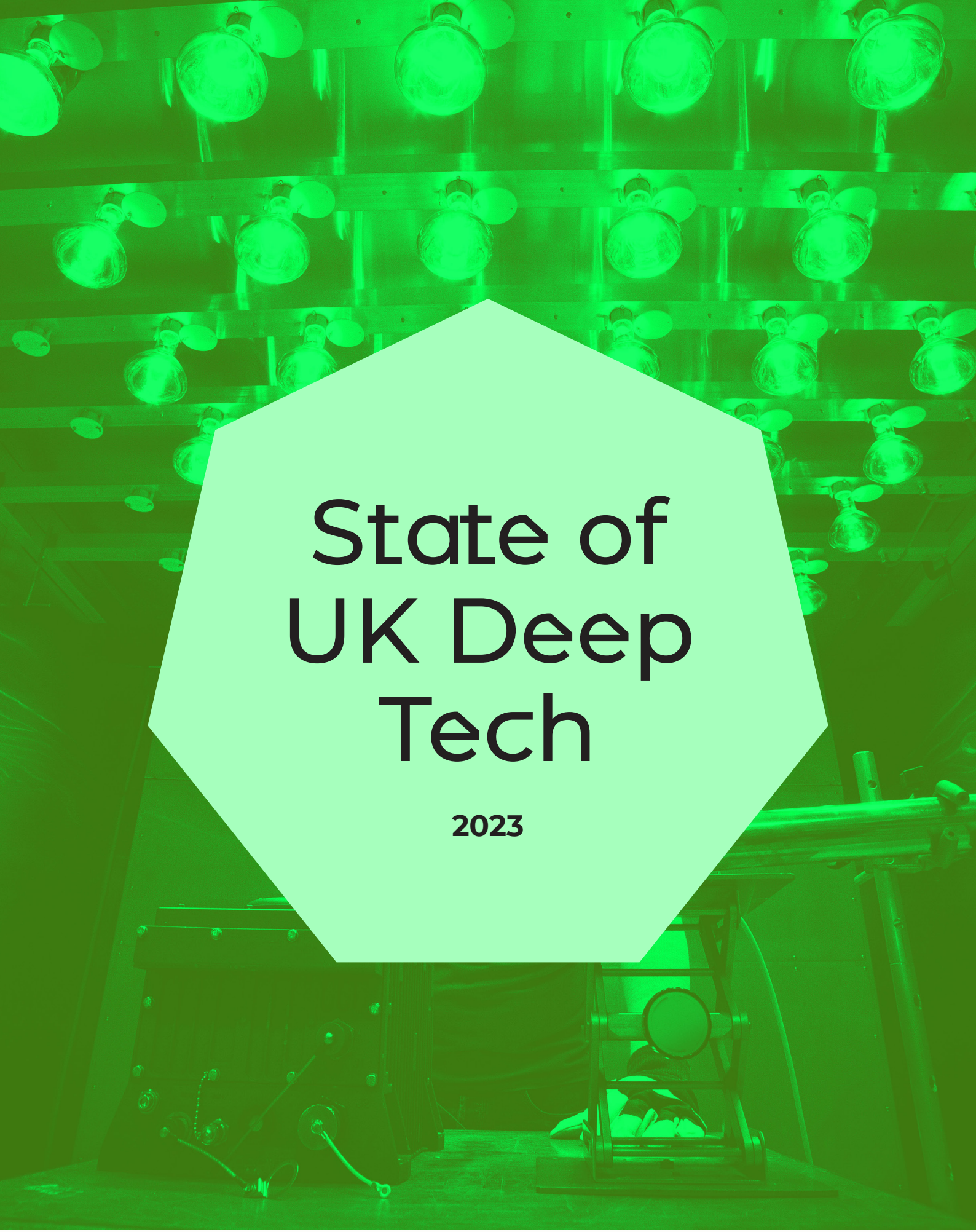


State of UK Deep Tech

2023

Royal Academy of Engineering | Enterprise Hub

Beauhurst

Contents

Introduction

Defining deep tech

There is no universal definition of deep tech, and other terms like hard tech and tough tech are also in the mix. By its very nature, the term encompasses a broad and evolving spectrum of innovative technologies, and what constitutes deep tech may vary based on the perspectives and metrics of different stakeholders. What does appear to be common in the definition of deep tech companies is that the technologies are grounded in innovative engineering and cutting-edge scientific advances and the companies are recognised as being capital, time and R&D intensive.

To define deep tech companies for this report, Beauhurst-defined sectors, buzzwords and SIC codes were used to identify deep tech companies. A relatively stringent approach was taken, with only sectors and SIC codes associated with cutting-edge innovation included. As a result, SIC codes were used sparingly as they cover large sectors which will encompass both deep-tech and non-deep tech companies. The Beauhurst sector classifications offered a more technology-specific approach to selection. The full methodology with selected sector classifications and SIC codes can be found on page 36.

Another consideration was company age. As deep tech companies grow it is likely that their activities diversify. To increase confidence that the companies selected are still actively engaged in deep tech development, a 10-year limit on company age was applied. While this does risk missing some more established firms engaged in deep tech activities, it does allow for a closer analysis of how starting and scaling deep tech companies are faring in the UK.

Foreword

Mike Carr OBE FREng
Enterprise Committee Member and EXPLORE Chair at Royal Academy of Engineering, Board Member at ERA Foundation

Deep technology companies build on the fundamental principles of engineering and science to create novel solutions and are recognised as being capital, time, and R&D intensive. Deep tech matters for the economy—indeed, it is the lifeblood of a modern, knowledge-based economy—because today's deep tech will become the mainstream employment of the future.

I am therefore delighted to support the publication of this report by the Royal Academy of Engineering, based on data compiled by Beauhurst, which, for the first time, assesses the capability, contribution and spread of the UK's emerging or deep tech economy.

Deep tech is grounded in the engineering and cutting-edge scientific advances that will enable us to solve the world's most complex environmental, economic and societal challenges. From cutting plastic pollution and providing renewable energy at scale to enhancing healthcare and building sustainable food systems, deep tech pioneers across the UK are pushing the boundaries and developing the world-beating innovations of the future.

After a decade of supporting talented entrepreneurs and decision-makers to transform breakthrough engineering innovations into disruptive spinouts, startups and scaleups across the UK, the Royal Academy of Engineering Enterprise Hub is uniquely well-placed to critique the nation's prowess in deep tech. Much of the Hub's experience is rooted in accelerating and navigating the pain points and challenges faced by deep tech companies as they develop their specific technologies and identify their target markets.

As the first of its kind, this comprehensive report analysing the UK's deep tech landscape contains much that will interest policymakers, investors and those working in deep tech companies. The UK is home to nearly 3,500 active deep tech companies, with 87.2% based in England, particularly in London, the South East and the East of England. Scotland has cemented itself as a deep tech innovation hub, with growing activity in Wales and Northern Ireland as well. The location data poses both a challenge and an opportunity – deep tech is ripe for growth across the entire nation, often enabled by our world-class research universities and research institutions. The report shows that they are vibrant engines for deep tech startups, with nearly 600 deep tech companies spun out of 68 universities between 2013 and 2022.

Artificial intelligence represents a major opportunity for deep tech development in the UK, with more than 500 AI-based companies established. AI is already revolutionising whole industries, from drug discovery to manufacturing, by helping to optimise processes and accelerate innovation. The UK government's recognition of AI's potential is reflected in its desire to take a pro-innovation approach to regulating AI. This approach empowers researchers and entrepreneurs to drive the technology while taking a proportionate approach to regulating the risks of AI.

Equity investment in UK deep tech has soared over the last 10 years from £174m to more than £5b, and a growing number of US venture capital firms are setting up offices in London to ensure they have access to the UK's growing prominence in the global deep tech landscape. However, the report highlights that recent investment activity has slowed following high levels of investment in 2021, with a decrease in the total number of deals secured by deep tech companies from 1,194 in 2021 to 1,181 in 2022. Narrowing the financing gap compared with the US remains a priority, with the data illustrating that North American acquirers have accounted for nearly a third (32%) of the total 176 acquisitions of UK deep tech companies over the past 10 years. There is an opportunity to capitalise upon our mature, open financial markets and improve access to finance, particularly for scaleups at later funding rounds, to support the growth of the UK's most innovative companies.

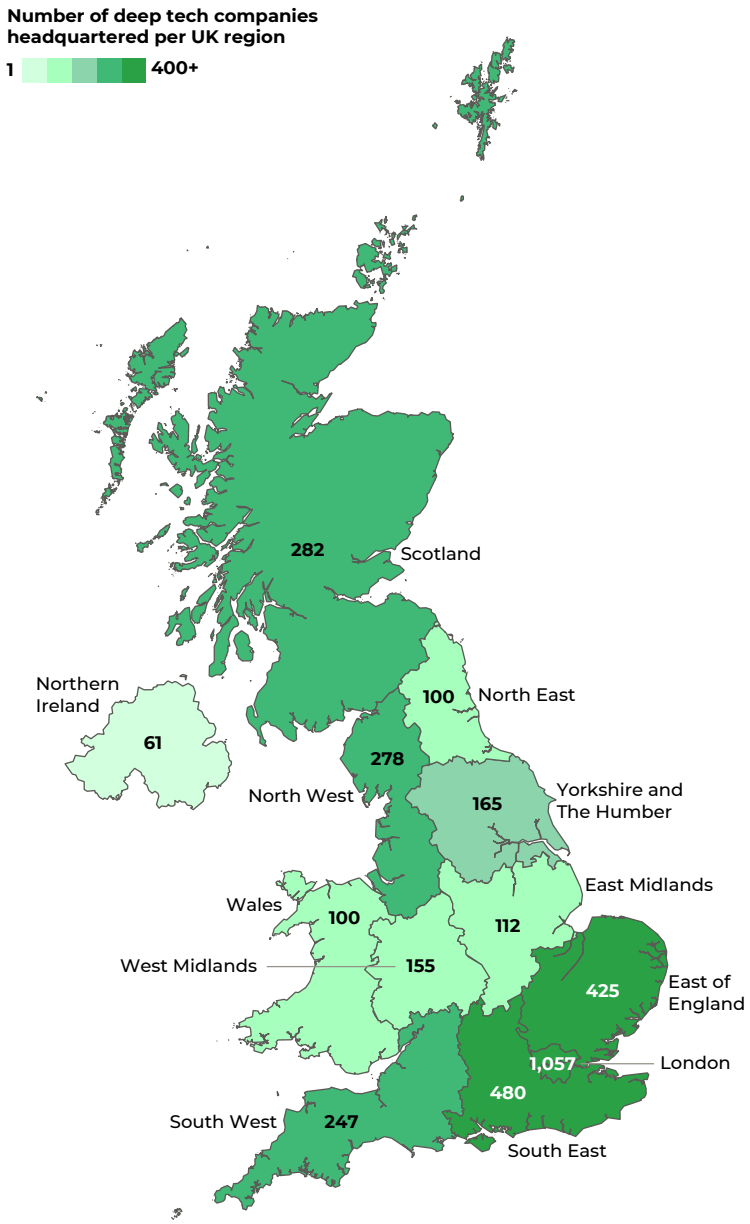
The UK Innovation Strategy's ultimate objective is to establish our nation as a global innovation hub by 2035. Deep tech companies are an essential component in meeting that aim and I am thrilled to see that the sector is now growing rapidly, with huge potential to grow and create new jobs for the future right across the country. However, continued collaboration between stakeholders from all areas of deep tech will be crucial to delivering a strong and vibrant deep tech ecosystem.

Business demography

The UK is home to 3,462 active deep tech companies, with 87.2% based in England: London, the South East, and the East of England host the majority. There are 591 active deep tech spinouts from 68 universities.

