CATALONIA

International innovation hub

As one of the world's capitals for next generation ideas and technologies, the area is attracting record investment across its dynamic economy

tanding proudly as the innovation capital of Spain, Catalonia is not only embracing the future through massive investment in cutting-edge technology hubs, but is also building on its impressive experience in more traditional markets like tourism, agrifood, manufacturing, logistics and creative design.

Famous for incredible architecture, countless cultural and sporting attractions, welcoming climate and stunning gastronomy, the region of eight million people has written an exciting new chapter in its illustrious history in recent years. Its reputation as an attractive destination for doing business has continued to grow strongly.

Catalonia's success as a dynamic base for state-of-the-art semiconductor, artificial intelligence (AI) and biotech enterprises has seen billions of euros of investment poured into a powerful portfolio of modern factories, advanced laboratories and gleaming offices operated by corporate giants and nimble startups that serve a broad range of domestic and foreign markets.

"Catalonia has a robust strategy for attracting investment, with a highly developed industrial base that positions it as one of the most advanced industrial landscapes in Europe," says Regional Minister for European Union and Foreign Action, Jaume Duch.

REGIONAL MINISTER FOR EUROPEAN UNION

"Catalonia is open to furthering international relations, investment and business.

"As one of Europe's most dynamic regions, Catalonia is poised to play a leading role in the anticipated expansion of the European economy. The region houses a skilled workforce and is supported by a vast network of universities, research centers and scientific institutions.

"This combination of a modern industrial environment, strong academic infrastructure and scientific capabilities creates a highly favorable business climate. Beyond these economic factors, the quality of life in Barcelona adds to the region's appeal, making it an attractive location for businesses and individuals looking for both professional and personal growth."



Catalonia's iconic capital, Barcelona, hosts many of Europe's most innovative firms.

Catalonia's business opportunities are increasingly tied to its position within the EU through Spain, which gives it access to a market of 450 million people," Duch highlights. "Offering direct access to one of the largest economic and consumer regions globally is a major advantage," he states confidently.

"In recent years, Catalonia has built a strong startup ecosystem, especially in Barcelona, which is now a leading hub for startups. Investing here means tapping into this dynamic network of innovation and entrepreneurship.

"While Catalonia encompasses 16% of the national population, it accounts for almost 20% of gross domestic product. With the region now enjoying stability, the focus has shifted to implementing transformative policies and creating a future of growth and innovation.

"Additionally, Catalonia's emphasis on local production is driving job creation and further solidifying its position as a regional leader in economic development and innovation. Now more than ever, Catalonia is a reliable partner for other regions and is open to furthering interna-

Not one to rest on its laurels, the regional government is striving to enhance Catalonia's visibility and influence in Brussels by creating and reinforcing networks — inter-institutional, multilateral, bilateral or even lobby-type, focused on the Council of Ministers, EC and the European Parliament

their implementation are handled locally," Duch adds. "This includes areas like industry, education, health services, transport, infrastructure, environment and international trade. These decisions are made within the framework of European laws, directives and regulations.

"We are leveraging public, private and mixed investments to stay at the forefront of innovation by maximizing EC funds for advanced technologies. Significant efforts have been made in microchip design alongside promising developments in photonic technology, the next evolution beyond traditional microchips. The EC recently announced plans for seven AI factories, with one to be established in Barcelona.

Catalonia is particularly proud of its status as a leading international research hub, with the highly prestigious 2023-2024 Stanford University rankings highlighting its 850 influential researchers, notably in emerging and cutting-edge scientific fields.

The region's key collaborative platform, the Barcelona Institute of Science (BIST) brings together seven top research centers specializing in life sciences, physics and advanced innovation, like photonics. The organization has secured over €190 million from the Spanish and Catalan ernments, EU and private investment.

"As well as biomedical projects, initiatives are being developed in chemistry, photonics, nanoscience and high-energy physics," says Eduard



Agrifood sector showcases excellence

Whether its produce is sourced from land or sea, the Catalan agrifood industry is regarded as an international benchmark courtesy of its hefty spending on new technologies and research

s one of the fundamental pillars of the Catalan economy, the agrifood industry's stellar performance of 2024, in which export revenues reached a record €15.7 billion, was roundly celebrated.

