October 2024. Technology snapshot

Analysis of the **deep tech startup** ecosystem in Catalonia, 2024

ACCIÓ Catalonia Trade & Investment

Generalitat de Catalunya
Government of Catalonia

CataloniaConnects

Technology snapshot: Deep tech in Catalonia, 2024

ACCIÓ
Government of Catalonia

Carried out by
Strategy and Competitive Intelligence Unit of ACCIÓ

Barcelona, October 2024

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Executive summary

Executive summary: deep tech in Catalonia (I)

Deep tech companies have a **solid technological and scientific base, generate impact and seek to make the world a better place**.

Features of deep tech companies

- They have roots in science, technology and engineering.
- They provide transformative solutions for global challenges.
- They exploit new scientific and technological knowledge and they have knowledge protection mechanisms.
- They tend to be physical products (rather than services) that change established paradigms and generate new business models.
- They have slow scalability and they need long-term funding.
- A large number of the founders emerge from the university and research systems.
- They need business talent and people from the STEM and R&D disciplines.

Technologies regarded as deep tech*

- Artificial intelligence
- Biotechnology
- DLT/blockchain
- Robotics
- Semiconductors
- Sustainable and frontier materials
- Batteries and clean energy
- Photonics
- Quantum
- Supercomputing

World market

Generative AI and technologies that have the purpose of combating climate change are acquiring a great deal of prominence.

86.2% of companies consider that new and frontier technologies will become the main transformational trend.

European market

16,800 million dollars were invested in deep tech startups in Europe in 2023.

*For the purposes of this report

Executive summary: deep tech in Catalonia (II)

Catalonia has **340 deep tech startups**, **6.3% more than in 2023**, and they account for **16.2% of the Catalan entrepreneurial ecosystem**.

340 deep tech startups

This represents an increase of **6.3%** compared to 2023.

The increase is **17%** compared to 2022, higher than the figure of **10.5%** for the growth in the total number of startups.

They account for **16.2%** of the total number of startups in the Barcelona & Catalonia Startup Hub.

They bill **€166 M** (**+3%** compared to 2023) and employ **2,735** workers (**+17%**).

The main technologies are biotechnology (**37.4%**), artificial intelligence (**27.9%**), and sustainable and frontier materials (**11.2%**).

41% of the deep tech startups are spin-offs.

52% of the deep tech startups have a patent or a system to protect their knowledge.

Funding raised

2022 was the year with the largest volume of investment raised by Catalan deep tech startups (**€165 M**). They have raised **€112 M** by October 2024.

Barcelona is the **6th largest hub in the EU** in terms of volume of funding raised by deep tech startups in venture capital (2019-2024), with a total of **€544 M**.

77.6% of Catalan deep tech startups have obtained venture capital funding.

15 deep tech startups have received funding from the EIC Accelerator in the last three years (**45%** of the total in Spain and **3.2%** of the total in Europe).

172 deep tech startups in Catalonia have received support from Startup Capital (**€14.4 M**), and **10** have obtained support from the **Startup Capital Coinversió** (**€1.5 M**).

Support initiatives

National pacts:

- National Pact for Industry
- National Pact for the Knowledge Society

Public funding sources:

- Startup Capital
- *Línia Startup Capital Coinversió*
- *Fons d'Inversió en Tecnologia Avançada*

Different ICF, Avançsa and AGAUR instruments

Ecosystem agents

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1. Definition of deep tech

Definition of deep tech

Deep tech companies have a **solid technological and scientific base, generate impact and seek to make the world a better place**.

- They are rooted in cutting-edge science, technology and engineering, and they combine advances in the physical, biological and digital spheres.
- They have the potential to offer transformative solutions to global challenges and they help achieve the UN SDGs.
- They exploit new scientific and technological knowledge based on the highest standards of ethics and integrity.
- They frequently result in physical products rather than pure software services and therefore tend to cooperate more closely with the industry.
- They require a strong supply of science, technology, engineering and mathematics (STEM) and business knowledge, as well as the capabilities associated with research and development principles.

Deep technology as such does not exist; rather, it is the application and the business model built around or through the technologies that are deep.

Sources: European Commission, Hello Tomorrow and BCG

Features of deep tech companies

Deep tech companies are based on scientific knowledge and major technological breakthroughs. They include innovations on the frontiers of knowledge in basic disciplines such as biology, chemistry, physics, mathematics and engineering (STEM).

They develop pioneering knowledge and technology or provide a clearly identifiable and impact-generating improvement.

They seek to provide solutions for social problems and global challenges, with a particular focus on the Sustainable Development Goals.

They have mechanisms to protect intellectual property, patents, etc.

They tend to be projects with a high technological and market risk. As a result, they have significant financial needs before they reach the market.

The time to market, from their conception until their availability on the market, is usually longer than that of conventional companies.

Their founders have usually acquired their knowledge and training within the university system or have emerged from the research system.

Deep tech companies tend to have a multi-disciplinary approach, with hybridization of technologies and knowledge.

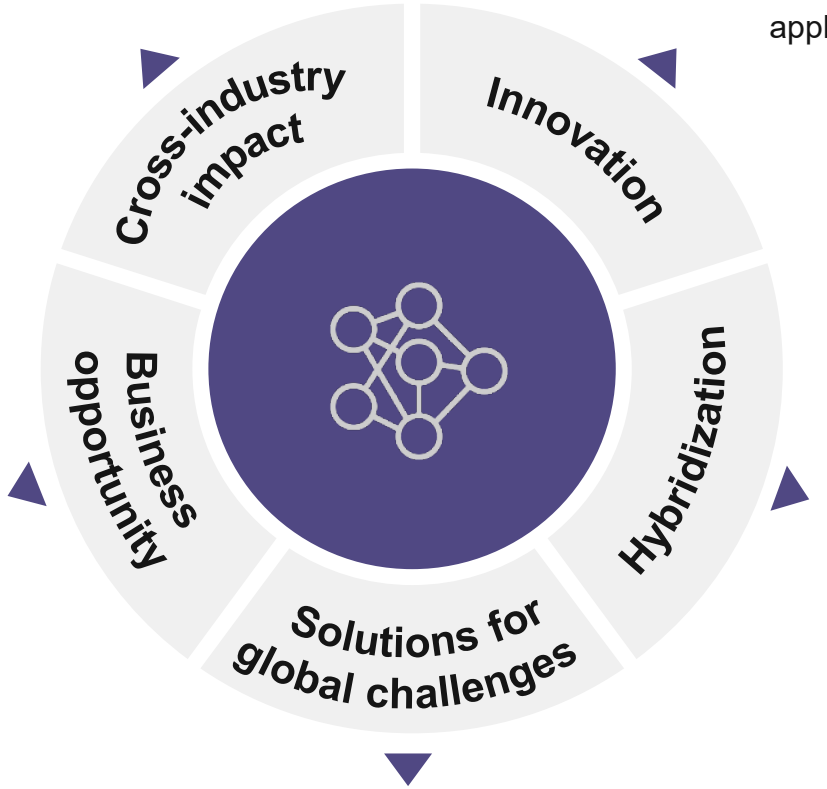
The goods and services offered by many deep tech companies can be made tangible in some way or they can have an impact on society.

Source: ACCIÓ, based on interviews with experts

Importance of deep techs

Deep tech companies can have an impact in many areas, such as health and life sciences, food, energy, materials and production processes.

Deep techs stem from research and they are a source of innovation for other emerging applications.



New business models may appear based on the applications of pioneering technical and emerging scientific solutions.

The challenges are becoming increasingly complex and the solutions cannot be addressed via a single field of knowledge, which entails a hybridization of technologies and the concurrence of knowledge to identify innovative and sustainable solutions.

Deep techs have a clear focus on providing solutions for global challenges such as climate change, health, resource scarcity, demographic changes, etc.