National distribution

Map of active, UK deep tech companies by UK region (April 2023)



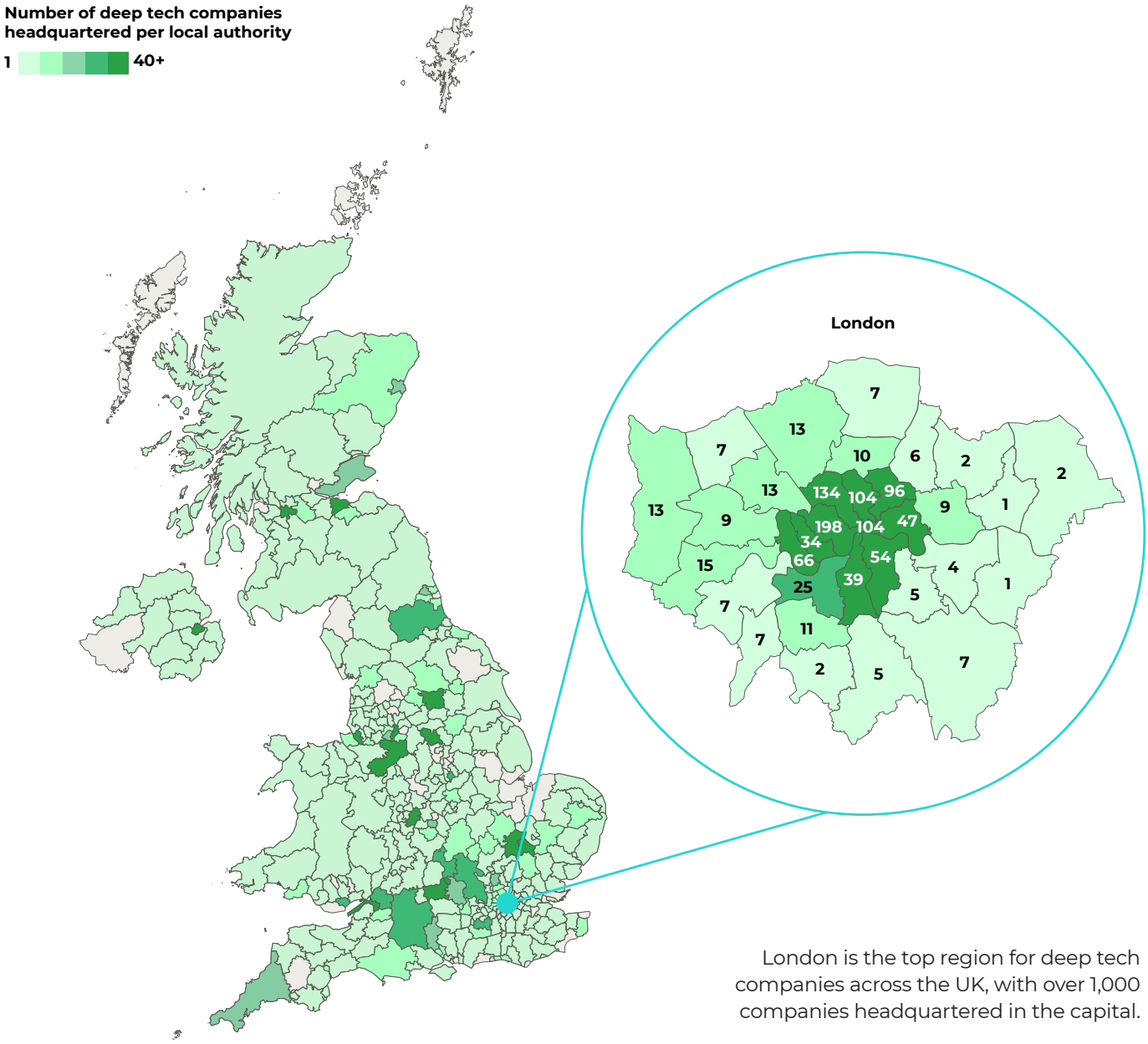
There are 3,462 active deep tech companies in the UK, 87.2% (3,019) of which are based in England. There is a concentration of companies in London (1,057), the South East (480) and the East of England (425). This cluster of companies can be attributed to the robust innovation ecosystems within the UK's golden triangle (Oxford, Cambridge, and London). These regions are attractive for technology companies to base operations due to the access to world-renowned universities and research institutions, as well as links with investors and high-quality talent pools. This has proven true for companies like London-based Quantum Motion, which received equity funding from London-based Parkwalk Opportunities EIS Fund. The company develops and commercialises silicon-based quantum computing technology. It has secured £52.2m in equity finance via four deals.

Scotland (282) is the next most populated nation for deep tech companies, followed by Wales (100) and Northern Ireland (61). Scotland has cemented itself as a deep tech innovation hub in the UK, with almost a third of the nation's deep tech companies based in Edinburgh (89). The nation's success can be partly attributed to the support of bodies focused on developing economic activity, such as Scottish Enterprise —a government economic development agency—which provides funding and business expertise to innovative companies in Scotland. For example, Scottish Enterprise has participated in two equity investment rounds for Gibson Robotics, an Edinburgh-based company that develops advanced drone technology.

The deep tech company populations broadly align with the regional high-growth company populations on a proportional basis. However, some regions, such as Scotland and the East of England, have a higher proportion of deep tech companies compared to their proportion of the total high-growth company population.

Regional distribution

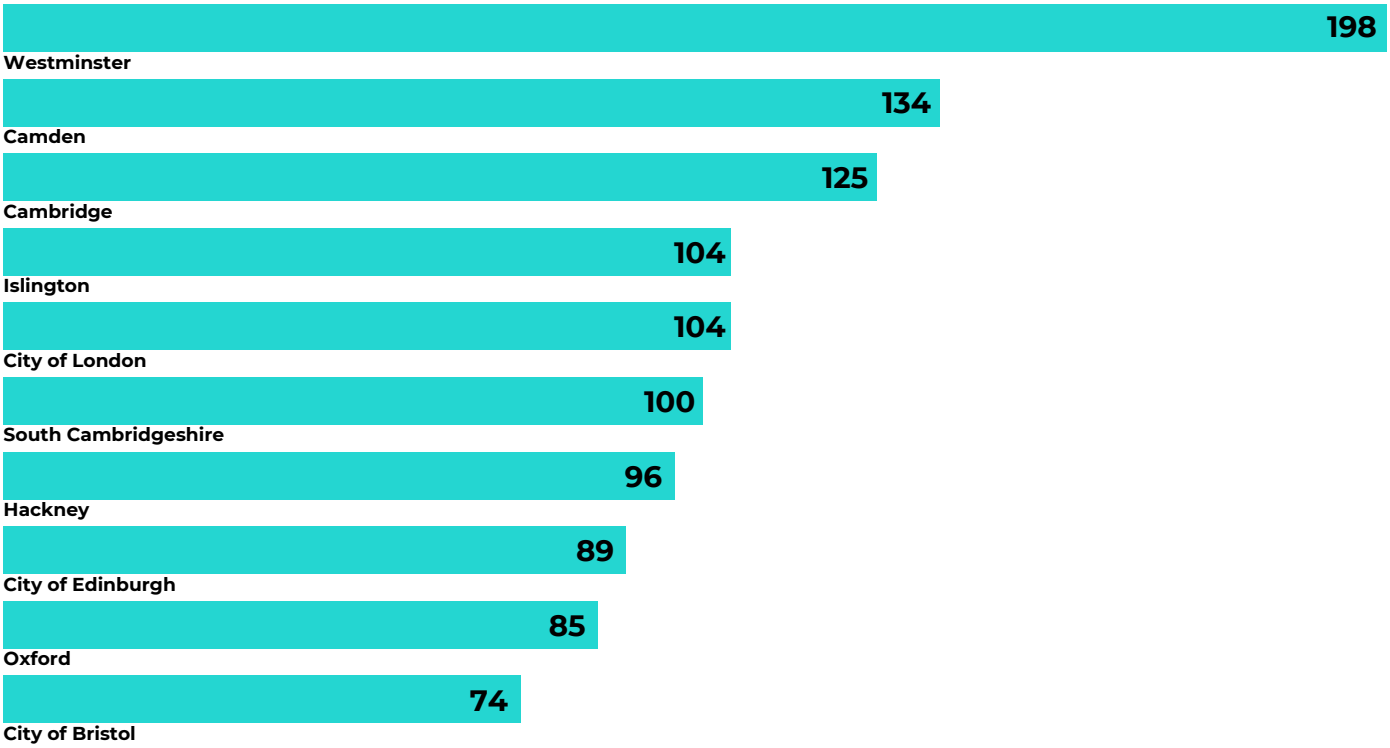
Map of top local authorities by number of deep tech companies (April 2023)



London is the top region for deep tech companies across the UK, with over 1,000 companies headquartered in the capital.

Top local authorities

Top local authorities by deep tech companies (April 2023)

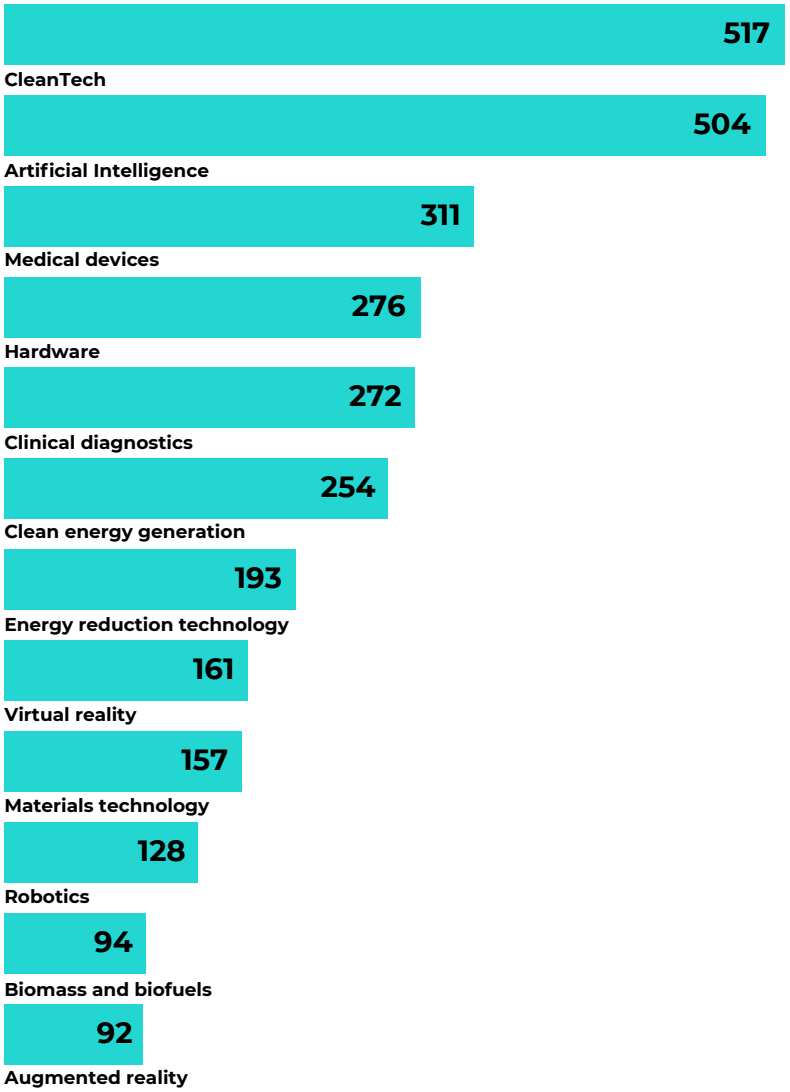


London is a leading hub for deep tech innovation and home to over 1,000 active deep tech companies. Westminster, Camden, Islington, the City of London, and Hackney account for half of the top local authorities—cementing London's position as a leader in deep tech innovation. Westminster ranks as the most populated local authority—hosting 198 deep tech companies, followed by Camden (134) and Cambridge (125). Westminster's established tech ecosystem makes it an attractive location for entrepreneurs to develop their businesses and an ideal place to draw in top talent. A number of factors influence this, including its proximity to renowned research institutions such as University College London and Imperial College London.

Bristol (74) and Manchester (70) rank closely behind as top local authorities for deep tech companies across England. Bristol-based deep tech companies represent 30.0% of the 247 companies in the South West, of which 30 are academic spinouts that have spun out from research-intensive institutions in the region, such as the University of Bristol, the University of Bath, and the University of Exeter. Manchester-headquartered companies represent a quarter of the 278 active deep tech companies in the North West of England. Of these companies, 33 spun out from local academic institutions, the University of Manchester and the University of Salford. This underscores the important role that universities play in producing deep tech innovations that can form the basis of commercially viable deep tech companies.

Sub-sectors

Top deep tech sub-sectors by number of deep tech companies (April 2023)



The urgent need to address environmental issues has boosted demand for solutions from the UK's deep tech sector, notably in cleantech (517 companies), clean energy generation (254), and energy reduction technology (193). The popularity of these sub-sectors can partially be attributed to the governmental and regulatory support entrepreneurs in these areas receive. For example, the Department for Business, Energy & Industrial Strategy (BEIS)* Energy Innovation Programme—a £505m programme that supported the commercialisation of clean energy technologies from 2015–2021.

Artificial intelligence (504 companies) is another key sub-sector, with its widespread application in industries such as drug discovery and manufacturing. The UK government's recognition of AI's potential is reflected in its desire to take a balanced approach to regulating the technology.