Leading the chorus of approval at that hugely impressive result was Regional Minister of Agriculture, Livestock, Fisheries and Food, Oscar Ordeig. During an event to discuss the sector's best ever year, he said: "Local agrifood exports grew three points above the average for Catalan exports as a whole, making a decisive contribution to consolidating its position as the region's leading economic sector.

"At present, a third of this sector's turnover is generated through exports, a fact that underlines its strategic importance for the country's economy," he told assembled media personnel. Delving into the details of the record year,

he noted how sparkling wines have now established themselves as a driving force in the wine sector, with notable export growth in markets such as the US and Canada. Similar achievements were seen in the fine food segment, now the leading export sector with 33.2% of the total, closely followed by the meat sector — still the largest segment in volume terms.

"Catalonia's agrifood exports command substantial economic weight and exert a notable influence on the global market," explains the minister. "The regional government aims to position Catalonia as one of the top agrifoods regions in Europe and around the world."

The authority has identified three main priorities to address current challenges such as climate change, droughts, rising raw material costs driven by global conflicts and the urgent need to reduce food waste. "Our first priority focus is innovation and

knowledge," he says. "We host a very large food research center and must continue to leverage this resource and share knowledge. Our second is education and talent development, while our third priority is infrastructure. We are launching a comprehensive irrigation modernization plan for 2025-2040. While some areas already use highly efficient systems powered by AI, others still rely on outdated methods."

The competitive advantages of Catalonia's agrifood sector are numerous, with the region one of the few where meat is produced in a competitive and sustainable manner across the entire value chain — from animal breeding and nutrition to veterinary care and processing.

"Products like wine, meat, ham and olive oil are extremely important for us," confirms Ordeig. "We are also one of the largest distributors of truffles, a gourmet product and expensive delicacy that is only produced in Spain and Italy. We also export saffron, another unique



Regional Minister of Agriculture, Livestock, Fisheries and Food

product. We offer great prices for final products, with excellent quality and flavor."

Record export volumes, value and firms In addition to record exports, 2024 also set a new bar for the number of agrifood exporters at almost 3,200. Of these, over 80% are SMEs. Catalonia continues to be a key driving force in this area, as one in four agrifood export entities in Spain are based in the region.

"When a US importer buys our products, they are guaranteed professionalism, security and reliability," Ordeig adds. "Our mentality is open and export-oriented. We aim to associate our territory with quality products and focus more on quality than quantity."

Connecting cutting-edge food and nutrition research with world-class culinary insight, food and agricultural business innovation is the Torribera Mediterranean Center: Food, Health, Culinary Innovation (TMC).

One of the world's most

meet the ever-changing demands of the global

drinks industry and to tackle climate change

sustainable wineries

Familia Torres is constantly innovating to



Sílvia Paneque Regional Minister of Territory, Housing and Ecological Transition

The center — a joint initiative of the University of Barcelona and the Culinary Institute of America — addresses vital public health and sustainability issues through expanded academic, professional and business collaboration.

principles of the Mediterranean diet while seeking to adapt to modern times," says Santi Mas de Xaxàs, TMC co-executive director. As Catalonia becomes an ever more popular

"The Catalonian diet exemplifies the core

place to settle for agrifood workers and staff in other industries, so the pressures on housing, education and medical provision have risen.

"Catalonia is both outward-facing in our connective elements and inward-facing in our focus on improving local infrastructure," comments Regional Minister of Territory, Housing and Ecological Transition, Sílvia Paneque. "The government is confident that Catalonia through collaboration with industry — has all the elements it needs to succeed."

Biotech and pharmaceutical enterprises are riding Catalonia's innovation wave.