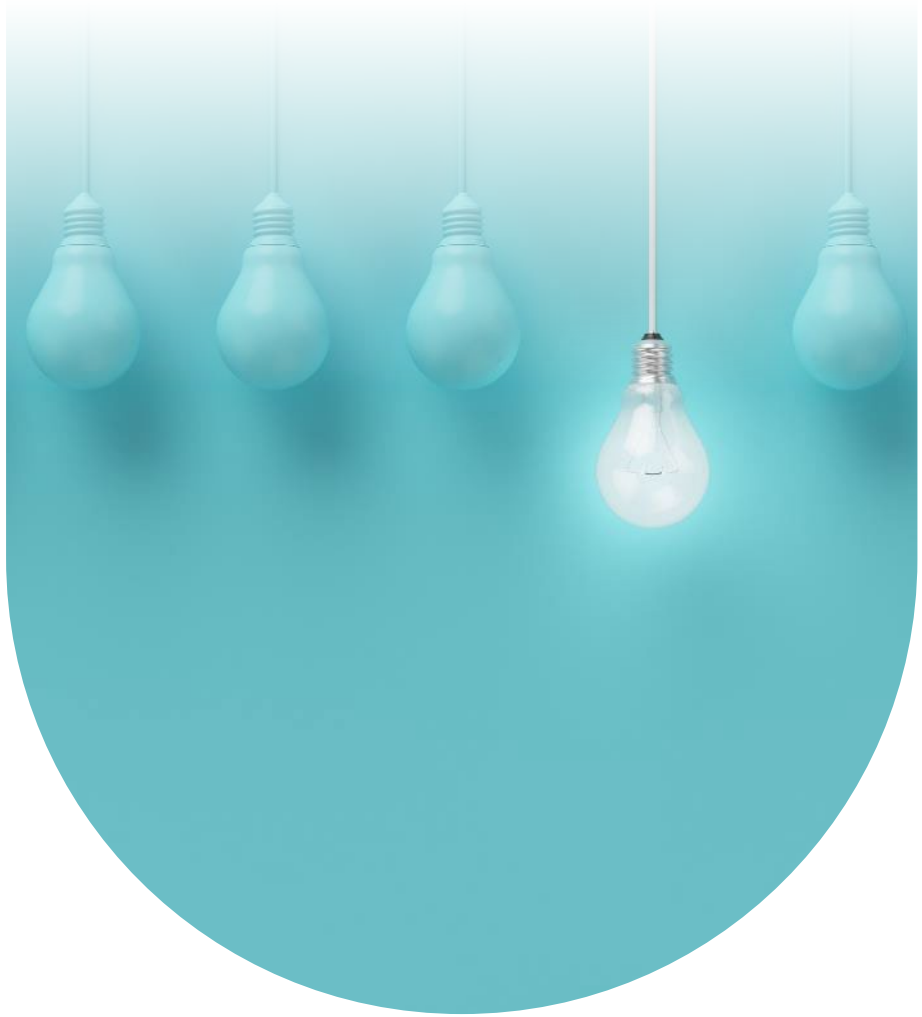
Source: ACCIÓ

2. Deep tech technologies

10 deep tech technologies

It is difficult to make a selection of technologies, as deep techs are characterized by their **approach** and **strategy**. For this reason, any technology within a given context may be regarded as deep tech.

In addition, the emergence of new technologies and the hybridization of knowledge are leading to a wide range of new opportunities.



However, the technologies that have been regarded as deep tech for the purposes of this report are the following:

- Artificial intelligence
- Biotechnology
- DLT/Blockchain
- Robotics
- Semiconductors
- Sustainable and frontier materials
- Batteries and clean energy
- Photonics
- Quantum
- Supercomputing

Note: the startup universe has been analyzed for the purposes of this report.

Growth of the deep tech technology market

Biotechnology
Essential for addressing climate and health challenges
3,200 billion dollars
+11.8% annually

Artificial intelligence
Excellent growth potential in the short and medium term
1,848 thousand million dollars
+35.5% annually

Photonics
Photons for technological growth and innovation
1,200 thousand million dollars
+6.2% annually

Semiconductors
Essential for technological disruption
736.4 thousand million dollars
+6.3% annually

Blockchain
Increased demand and opportunities for data decentralization
674.4 thousand million dollars
+85.7% annually

Batteries and clean energy
Keys to the sustainable energy transition
423.9 thousand million dollars
+13.1% annually

Quantum
Enhanced capabilities and calculations thanks to QTs
173 thousand million dollars
+25.75% annually

Robotics
Greater automation and efficiency in production
65.6 thousand million dollars
+11.25% annually

Frontier materials
New materials with transformational properties
44.3 thousand million dollars
+17.9% annually

Supercomputing
Surpassing conventional computers in terms of power and capabilities
20 thousand million dollars
+11% annually

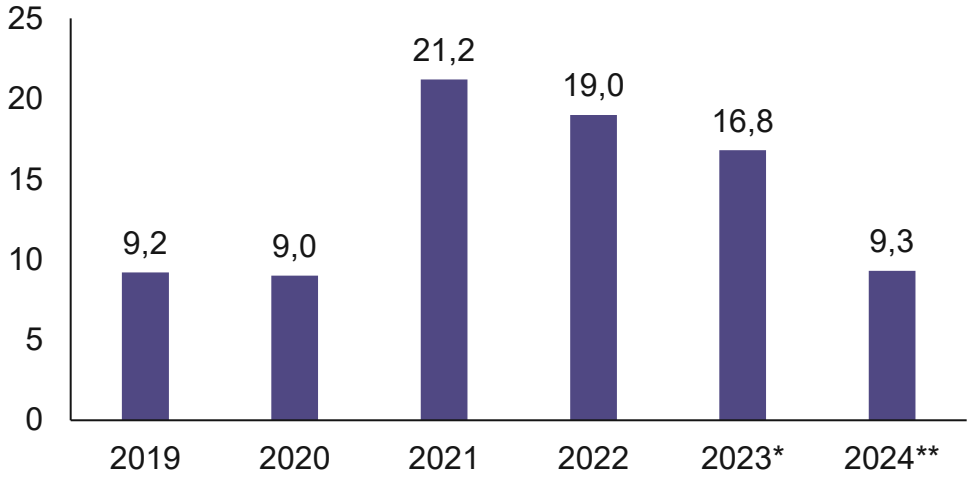
Note: the data corresponds to the expected long-term market value (4-6 years) and the expected annual growth over the 2023-2030 period (2040 in the case of quantum). They are ranked from the highest to the lowest market value achieved by each technology in the period in question.

3. Deep tech around the world

Venture capital in deep tech in Europe

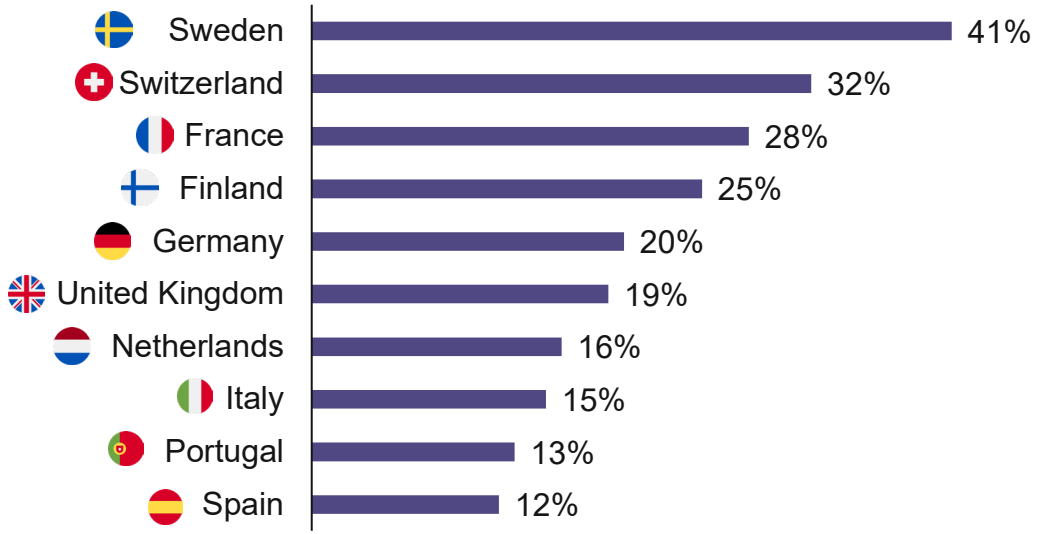
$16,800 M were invested in deep tech startups in Europe in 2023, a year-on-year decrease of 11.5%, lower than the 38.3% fall in venture capital. During the first half of 2024, investment increased by 43.1% compared to the same period in 2023.

Venture capital in deep tech startups in Europe (billions of dollars). **2019-2024 (first semester)**



* Provisional data
** First semester (provisional data)

Investment of venture capital in deep tech compared to the total (main European countries). **2018-2023**



The funding raised by startups is falling due to the macroeconomic situation. Despite so, **the commitment to deep tech is rising**; the emergence of generative AI is transforming the innovation ecosystem, while technologies aimed at combating climate change are gaining ground.

