductors (especially the South Wales cluster), integrated photonics (Southampton / Glasgow / Northern Ireland), advanced packaging, and neuromorphic computing. Consultation with 38 semiconductor sector stakeholders spanning industry, academia and policy spheres similarly pointed to similar strengths, including: i) chip design and IP, anchored by Arm, wider design ecosystems including Imagination, Dialog (now Renesas) and with extensive engineering expertise throughout the UK; ii) Compound Semiconductors and Photonics, with South Wales, Glasgow and Southampton routinely cited; iii) the UK's academic research base, consistently highlighted as a key asset; iv) power electronics, particularly in compound forms and for high-voltage applications; and v) a less well recognised strength in specialist consumables and equipment manufacturing. These strengths are seen to be the result of the university research base, accumulated tacit know-how (often inherited from now-departed anchor companies), and cluster effects.

6.1.1 INCREASINGLY CONNECTED ECOSYSTEM

Public funding for the UK Semiconductor Centre, and university-led semiconductor initiatives has been allocated in an effort to further advance and leverage UK strengths via a central focal point (UKSC) and four innovation and knowledge centres (IKCs). These have broadly been seen as positive developments since 2024.

TABLE 6.1 – PUBLICLY FUNDED RESEARCH INTERVENTIONS

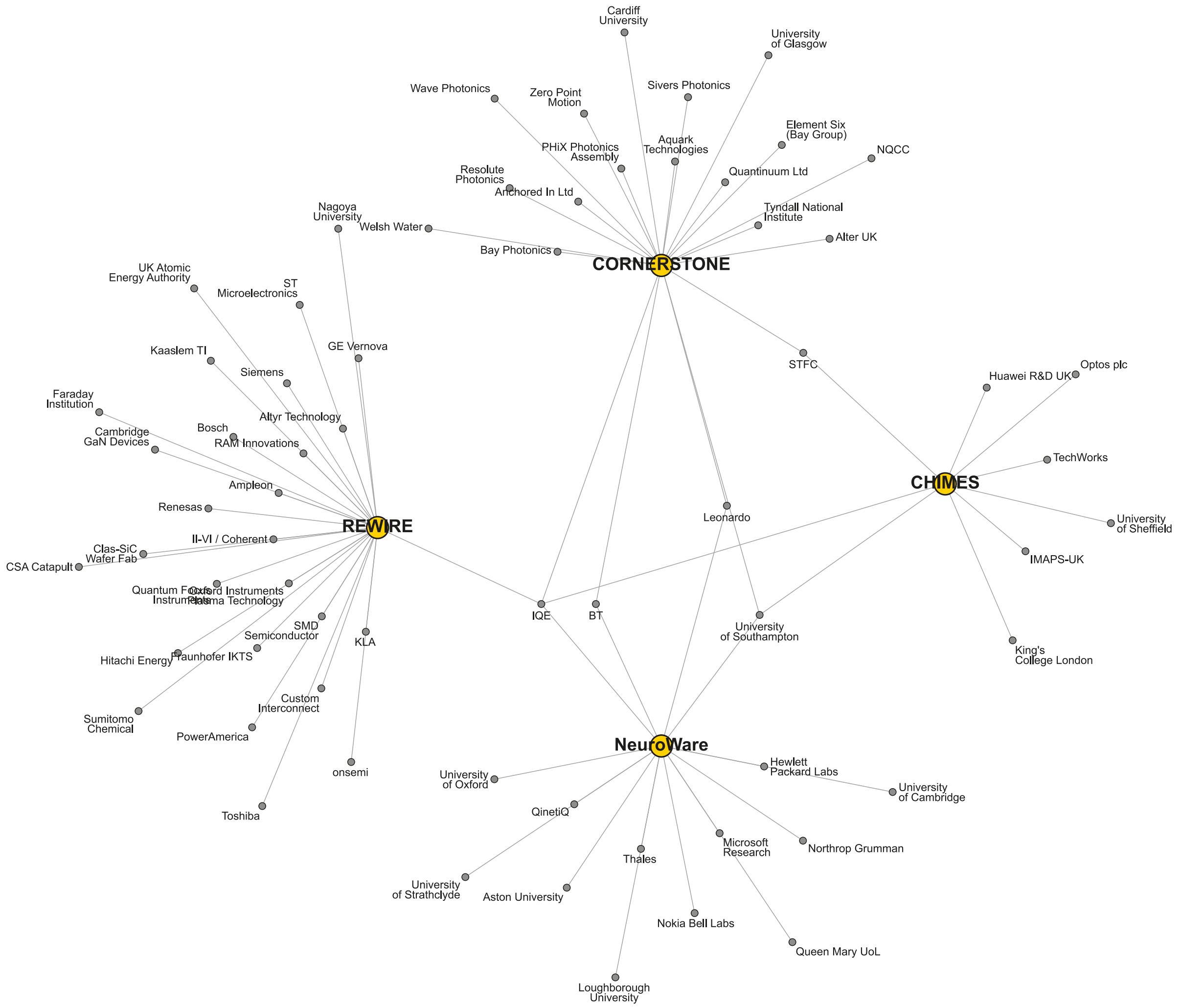
Intervention	Relevance to UK Strengths
REWIRE IKC — Wide/Ultra-Wide Bandgap Power Semiconductors (Bristol, Warwick, Cambridge)	The UK is seen as having world-class capability in next-generation power semiconductors across silicon carbide (SiC), gallium nitride (GaN), and the emerging gallium oxide (Ga_2O_3). Bristol hosts Europe's first Ga_2O_3 MOCVD machine and has demonstrated 4kV+ breakdown voltage devices. Warwick operates one of the UK's only industrial SiC CVD reactors. Research spans the full device pipeline from epitaxial growth through to packaged prototypes, >30 partners including Bosch, Toshiba, and ST Microelectronics. Applications