Powerful growth platform

The regional government is fostering a climate and spirit very conducive to business creation

atalonia's economy is one of the strongest in Europe having benefited from the vision and implementation of its ambitious and comprehensive National Industry Plan for 2022-2025 that has created solid foundations for future roadmaps. With that plan now about to expire, the regional government has been busy drawing up

a detailed blueprint that aims to bolster the region's presence in many industries and sectors. The administration has pledged to invest €18.5 billion by the end of the decade via a far-reaching shared prosperity economic model. "We want to unleash the full potential of

Catalan society, break the bottlenecks, untie the knots, to be the most prosperous region in Spain and one of the most prosperous in Europe," explained Catalan President, Salvador Illa, at the huge investment strategy's high-profile launch in Barcelona in late January.

The exhaustive plan comprises €13.7 billion in direct investment from the regional government and around €4.8 billion in loans. The funds will boost infrastructure, help manufacturing modernization, knowledge and innovation, good governance and equal opportunities.

The scale and commitment to long-term spending on a myriad of economic activities that create well-paid jobs and attract major international companies and investment is music to the ears of Regional Minister of Business and Employment, Miquel Samper.

"My primary objective is to foster the creation of businesses, not only maintaining the companies we already have, but creating an environment that allows new ones to thrive," he says. "The work carried out by the previous government is commendable and has laid a solid foundation for the upcoming industrial plan.

"We will focus on consolidating our strengths, such as Catalonia's automotive, metallurgy, chemicals and pharmaceuticals sectors.



Miquel Sàmper Regional Minister of Business and Employment

In addition, we will focus on the emerging biotech sector that backs the pharmaceutical industry in developing medications.

"We are also concentrating on our significant new technologies sector, which has grown rapidly in importance with some 3,000 jobs created each month. This level of job creation is enormous considering Catalonia has eight million inhabitants. We have two important technology centers: Eurecat Technology Center in Barcelona and Leitat Technological Center in Terrassa, which provide the base for biotechnology studies that transition into pharmacology."

The minister is hugely excited about the opportunities for trade with the US given 3,100 Catalan firms already ship items there that feature a combined annual value of \$3.8 billion.

"The US is an extremely important partner for Catalonia and we wish to strengthen ties," he adds. "Our collaboration must increase and our rich talent can support many US initiatives."

tional relations, investment and business." **Growing influence in European circles**

"Catalonia enjoys a high level of self-government, meaning that many policy decisions and

Promoting Catalonia's booming industries

Barcelona-based ACCIÓ has built a successful investment strategy that has helped companies across diverse sectors grow and thrive

public agency tasked with promoting the competitiveness and growth of Catalan businesses, ACCIÓ-Catalonia Trade & Investment advises companies in their search for funding, helps them grow through training programs and offers a range of support services. It is also responsible for attracting foreign direct investment to Catalonia.

In order to accomplish this, ACCIÓ has developed an investment attraction strategy that highlights industries that are booming throughout Catalonia, including the automotive, agrifoods and healthcare sectors. This approach aligns with the Catalonia Leads Plan, a strategic initiative by the government of Catalonia aimed at positioning the region among Europe's most competitive and innovative economies.

"Our investment attraction strategy for Catalonia is well organized and carefully planned. One of our key strengths is having a clear map of the various value chains within our sectors states Jaume Baró, Secretary of Business and Competitiveness and the CEO of ACCIÓ.

"We operate 40 offices worldwide, each with a dual mission to help Catalan companies export and attract investments to Catalonia. These offices actively engage with American companies and present Catalonia as an ideal location for expanding their businesses. We assist in building business opportunities and crafting proposals so that when companies consider investing abroad, Catalonia is part of their strategic options. Our highly strategic approach has three main focus areas: industry, technology and sustainability. We are surgical in identifying what we need to strengthen these three verticals and their value chains. Our goal is not just to enhance one sector but to strengthen our

This strategy proved to be particularly successful in 2024 as Catalonia broke its record for foreign investment, attracting over \$1.13 billion. The investments also attracted 106 proj-

ects, leading to the creation of nearly 5,000 jobs. "Our industry is multi-sectoral and we are catching up in building significant sectors based on emerging technologies," explains Baró. "Regarding innovation, development and research, our hubs related to photonics and supercomputing make us European leaders.