Source: Dealroom (2023): *The 2023 European Deep Tech Report*

Deep tech initiatives in the EU

New European Innovation Agenda

The New European Innovation Agenda includes 25 key actions grouped into 5 areas set to enhance competitiveness, growth, and strategic autonomy in Europe.

European Innovation Council

The EIC is Europe’s flagship innovation program for identifying, developing and expanding disruptive innovations and technologies.

EIT Digital Challenge

The EIT Digital Challenge is the leading pan-European competition for scaleups, aimed at recognizing Europe's top deep tech initiatives and supporting them with funding and networking.

European Investment Fund

The EIF is a specialist provider of funding to benefit SMEs in Europe and a key player in most of the funds of European deep techs.

Deep Tech Talent Initiative

The Deep Tech Talent Initiative will train one million Europeans and provide them with the skills required in deep tech fields such as AI, quantum computing and semiconductors.

Joint European Disruptive Initiative

The JEDI, known as the European DARPA, is the initiative for disruptive innovation designed to position Europe as a leader in innovative technologies

Cross-cutting policies to promote deep tech deployment in the EU

Next Generation

Post-pandemic recovery package that allocates 37% of its budget to renewable energies and clean technologies, and 20% of it to digital technologies.

Horizon Europe

Research and innovation framework program for the 2021-2027 period with three pillars, the second of which seeks to enhance European industrial technological capabilities.

Strategic Technologies for Europe Platform

Platform that supports European industry and drives investment in three priority areas: digital technologies and innovation in deep tech, clean technologies and biotechnology.

Important Projects of Common European Interest (IPCEI)

Cross-border innovation projects and cutting-edge infrastructures designed to overcome the market's shortcomings in strategic value chains, such as semiconductors, batteries and hydrogen.

European Chips Act

Initiative set out to mobilize over 43,000 million euros of public and private investment to guarantee European participation in the semiconductor value chain.

European Critical Raw Materials Act

Law to ensure the acquisition, processing and recycling of critical raw materials in Europe that are essential for the technologies of the future.

Deep tech-related initiatives in Spain

The Spanish government is working on the first **Spanish Deep Tech Strategy**. For the time being, it is driving deep tech in a cross-disciplinary way with different policies.

PRTR - Next Generation EU

Impact of the National Recovery, Transformation and Resilience Plan (RTRP) on innovation policy:

- Increased digitization of tractor sectors
- Modernization of production chains
- Promotion of science
- Training in digital skills

ECIT 2021-2027

The main goals of the Science, Technology and Innovation Strategy (CTIS) for 2021-2027 are to:

- Reinforce public-private collaboration
- Promote knowledge transfer
- Improve the situation of research staff
- Improve talent attraction and retention

INNVIERTE Technology Transfer Program

The CDTI, within the framework of the INNVIERTE venture capital fund, is allocating €120 M and channeling them into three private venture capital funds specialized in technology transfer.

Startup law

The aim of the law is to create an innovative entrepreneurial ecosystem in Europe. The expected benefits include the following:

- Enhanced ability to attract international talent
- Promotion of partnerships between companies
- Beneficial tax measures (corporate tax and non-residents' income tax)
- Expansion of the maximum investment deduction base

Sources: Ministry of Science and Innovation and Elcano Royal Institute

4. Deep techs and the SDGs

Contribution of deep tech technologies to the SDGs

1. End of poverty
Frontier and sustainable materials, artificial intelligence, DLT

2. Zero hunger
Frontier and sustainable materials, artificial intelligence, DLT, robotics, biotechnology

3. Health and wellness
Frontier and sustainable materials, robotics, semiconductors, artificial intelligence, photonics, supercomputing, biotechnology, batteries and clean energy, quantum

4. Quality education
Robotics, artificial intelligence, DLT, quantum

5. Gender equality
Artificial Intelligence, DLT

6. Clean water and sanitation
Frontier and sustainable materials, artificial intelligence, robotics, DLT, photonics, biotechnology

7. Clean and affordable energy
Frontier materials, robotics, semiconductors, artificial intelligence, DLT, photonics, quantum, biotech, batteries and clean energy

8. Decent work and economic growth
Frontier and sustainable materials, robotics, semiconductors, artificial intelligence, DLT, photonics, biotechnology, batteries and clean energy

9. Industry, innovation, and infrastructures
Frontier and sustainable materials, robotics, semiconductors, artificial intelligence, DLT, photonics, quantum, biotechnology, batteries and clean energy

10. Reduced inequalities
Artificial intelligence, robotics

11. Sustainable cities and communities
Frontier and sustainable materials, semiconductors, quantum, robotics, artificial intelligence, photonics, batteries and clean energy

12. Responsible consumption and production
Frontier and sustainable materials, semiconductors, robotics, artificial intelligence, DLT, photonics, quantum, batteries and clean energy

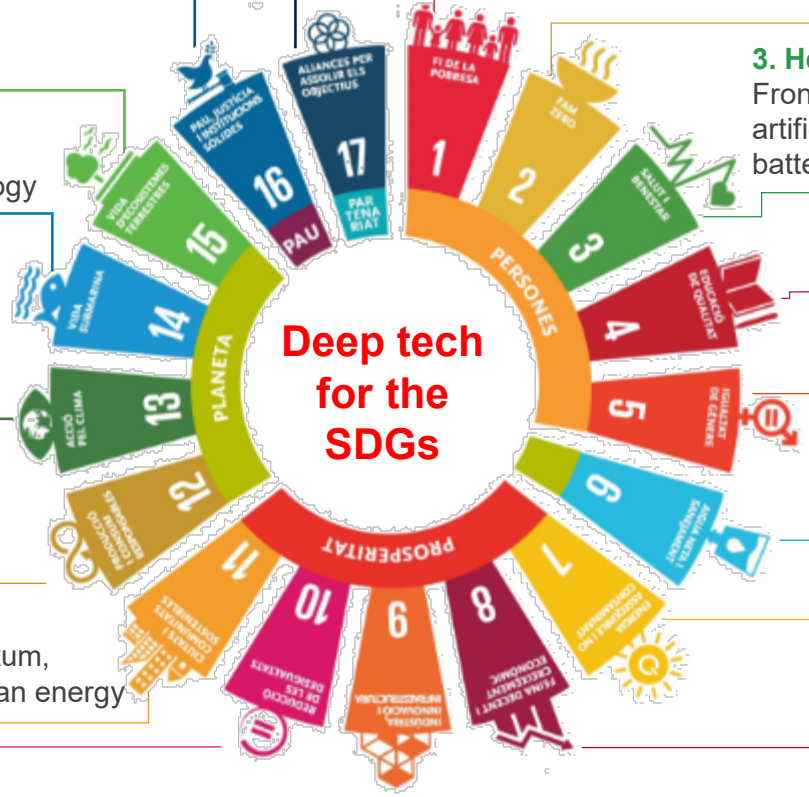
13. Climate action
Frontier and sustainable materials, robotics, artificial intelligence, DLT, photonics, quantum, biotechnology, batteries and clean energy