	target net zero: EV charging, renewable energy, smart grids, extreme environment electronics.
CORNERSTONE (C-PIC) IKC — Silicon Photonics (Southampton, Glasgow, STFC)	Cornerstone provides an open-source, licence-free silicon photonics foundry offering seven technology platforms from near-infrared to visible wavelengths on 8-inch wafers. Founded in 2014, housed in Southampton's £120M cleanroom, CORNERSTONE serves collaborators in 20+ countries through regular multi-project wafer runs. Strengths include custom/non-standard fabrication increasingly unavailable from commercial foundries. Applications span telecoms into quantum technologies, AI hardware, environmental sensing, and LiDAR.
CHIMES IKC — Heterogeneous Integration System Design (Sheffield, Southampton +10 academic partners)	The Centre for Heterogeneous Integrated MicroElectronic and Semiconductor Systems (CHIMES) provides national capability in heterogeneous integration i.e., combining different semiconductor chiplets into unified high-performance systems. CHIMES focuses on creating a shared "Design Commons" of reusable architectures, workflows, and design tools to lower barriers for UK companies. A distinctive strength is the secure-by-design approach, building Cambridge's CHERI architecture and Arm's Morello prototype. The centre targets power management, wireless communications (5G/6G), photonics, and sensors, and aims to convert UK research IP into physical "Hard-IP" chiplets.
NeuroWare IKC — Neuromorphic Computing (UCL, Cambridge, Oxford, Manchester, Strathclyde, Sheffield, Imperial College London, King's College London)	NeuroWare is a new multi-institution Innovation and Knowledge Centre (IKC) dedicated to advancing neuromorphic computing — brain-inspired computing architectures — through academic and industry collaboration. Led by University College London (UCL Electronic & Electrical Engineering, with involvement from STEaPP), the consortium also includes the universities of Cambridge, Oxford, Manchester, Strathclyde, Sheffield, Imperial College London, King's College London, and the National Physical Laboratory (NPL). The IKC involves Around 30 industrial partners, with named anchors being Arm, Intel, Microsoft, HP, Samsung, and the Tyndall Institute, plus start-up networks and VC investors.

Source: Perspective Economics, IKC websites

Collation of publicly available data on networks being established across the four IKCs points to their strategic relevance. Each IKC is engaged with large global semiconductor companies, and the IKCs are also connecting businesses and academic institutions across the UK semiconductor ecosystem. Figure 6.1 below provides an illustration of evolving IKC networks, which total 66 unique connections across industry and academia.

FIGURE 6.1 – IKC NETWORKS



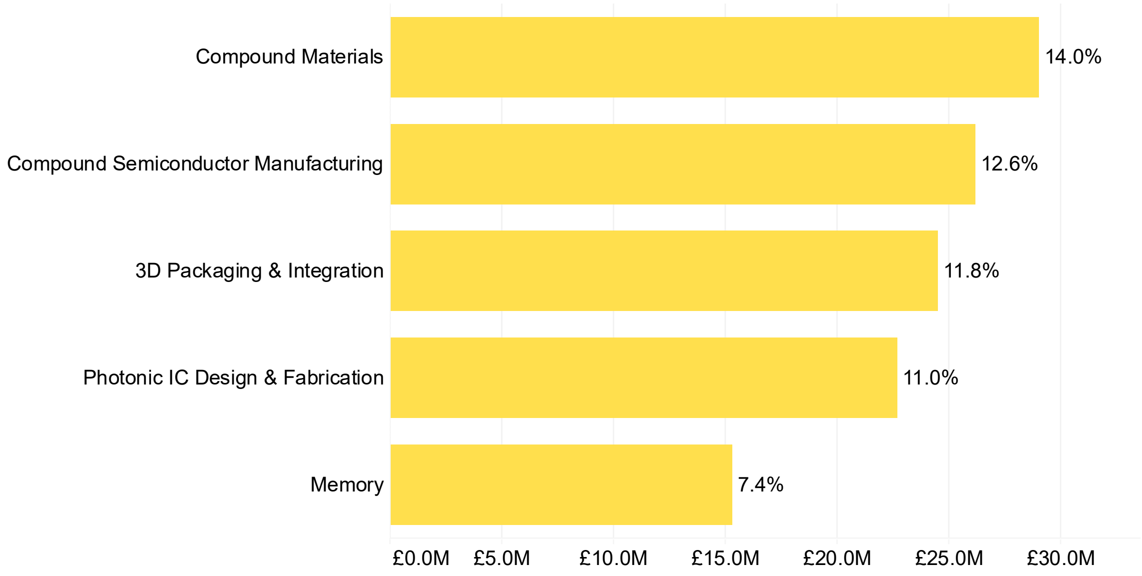
Source: Perspective Economics, IKC websites

6.1.2 RESEARCH & INNOVATION FUNDING

The 2024 study estimated that between 2006 (beginning of structured UKRI funding records) and 2023, semiconductor related research and innovation had received ~£1.4bn in public investment. By the end of 2025 research and innovation funding for semiconductor activity is estimated to be ~£1.8bn[xxi]. Between 2024 and 2025 five high-level semiconductor topics have secured just under 60% of new funding allocations, including compound materials (14%), compound semiconductor manufacturing (13%), 3D packaging and integration (12%), photonic integrated circuit design and fabrication (11%) and memory (7%)[xxii].

"One of the major advantages that the UK semiconductor industry has is [the] knowledge and industry expertise around compounds. It's really something that's quite unique."

FIGURE 6.2 – RECENT FUNDING FOCUS



Source: Perspective Economics, UKRI (incl. SIPF and RPIF)

As part of horizon scanning research conducted to inform this iteration of the study, workshop participants noted that memory technology is an increasingly important part of the AI compute opportunity, and that it should garner greater recognition as a potential UK capability opportunity.