"Innovation in both the automotive and

agrifood sectors is essential, and significant in-

vestments are helping us rebalance the territory.



and CEO, ACCIÓ-Catalonia Trade & Investment

In Tarragona, we have a major European petrochemical hub. Several companies operate there and act as the main drivers of Spain's chemical industry. We are working on decarbonization projects worth millions and are well organized maintain leadership in this vital sector.

"We have also managed to reindustrialize a historic Nissan plant, which is now operational due to foreign investment, and we are also attracting battery companies. Being at the forefront of new industries is crucial for maintaining jobs, reindustrializing and continuing to lead in the sector."



Salud! Catalonia's food and drink options personify the famous Mediterranean Diet.

Harvesting handsomely

Catalonia's food value chain excels in a highly competitive international and evolving field

mid the widespread applause at Catalonia's agrifood industry's exceptional 2024, an analysis of the segments that served up the record shows the fine food sector created the most value, accounting for a third of the industry's entire exports.

products are sold in around 200 countries — for high-quality products like cocoa, coffee, meat and snacks was the principal driver of growth, accord-This positive trend in foreign sales was good

news for leading agrifood firms such as bonArea

Group, a company differentiated by its direct ap-

Increased international demand — regional

proach that involves farmers supplying produce to the world without intermediaries. "The management operates as a family business, and ownership is largely held by farmers, ranchers and employees of the company itself," explains Ramon Alsina, CEO. "We believe that sharing the company's wealth with our local communi-

ty ensures our people become real enthusiasts and

stakeholders in the giant project that is bonÀrea. "We were born in the rural world to support local economies and provide fresh, high-quality food to city dwellers. Our growth has been tremendous, and we are very proud of what we have achieved. A key mission is to democratize access to our products across all social classes; we want to make products that were once exclusive to wealthier classes

The region's wine and sparkling wine sector also performed well last year, with orders from US consumers up more than 10% year-on-year to a record high in value terms. Of note, sparkling wines consolidated their position as the driving force of the sector, with 62% of the value and 63% of sector volume, revealed statistics from the Ministry of Agriculture, Livestock, Fisheries and Food.

Having produced its first wine more than 150 years ago, but with its prestigious wine growing roots stretching back to the 16th century, Familia Torres' experience is unmatched and the enviable reputation of its rich flavors stretches far from its vinevards in Penedès.

Torres' vision is to "love the land, celebrate life, care for the earth and carry on our legacy in a life lived "Wine is not just a drink; it is an integral part of

Dedicated to wine for five generations, Familia

our traditions and way of life," affirms Mireia Torres, director of knowledge and innovation at Familia Torres. "Catalonia has benefited immensely from excellent researchers, universities and technology

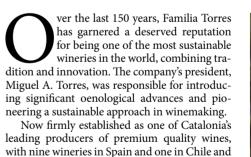
JOSEP USALL GENERAL DIRECTOR, INSTITUTE OF AGROFOOD RESEARCH AND TECHNOLOGY "We carry out over 700

technology transfer activities a year, promoting the creation and sharing of knowledge."

centers. A wealth of knowledge within the sector is

Having brought together small research centers into one major institute back in 1985, the Institute of Agrofood Research and Technology (IRTA) is now Spain's leading institution in the agrifood sector with over 1,000 professionals.

"Our goal is to integrate breakthroughs throughout the entire value chain," explains Josep Usall, general director of the IRTA. "We carry out more than 700 technology transfer activities every year, thus promoting the creation and sharing of



curb climate change and diversifies its product range to cater to changing global demand. "Developing new products is key for the Catalonian wine sector. We are developing new wines and spirits to meet consumers' needs. Our spirit division is particularly active in launching new and innovative brandies and has recently entered the Scotch whisky category," explains Mireia Torres, R&D Director at Familia Torres

California, Familia Torres continues to use in-

novative solutions and technology to adapt and

ywood's Golden Age "We place a strong emphasis on innovation when producing our wines and spirits. A good example is de-alcoholized wines, which we launched in 2008. This segment has been growing steadily for the last decade, and we are planning larger investments in this area.

and Director at Jean Leon, a small winery in

Penedès whose founder befriended stars of Hol-

"While the idea of alcohol-free wine initially seemed crazy, the product is now well established. A key differentiator is that our alcohol-free wine Natureo only uses natural aromas from the wine itself; we do not add any external aromas. We are utilizing the latest technologies to make these processes more efficient."