14. Marine life
Artificial intelligence, DLT, biotechnology

15. Terrestrial life
Frontier and sustainable materials, artificial intelligence, DLT, biotechnology

16. Peace, justice and strong institutions

17. Partnership for the goals
Artificial Intelligence, DLT



Source: the authors

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5. Deep tech in Catalonia

Mapping of the deep tech startup ecosystem in Catalonia

340 deep tech startups

6%*

16.2% of the total number of startups in the Barcelona & Catalonia Startup Hub

€166 M of turnover

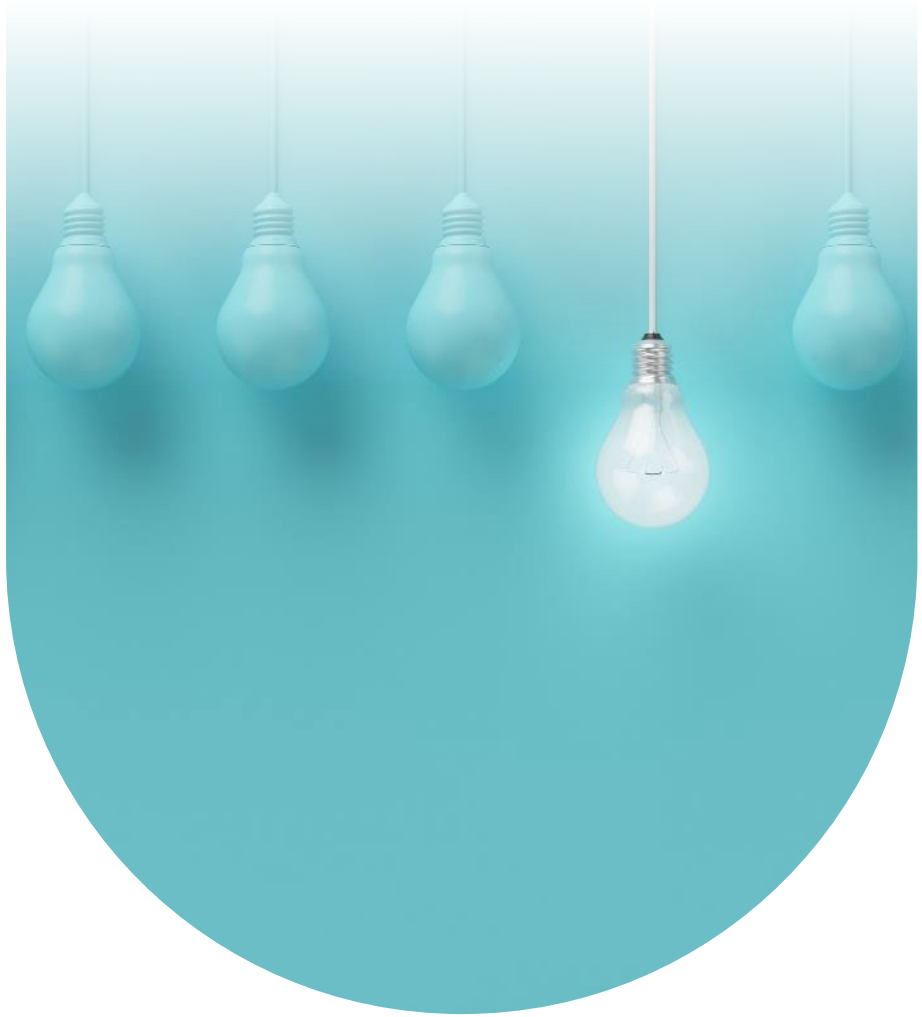
3%*

2,735 employees

17%*

By technologies, the deep tech startups in Catalonia are distributed as follows:

- **37.4%** in biotechnology
- **27.9%** in artificial intelligence
- **11.2%** in sustainable and frontier materials
- **6.2%** in batteries and clean energy
- **5.9%** in robotics
- **3.8%** in photonics
- **2.9%** in DLT/blockchain
- **2.6%** in supercomputing
- **1.2%** in semiconductors
- **0.9%** in quantum



*Growth compared to the data of 2023.

Note: for the purposes of this mapping, the main technology used by each startup is selected. The Barcelona & Catalonia Startup Hub is made up of 2,102 startups (2023).

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Source: ACCIÓ

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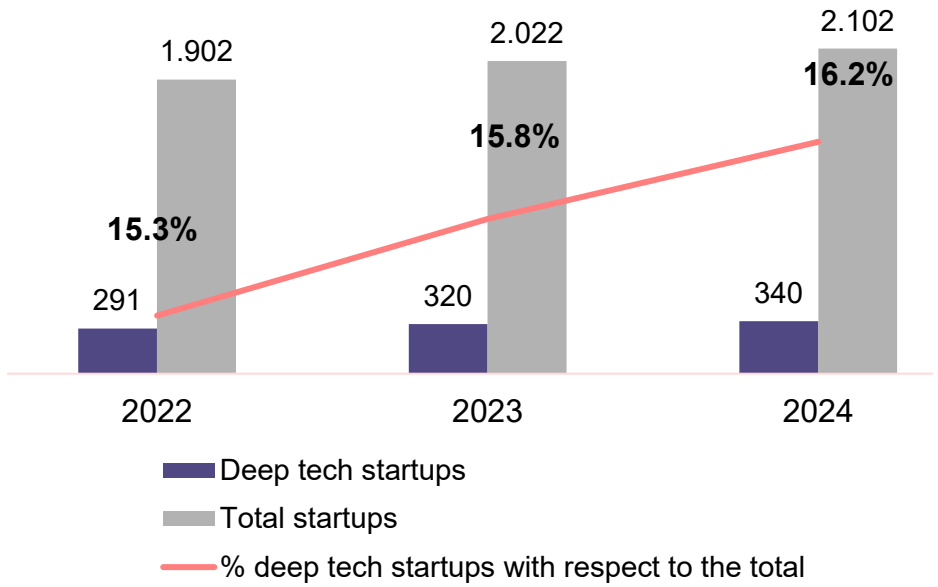
Evolution of the deep tech ecosystem in Catalonia (I)

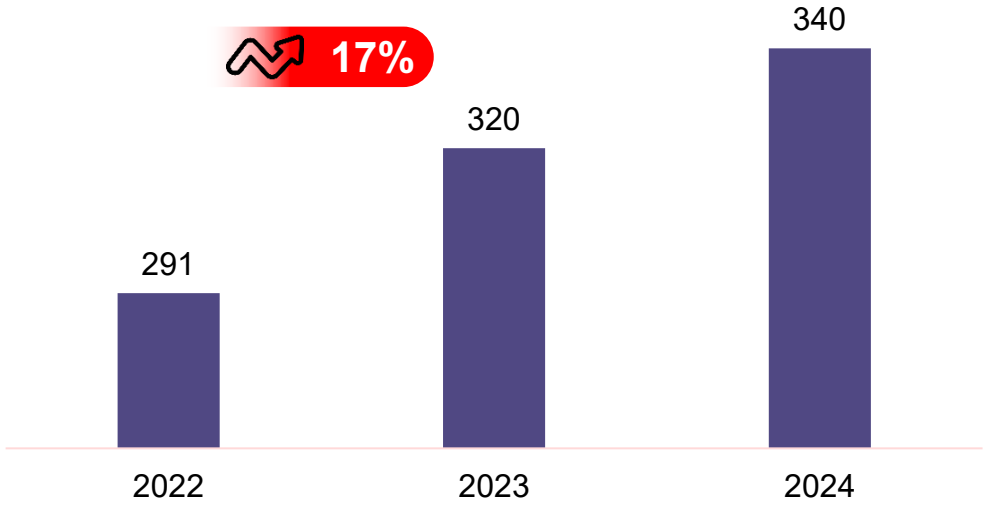
Over the last three years, the number of deep tech startups has risen by **17%**, an increase higher than the growth in the total number of startups in Catalonia (**10.5%**).

The proportion of Catalan deep tech startups compared to the total number of Catalan startups has risen from **15.3%** in 2022 to **16.2%** in 2024.

Evolution of the total number of startups and deep tech startups



Evolution of the number of deep tech startups

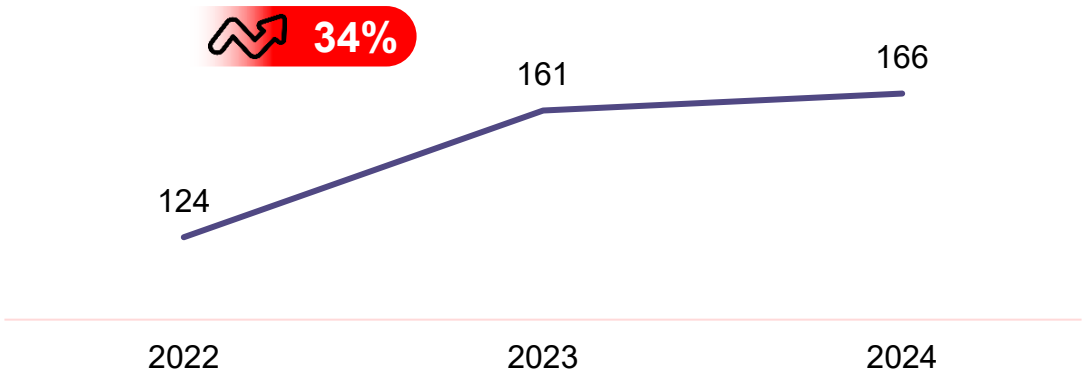


Source: Barcelona & Catalonia Startup Hub, ACCIÓ

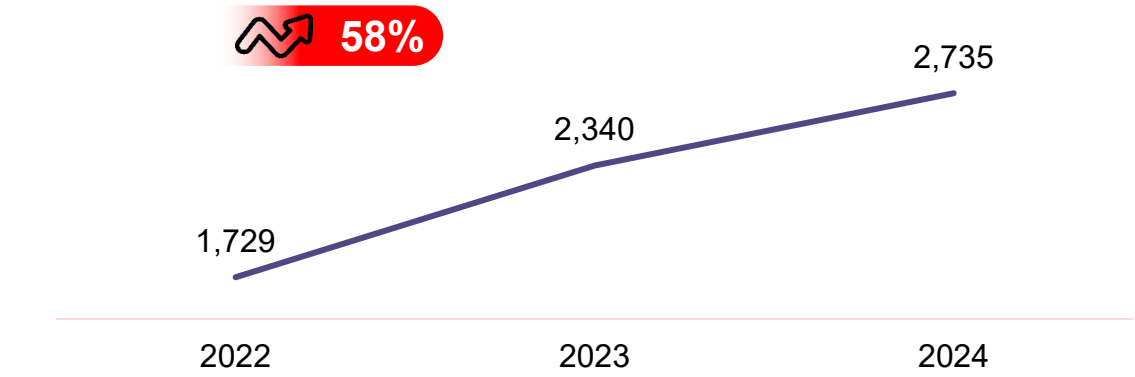
Evolution of the deep tech ecosystem in Catalonia (II)

Over the last three years, the turnover of deep tech startups has risen by **34%** and the number of workers has increased by **58%**.