UK MEMORY OPPORTUNITY

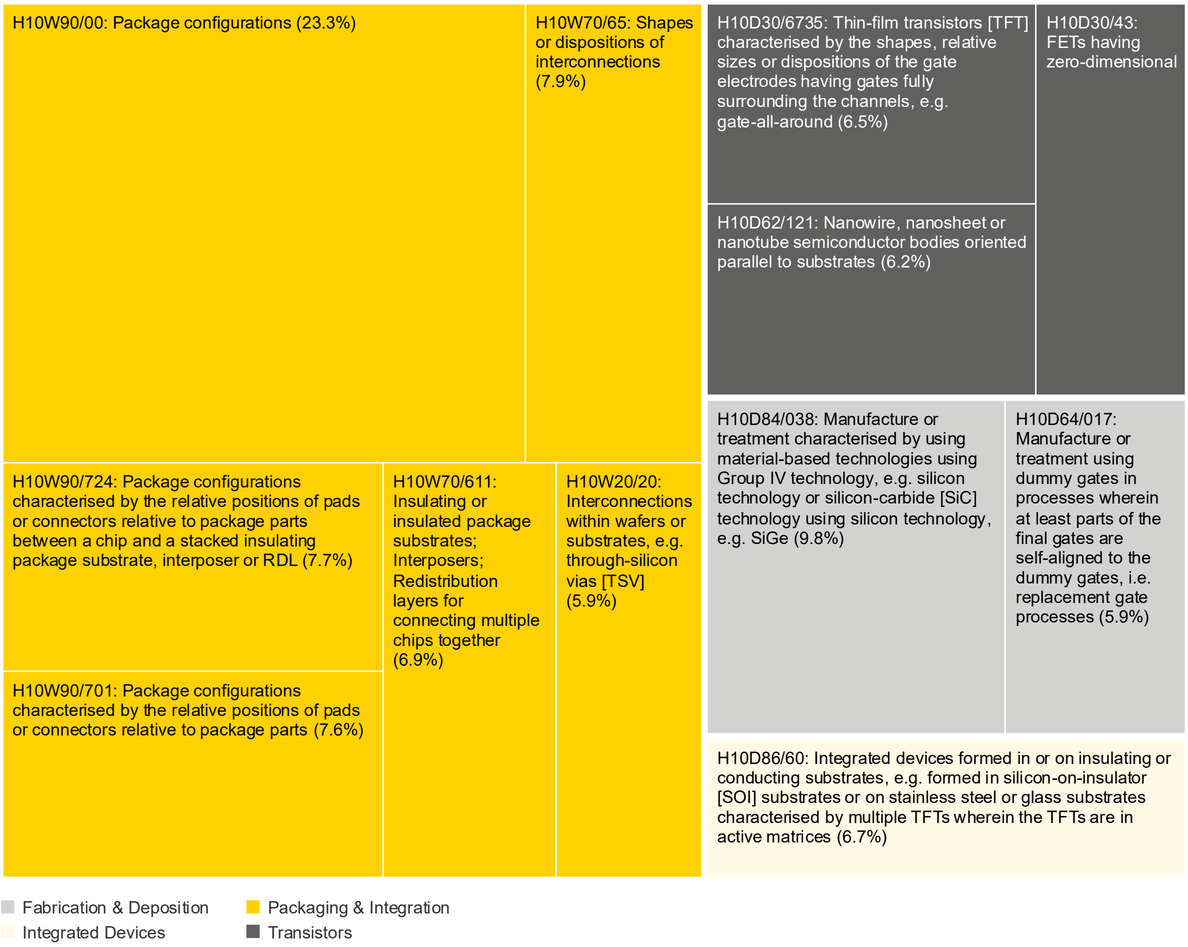
Memory technology makes up an estimated 28% of the $1trillion semiconductor market (WSTS Autumn 2025 Forecast). Despite early forays into this market in the 1970s with INMOS, the UK has no remaining sovereign capability, which now all resides in Asia and is subject to near insurmountable barriers to entry. However, there is global recognition that the memory market is ripe for disruption[1] given the need for lower power to support all areas of application along with the growth of novel architectures e.g. non-Von Neumann[2], neuromorphic and the convergence of memory with processing as well as supporting quantum computing. Since 2019, semiconductor companies have applied for and / or been granted over 1 million patents concerning semiconductor memory technologies. Horizon scanning research conducted to inform this study has highlighted a) that frontier semiconductor memory technology represents a significant opportunity for the UK and b) that leading-edge UK companies that epitomize this opportunity are now facing scale-up barriers that could see them pursue operations internationally aligned to funding opportunities, risking a repeat of the UK's INMOS experience.

[1] https://www.astutegroup.com/news/memory-shortages/ai-driven-memory-crunch-set-to-reshape-electronics-market-and-cost-structures-in-2026-samsung-ready-for-impact
[2] https://research.ibm.com/blog/why-von-neumann-architecture-is-impeding-the-power-of-ai-computing

6.1.3 INTELLECTUAL PROPERTY

In the baseline study, a search for data on patents either applied for or granted between 2018 and 2023 within the US, the UK or Europe returned a total of 525,000 patent records[xxiii]. At that stage, 81% of patent records applied to the US, 17% applied to Europe and 2% applied to the UK. Re-running the same patent query with a cut off date of 31st December 2025 returns a total of 597,100 patent records – an almost 14% increase within two years. 84% of those apply to the United States, 14% apply to Europe and 2% apply to the UK. In absolute terms, the number of US patents applied for or granted since the baseline study has increased by ~18%. Within the last two years, US applications have been driven by TSMC, Samsung, BOE, LG, Intel, Applied Materials, Tokyo Electron and Micron Technology. European patent activity has been led by Samsung, BOE, the Atomic Energy Commission, Intel, LG, Huawei, Sony and Applied Materials. UK activity has been led by LG, BOE, IBM, Cirrus Logic, Skyworks Solutions, Sumitomo Chemicals and UK headquartered companies Pragmatic and Paragraf. Over the same period, Arm has had ~820 patents (all US oriented) either applied for or granted under a range of physics classifications including processor architectures, processor configuration, general purpose rendering architectures, memory management and latency reduction. Figure 6.3 shows the technological focus of patent activity between 2024 and 2025, 60% of which relates to packaging and integration.

FIGURE 6.3 – FOCUS OF PATENT ACTIVITY



Source: Perspective Economics, Lens.org

To better understand UK involvement in patent activity, the study applied the same approach used to identify and classify semiconductor research projects, to US patents granted between 2020 and 2025 that have at least one UK-located inventor or assignee. A total of 1,139 of the 56,980 UK-related US patents (~2.0%) were considered to be semiconductor-related. Analysis of those patents across the supply chain provides some insight into technical UK expertise:

- Pure design (497 patents, 44%): including EDA software, formal verification and design-flow tooling, plus circuit- and IP-level designs for digital ICs, analog ICs, memory, RF/microwave and quantum devices. This category is dominated by Arm (>100 patents across memory, digital and RF/microwave), Imagination Technologies, Pulsic, Graphcore, Dialog Semiconductor UK and a tail of EDA spinouts.
- Device engineering (336 patents, 29%): covering patents on the physical structure of devices themselves, mostly optoelectronics, transistors and diodes. This tier includes patents across the design / manufacturing boundary i.e., the patent claims a device structure, but the structure is tied to a specific fabrication process. Most of this category is filed by fabless device companies that outsource fabrication, such as Rockley Photonics, Cambridge GaN Devices, ORCA Computing, and Dynex Semiconductor.
- Manufacturing and supporting infrastructure (306 patents, 27%): including wafer fabrication and process steps (across etch, deposition, lithography, integration, doping, isolation and thermal), packaging and assembly, materials, metrology and inspection, and fab equipment. This category includes specialist process companies such as KLA (under SPTS), IQE and Edwards.

Analysis of UK-US patents granted most recently (in either 2024 or 2025) suggests that the focus of UK input has shifted from pure design towards device engineering (see Table 6.2 – note totals sum to ~99% because a small number of patents had insufficient information to be classified in both periods).