A significant 311 deep tech companies are focused on creating medical devices. These include companies such as Aberdeen-based Alceli, which specialises in the use of proton therapy to treat illnesses such as cancer through the destruction of tumours. Since starting in 2016, Alceli has secured a £100k grant in 2017 and received £65k in equity fundraising through three funding rounds.

Immersive technologies, including virtual reality (VR, 161 companies) and augmented reality (AR, 92 companies), have grown beyond entertainment. They are being used across various sectors, including healthcare, where practitioners can use VR/AR for surgical simulations and mental health therapies. Much of the technology being developed by UK deep tech companies will have applications beyond the deep tech sub-sectors presented in this analysis.

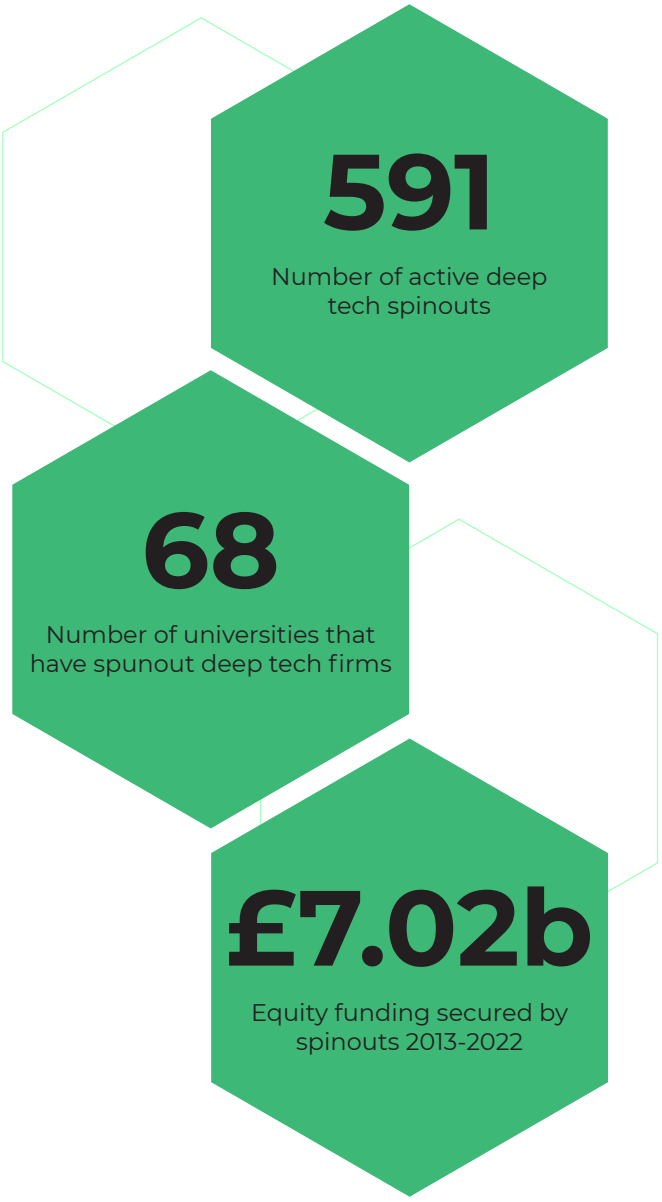
* BEIS was operational until 2023. It was restructured to create the Department for Business and Trade (DBT), the Department for Energy Security and Net Zero (DESNZ), and the Department for Science, Innovation and Technology (DSIT).

Spinouts

Academic spinouts are often at the forefront of technological advancements, utilising cutting-edge research and intellectual property to develop the latest innovations. This lends itself well to the deep tech sector, resulting in a significant overlap between the two. There are 591 active, deep tech spinout companies, representing 17.1% of the sector's total business population. In comparison, there are 203 active, deep tech scaleups, representing just 5.86% of the sector. For the wider tech sector, spinouts represent just 7.36% of the business population, demonstrating the significant role that spinouts and research-intensive universities play within the deep tech sector.

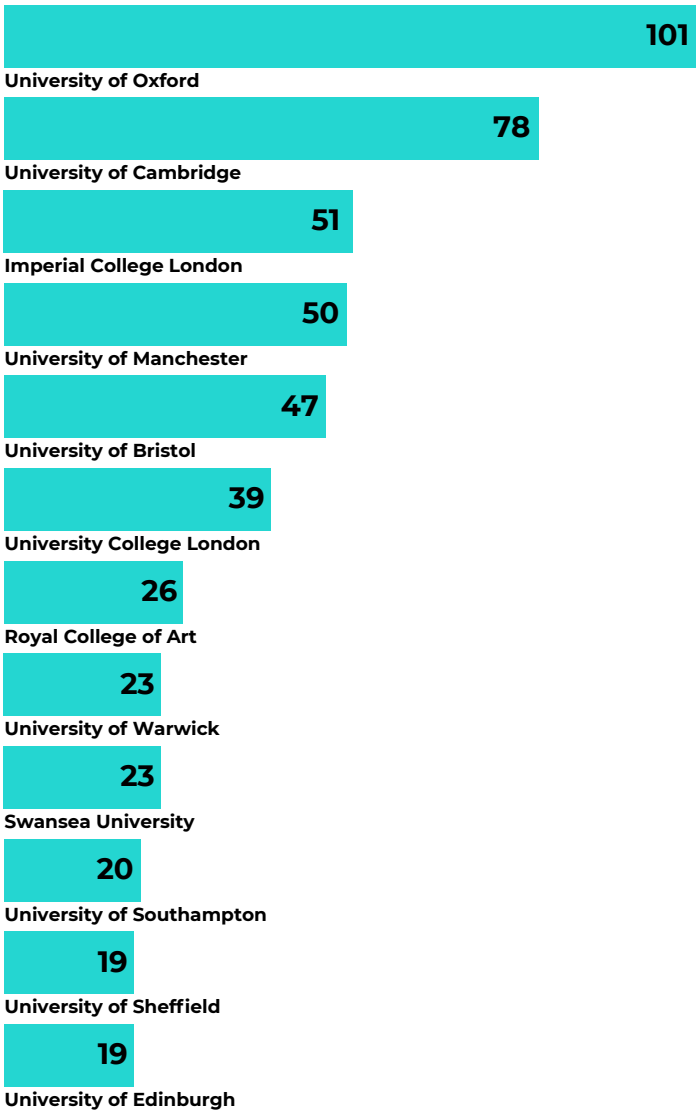
Additionally, deep tech spinouts have proven to be an attractive investment opportunity, securing an impressive £7.02b in equity investment between 2013 and 2022. This figure represents 35.5% of the total equity investment secured by deep tech companies in the same period, highlighting the strong investment potential of these companies.

In addition to the high number of deep tech spinouts, the fact that they have emerged from such a wide range of academic institutions across the UK highlights the breadth and depth of the country's research capabilities. Accordingly, this demonstrates the potential for further growth and innovation in the deep tech sector and underscores the importance of continued investment and support for academic research. As mentioned previously, high-quality research institutions also facilitate the development of innovation clusters, where spinouts, established firms, and research institutions can collaborate to drive innovation and economic growth. With 68 such institutions successfully producing deep tech spinouts, the UK is well-positioned to develop more of these innovation clusters and to further bridge the gap between academia and industry by continuing to commercialise cutting-edge research. For more information surrounding the wider academic spinout landscape, please see our *Spotlight on Spinouts* report.



Spinouts by origin

Top origin universities by total number of deep tech spinouts (April 2023)



The University of Oxford ranks as the top institution for spinning out deep tech companies, having spun out 101 companies that have achieved a Beauhurst tracking trigger since 2011. This aligns with the University of Oxford's position as the top origin university for academic spinouts across all sectors.

The University of Cambridge (78), Imperial College London (51) and University College London (39) also feature among the top universities by the number of deep tech spinouts created, highlighting their contribution to the development and growth of the innovation clusters in the South. These universities have helped researchers commercialise cutting-edge research, growing businesses such as Cambridge-based niobium anode developer Echion Technologies.

Given its name, it may be intriguing to find the Royal College of Art (23) among this ranking. However, it should be noted that the university offers interdisciplinary research opportunities through its various research centres, such as the Materials Science Research Centre, the RCA Robotics Laboratory, and the Computer Science Research Centre.

Several other universities in the UK have also contributed to creating a rich deep tech landscape. Notably, these have come from different regions, such as the University of Warwick (23) and the University of Sheffield (19). The importance of geographic distribution should not be understated, particularly as 91.7% of active spinouts are based within the same region as their origin institutions. This allows for better-distributed economic growth by generating jobs, attracting investment, and fostering entrepreneurship across the country.

Fastest growing companies

The deep tech companies highlighted on this page have achieved the highest compound annual growth rates (CAGRs) in their turnover or headcount in the UK as reported by their financial accounts for the last three years. Materials technology company Alloyed and medical device company aVaxziPen exhibited the highest turnover growth, growing their revenue by a CAGR of 293% and 99%, respectively. Meanwhile, Holiferm and Crover demonstrated the highest headcount growth, with both companies increasing their employee headcount by a CAGR of 204% and 180%, respectively.

Alloyed
CAGR (turnover): 293%
Turnover (FYE 2022): £4.50m
Sector: Materials technology

Founded in 2017, Alloyed designs, develops and manufactures alloys for applications across various sectors, including aerospace and defence. The University of Oxford spinout has secured £45.2m via four fundraising rounds and a further £1.57m in grant funding. The Oxfordshire-based company holds six patents related to metallurgy and manufacturing across three jurisdictions: the UK, the EU, and China.

Holiferm
CAGR (headcount): 204%
Headcount (FYE 2022): 28
Sector: Manufacturing and engineering

Incorporated in 2018, Holiferm develops industrial-scale production methods for sustainable, bio-based products for industrial and consumer products. The Manchester-based company holds a patent for its gravity separation method for producing and separating lipids. Since spinning out of the University of Manchester, the company has secured £10.1m across four rounds of fundraising and an additional £3.04m in grant funding.

aVaxziPen
CAGR (turnover): 99%
Turnover (FYE 2022): £286k
Sector: Medical devices

Oxfordshire-based aVaxziPen develops needle-free, solid-dose vaccine delivery systems to improve thermal stability. Founded in 2017, the company has been granted five patents related to its needle-free drug delivery system across 14 authorities. aVaxziPen has also secured £18.5m in equity investment, alongside £870k in grant funding from Innovate UK.

Crover
CAGR (headcount): 180%
Headcount (FYE 2022): 22
Sector: Agriculture and farming

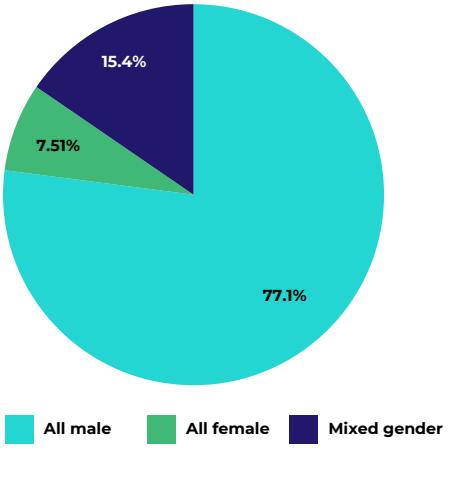
Headquartered in Edinburgh, Crover has developed a subterranean drone to navigate granular environments, such as grain storages, mineral bulks or Martian terrain. The robotics company holds a patent for its technology supporting propulsion through granular matter. Since launching in 2018, Crover has received £422k in equity investment and £1.01m in grant funding.

Diversity

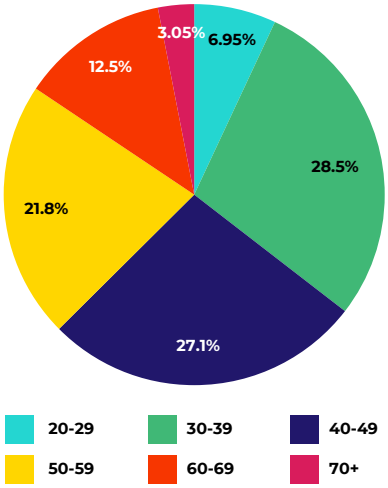
Deep tech sector founders show a gender disparity, with 77.1% being all-male teams and 7.51% all-female. Key employee representation is more diverse, with 39.7% having mixed-gender teams. Age and nationality distributions are similar for founders and key employees, with most being UK citizens.