Evolution of the turnover of deep tech startups (€M)

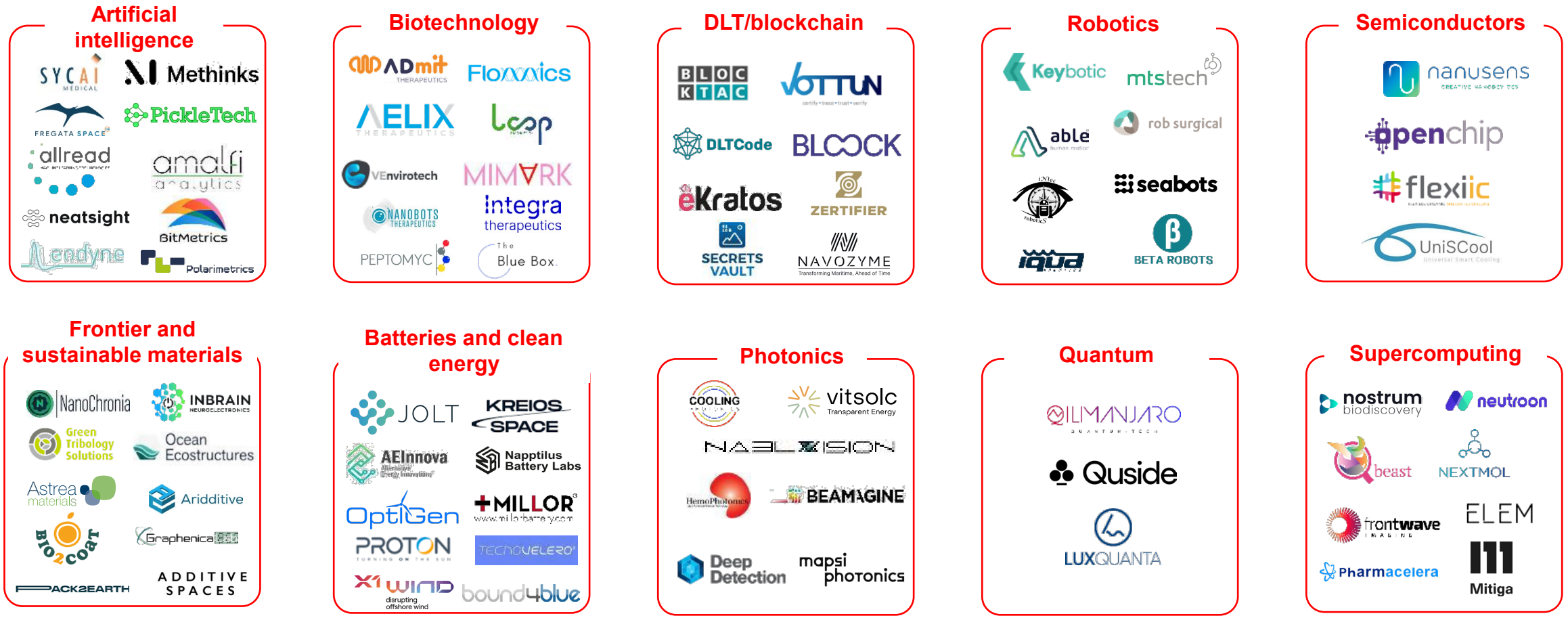


Evolution of the number of workers in deep tech startups



Source: Barcelona & Catalonia Startup Hub, ACCIÓ

Mapping of deep tech startups in Catalonia



Note: partial illustrative image. For the purposes of this mapping, the main technology used by each startup is selected.

Source: Barcelona & Catalonia Startup Hub, ACCIÓ

Agents in the deep tech ecosystem in Catalonia

Centers and institutions generating deep tech spin-offs

Incubators and accelerators

Venture capital funds and investors

Institutions and public administration

Source: ACCIÓ

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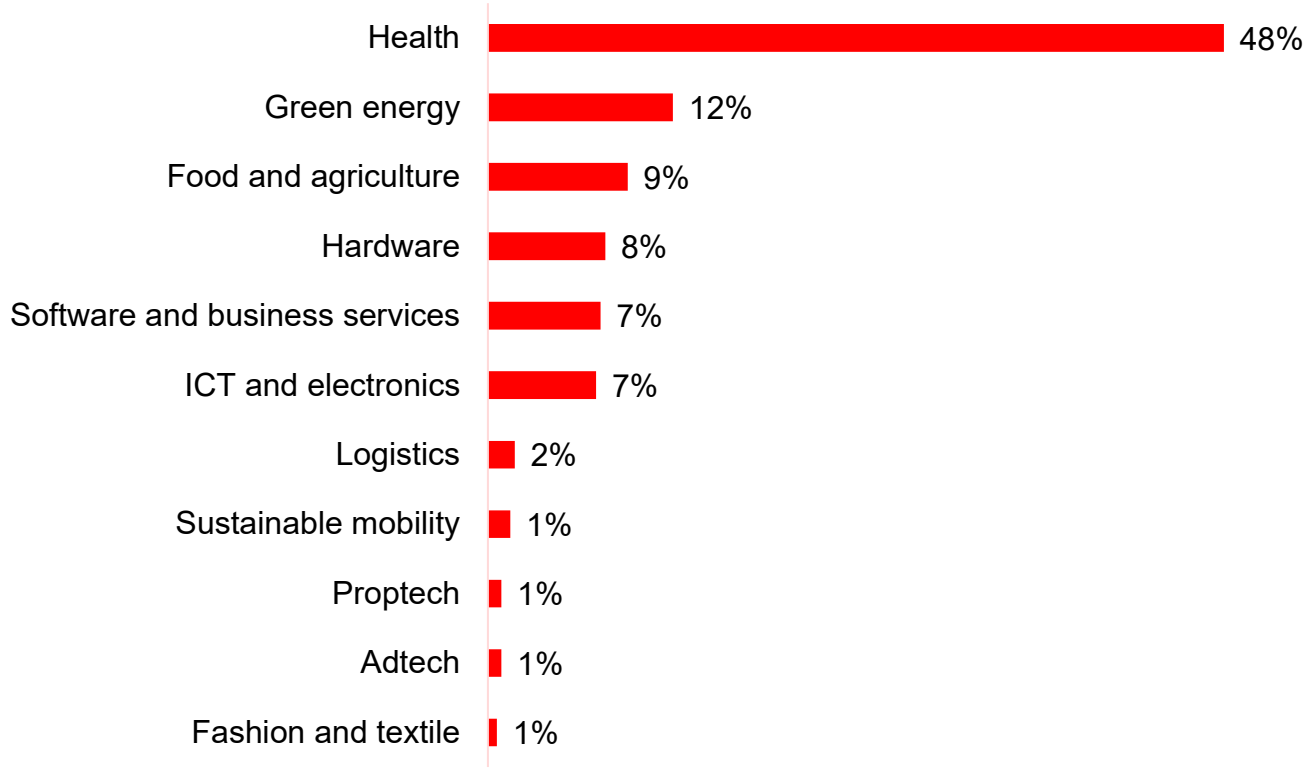
Analysis of the deep tech ecosystem in Catalonia: sectoral application of startups