TABLE 6.2 – FOCUS OF RECENT PATENT ACTIVITY (2024 – 2025)

Supply-chain component	2020–23 share	2024–25 share	Change (pp)
Pure design	47%	36%	-11
Device engineering	27%	37%	+10
Manufacturing & supporting infrastructure	26%	26%	-

Source: PatentsView, Perspective Economics | n=846 (2020 – 2023), n=293 (2024 - 2025)

The top 10 UK assignees between 2024 and 2025 are set out in Table 6.3 below.

TABLE 6.3 – UK PATENT ASSIGNEES BY GRANTED PATENTS (2024 – 2025)

Assignee	Focus
Rockley Photonics Limited	Silicon-photonics device engineering
Arm Limited	Memory & on-chip system design
STMicroelectronics R&D UK Limited	Optoelectronics, sensing, packaging
Imagination Technologies Limited	Digital IC design, formal verification
Cambridge GaN Devices Limited	GaN power transistors
KLA (SPTS)	Etch & deposition equipment
Flexenable Technology Limited	Flexible electronics materials
Flusso Limited	MEMS flow-sensor ICs
Graphcore Limited	3D packaging, AI accelerators
Pragmatic Semiconductor Limited	Flexible thin-film ICs

Source: PatentsView, Perspective Economics

6.2 INVESTMENT

Across the 190 companies included in both the baseline and current study, the value of grants and fundraising has increased by 16% from £1.5bn to £1.73bn. Ten companies account for 75% of new grant and fundraising activity – seven are design companies, two are materials companies and one is a manufacturing company.

Newly identified dedicated companies have secured ~£400m in grants and fundraising, 84% of which has been secured by design-oriented companies, and almost 70% of which has been secured by companies at seed or venture stages, including companies like Fractile and Olix Computing. Companies with registered offices in the East of England account for 46% of grants and fundraising among newly identified companies, London accounts for 26% and the South East accounts for 15%.

6.2.1 FOREIGN DIRECT INVESTMENT

Between 2003 and the end of 2025 there have been a total of 142 inward investment projects into the UK – 13 additional projects since the baseline study totalling an estimated $600m (~£446m) in capital investment (+21%). This includes substantive investments by Vishay, KLA, Ion Beam Services and Cadence Design Systems. Over 80% of the estimated inward capital investment is from the US, and 90% has been from manufacturing companies.

6.2.2 INTRA-COMPANY INVESTMENT

Analysis of Companies House filings for more than 40 of the UK's most significant dedicated semiconductor companies highlights less obvious forms of parent-company investments in the form of (among other mechanisms) parent equity injections, intercompany debt conversions and multi-year intercompany loan facilities. Across the filings analysed, this type of investment amounts to approximately £0.5bn of one-off equity events in a single year. Examples include but may not be limited to Vishay, Quantinuum / Honeywell, Graphcore, and Plessey. The total stock of intercompany funding that sits behind the sector is larger again, estimated to be net inward funding into the UK of ~£2.1bn, which serves as an indicator of foreign-parent commitment to UK semiconductor capability.

6.3 PERCEIVED GAPS, GROWTH BARRIERS & RISKS

Beyond the fundraising points raised above, consultation with sector stakeholders identified four other recurring themes in discussions about current gaps and growth barriers. These included access to finance for manufacturing capex and market distorting subsidies being offered abroad, skills (particularly mid-career and technician roles), commercially-competitive incentive packages, and coordination and clarity of strategy.

Regarding support for manufacturing activity, consultees perceived that UK companies are in a less competitive position due to comparatively high levels of subsidies being provided by governments in other countries, and challenges accessing finance to support high capital expenditure more generally.. Consultees suggested that equivalent levels of subsidy and improved access to finance for large scale capital expenditure could strengthen the UK's domestic manufacturing base.

A range of skills gaps were cited across consultations including, at the base of the skills pyramid, a simple lack of awareness of job opportunities in the semiconductor industry, to future workforce gaps caused by retirement of the current workforce, and specific gaps including a lack of technicians and insufficient numbers of equipment engineers. This is in keeping with findings from the UK Semiconductor Workforce Study (2025)[xxiv].

Thirdly, several consultees emphasised the international nature of the semiconductor workforce, and the fact that UK businesses are required to compete for talent with companies in other jurisdictions where incentives are available to assist (or de-risk) the cost of employment. Again, Ireland was cited as a comparator with consultees suggesting that grants can help reduce the cost of expanding a semiconductor team by up to 25%[xxv].

Lastly, consultees reiterated the call for greater coordination and strategic clarity across the sector. In particular, consultees considered that more granularity regarding objectives, targets and actions over a 3 to 5-year timeframe would be beneficial, and that continued effort is required to reduce perceived fragmentation across the industry.

Consultees agreed that universities are foundational to UK semiconductor activity, with academia positioned as one of the key routes to de-risking innovation. However, consultees also highlighted some scope to improve productivity within translational research and innovation facilities. For example, cleanrooms could be operational more often, and it may be beneficial for capex funding to extend to operating costs or staffing. When asked about opportunities to further leverage UK semiconductor sector opportunities, consultees highlighted workforce retention, preventing capital-driven offshoring of successful UK firms, alleviating structural subsidy disadvantages, mitigating the risk of concentrated packaging and materials supply in Asia and increasing the translation of internationally-leading research outputs to industrial scale.

6.3.1 PRODUCTION CAPACITY

Survey respondents involved in semiconductor manufacturing were asked to provide information regarding current and potential future production capacity. While limited detail can be provided here due to commercial sensitivities and risk of disclosure, analysis of production data returned two key findings; i) that in the absence of labour constraints production among the businesses that responded to the survey could more than double from current levels (in the order of tens of thousands of wafer starts per month), and ii) latent capacity for growth exists, in the form of ~18% under / unutilised cleanroom floorspace.

6.4 HORIZON SCANNING

This study gathered views from sector stakeholders regarding future opportunities and the UK's role within them via a combination of one-to-one consultations, a horizon scanning workshop, and follow-up inputs from workshop participants. Six themes consistently emerged across these research strands.

1. AI is the dominant driver of new opportunities, with greatest UK opportunity in the supporting parts of the AI compute stack, such as inference chips, edge devices, photonic interconnect, advanced packaging, power electronics, and novel architectures – where the UK can compete on capability rather than capital intensity. Workshop participants similarly identified AI-enabled chip design and photonic chips as the two top technology priorities.

2. Compound semiconductors as a distinct UK strength, with applications spanning telecoms, datacoms, defence, automotive, renewable energy, and quantum systems, would benefit from a coordinated ten-year roadmap for wide-bandgap design, materials, devices, packaging, and integration, aligned to UK end markets in automotive, aerospace, defence, grid, and industrial applications, supported by a supply chain adoption programme that lowers barriers to existing open facilities and strengthens connectivity between academia and industry.