Founders

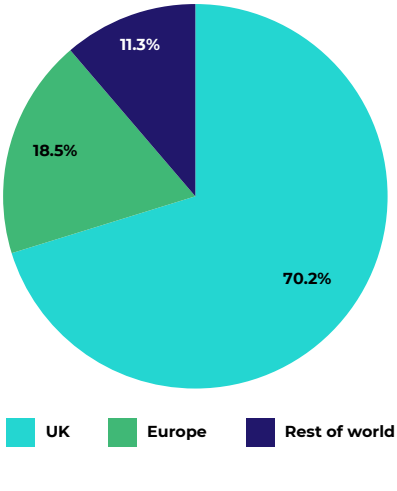
Deep tech founders by gender



Deep tech founders by age



Deep tech founders by nationality



Most deep tech companies (77.1%) have founding teams solely comprised of men. Companies with mixed-gender founding teams account for 15.4% of the population, with all-female teams accounting for the remaining 7.51%. For the wider high-growth ecosystem, the equivalent figures are 75.4%, 11.8%, and 12.8%, respectively. These figures underscore the dominance of male founders within the deep tech sector, revealing a clear gender disparity. This may be connected to the historically low proportion of women studying STEM subjects in the UK, though this has increased in recent years and may improve the gender diversity of deep tech founders in the coming years [1]. The disparity may also reflect investor attitudes and the need for more robust support for women entrepreneurs. This analysis excludes companies where one or more founder genders are unknown (28.1% of deep tech companies).

Of the 4,644 current deep tech founders in the UK, a small proportion (6.95%) fall within the 20-29 age group, suggesting that relatively few young entrepreneurs launch deep tech ventures immediately following their tertiary education. This trend likely reflects that establishing a deep tech company often requires extensive technical expertise and specialised domain knowledge, which are often challenging to attain without substantial experience in the relevant field.

The 30-39 age bracket (28.5%) makes up the largest segment for deep tech founders, closely followed by the 40-49 age group (27.1%) and the 50-59 age bracket (21.8%). These figures differ slightly from the broader high-growth ecosystem in the UK, for which the 40-49 age bracket is the most common age for founders.

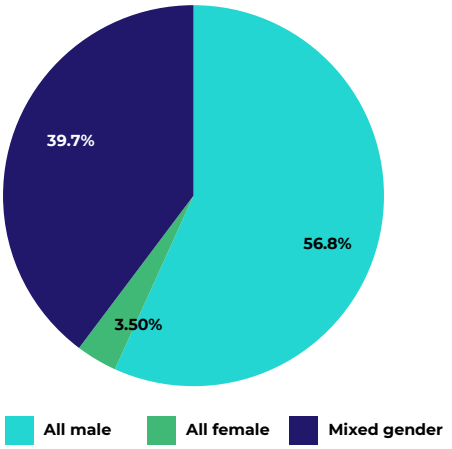
Most deep tech founders are UK citizens (70.2%), 18.5% are European citizens, and the remaining 11.3% come from the rest of the world. The significant proportion of founders from European countries can be partially attributed to the proximity of these countries and that up until the UK's exit from the EU, European founders could work in the UK without any restrictions. Another contributing factor is the attractiveness of the UK for entrepreneurs. The UK offers research and development (R&D) intensive companies a supportive regulatory environment to base their operations in, as well as R&D tax credits, robust talent pools and access to funding. The number of founders from outside of the UK may also be fueled by their past involvement in research at universities based in the UK.

The analysis presented here does not include ethnicity statistics for deep tech founders as widespread and accurate data on the ethnicities of UK deep tech founders is not available.

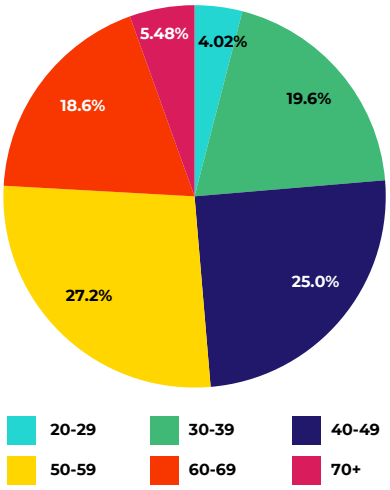
[1] Higher Education Statistics Agency, www.hesa.ac.uk

Key employees

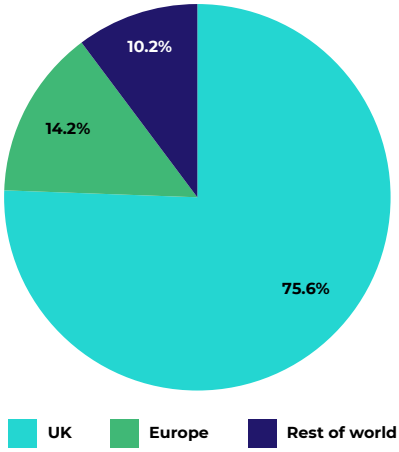
Deep tech key employees by gender



Deep tech key employees by age



Deep tech key employees by nationality



The gender breakdown of key employee, which Beauhurst defines as any employee with a C-suite, head of team or management title, in deep tech companies presents a more diverse picture compared to the gender of founders. Similar to the founder data, the all-male teams make up the largest proportion of companies (56.8%); however, all-female teams account for just 3.50% of all deep tech companies in the UK. The remaining 39.7% of businesses have mixed-gender teams, significantly greater than the 15.4% for founding teams. This suggests a positive trend of gender diversity improving among deep tech companies as they grow and expand beyond their initial founding teams. This analysis excludes companies where one or more key employee genders are unknown (19.9% of companies).

Notably, the distribution of key employee ages differs from that of the founding teams. The most common age brackets are the 30-39 group (19.6%), the 40-49 group (25.0%) and the 50-59 group (27.2%). While this is similar for founding teams, the oldest of these three groups is most populated for key employees in deep tech companies. As companies mature and grow beyond the founding stage, they often seek individuals with deeper industry knowledge and a proven track record of success, which is more prevalent in the older age brackets. Additionally, the older age groups may also reflect a trend of professionals transitioning from other industries into deep tech, bringing valuable skills and perspectives to the companies.

The nationalities of key employees in these companies are also similar to that of founding teams. The highest proportion of key employees come from the UK (75.6%), while 14.2% come from Europe, and the remaining 10.2% originate from the rest of the world. The diverse range of nationalities with deep tech companies in the UK is a positive indicator of the sector's ability to attract and retain top talent. However, the UK's exit from the EU is likely to have had an impact on the sector's ability to recruit talent due to European candidates now facing employment and visa requirements to work in the country.

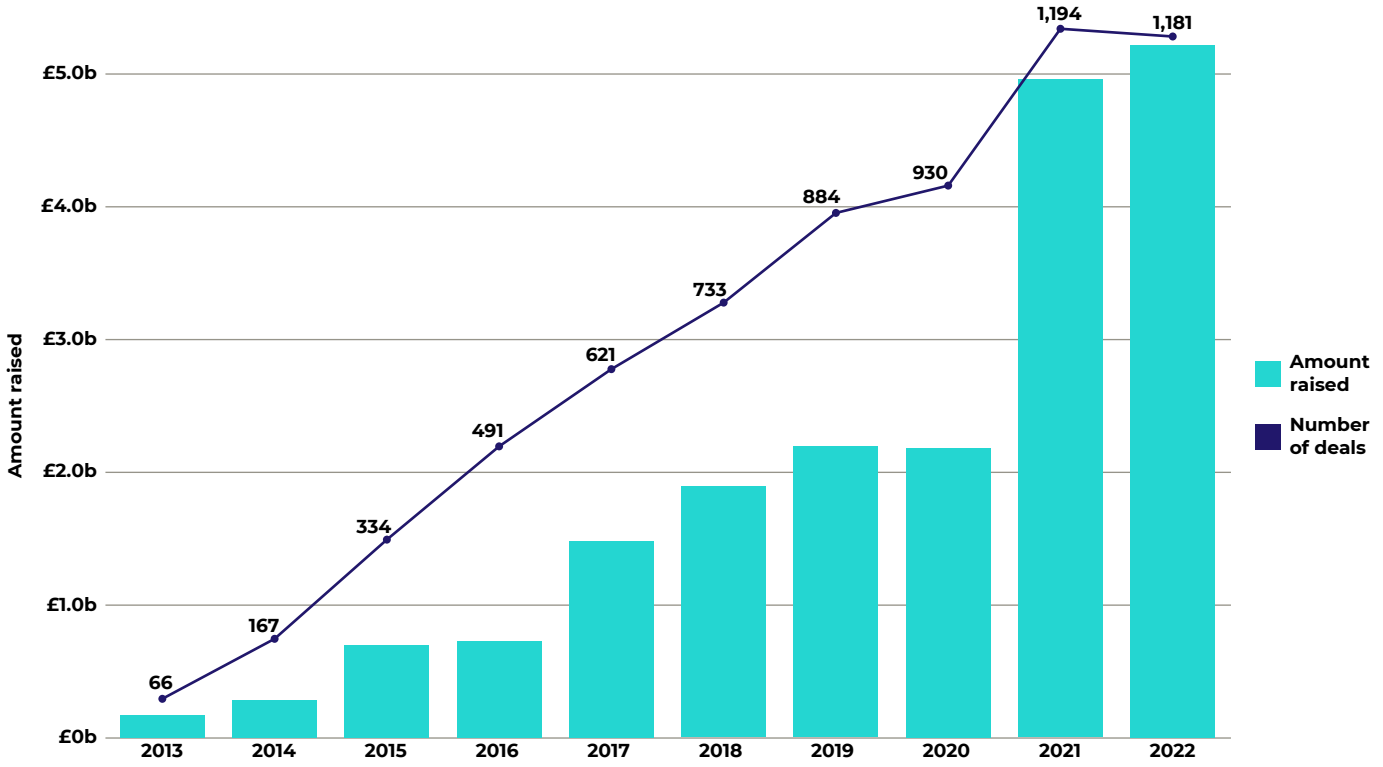
The analysis presented here does not include ethnicity statistics for deep tech key employees as widespread and accurate data on the ethnicities of employees at UK deep tech companies is not available.

Investment

UK deep tech companies have experienced significant growth in equity investments, reaching £5.22b in 2022. US-based investors lead in foreign investment, while Scottish Enterprise, Crowdcube, and Seedrs are among the top investors, highlighting the importance of early-stage funding and academic-industry collaborations.

Total volumes

Equity investment secured by deep tech companies (2013–2022)



Over the past decade, deep tech companies in the UK have received significant equity investment in the number and value of deals. Between 2013 and 2022, the number of equity deals secured by these companies increased from 66 to 1,181. Meanwhile, the value of these deals has risen from £174m to £5.22b. While the sector has seen consistent growth over the last 10 years, 2020 represented the first year it saw a minor decline in the value of equity investments secured. Notably, the negligible 0.5% decrease in equity investment deals from 2019 to 2020 represents relative strength compared to the broader private company landscape, which saw investors take a step back amid the economic uncertainty surrounding the COVID-19 pandemic. This reflects the robustness and attractiveness of deep tech companies within the investment landscape, with investors showcasing their confidence in the sector's long-term growth.

The number of deals secured by deep tech companies decreased from a peak of 1,194 in 2021 to 1,181 in 2022, aligning with the broader investment landscape as investors took a step back following high levels of activity in 2021 and amid a more challenging economic environment. Meanwhile, the value of deals secured by deep tech companies reached a record £5.22b in 2022. This includes a £13.0m deal in September 2022 by Oxford-based Optellum, which utilises artificial intelligence and machine learning to improve the early detection and treatment of lung cancer. Meanwhile, the continued growth potential of the sector is also promising. With 50.5% of deep tech companies in the UK currently at the seed stage, there is a significant number of companies poised to make significant strides in their development and attract further investment in the coming years. This growth is fuelling the ongoing expansion and evolution of the UK deep tech ecosystem.