The health and green energy sectors account for **60% of deep tech startups**

Sectoral application of deep tech startups



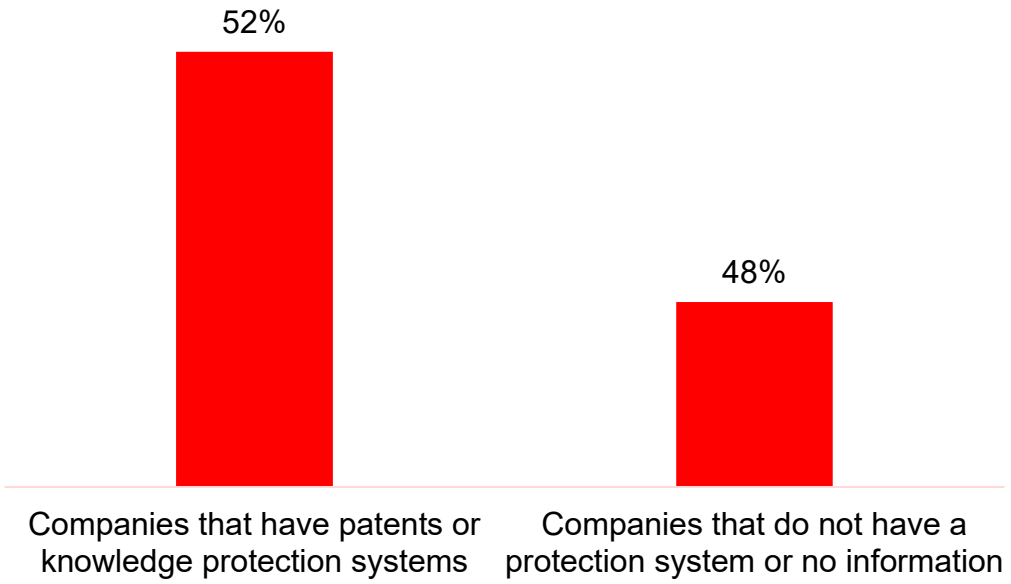
Note: this chart has been drawn up using the data of the 340 startups in the directory that possessed this information. The analysis has been conducted with the main sector of each company.

Source: Barcelona & Catalonia Startup Hub, ACCIÓ

Analysis of the deep tech ecosystem in Catalonia: knowledge protection systems of startups

52% of deep tech startups have some form of patent or knowledge protection system.

Deep tech startups with patents or knowledge protection systems



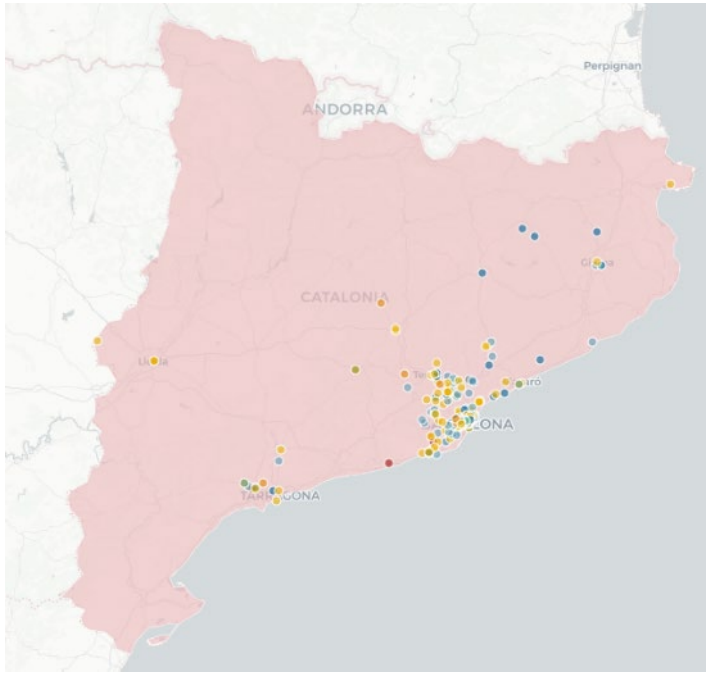
Note: these data was taken from companies that answered this question in the 2023 survey or information that was found in the Orbis Intellectual Property database in 2024.

Sources: Barcelona & Catalonia Startup Hub, ACCIÓ, and Orbis

Analysis of the deep tech ecosystem in Catalonia: location of startups by municipality

58% of deep tech startups are located in Barcelona, followed by Cerdanyola (**4%**) and Terrassa (**3%**).

86.7% of startups are located in the Metropolitan Area of Barcelona (AMB).



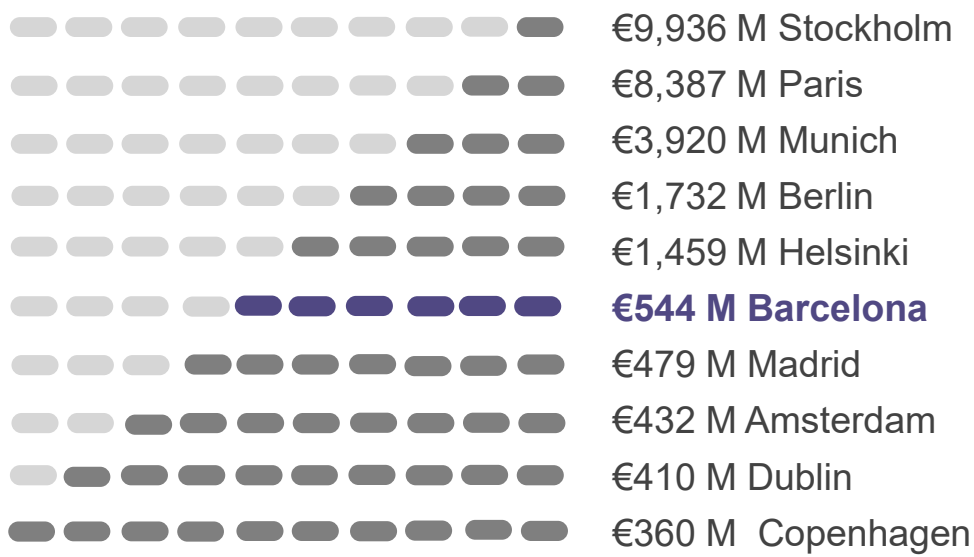
Top 20 municipalities	Number of companies	%
Barcelona	196	58%
Cerdanyola del Vallès	12	4%
Terrassa	10	3%
Castelldefels	8	2%
L'Hospitalet de Llobregat	8	2%
Badalona	7	2%
Sant Cugat del Vallès	7	2%
Tarragona	6	2%
Esplugues de Llobregat	5	1%
Gavà	5	1%
Girona	4	1%
Lleida	4	1%
Mataró	4	1%
Reus	4	1%
Cornellà de Llobregat	3	1%
Sabadell	3	1%
Cànoves i Samalús	2	1%
Igualada	2	1%
Molins de Rei	2	1%

Sources: Barcelona & Catalonia Startup Hub, ACCIÓ and InAtlas

Funding raised by deep tech startups: ranking of cities in the EU

Barcelona is the **6th largest hub in the EU** in terms of volume of venture capital funding raised by deep tech startups in the period 2019-2024.

Main EU cities by volume of investments in deep tech startups. 2019-2024*



Note: consultation in Dealroom on 14/10/2024. Exchange rate $1.097/€.
Provisional data for 2023 and 2024.

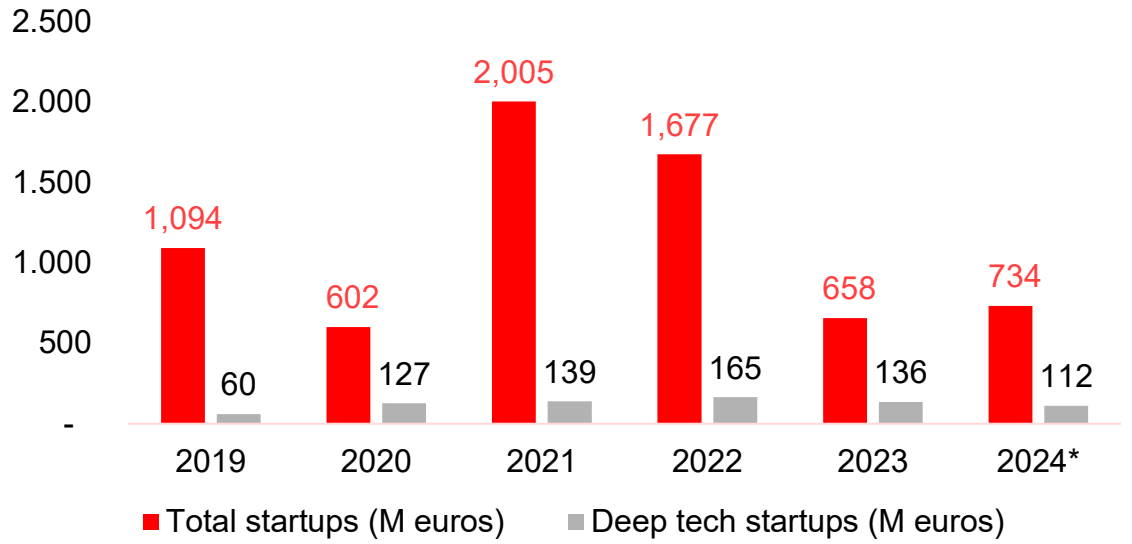
Source: Dealroom

Funding raised by deep tech startups: volume invested in Catalonia

21% of the venture capital invested in Catalan startups in 2023 was assigned to deep tech, compared to 7% in 2021 and 10% in 2022.