One of Familia Torres' most exciting research projects is the recovery of ancestral grape varieties, some of which have great potential for winemaking and the capacity to adapt to climate change. "When vineyards were replanted after the devastation caused by phylloxera, many grape varieties were neglected and lost. For more than 40 years, we have traveled across Catalonia visiting vineyards and responding to calls from vine growers who reached out after we placed announcements in newspapers," outlines Torres.

"We have recovered 60 grape varieties, 15 of which are now officially registered, a process that can take more than 15 years in Spain and Catalonia. This project is particularly relevant as some of these varieties cope better with higher



R&D Director at Familia Torres

and Director at Jean Leon

temperatures. They reach ripeness later while preserving a good acidity, making them ideal for producing more balanced wines even in hot summers," he explains.

Familia Torres has placed sustainability and combating climate change high on its list of priorities. "Torres & Earth is a program my father launched in 2008 in response to climate change," adds Torres. "Its goal is to make our company more sustainable, reducing our carbon footprint, adapting our vineyards and influencing others. We established a carbon reduction roadmap and reached a 40% reduction in CO2 emissions in 2024 compared to 2008. Our next targets are to achieve a 60% reduction by 2030 and become Net Zero by 2040."

Familia Torres has joined forces with other wineries to decarbonize the wine sector through the coalition International Wineries for Climate Action, which they cofounded with Jackson Family Wines, and the Association of Regener-



Pushing new frontiers in scientific research and development

As a magnet for life sciences and healthcare companies, Catalonia is pioneering a wide range of new medicines and treatments to benefit people and the planet

rom well before the turn of the millennium, Catalonia has worked hard to develop a strong network of scientific research institutes in basic science, targeting topics such as biomedicine, archaeology, history and economics.

Now home to more than 40 research institutes that employ 13,000 people exploring the frontiers of knowledge to advance society, they all sit under the umbrella organization Research Centers of Catalonia (CERCA).

Based in Barcelona, CERCA's members are dedicated to promoting synergies and strategic cooperation, improving the positioning, visibility and impact of research and facilitating dialogue with public and private agents.

"Many of our scientific research centers house internationally leading infrastructure and in terms of knowledge, we have around 12 different public and private universities," reveals Regional Minister for Research and Universities, Núria Montserrat.

This full ecosystem has enabled Catalonia to lead in basic science and knowledge. The government aims to position Catalonia as one of the most innovative regions in Europe by investing money in geopolitically significant innovative areas such as AI, semiconductors and emerging therapies.

"The region's industrial ecosystem is well suited to back these segments, with the area also actively connecting universities and research institutes with the public sector to fill the gap between basic science, industrial applications and economic production."

Long-term gains as vital as short-term

The pro-business and pro-investment regional administration regards universities as one of its main priorities, albeit officials are not only investing money in the sector, but also creating a sustainable strategy to advance Catalonia's university ecosystem over the long-term.

We are now working on long- and shortterm phases and around \$1.5 billion will be deployed to Catalonian universities," Montserrat notes. "We are currently working in the financial area to develop a new model for distributing funds to universities by establishing a contract program with them. The investments given to universities will be based on the parameters we



Núria Montserrat **Regional Minister for Research and Universities**

are evaluating for research quality and impact."

Describing international cooperation with similar organizations in the US and elsewhere as "critical in terms of knowledge exchange with universities and our various research institutes and assets", the educational expert sees plenty of scope to advance existing relationships.