Foreign investment

Top origin countries of funds by number of equity deal participations into deep tech companies, excluding UK (2013–2022)

42.6%

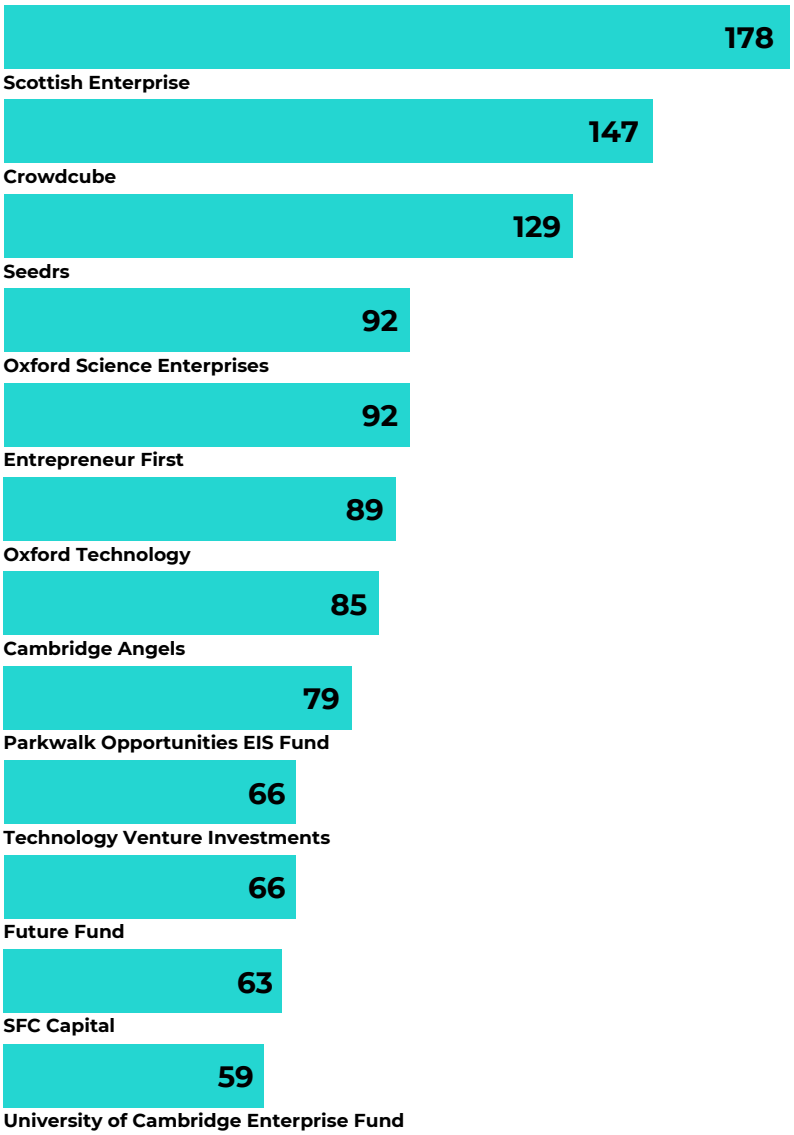
of deals involving foreign investors were at the seed stage.

Outside of UK-based investors, who participated in 4,601 deals, US-based investors have participated in the most fundraising rounds by deep tech companies in the UK since 2013 (728). US-based investors may focus on companies in the UK for multiple reasons, one being the nation's traditional strength and expertise in deep tech areas, such as AI, ML and biotechnology. The leading universities and research institutions in the UK have resulted in tech hubs that foster innovation and attract top talent, such as those in Cambridge, Manchester, and Edinburgh. Another reason is the UK's strong history of collaboration and partnerships with US companies, a fact investors may wish to take advantage of for their technological advancements and market presence. The partnership between Graphcore and Dell is an example of this. The Bristol-based semiconductor company specialises in processing technology for AI and ML and has partnered with Dell to leverage the US company's market reach and customer base. In a testament to the UK's growing prominence in the global deep tech landscape, a rising number of US venture capital firms are setting up offices in London, including prominent names like Andreessen Horowitz and Sequoia.

Six of the top 10 nations are based outside of Europe, including China (49), Japan (48) and Singapore (43). This showcases the strength of the UK's deep tech landscape, both in Europe and globally. This international attention further validates the UK's reputation as a hub for deep tech innovation and highlights the country's ability to attract capital from international investors. The presence of investors from these countries underscores the global recognition of the UK's deep tech expertise and the potential for fruitful partnerships and growth in the sector.

Top investors

Top investors into deep tech companies by number of equity deal participations (2013–2022)



The Future Fund was a government scheme to support UK companies during the COVID-19 pandemic and is now closed.

Scottish Enterprise (178) ranks as the top deal participant for deep tech companies, helping support the deep tech population in the nation—the fourth most populous area for deep tech companies in the UK. As Scotland's national economic development, Scottish Enterprise offers a range of financial assistance, grants, and equity investments to help companies based in the country commercialise their technologies and expand their operations. Scottish Enterprise also provides access to a network of mentors, industry experts, and strategic partners, facilitating valuable connections and collaborations for deep tech companies.

Over the past decade, crowdfunding platforms Crowdcube (147) and Seedrs (129) have ranked among the top deal participants for deep tech companies. This aligns with the wider investment landscape across the UK and highlights the importance of these platforms as a source of funding for early-stage deep tech companies. The notable ranking of these platforms, coupled with the angel network Cambridge Angels (85), signifies the emerging stage of the technologies being pioneered in this sector. Such investor types typically shoulder the increased risk associated with companies in their infancy.

Oxford Science Enterprises (92) and the University of Cambridge Enterprise Fund (59) also feature among the top deal participants. Both funds focus on spinout companies from their namesake universities and play a vital role in translating scientific discoveries into viable commercial ventures, providing capital, expertise, and support. Their strong presence in the top deal participants further highlights the critical role of universities as a breeding ground for deep tech innovation, as well as underscoring the importance of academic-industry collaborations in driving technological advancements and economic growth.

Exit activity

UK deep tech companies have seen 34 IPOs and 176 acquisitions since 2013, reflecting the sector's strength and global appeal. International collaborations and market expansions drive growth, allowing companies to leverage expertise, access new markets, and remain competitive globally.

IPOs

Top IPOs undergone by deep tech companies by market capitalisation (2013–2022)

Since 2013, 34 of the UK's deep tech companies have listed on a stock exchange, 15 of which were academic spinouts. While these companies have largely listed on UK-based stock exchanges such as the London Stock Exchange (LSE) or Alternative Investment Market (AIM), 10 of these deep tech companies (29.4%) floated on the NASDAQ Stock Market. Medtech company ConvaTec tops the ranking by a market capitalisation of £4.39b, having floated on the London Stock Exchange in October 2016. Based in London, the company develops and manufactures innovative products in advanced wound care, ostomy care, continence and critical care, and infusion devices.

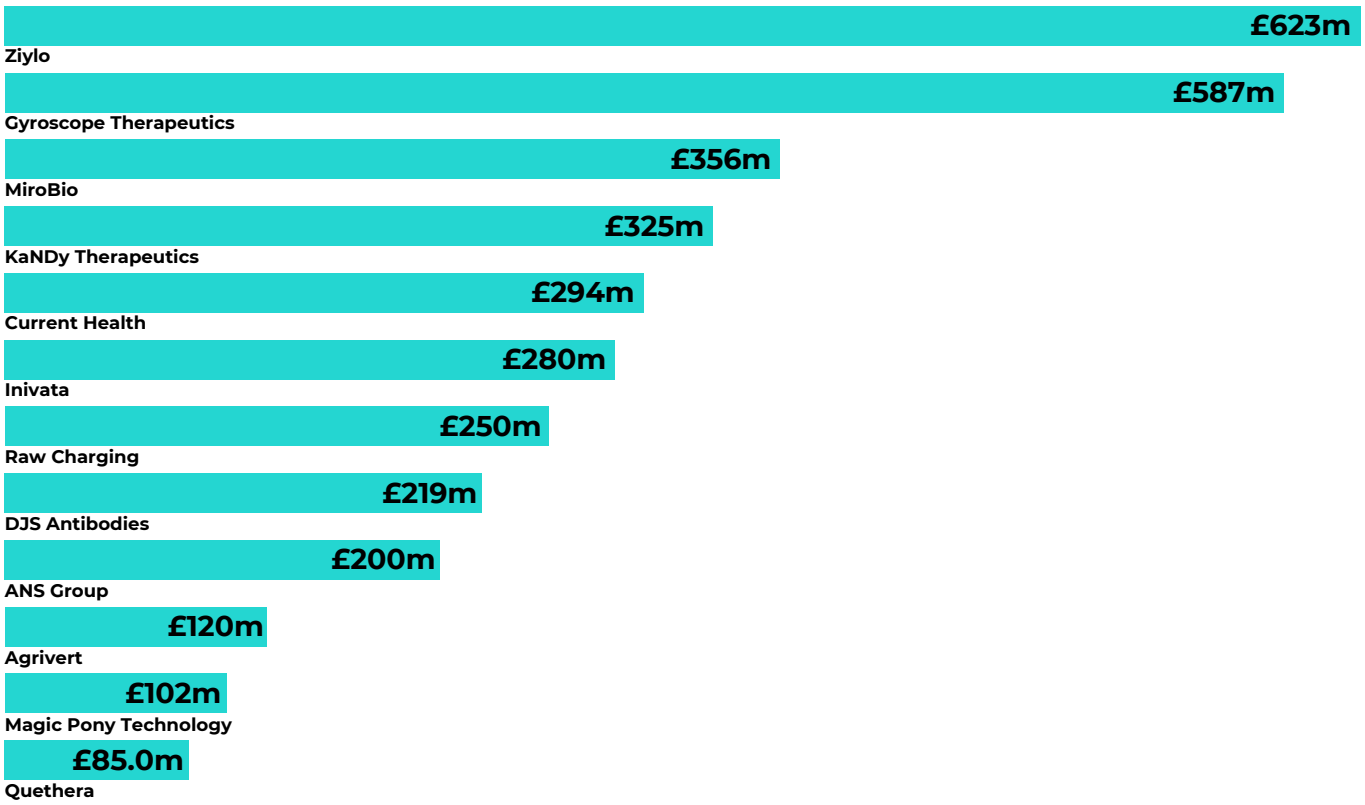
University of Manchester and UCL spinout Orchard Therapeutics also features on the ranking. The London-based pharmaceuticals company floated with a market capitalisation of £950m on the NASDAQ in October 2018. Orchard Therapeutics develops gene therapies for rare, life-threatening diseases. Its innovative treatments involve modifying patients' stem cells to address genetic disorders at the source.

Given the challenging macroeconomic climate, only 12 high-growth companies listed via IPO in 2022. Within this select group, just two were from the deep tech sector. A prominent example is Clean Power Hydrogen, which debuted on AIM in February 2022, attaining a market capitalisation of £119m. The Doncaster-based company develops a range of hydrogen-based technologies for applications across the transportation and energy sectors.

The IPOs on this page highlight exit activity by companies that meet the deep tech criteria detailed in the methodology (companies incorporated since 2013). As a result, this page omits exit activity by deep tech companies incorporated before 2013.

M&A

Top acquisitions of deep tech companies by consideration paid (2013–2022)



Over the past 10 years, 176 deep tech companies have successfully exited via acquisitions, 28 of which (15.9%) were academic spinouts. This is a testament to the strength of the R&D of various technologies by UK-based companies, with many companies being acquired by overseas entities.

Bristol-based Ziylo tops the ranking and was acquired by Danish healthcare company Novo Nordisk for £623m in August 2018. Ziylo developed a glucose-binding molecule platform that could develop glucose-responsive insulins to treat diabetes. Before its exit, the University of Bristol spinout had secured £960k in equity investment and a further £642k in innovation grants from Innovate UK and the Innovation for Growth grant programme.

Another significant exit was Twitter's acquisition of Magic Pony Technology for £102m in June 2016. The London-based startup developed AI and ML techniques for visual processing. The company's algorithms and neural networks enhanced and analysed images and videos in real-time. Before Magic Pony Technology's acquisition, it had been granted 10 patents across the European Patent Office, the United States and Germany for its video processing techniques and ML algorithms.

The acquisitions on this page highlight exit activity by companies that meet the deep tech criteria detailed in the methodology (companies incorporated since 2013). As a result, this page omits exit activity by deep tech companies incorporated before 2013.

International dynamics

North American acquirers play a notable role in the exit dynamics for UK deep tech companies, accounting for 56 (32.0%) of the 176 acquisitions that have taken place in the last 10 years. For deep tech companies, North American buyers have a dual appeal: diversity of size and focus, and greater financial resources than their UK counterparts. For entrepreneurs that stay with the business, there is also the appeal of growing the company in a larger market.

For entrepreneurs, the attraction of North American markets is also a reason to actively seek out investors from this region when raising funds. Beyond capital, these investors can bring geographic-specific expertise and networks that UK rivals may not be able to offer. Of the currently active UK deep tech population that has secured equity investment, 16.3% have at least one North American backer.

The prevalence of North American investors feeds into the exit dynamics already described. Naturally, these investors will seek exits that leverage their relationships within the region. A company that received US investment before exiting to a US buyer is University of Oxford therapeutics spinout MiroBio. It secured investment from Samsara BioCapital and SR One, before exiting to Gilead Sciences—a US biopharmaceutical company—in September 2022 for a consideration of $405m (£356m).