This is a higher percentage than the state average (**12%**).

Volume of investment in startups in Catalonia (€M) 2019-2024*



Years	2019	2020	2021	2022	2023	2024*
Total startups (M euros)	1,094	602	2,005	1,677	658	734
Deep tech startups (M euros)	60	127	139	165	136	112
% deep tech/total	5%	21%	7%	10%	21%	15%

(*) The data for 2024 is updated to 09/10 and is provisional.
Note: Consultation in Dealroom taking Catalonia as the founding location or operational headquarters of the startup (consultation date: 09/10/2024).
Exchange rate $1.097/€

Source: Dealroom

Funding raised by deep tech startups: leading investments in 2023-2024

Leading deep tech investments in 2023-2024

10 main foreign investments in deep tech startups in Catalonia (2023-2024)

submer	Heura	inbenta	SATELIOT Space · Connecting · 5G IoT	NOVA MEAT
€50 M 2024	**€40 M** 2023	**€36.4 M** 2023	**€30 M** 2024	**€17.4 M** 2024
Mitiga	Quside	IOMED	Delfos	AISTECH access to intelligent space technologies
€13 M 2023	**€10 M** 2023	**€10 M** 2023	**€6.3 M** 2024	**€5 M** 2024

Note: consultation in Dealroom (08/10/2023), taking Catalonia as Catalonia as the founding location or HQs of the startup

Sources: Dealroom and ACCIÓ

Ecosystem of consolidated deep tech companies in Catalonia

Although this study has analyzed the deep tech startup ecosystem in Catalonia, our territory is the cradle of science and technology. One good example of that is the fact that **Catalonia has well-established and renowned companies that also base their activity on deep techs**, enabling this ecosystem to grow and evolve.

Artificial intelligence

GRUPO AIA, catchoom, AIS GROUP, IBM, minsait, BCG, ERNI

Biotechnology

AB-BIOTICS Part of kaneka Corporation, Agilent Technologies, Bioiberica, ESTEVE más cerca, ferrer, GRIFOLS, REIG JOFRE, Roche

DLT/blockchain

Worldline, capside, Scytl, validatedID real identities for digital world, kualito, BLOCKTAC, JOTTUN

Robotics

CAT UAV, EBRE DRONE, KIVNON friendly innovation, KUKA, FANUC, ABB, YASKAWA, gmv, UNIVERSAL ROBOTS

Semiconductors and microelectronics

draco systems, EBV Elektronik, esperanto.ai, Fractus, IDEADED, imasenic, gtd, semidynamics, SEMIKRON innovation+service, WORLD SENSING

Sustainable and frontier materials

BASF We create chemistry, BAYER, MERCK, REPSOL, GPAINNOVA, 3M Science. Applied to Life.™, SANDVIK, NOVARTIS, AkzoNobel, ECOPOL TECH

Batteries and clean energy

WAHIUS, BOLD, wallbox, DENSO, PREMO, Gestamp, SMA SOLAR TECHNOLOGY, factorenergia, SCHNELLECKE LOGISTICS, solideo

Photonics

ASE OPTICS EUROPE, COHERENT, HAMAMATSU PHOTON IS OUR BUSINESS, Macsa id, INFAIMON, IRIS, Ingenia, SENSOFAR, PRO-LITE TECHNOLOGY, monocrom, RADIANTIS, Ymaging, KEYSIGHT TECHNOLOGIES

Quantum

IBM, Microsoft

Supercomputing

IBM, intel

Note: partial illustrative image

6. Initiatives to support deep techs in Catalonia

Active public policies from the promotion of deep techs

National pacts

National Pact for Industry (2022)

National Pact for the Knowledge Society (2020)

Funding

Startup Capital
€2M each year

Línia Startup Capital Coinversió
€2.5M

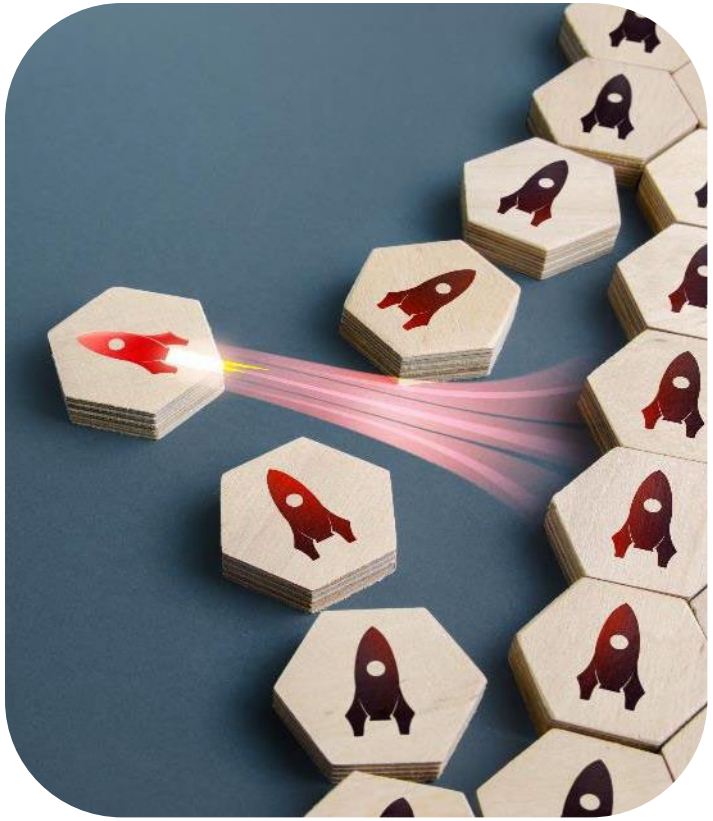
Fons d'Inversió en Tecnologia Avançada (FITA)
€55 M in endowment

+ Instruments from

ACCIÓ supports deep techs: Startup Capital

Between 2017 and 2024, **172 deep tech startups** have received support from the **Startup Capital** aid, with a total amount of **14.4 million euros**.

- ACCIÓ allocates **2 million euros** every year to support technology-based startups seeking to overcome major global challenges.
- The program offers direct grants totaling up to **100,000 euros** and provides startups with **mentoring**, a training **bootcamp** and **networking** opportunities.



Deep tech startups benefiting from Startup Capital in 2024

Agrikola.AI, Aridditive, ATOM, Banting Labs, BrainFocus, CellFlow Bio-technology, DEBIOS, Green Tribology Solutions, SECRETS VAULT, NEMA Health, xpnd, OptiGen, PHOENIXFOODS, Planet BIOTECH, RED BEAT, SLIMOP SPACE, TALPTECH, YPlasma ACTUATORS TECH

Further information:

ACCIÓ Catalonia Trade & Investment

Generalitat de Catalunya Government of Catalonia

Source: ACCIÓ

CataloniaConnects

ACCIÓ supports deep techs: Startup Capital Coinversió

2023 saw the launch of **Startup Capital Coinversió**, which has already mobilized around **1.5 million euros** for **10 Catalan deep tech startups**.

- ACCIÓ offers grants between **75,000 and 250,000 euros** linked to investments formalized by angel investors or venture capital funds over the past six months.
- This provides an opportunity to expand the investment received through a **10-year loan** and a **non-refundable grant of 20%**.

Deep tech startups benefiting from the Línia Startup Capital Coinversió

VITALA · The Blue Box. · Latitude · UNION AVATARS · EOX SENSE · PACK2EARTH · YSOTOPE Theranostics · improfit PHYSOTHERAPY & TRAINING AI · virmedex Virtual Experiences · higia.ai

Further information:

ACCIÓ Catalonia Trade & Investment

Generalitat de Catalunya Government of Catalonia

Source: ACCIÓ

CataloniaConnects

The Government of Catalonia boosts deep tech

The Government of Catalonia will allocate **110 million euros** from the ERDF funds to eight new strategic projects in the fields of **biotechnology**, **decarbonization** and **deep technologies**.