3. Photonics as a near-term opportunity where the UK has some differentiation, building on existing silicon photonics fabrication capability and a deep compound semiconductor ecosystem. Consultees referred to photonic ICs for data communications as part of the second wave of AI-driven demand, while workshop participants proposed a dedicated photonics pilot line and scale-up facility to bridge the gap from UK research to production, including low-volume defence manufacturing.

4. Heterogeneous integration and advanced packaging were often cited across all strands as critical enabling capabilities. Consultees flagged advanced packaging and chiplets as part of the AI-driven demand opportunity, while workshop participants gave heterogeneous integration and verification more emphasis as a critical enabling technology in its own right. All horizon scanning inputs treat the ability to combine diverse chip technologies into working systems as a distinct UK opportunity.

5. Pilot and translational infrastructure as a key commercialisation enabler. Consultees called for long-term Fraunhofer (Germany), Tyndall (Ireland), and DTU (Technical University of Denmark)-style operating support for RD&I infrastructure, which provide shared, capital-intensive equipment (cleanrooms, pilot lines and prototyping fabs) that individual firms, particularly SMEs and start-ups cannot afford to build or maintain alone. European facilities were cited as good practice references for commercially accessible, around-the-clock operations. Workshop participants independently proposed a Fraunhofer-lite design and integration centre and a photonics pilot line, and identified national infrastructure for chip design (cloud compute resources, EDA access, extended ChipStart-style programmes, and alignment with European platforms such as IMEC) as currently insufficient. Follow-up input noted the need for formal mechanisms to fund researcher and industry access to existing capabilities.

6. Energy and power emerged as a cross-cutting strategic opportunity. Consultees identified AI-driven demand for power, wide and ultra-wide bandgap power electronics (SiC, GaN, gallium oxide), and the wider infrastructure of power racks and delivery as recurring opportunities aligned to electrification, defence, space, and renewable energy. Workshop participants described the data centre 'power crunch' as a full-stack, national-scale problem requiring a coordinated response across compute, packaging, and power delivery.

Quantum applications were also cited across horizon scanning inputs. Consultees described quantum as a longer-horizon opportunity where the UK is well-positioned, while follow-up input emphasised specific compound semiconductor underpinnings including GaAs VCSELs for atom-cell atomic clocks used in network synchronisation, satellite communications, and GPS; InP photonic integrated circuits for QKD miniaturisation and quantum communications and computing interconnects; quantum-dot single-photon emitters for quantum-secure communications; and antimonide-based SWIR single-photon detectors for future free-space optical and quantum comms.

Additionally, the workshop raised two further points. Next-generation memory was identified as an overlooked strategic domain, with the UK holding relevant strengths in compound semiconductors and epitaxy. Equipment manufacturing was highlighted as a UK value chain strength with geopolitical leverage that warrants greater attention.

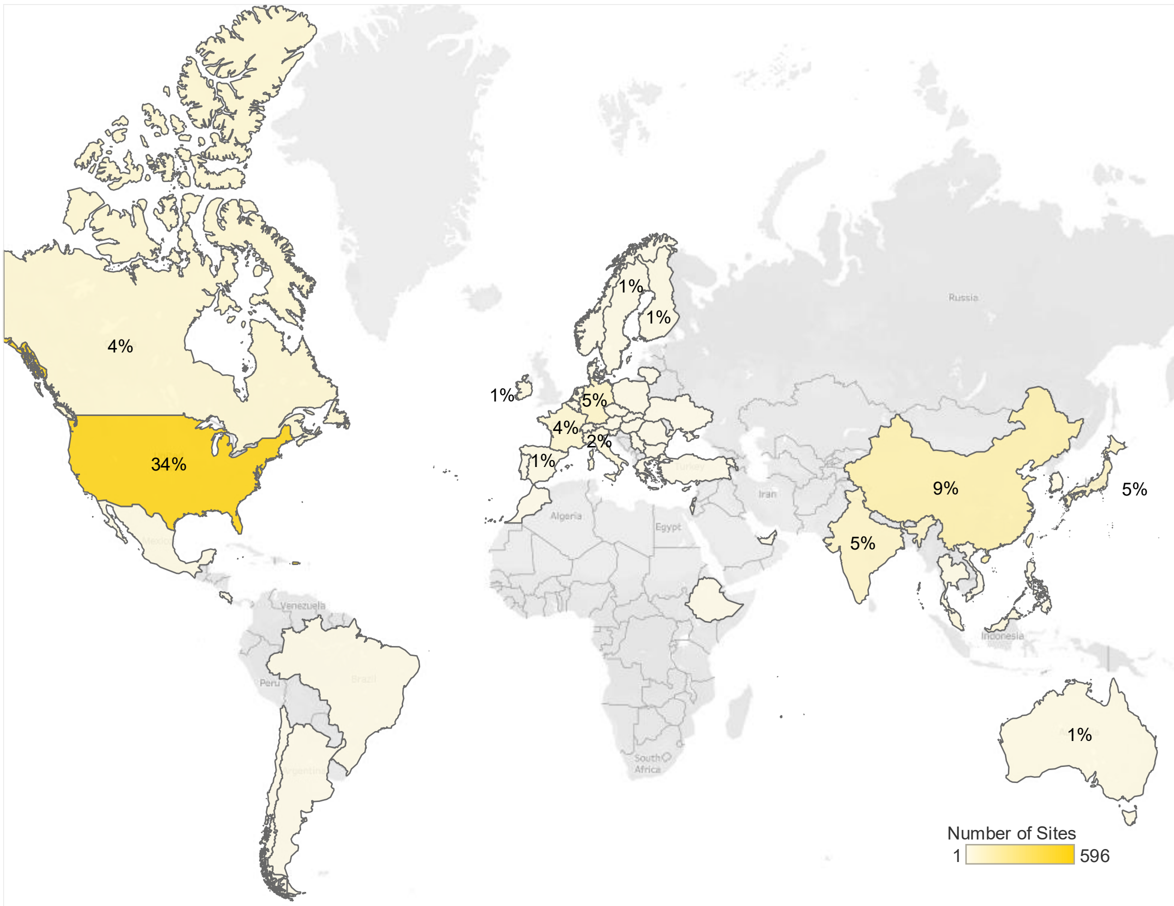
7 International Activity

This section presents findings from secondary data and qualitative research regarding international aspects of the UK semiconductor sector.