International investors and acquirers play a role in the life cycle of UK deep tech companies. It is unclear to what extent this trend is driven by strategic decisions by UK founders to embrace a larger market or by a lack of resources in the UK ecosystem. It is likely that the answer to this question is company and context-specific, with factors such as a company's technology, sector, and market shaping the decision to engage with international players.

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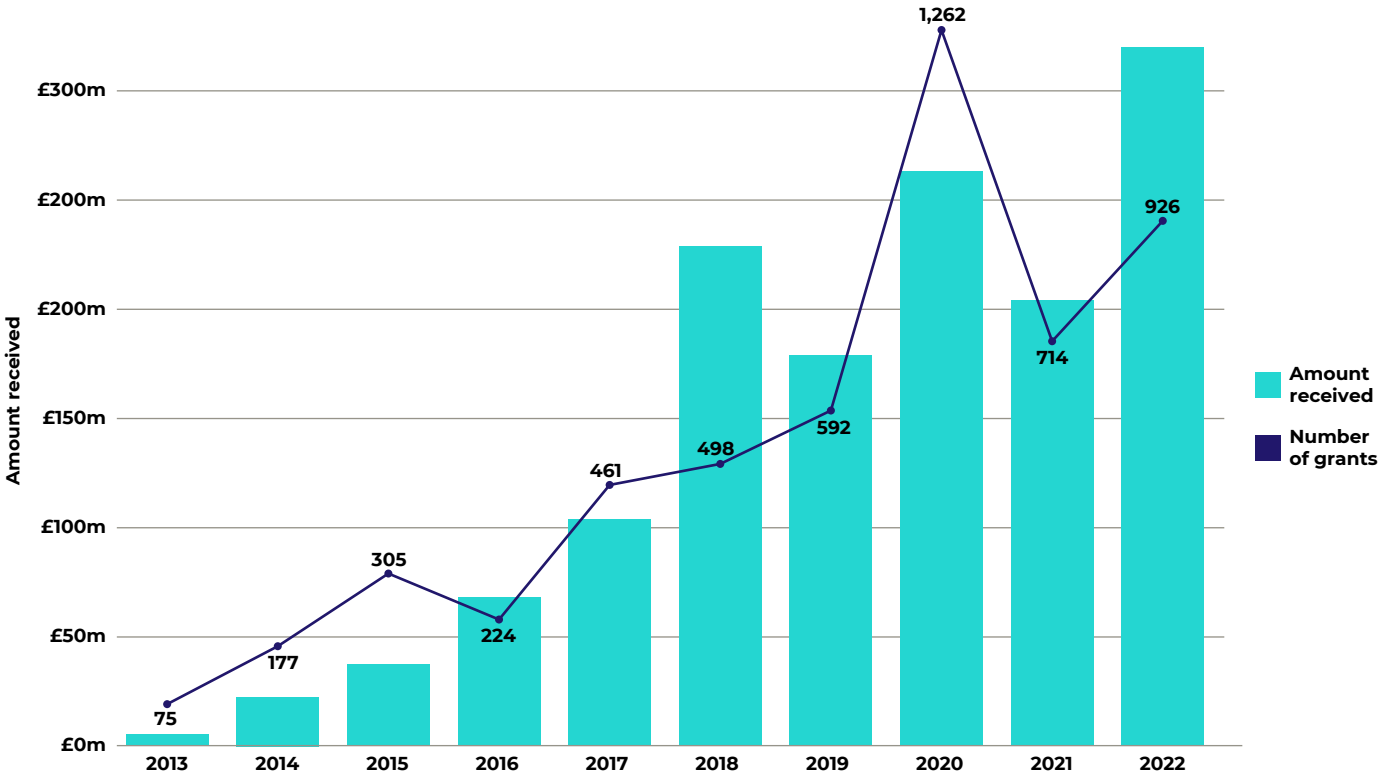
Grants

Between 2013 and 2022, UK deep tech companies saw a dramatic increase in grant funding, with the total value rising from £5.42m to £320m and the number of grants from 75 to 926.

UK grants

UK grant funding secured by deep tech companies (2013–2022)

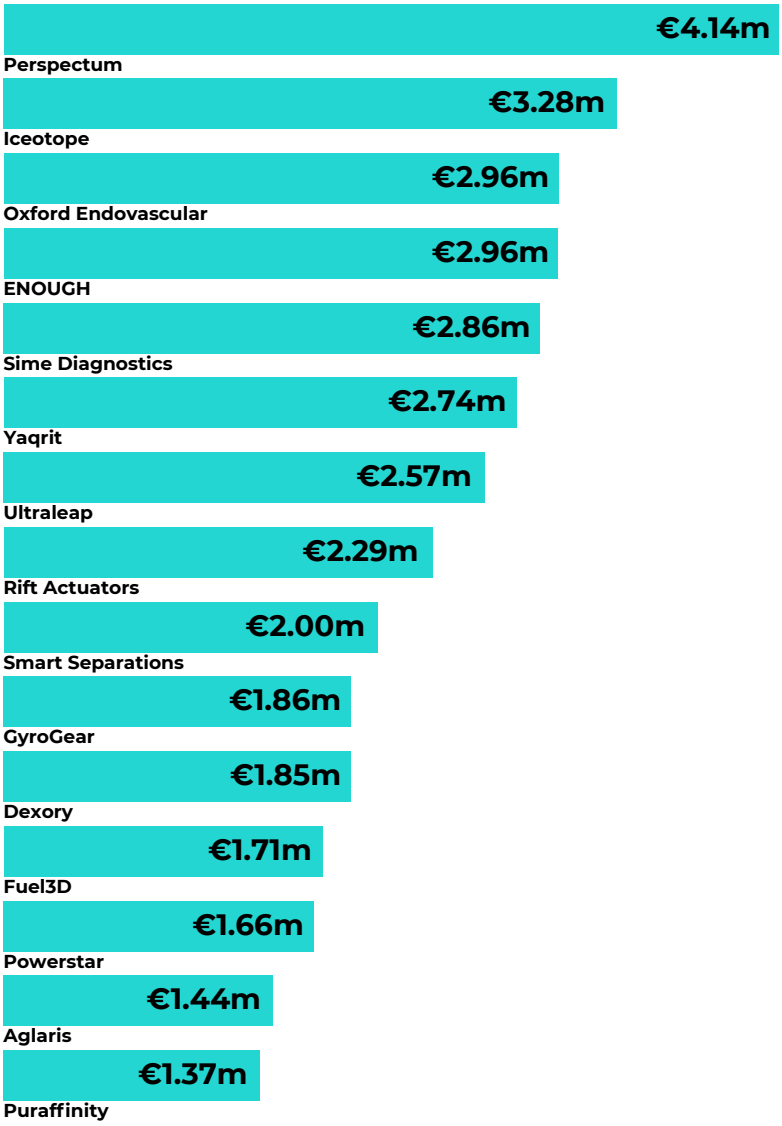


Between 2013 and 2022, deeptech companies have received 13.8% of the total number of grants received by businesses in the UK and 12.4% of the total value of this funding. The total value of grants received increased from £5.42m to £320m in this time period. Meanwhile, the number of grants rose from 75 to 926. Naturally, this is tied to the increasing number of deep tech companies incorporated over the past decade. However, other factors also affect the fluctuations seen in the chart. For example, grant funding rose significantly between 2019 and 2020. This can be attributed to part of the UK government's response to the COVID-19 pandemic, which aimed to support R&D-intensive companies through increased grant funding. This includes Innovate UK's Smart Grants which allowed innovative companies to apply for a share of up to £25.0m.

Following this surge in government support in 2020, grant funding figures decreased slightly in 2021 as companies resumed their regular operations. Notably, 2022 was a record year for grant funding, as the total value of grants received reached the decade's peak of £320m. These figures include a £500k grant for the Ministry of Defence spinout Sentinel Photonics, which develops and manufactures laser detection and protection systems for applications across the defence and security sectors.

EU grants

Top deep tech companies by total value of EU grant funding received



Deep tech companies in the UK have also benefitted from the grant funding opportunities offered to them when the UK was a member of the European Union. Two of these were the FP7 and Horizon 2020 grant funding programmes, both of which aimed to support research and innovation projects across Europe. The former ran from 2007 to 2013, while the latter spanned from 2014 to 2020. In total, deep tech companies in the UK have been awarded €76.0m via 117 grants through these programmes.

The top recipient of EU grant funding is the University of Oxford spinout Perspectum, which develops non-invasive precision health technology, including advanced medical imaging software. The Oxford-based company has received €4.14m across four Horizon 2020 grants, including a €3.46m grant in July 2016 for its research into non-invasive rapid assessments of chronic liver disease.

Rotherham-based Iceotope also features among the top EU grant recipients, having received €3.28m in grant funding via two Horizon 2020 grants. The company develops advanced liquid cooling systems for data centres and high-performance computing, enabling efficient and sustainable electronics cooling.

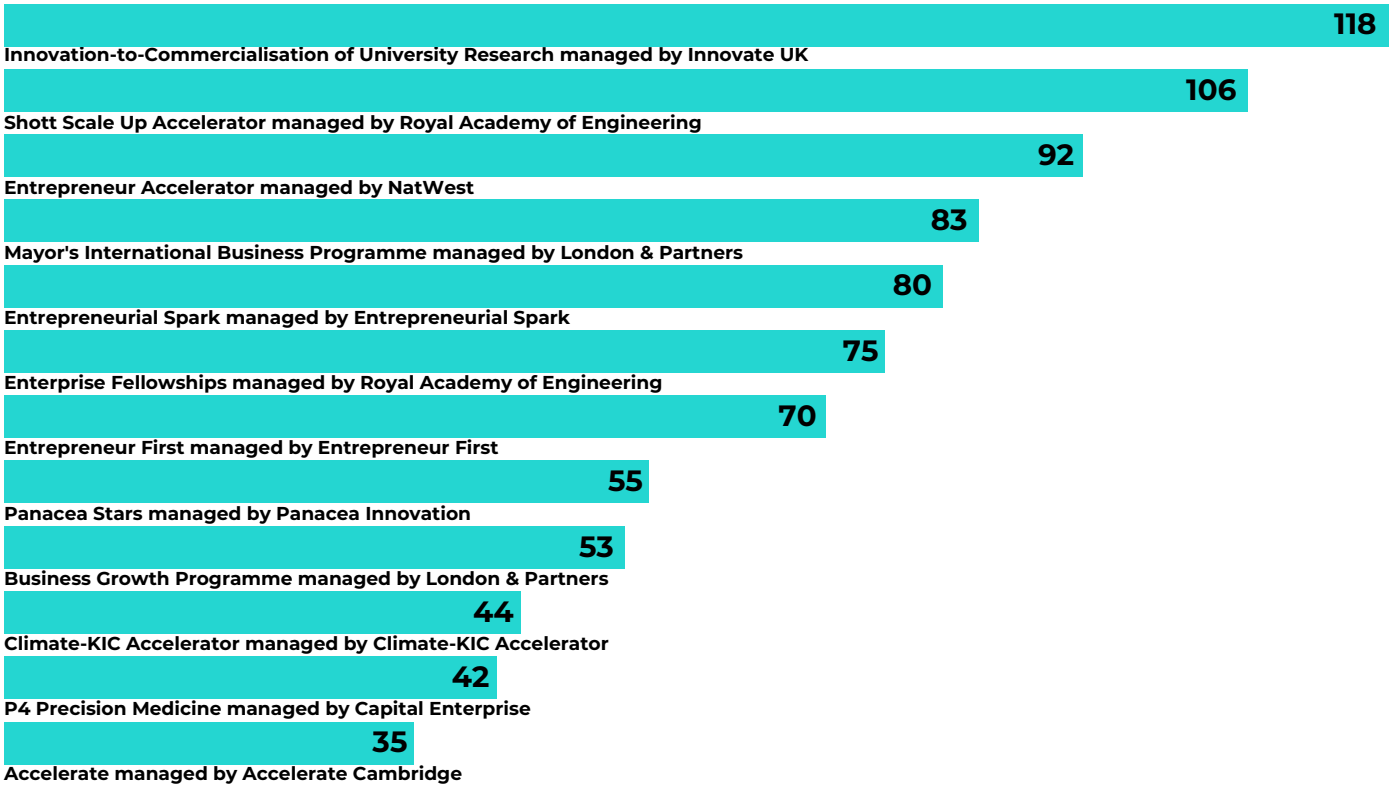
The above highlights the significant funding provided by the EU to deep tech companies in the UK and the type of cutting-edge research it supports. In September 2023, the UK struck a deal to rejoin the EU's Horizon research programme as an associate member, which involves a three-year period without financial contributions but allows UK scientists to apply for grants immediately.