- The European Commission has agreed to modify the Programme Catalonia ERDF to incorporate new investment priorities within the framework of the STEP Platform.
- The EU will provide 100% of the investments and will facilitate an advance of 30% of the total cost.

The 8 selected projects:

Protein.cat	**PhotonChip**	**Congenital pathologies**	**Lithographic scanner**
To develop and implement biotechnological processes aimed at producing non-animal-based proteins.	To implement integrated photonic chip technologies in devices ready for transfer and industrial scalability.	To develop technologies in the field of digital twins that integrate AI to predict the progression of complex congenital pathologies.	To have a high-performance lithography equipment, unique in Spain, aimed at the manufacturing of semiconductor devices.
Quantum	**PRIMA Platform**	***Test-beds***	**Industrial decarbonization**
To transform data and communication security by moving from an asymmetric algorithm system to one based on quantum cryptography (QKD).	To build six pilot plants for testing and demonstrating technologies that contribute to the energy transition.	To deploy facilities to conduct trials and pilot tests of new technologies with an impact on the water sector.	To design and deploy experimental and testing facilities and plants for the use and capture of CO_2 that enable the scalability of technologies.

Source: Departament d'Economia i Finances

Catalonia, at the forefront of the EU's Regional Innovation Valleys with the PRECISEU project

Catalonia is leading **PRECISEU**, a European-wide macro-project to promote personalized medicine and advanced therapies.

PRECISEU, which began on 1 July 2024 and is set to last until 30 June 2029, is one of the five projects selected by the demanding **European Innovation Ecosystems (EIE)** program as part of the **Regional Innovation Valleys (RIVs)** initiative of the New European Innovation Agenda (NEIA).

With a budget totaling **€23 M**, it will accelerate the adoption of **personalized medicine** in Europe, facilitate the **digital and sustainable transformation** of health systems, and allocate financial support (around €12 M) to four inter-regional projects for the development of highly innovative products based on **advanced therapies** and **health data**.

Catalonia is the region with the most partners participating in this project, coordinated by **Biocat** with the support of the **Ministry of Health**, **ACCIÓ**, the **Barcelona Supercomputing Center** and **AstraZeneca**. A total of 25 partners from 12 European regions of 10 EU member States and Ukraine are participating.

Participating partners of PRECISEU

Catalonia is one of the main European regions in the field of personalized medicine and advanced therapies

Sources: Biocat, Ministry of Foreign Affairs and the European Union

Catalonia, a benchmark in the EIC Accelerator

Between 2022 and the first quarter of 2024, **15 Catalan deep tech startups** received funding from the EIC Accelerator.

The 15 startups account for **45%** of the total number of beneficiaries in Spain and **3.2%** of startups throughout Europe.

- The EIC Accelerator is the EU's main funding program which awards up to €2.5 M in grants and up to €15 M in capital investments, in addition to coaching, mentoring and networking.

Deep tech startups benefiting from the EIC Accelerator

2022

ABCDx · ELEM · GATE2BRAIN Medicines beyond barriers · ignion · INBRAIN NEUROELECTRONICS · kriba · Methinks · SAALG GEOMECHANICS · timeisbrain

2023

LUXQUANTA · MIMARK · NIMBLE Diagnostics · PEPTOMYC · Quside

2024 (1st quarter)

Integra therapeutics

ACCIÓ Catalonia Trade & Investment · Generalitat de Catalunya Government of Catalonia

Source: EIC Accelerator

CataloniaConnects

Barcelona Deep Tech Summit

The **Barcelona Deep Tech Summit** is an event that turns the city into the epicenter of exponential technology. It's an opportunity for all the players in the deep tech ecosystem to connect, collaborate and create together. Its main goals are:

- To become the meeting point for the entire deep tech ecosystem in Barcelona and Catalonia.
- To popularize entrepreneurial culture based on science and technology.
- To promote the growth and visibility of research centers and deep tech startups.
- To encourage entrepreneurial activity in the scientific and research sector.

BARCELONA DEEP TECH SUMMIT

5-7 November 2024
Fira de Barcelona
Gran Via Venue

barcelonadeeptechsummit.com

BARCELONA DEEP TECH SUMMIT

Four verticals

1. Energy transition
2. Connectivity
3. Industrial technology
4. Health technology

Barcelona Deep Tech Fund

In 2022, in order to support the deep tech ecosystem, Barcelona City Council created an investment fund by contributing 10 million euros.

Source: Barcelona Deep Tech Summit

Opportunities to drive deep techs in Catalonia

Deep tech refers to technology and innovation with great potential for disruption and the ability to transform the world with a profound impact on society.

European framework

European deep tech support framework, including the European Innovation Agenda, the Green Pact and the Next Generation funds.

Social valuation

Improved appreciation of science and technology by society.

SDGs

Key role of science and technology in contributing to achieving the Sustainable Development Goals.

Changes in equity fund preferences

Availability of equity funds that are abandoning large investments in unicorns with promises of rapid returns and advocating longer-term investments with a positive impact.

Policy deployment

Policies that have already been deployed to encourage deep tech: national agreements, public funding and the Catalan Science Law.

Ecosystem

Ecosystem of startups and environmental agents active in the promotion of deep techs.

Good positioning of Catalonia

Good positioning of Catalonia compared to other European regions and Spain. In 2023 Catalonia became a Strong Innovator at the European Commission's Regional Innovation Scoreboard.

International collaboration

Promotion of open science to encourage cooperation and transfer between ecosystems, which are key to the development of deep techs.

Source: Own production

Challenges faced when promoting deep techs in Catalonia

The momentum of deep techs is not without its challenges, including long-term funding, technical complexity and the need for specialized talent.

Talent

Need for experts with specialized knowledge. Foster and improve conditions for local talent and attract talent from other ecosystems

Industrial Doctorates

Greater promotion of industrial doctorates.

Instruments

Provide more instruments and streamline bureaucratic hurdles to facilitate the transfer of knowledge from universities and/or technological and research centers to the business world.

Creation of companies

Facilitate the creation of scientific and technological companies.

Legal and regulatory framework

Legal and regulatory framework. Many deep techs are targeting highly regulated sectors such as energy, health, etc. that require good knowledge of legal frameworks, requirements and approval processes.

Intellectual Property

Promote the protection of proprietary inventions through patents or other legal mechanisms.

Long-term funding

Increase the budget and the duration of financial instruments to invest in deep tech companies, taking into account their long development cycles and the risk they entail.

Private capital

The private investment ecosystem specializing in deep tech is still in its early stages.

Communication

Communication, finding the balance between generating excitement about technology, communicating in a precise and verifiable way and ensuring it can be shared beyond the scientific community.

Source: Own production

7. Success stories in Catalonia

Success stories on Catalonia

INTEGRA THERAPEUTICS develops gene therapies to fight liver diseases, cancers and rare illnesses.

POLARIMETRICS uses artificial intelligence to identify strokes and speed up diagnoses to prevent more serious consequences of the disease.

SUBMER is developing a data center cooling system by immersion while saving water and electricity costs.

MAGNETIKA is developing a wireless electric charging system using magnetic resonance.

GPA SEABOTS is developing hybrid aquatic robots for numerous tasks at sea, ranging from data collection to maritime rescue.

VITSOLC develops transparent solar panels using organic materials that transmit visible light and convert infrared light into electricity.

NAVOZYME has introduced innovative certification systems based on blockchain for port management.

PHARMACELERA is improving productivity in R&D through drug discovery based on advanced computational technologies.

FLEXIIC is developing organic and flexible electronic circuits with innovative manufacturing methods, such as additive manufacturing and circuit printing.

QUSIDE manufactures quantum components for the cybersecurity, communication and high-performance computing sectors.

Acknowledgments of institutions

We would like to thank the following institutions for providing information for the preparation of this report:

TECNIO Association

CERCA centers

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Catalan Foundation for Research and Innovation

secpho

University of Barcelona

Polytechnic University of Catalonia

Thank you

Contact us!

934 767 206
info.accio@gencat.cat
Passeig de Gràcia, 129
08008 Barcelona

accio.gencat.cat
catalonia.com

Follow us on social media!

@accio_cat
@Catalonia_TI

linkedin.com/company/acciocat/
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