7.1 INTERNATIONAL TRADING LOCATIONS

Additional trading locations were gathered for 267 of the 295 dedicated companies identified through the study. These 267 companies operate in 59 countries (other than the UK) – highlighting the global nature of the semiconductor industry. Excluding the UK, 34% of all international sites are in the US. Germany, China, France and India are also prominent locations for semiconductor companies with a UK presence – consistent with the baseline study.

FIGURE 7.1 – INTERNATIONAL LOCATIONS (DEDICATED COMPANIES)



Source: Perspective Economics (n=2,195 sites)

Findings from consultations highlight the US as the dominant trade partner (home to customers and capital), followed by Europe (especially Germany, Ireland, the Netherlands and the Nordics), with Taiwan and China as critical Asia-Pacific links.

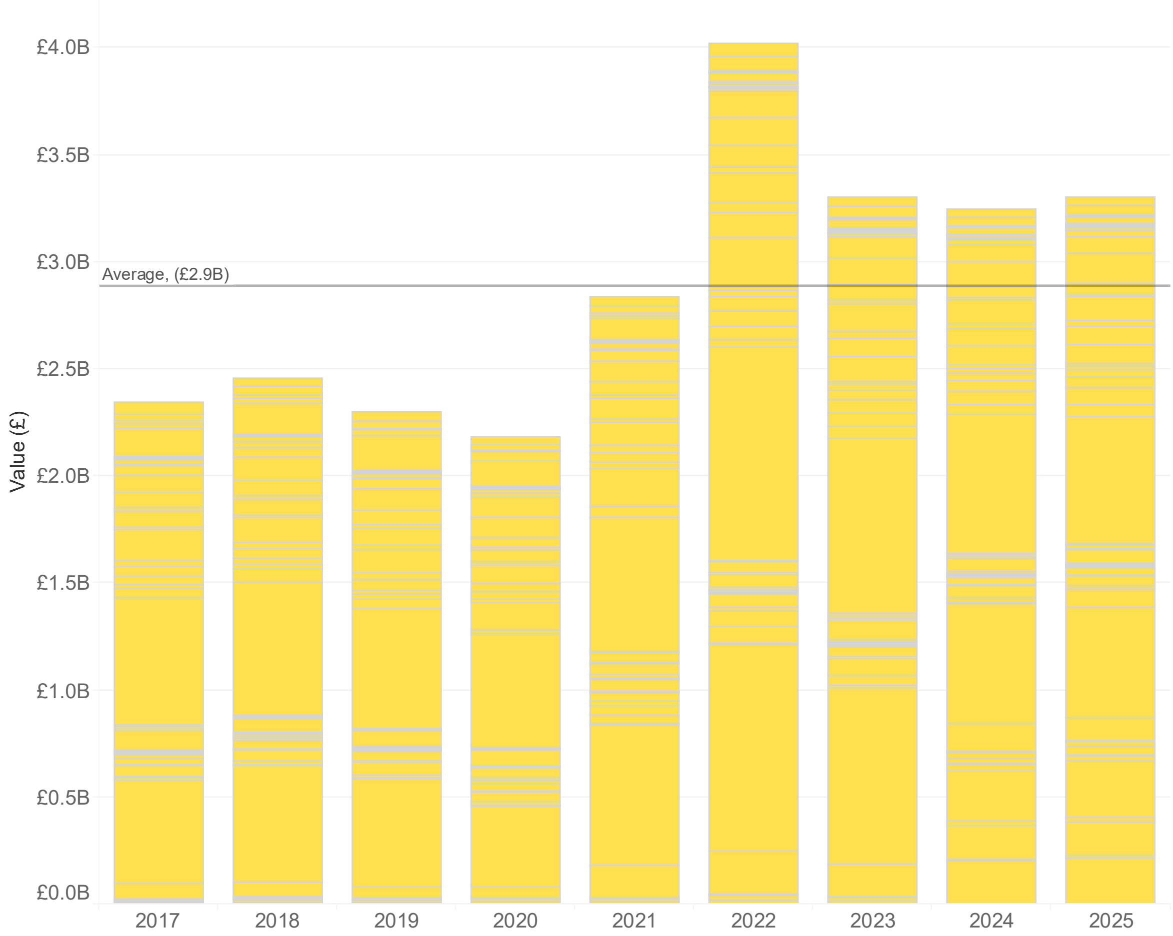
Stakeholders in different segments of the sector highlight that trade within the design-IP end of the value chain (US and APAC) looks geographically different from the manufacturing end, where Europe is more prominent given the presence of automotive OEMs.

Stakeholders suggest that supply chains are being reconfigured, with manufacturing being moved out of China, and to a lesser extent out of Taiwan, but that packaging remains a structural sector risk because it remains concentrated in those countries. Desk research supports these assertions. For example, a recent report on US Census Bureau trade data suggests that Mexico and Taiwan are overtaking China as sources of US advanced technology imports[xxvi]. On packaging, a recent McKinsey article on barriers to scale in the US highlighted that lower cost Asian countries account for ~75% of global supply of traditional assembly, packaging and test and that the concentration of advanced packaging is greater still[xxvii]. Consultees also highlighted how Chinese restrictions in indium phosphide substrate exports are directly constraining UK activity. Some stakeholders suggested that the current geopolitical context offers a uniquely favourable opportunity for the UK to deepen relationships with similar-capability partners.

7.2 SEMICONDUCTOR IMPORTS

HMRC trade data shows that since 2017 UK companies have spent an average of £2.9bn on imports of semiconductor goods each year (up from an average of £2.8bn in the baseline report). Having seen a marked increase between 2021 and 2022 (driven by increases in the unit cost of various types of integrated circuits), semiconductor import costs have remained relatively constant since 2023. A list of the harmonised system (HS) commodity codes used in this analysis is available in the appendices.

FIGURE 7.2 – SEMICONDUCTOR IMPORTS



Source: HMRC UK Trade Info, Perspective Economics

79% of survey respondents indicated that they import products or services to enable their semiconductor business activity (n=44, baseline 75%, n=45). 70% of those respondents indicated that it would be beneficial to increase the share of semiconductor inputs procured from UK companies (n=31), but that those inputs are either not currently produced in the UK (cited by 81%, n=25) or that the cost of UK produced alternatives was prohibitive (cited by 71%, n=22). 55% of respondents who would like to diversify towards UK supply chains were not aware of UK alternatives (n=17). These patterns mirror those identified in the baseline study.