Accelerators

Deep tech companies extensively use accelerators to foster growth and commercialisation. Popular sub-sectors by accelerator attendance include cleantech, clean energy generation, energy reduction technology, analytics, insight, tools, and software-as-a-service.

Top accelerators

Top accelerators by number of attendances by deep tech companies (April 2023)



An accelerator is a time-bound, structured programme that nurtures the growth of participating companies. It features a competitive application process, a clear start and end date, and structured learning through elements like a syllabus or mentoring. It maintains low or nominal attendance fees relative to duration and its offered perks.

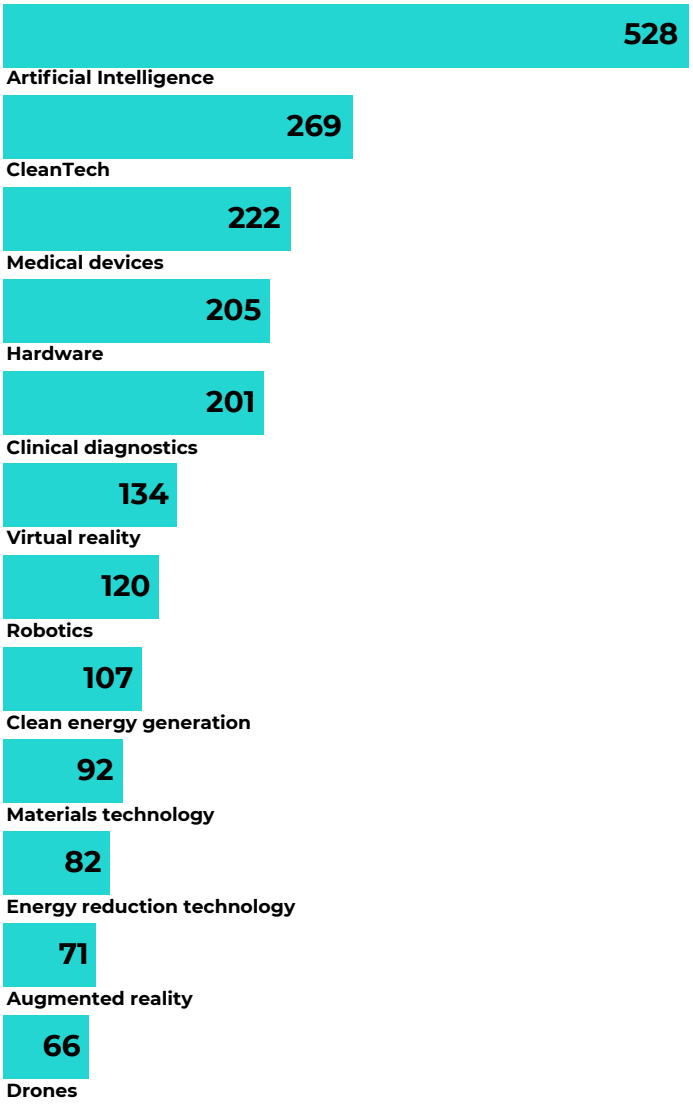
Deep tech companies in the UK have extensively used various accelerators to foster their growth and commercialisation efforts. One of the most popular accelerators is the Innovation-to-Commercialisations of University Research (ICURe), attended 118 times by deep tech companies. This program has proven to be a valuable platform for bridging the gap between academic research and commercialisation, providing entrepreneurs with support and resources.

Sector-specific accelerators have also been crucial in supporting innovation in targeted areas. For example, the Climate-KIC accelerator (44) has provided a dedicated platform for deep tech companies focused on climate-focused innovation. This program offers specialised support, funding, and access to a network of experts and partners in the sustainability and clean technology sectors.

The P4 Precision Medicine accelerator (42) has emerged as an integral platform for deep tech companies operating in the precision medicine sector. This program supports companies in developing innovative solutions in genomics and healthcare technologies, connecting them with industry leaders and investors.

Accelerator attendance by sector

Top sub-sectors for deep tech companies by number of accelerator attendances (April 2023)



As some of the most populous sub-sectors for deep tech companies, cleantech (269), clean energy generation (107), and energy reduction technology (82) feature among the top sectors for accelerator attendance. This will have been aided by the sector-specific accelerators supporting cleantech companies, such as the Climate-KIC accelerator. The Climate-KIC accelerator has assisted companies like the University of Cambridge spinout Immaterial. The Cambridge company has developed an advanced materials technology platform to design and manufacture super-adsorbent nanomaterials for applications such as hydrogen storage and carbon capture. Immaterial attended the Climate-KIC and Enterprise Fellowships accelerator programmes within a year of incorporating in 2015 and has since received £1.21m in equity funding and a further £4.88m in grant funding.

The artificial intelligence (528) sub-sector has also benefitted from AI-focused accelerators, such as Tech Nation's Applied AI, which aimed to support founders through dedicated coaching sessions, providing networking opportunities in the sector and exposure to industry experts. Drones (66) and robotics (120) have also emerged as top sectors by accelerator attendance, driven by their potential in industries like logistics, agriculture, and manufacturing. Specialised accelerators, such as BetaDen, cater to these sectors, offering tailored support, mentorship, and access to resources, driving the development of groundbreaking drone and robotics applications.

The future of deep tech

The future of the deep tech landscape in the UK is a truly exciting prospect. Companies are producing innovative solutions to society's most pressing challenges, and under the right conditions, the UK can cultivate an environment where such companies can scale.

Innovation policies and initiatives

The UK Innovation Strategy

Introduced by the UK government in July 2021, the UK Innovation Strategy is an extensive framework designed to foster innovation and stimulate economic growth. It is closely aligned with the Science and Technology Framework, which aims to make the UK a Science and Technology Superpower by 2023. The UK Innovation Strategy's ultimate objective is to establish the UK as a global innovation hub by 2035. The strategy centres around four key pillars: promoting business innovation, attracting top-notch innovative talent, aligning research and development institutions with the needs of businesses and regions across the UK, and enhancing the country's capabilities in critical technology domains to address significant challenges. Notably, the strategy places a strong emphasis on emerging technologies, entrepreneurship, and collaborative efforts among academia, industry, and government. Moreover, it prioritises sustainability, inclusivity, and the creation of a supportive innovation ecosystem. This commitment is bolstered by a record annual public investment of £22.0b dedicated to research and development.

ARIA

The Advanced Research and Invention Agency (ARIA) is an independent, scientific research funding agency sponsored by the Department for Science, Innovation and Technology. It aims to support research into transformative technologies to further the UK's position as a research and innovation leader.

ARIA operates uniquely to traditional funding agencies in the UK. Inspired by the US's Defence Advanced Research Projects Agency, the agency can invest in research projects that may not typically fit the government's conventional funding criteria. Despite being backed by an £800m investment by the UK government, the agency will be exempt from public procurement regulations to allow it to seek high-risk, high-reward research projects across various disciplines, including science, engineering and technology. This makes it an attractive source of capital for the deep tech sector—its focus on transformative technologies aligns well with the goals of deep tech researchers in private companies and academic institutions, fostering an exciting environment of exploration and advancements. This focus on ambitious projects also aims to attract top talent to the UK, alongside accelerating scientific discoveries that can address pressing societal challenges and drive further economic growth.

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SEIS/EIS

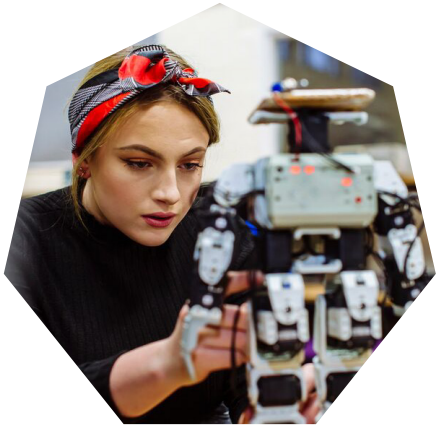
The Seed Enterprise Investment Scheme (SEIS) and Enterprise Investment Scheme (EIS) are tax incentive programs in the UK aimed at encouraging investment into early-stage businesses. These schemes offer tax advantages to angel investors fund eligible companies. These include tax relief, tax exemptions and also loss relief on any losses incurred on their investments.

As of April 2023, the maximum amount a company can raise under the SEIS has risen to £250k, while eligibility criteria for the scheme have also become more flexible.

Innovation policies and initiatives

For example, companies that have operated for up to three years are now eligible and can now have assets of up to £350k.

These changes are positive for startups and high-growth companies across the UK, particularly the deep tech sector. Deep tech companies often require significant capital to fund their operations and the SEIS and EIS programmes encourage angel investors to support deep tech companies in their early stages. These schemes also encourage inventors to take a long-term view. The requirement to hold shares for a minimum period (three years for capital gains tax exemptions) aligns with the nature of deep tech development, which often requires substantial timeframes for research, prototyping, and market adoption. This long-term commitment from investors can provide stability and support for deep tech startups during their critical growth phases.



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Creating areas of innovation

The UK government's "levelling up" policy and the Spring Budget 2023 have introduced various area-based initiatives aimed at addressing regional disparities, driving economic growth, and fuelling innovation. These initiatives include Investment Zones, Enterprise Zones and Freeports, all of which offer businesses in designated areas unique economic regulations, such as tax incentives and funding, to encourage trade, investment and innovation. In particular, Investment Zones focus on developing existing technology clusters through tax reliefs and grant funding, and by fostering collaboration between research institutions and industry. Four of these areas will be across Scotland, Wales and Northern Ireland following engagement with the devolved administrations. The focus of connecting research institutions with industry in this initiative has the potential to support long-term deep tech innovation in the government's focus areas, which include the life sciences, green industries, and advanced manufacturing.

Enterprise Zones and Freeports are also a part of the "levelling up" policy and provide tax incentives and government support to businesses in selected areas across the UK. The former also includes enhanced capital allowances for investments in plants and machinery, making them attractive prospects for R&D-intensive and engineering firms looking to set up or expand their operations. Meanwhile, Freeports also offer additional support for innovative companies as they look to develop new technologies by providing early and direct interactions between regulators and companies.

R&D tax credits

The UK government has implemented significant changes to its R&D tax credits scheme, effective from April 2023, to foster science, technology, and innovation. These changes include introducing relief for companies engaged in pure mathematics innovation and costs related to cloud computing and data. deep tech startups heavily rely on research and development to drive innovation and gain a competitive edge. The availability of R&D tax credits provides crucial financial support for their activities. Accordingly, introducing relief for pure

Innovation policies and initiatives

mathematics and cloud computing will encourage early-stage companies in these fields, enabling them to invest more confidently in their R&D projects. However, the changes include a decrease in the additional deduction for SMEs from 130% to 86% and a reduction in the SME credit rate from 14.5% to 10.0%. The changes to R&D tax credits result in reduced financial incentives for smaller companies, potentially making it more difficult for them to allocate sufficient resources to their research and development efforts.

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Commercialisation of academic IP

As described on pages 8 and 9, academic institutions play a critical role in the deep tech sector in the UK. Their technology transfer offices often help researchers commercialise intellectual property, offering advice, funding and support for their spinout companies. These universities are a frequent source of innovative deep tech companies that go on to attract international attention, secure top talent, and drive economic growth in the UK.

However, there is an ongoing discussion about how universities can best support spinouts to succeed, with debate recently surrounding the equity stakes taken by universities in spinout companies. In particular, there have been arguments that the large university stakes negatively affect the competitiveness of these companies by reducing some of the incentives for founders to grow the company and consequently deterring investors. Conversely, there is an argument that the university stakes are justified due to the large resources dedicated to the creation and support of spinouts. The performance of spinouts in the UK is currently under review to determine and identify the best practice for the continued growth of these companies. For more information surrounding the commercialisation of academic IP please see our *Spotlight on Spinouts* report and *The Entrepreneur's Handbook*.

The changes to R&D tax credits result in reduced financial incentives for smaller companies, potentially making it more difficult for them to allocate sufficient resources to their research and development efforts.

Emerging sub-sectors

Aiming to cement the UK's position as a "science and technology superpower" by 2030, the government's Science and Technology Framework outlines five key technologies—AI, engineering biology, future telecommunications, semiconductors, and quantum technologies—considered vital for unlocking potential, fostering growth, and driving prosperity. This ambitious roadmap aims to promote rapid technological advancements, harness innovative solutions for complex challenges, and promote a thriving deep tech ecosystem. This section of the report outlines the five technologies in more detail as well top emerging technologies drawn from the UK deep tech population.