TABLE 7.1 – BARRIERS TO UK SUPPLY CHAIN DIVERSIFICATION

Response	Count	% of respondents
Availability of UK alternatives	25	80.6%
Cost of UK alternatives	22	71.0%
Availability of UK alternatives at suitable scale	16	51.6%
Awareness of UK alternatives	15	48.4%
Quality / consistency of UK alternatives	14	45.2%
Other (Please State)	3	9.7%

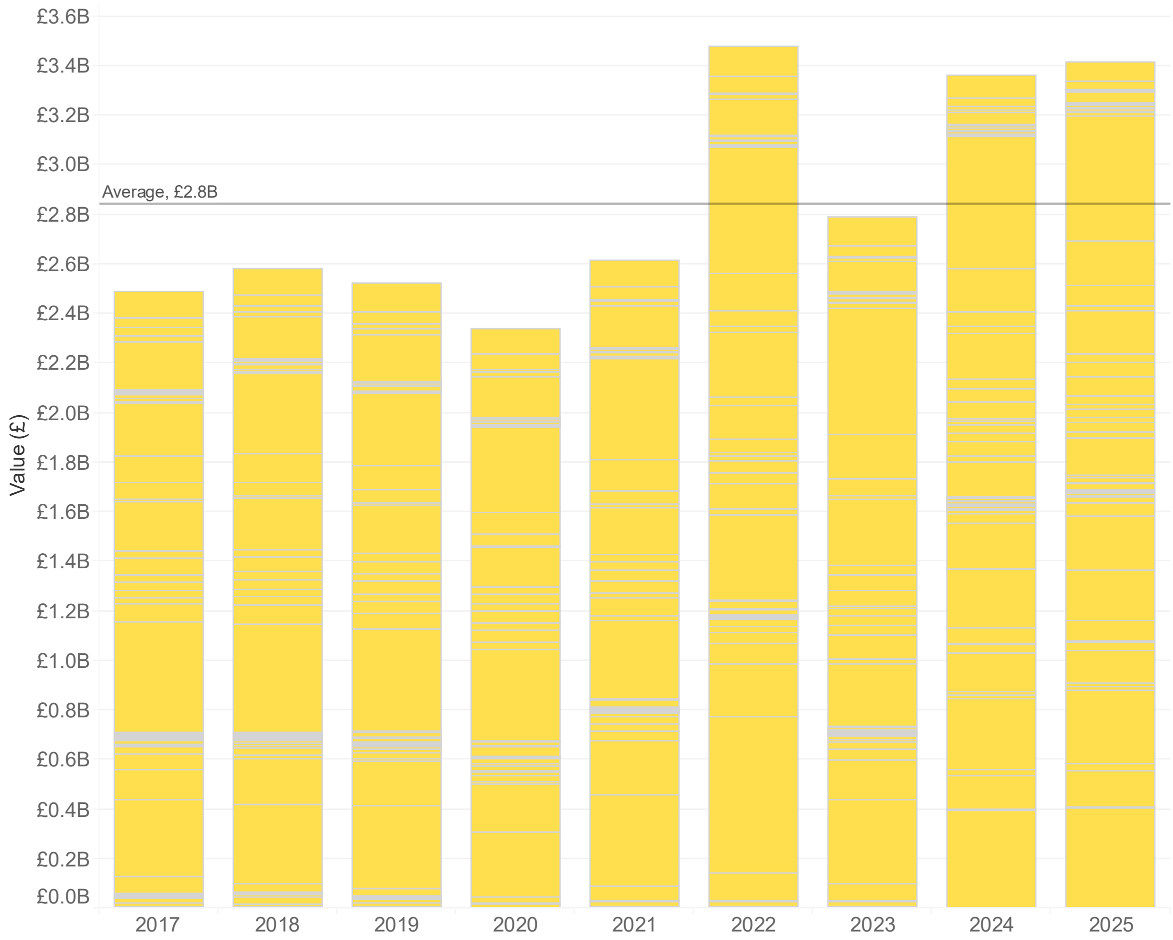
Source: Perspective Economics (n=31, respondents could select multiple options)

7.3 SEMICONDUCTOR EXPORTS

70% of survey respondents indicated that they currently export semiconductor products or services (n=38). 50% of these respondents suggested that exports account for more than 75% of their total UK sales (n=18, baseline 60%). When asked which countries were most important for exports, 78% of respondents included both Europe and the US (n=28), with Europe ranked as a top priority market slightly more often than the US (17 respondents ranked Europe as their number one export market, compared to 14 who ranked the US as their top export market). A second tier of countries were cited by between 30% and 50% respondents, including China, India, Taiwan, Japan and 'Rest of the World'.

HMRC trade data shows that semiconductor exports have grown by 23% since 2023 (~£625k, Figure 7.3). This export growth has been driven by increases in exports of measurement and testing equipment and tools, which is a continuation of the trend seen in the baseline study.

FIGURE 7.3 – SEMICONDUCTOR EXPORTS

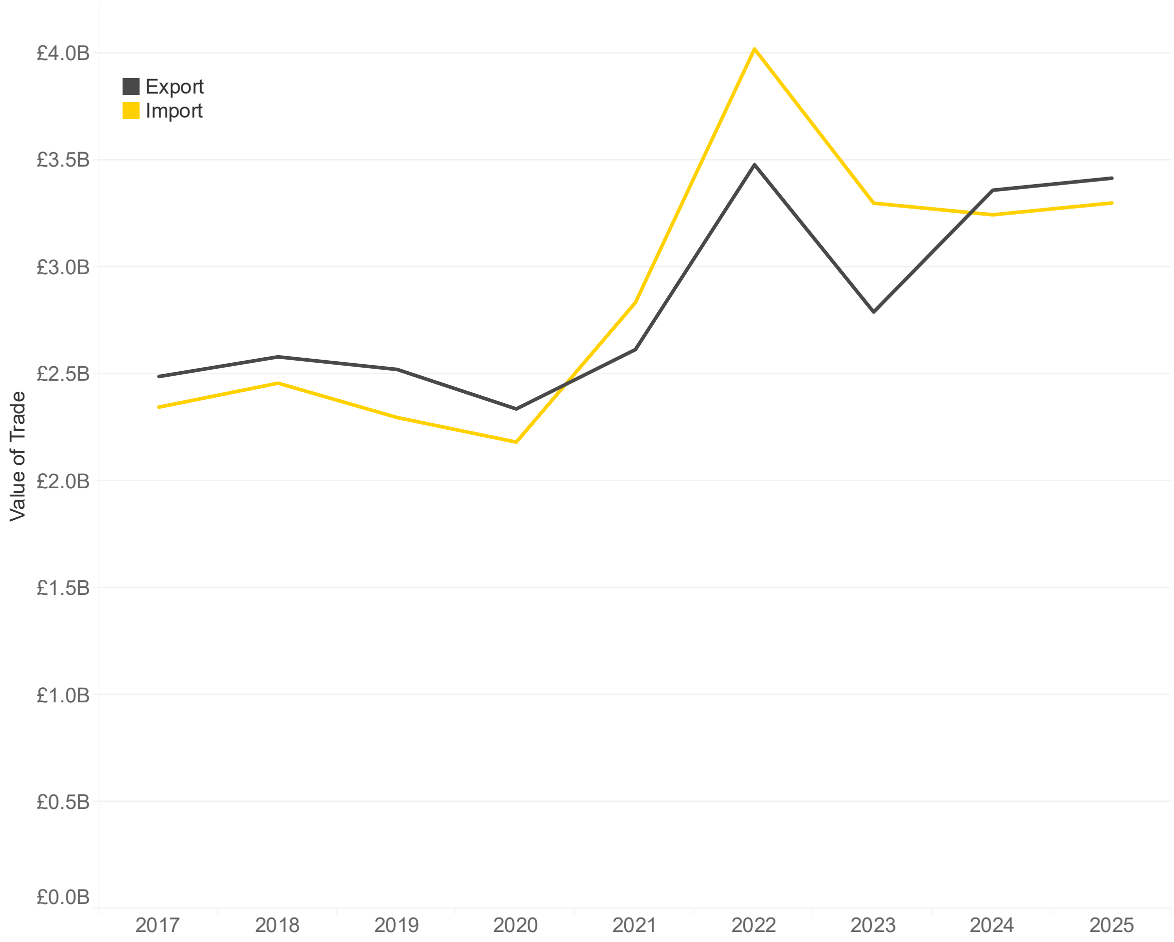


Source: HMRC UK Trade Info, Perspective Economics

7.4 BALANCE OF TRADE

Increase value of semiconductor exports since 2023 means that the value of semiconductor related exports is now higher than the cost of semiconductor imports.

FIGURE 7.4 – SEMICONDUCTOR TRADE BALANCE



Source: HMRC UK Trade Info, Perspective Economics

[i] https://www.wsts.org/76/103/WSTS-Semiconductor-Market-Forecast-Spring-2025
[ii] Baseline study published in 2024 based on 2022/23 data.
[iii] Semiconductor Industry Association
[iv] Sources include: IDB *Aerospace Industry: Current Status and Trends of the Global Value Chain* (2025); https://www.icaew.com/library/industry-profiles/automotive-manufacturing; https://www.asd-europe.org/news-media/facts-figures/key-data-overview/ (aerospace and defence less aerospace figure derived from IDB); https://techma.bakertilly.es/wp-content/uploads/2026/01/Market-Research-Industrial-Automation_corregido_compressed.pdf; https://www.pwc.com/gx/en/services/tax/assets/the-case-for-circular-business-models-new.pdf (figure uplifted from 2023 by CAGR est); https://khaznadatacenters.com/wp-content/themes/khazna/report/pdfs/Khazna-White-Paper-Style-Guide-v10.pdf
[v] https://www.microchipusa.com/industry-news/the-intersection-of-ai-and-semiconductors-advancements-implications-and-future-opportunities
[vi] https://www.gov.uk/government/publications/science-and-technology-framework/science-and-technology-framework
[vii] One seen as critical to the development of technologies and capabilities with both civil and military applications: https://www.gov.uk/government/publications/industrial-strategy
[viii] https://www.pragmaticsemi.com/pragmatic-welcomes-hrh-the-princess-royal-to-pragmatic-park-for-the-opening-of-the-uks-first-300mm-semiconductor-wafer-manufacturing-facility/
[ix] 42 company classifications were changed from diversified in the baseline study to dedicated in this study following collation of additional data and improved classification tools. Companies designing, developing or manufacturing photonic integrated circuits (PICs) were classified as dedicated.
[x] The same figures for the 190 dedicated companies included across both the baseline and current study datasets are 80% of revenues and 66% of employment, suggesting increased concentration within the UK semiconductor sector.
[xi] Supply chain classifications were adjusted for 32 records. Baseline: Design=18, Manufacturing=13, Materials=1. 2026: Design=13, Manufacturing=15, Materials=4.
[xii] The study applies frontier LLM technology to detailed descriptive information gathered from websites and other publicly available information to assign pre-determined target market tags. Multiple tags can be assigned to a single company and a single 'best-fit' target market is also selected.
[xiii] WSTS Historical Billings Report March 2026
[xiv] Note that this figure includes a downward adjustment to UK revenue estimates for Qualcomm
[xv] 94 survey responses were received this year, compared to 66 within the baseline study
[xvi] This figure is lower than that presented in the semiconductor workforce study because it includes only employment within dedicated semiconductor companies whereas the workforce study also included some diversified companies deemed relevant from a skills perspective.
[xvii] Weighted Type I FTE employment multiplier (1.64) constructed from Type I FTE multipliers for the SIC sub-sectors most relevant to the UK semiconductor value chain and applied to employment shares across design, manufacturing and materials. Type II multiplier (1.99) is derived using Type II/Type I relationships in the Scottish Government's Supply, Use and Input-Output Tables.
[xviii] Location Quotients measure the concentration of employment in a particular part of the economy within a region, relative to its concentration nationally. They are calculated by dividing the sector's share of total regional employment by the sector's share of total national employment. A result greater than 1 denotes above-average concentration.
[xix] ARM accounts for c.20% of dedicated company UK employment and almost 25% of revenues.
[xx] https://uksemicentre.org.uk/assets/content/reports/UKSC-Roadshow-Insight-Report-FINAL.pdf
[xxi] Note that improved analytical tools (more technical scripts and more advanced frontier LLMs) mean that some previously included projects were removed, and new projects were added. These adjustments are not deemed to have changed key findings from this aspect of the research.
[xxii] Analysis uses a 'best-fit' categorisation based on frontier LLM review of project titles and abstracts. N.B. research and innovation projects often address multiple issues and could therefore fit into multiple categories.
[xxiii] Analysis uses CPC code H10 as a proxy for semiconductor patents in line with existing literature.
[xxiv]https://assets.publishing.service.gov.uk/media/680f671211d566056bcae946/Semiconductor_Workforce_Research_Report_DSIT_F_AC_April_2025.pdf
[xxv] IDA Ireland training grant guidelines suggest up to 50% funding for eligible training costs, see: https://www.idaireland.com/getmedia/e22fdf46-9e75-4260-a882-a07f2f776edf/Training-Grant-Client-Guide-2026_1.pdf
[xxvi] https://www.dallasfed.org/research/pubs/25trade/a4
[xxvii] https://www.mckinsey.com/industries/semiconductors/our-insights/semiconductors-have-a-big-opportunity-but-barriers-to-scale-remain