Artificial intelligence

AI is the simulation of human intelligence and behaviour by computer systems. It plays a pivotal role in the development, integration, and deployment of systems, enabling advanced automation, data analysis, and decision-making capabilities. AI-powered innovation, with its multifaceted nature, has the potential to transform lives on a global scale. UK deep tech companies such as BenevolentAI utilise ML—an application of AI—to expedite the discovery of potential drug candidates.

Aside from its drug discovery applications, companies are also using AI to facilitate the energy transition. This includes companies such as the University of Southampton spinout Absolar, which utilises AI and geographic information system (GIS) technology to evaluate the solar-power-generating feasibility of buildings. AI is also being used in robotics and autonomous vehicles, with companies such as Oxa and Wayve developing software to power driverless vehicles in the UK. The success of these companies, both of which have raised almost £200m in equity investment to date, suggests that there is certainly appetite for the development of these technologies.

Virtual reality

VR is an immersive technology that simulates a 3D environment that seems realistic—allowing individuals to experience new environments without being physically present. VR is changing how we interact with digital content and the physical world, playing a significant role in industries such as healthcare, education, and gaming. The deep tech sector in the UK boasts the likes of Immersive Rehab. The London-based company develops a virtual reality environment to enable patients to participate in neurorehabilitation exercises following spinal cord injuries or the diagnosis of multiple sclerosis or amyotrophic lateral sclerosis.

AI drives innovation within the deep tech space by enabling advanced automation, data analysis and decision-making capabilities.

Emerging sub-sectors

Robotics

Robotics involves designing, developing, and applying robots and robotic systems to perform tasks autonomously or with human supervision. Robotics and autonomous systems have the potential to significantly boost economic growth. A report released by DSIT in 2021 highlights that boosting robot installations by 30% has the potential to add an extra $4.9t per year to the global economy by 2030 (The Economic Impact of Robotics And Autonomous Systems Across UK Sectors, 2021).

While robotics is most commonly associated with manufacturing, the pace of technological advancements has seen robotic advancements in a range of subsectors, such as agriculture and healthcare. For example, Edinburgh-based BioLiberty develops rehabilitative robotics to help individuals with degenerative hand conditions. Its robotic glove uses ML algorithms to help users improve hand dexterity following a stroke. In April 2023, it secured £2.35m in equity financing to fund further R&D and enhance its digital therapy platform.

Precision medicine

Precision medicine is an emerging approach to disease treatment and prevention. It uses an individual's genetic or molecular information to provide personalised treatment and prevention strategies for illnesses. Companies in the space leverage technologies such as genomics and AI to develop targeted therapies and disease detection techniques. Companies innovating in this area include London-based Sixfold Bioscience. It combines AI and advanced chemistry to engineer programmes that improve the delivery of RNA therapeutics through its Mergo platform. The field of RNA therapeutics predominantly focuses on targeting liver conditions. Sixfold's Mergo platform offers the possibility of expanding RNA therapeutics to different organs and various tissue types.

Engineering biology

Engineering biology is a multidisciplinary field that combines traditional principles of biology, technology, and engineering processes to design and construct biological systems. It aims to solve real-world problems and provide efficient solutions to complex challenges faced in industries including healthcare, energy, and food production. The UK has an established presence in engineering biology due to its renowned academic reputation and rapidly growing community of SMEs. Businesses innovating in this area include biotech company Ingenza. The Scottish company specialises in molecular biology, fermentation, organic synthesis, and analytical chemistry. It uses engineering biology to optimise organic systems—creating a range of high-value industrial products such as biofuels and therapeutic proteins that can be used in sectors such as healthcare. For more information on the UK engineering biology landscape, please see our report *Engineering biology: A priority for growth.*

Emerging sub-sectors

Future telecommunication

Future telecommunication encompasses digital infrastructures such as the Internet of Things (IoT), 5G, and 6G technologies. Digital infrastructures play a significant role in the development of a successful digital economy as well as our daily lives. The UK Wireless Infrastructure Strategy sets out government plans to invest £40m in 5G-enabled services for businesses and the public sector. The government has also allocated an initial £100m to support the development and implementation of 6G, given the strategic and economic advantages of a connected society.

Semiconductors

Semiconductors are a core area of UK technology and are ubiquitous in modern society. They refer to substances or materials that hold specific electrical properties allowing them to serve as a foundation for electronic devices. They can be found in temperature sensors, rice cookers, and microprocessors, which are key components of computers, smartphones, tablets, and gaming consoles. The government's National Semiconductor Strategy sets out a 20-year plan to build on the UK's existing strengths in the technology to grow the sector. It outlines plans to invest up to £1.00b to secure the UK's advantages in this sector, improve national security, and facilitate international cooperation.

Quantum technologies

Quantum computing is a rapidly-evolving field at the intersection of physics and computer science. It leverages principles from quantum mechanics to process information in a fundamentally different way compared to classical computers. The technology has the potential to improve drug discovery processes, tackle medical challenges, and boost economic growth. The government's National Quantum Strategy has pledged to invest £2.50b in quantum technologies over the next 10 years, and The Science and Technology Framework has dedicated £250m to 'technology missions' across quantum technologies, AI, and engineering biology that will aim to exploit and sustain the UK's leadership across the three industries.

Graphene

Graphene is an incredibly thin but strong layer of carbon atoms made from graphite. It has high thermal and electrical conductivity and is also the strongest material known to science—200 times stronger than steel. It was discovered at the University of Manchester in 2003 by Andre Geim and Konstantin Novoselov. While graphene is a relatively new material, developments in graphene-based technology have been rapid with graphene companies operating in 3D printing, energy, healthcare, and aerospace. Companies operating in this field include Cambridgeshire-based Paragraf, which develops and produces graphene-based electronic devices and Tayside-based Integrated Graphene—which manufactures 3D graphene foam for biosensors and energy storage.

Macro-economic themes

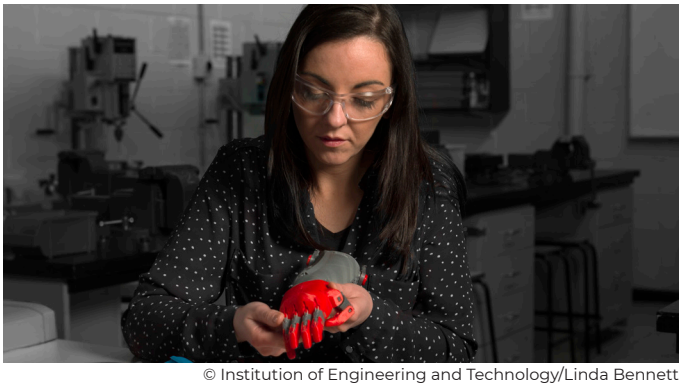
The deep tech sector has seen considerable growth and innovation in recent years, making it important to understand the macroeconomic trends shaping the sector. This includes government support and policy initiatives, a favourable regulatory environment and talent developments—all instrumental in supporting the sector.

The UK has launched its own initiatives to support access to capital for deep tech companies. Both directly, in the form of ARIA and innovation grant programmes and indirectly by incentivising angel investors with updates to the UK's SEIS and EIS. The government's Innovation Strategy aims to make the UK a global innovation hub by 2035. The Innovation Strategy report acknowledges that although investment in UK deep tech increased by 291% between 2018 and 2020–funding gaps still remain for SMEs. The Innovation Strategy aims to reduce this and establish the UK as a science superpower through its four pillars which aim to increase business, attract the best talent, invest in R&D, and tackle global challenges. These initiatives seek to provide a platform for deep tech companies to continue innovating and access the capital required to support their research and development efforts.

The UK's approach to its regulatory environment is also positive for the sector and its continued growth. This includes the regulatory sandboxes the UK has established, which allows deep tech companies to test innovative products and services in a controlled environment, even though they may not fully comply with the existing legal and regulatory requirements. Recently, the UK government's whitepaper on AI regulation suggested it would aim to drive innovation and strengthen the UK's position as a global leader in AI by taking a light touch regulating the technology.

While broader macroeconomic themes regarding private investment have been largely negative, the data in this report has suggested that the sector is resilient concerning securing capital. Both grant and equity funding have shown consistent growth over the past decade, despite challenging economic conditions in 2022. While historic strength does not guarantee future strength, it suggests that the sector can withstand short-term turbulence at a minimum. This may be down to the long-term vision and viability of the technologies being developed, providing a positive outlook for the sector's future.

Another important factor for the longevity of deep tech in the UK is the country's ability to attract and retain top talent. Naturally, world- renowned academic institutions play a pivotal role in this, as well as the country's supportive environment for international founders. The UK government has supported this through its Innovator Founder visa, awarded to entrepreneurs with innovative and scalable business ideas, facilitating the entry of top deep tech founders and their technologies into the country.



Methodology

This report employs a systematic approach to identifying companies operating in the deep tech sector in the UK. Companies were classified as such if they met one of Beauhurst's high-growth tracking criteria and held a relevant Standard Industrial Classification (SIC) code or sector classification. Companies that fell outside of Beauhurst's high-growth criteria were discovered through recipients of innovation grants from IUK with relevant SIC codes. This methodology aims to highlight young and innovative companies driving technological advancements in the UK.

Identifying and classifying UK deep tech companies

A comprehensive list of sectors and Standard Industrial Classification codes relevant to deep tech was established and used to build the initial cohort of companies. This list can be found below. These classifications encompass a broad range of sectors and technologies associated with cutting-edge innovation. To be considered in scope for this report, companies need to meet at least one relevant sector classification from Beauhurst's proprietary sector matrix or hold a relevant SIC code, and have met one of Beauhurst's tracking triggers. It should be noted that this means companies in this report may also be associated with additional, non-deep tech sectors or SIC codes.

To uncover relevant deep tech companies outside of Beauhurst's high-growth dataset, companies that had received an innovation grant from Innovate UK and had been assigned a relevant SIC code were also included.

The cohort of companies was then refined to ensure a focus on current deep tech innovation. The scope of this report was limited to companies incorporated on, or after, 1st January 2013. This criterion ensures that the cohort comprises relatively young and innovative companies, offering a snapshot of the most recent developments in the UK deep tech ecosystem. Also, companies that offered consultancy services and pure software companies were excluded. While these companies play an important role in the broader business landscape, this report centres specifically on deep tech ventures with tangible research efforts.

High-growth companies

Beauhurst classifies private UK companies as high-growth if they have met one of eight triggers. These triggers include securing equity investment, attending an accelerator and spinning out of an academic institution. For more information on these growth triggers, please see Beauhurst's website.

Defining scaleups

Beauhurst defines a 10% or 20% scaleup as a company that meets one, or both, of the following conditions with the relevant growth rate:

- It had an annualised average growth rate of at least 10% or 20% in turnover over three accounting years and it had at least £200k in revenue in its base year
- It had an annualised average growth rate of at least 10% or 20% in headcount over three accounting years and it had at least 20 employees in its base year

Deep tech classifications

Sectors/buzzwords:

- 3D printing
- Adaptive learning
- Artificial intelligence
- Augmented reality
- Big Data
- Biomass and biofuels
- Blockchain
- Clean energy generation
- CleanTech
- Drones
- Energy production
- Energy reduction technology
- Graphene
- Hardware
- Materials technology
- Medical technology
- Metamaterials
- Precision agriculture
- Precision medicine
- Quantum
- Regenerative medicine
- Retail biometrics
- Robotic surgery
- Robotics
- Virtual reality

SIC Codes:

- 71200 - Technical testing and analysis
- 72110 - Research and experimental development on biotechnology
- 72190 - Other research and experimental development on natural sciences and engineering

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The Royal Academy of Engineering is harnessing the power of engineering to build a sustainable society and an inclusive economy that works for everyone.

In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public.

Together we're working to tackle the greatest challenges of our age.

What we do

TALENT & DIVERSITY

We're growing talent by training, supporting, mentoring and funding the most talented and creative researchers, innovators and leaders from across the engineering profession.

We're developing skills for the future by identifying the challenges of an ever-changing world and developing the skills and approaches we need to build a resilient and diverse engineering profession.

INNOVATION

We're driving innovation by investing in some of the country's most creative and exciting engineering ideas and businesses.

We're building global partnerships that bring the world's best engineers from industry, entrepreneurship and academia together to collaborate on creative innovations that address the greatest global challenges of our age.

POLICY & ENGAGEMENT

We're influencing policy through the National Engineering Policy Centre – providing independent expert support to policymakers on issues of importance.

We're engaging the public by opening their eyes to the wonders of engineering and inspiring young people to become the next generation of engineers.

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