'We have signed several important agreements and memorandums of understanding between universities in the US and research institutes such as the Massachusetts Institute of Technology, particularly in the field of bioengineering," she states. "There also exist solid collaborations with other universities like the University of California, Davis and University of Colorado Boulder.

'We are committed to strengthening our collaborations with the US and there are many great opportunities in multiple sectors. We need to focus on the mutually beneficial areas.

"The field of supercomputing will be a magnet for investors in Catalonia. Similarly, new advanced therapies in oncology developed in Catalonia and Spain will be a leading attractor of FDI. Advanced therapies, including gene therapy, have already been mastered in the US.

"Philadelphia is leading in chimeric antigen receptor T-cell therapies. Additionally, our rapid development of photonics is set to change the landscape of telecommunications.



Catalonia is a hub for cutting-edge research into new crop cultivation techniques.

"In addition, we are set to become leaders in decarbonization and hydrogen through major commitments by the government. Catalonia has a plethora of universities and research institutes focused on these specific areas.'

According to official data, the regional life sciences and healthcare sector represents 7.9% of Catalonia's entire GDP, comprising 1,400 companies. The sector employs more than 264,000 people, generates nearly \$25 billion in revenue and exports more than 30% of Spain's life sciences and healthcare products.

Created as a public-private entity to connect sectors, promote innovation and identify the needs of the population, Biocat works with local, national and international bodies to create connections across the entire life sciences value chain to boost people's health via innovation.

"Catalonia's main strength is its robust value chain as we have large research centers and significant hospitals and universities conducting a great deal of research in healthcare," says Robert Fabregat, CEO of Biocat.

"There is also a significant presence of entrepreneurs creating startups and spin-offs alongside many local investors. These investors provide funding and attract international investors.

"This combination of elements creates a unique ecosystem that is hard to replicate. A recent report comparing the metropolitan areas of Barcelona with Madrid attributed Barcelona's key differentiator as its focus on innovation. The municipality leads not only in Spain, but in all of Europe."

Laser sharp focus on photonic solutions Driven by the desire to advance the very limits of knowledge in several fields of science and technology where photonic tools and related concepts provide an edge, the Institute of Photonic Sciences (ICFO) is spearheading new technological tools in a broad spectrum of traditional and emerging industries.

With photons one of the most powerful enabling technologies currently available to humankind, ICFO is utilizing them for research targeting the global forefront of areas of physics and engineering, and salient topics in material sciences, chemistry, biology and medicine.

NÚRIA MONTSERRAT REGIONAL MINISTER FOR RESEARCH AND UNIVERSITIES

"We aim to position Catalonia as one of the most innovative regions in Europe by investing in innovative areas such as Al and emerging therapies."

"We aim to tackle key challenges faced by society at large and focus on current and future problems in health, energy, information, safety, security and caring for the environment," reveals Lluís Torner, founder of ICFO. "Currently, ICFO has several rapidly growing spin-offs backed by US investors, but the goal is to attract even more international investment, particularly from the US, to capitalize on the high-value intellectual property generated at ICFO.

"With a growing portfolio of disruptive technologies, ICFO is well-positioned to strengthen Catalonia's role as a global innovation hub. While competition drives innovation, cooperation is essential in achieving breakthrough scientific advancements. ICFO is certainly open to new partnerships with American entities.'

Setting new standards

UIC Barcelona plans to use AI to become a cutting-edge university

ounded in 1997, UIC Barcelona — the international university located in Barcelona has always had one mission: to provide students with the tools to transform society through academic excellence. This has led to the university gaining global recognition and attracting students from around the world.

Well-positioned in international rankings, UIC Barcelona has already achieved numerous milestones and is determined to lead the way when it comes to areas such as sustainability and innovation.

"Our faculty of medicine was the first in Spain, together with Girona, to be accredited by the World Federation for Medical Education, which certifies that students are prepared to work in the international job market, such as in the US," reveals Alfonso Méndiz, rector at UIC Barcelona. "Nearly 100% of students pass the MIR exam in Spain, meaning they have a place to become a resident in the public healthcare system. In addition, we became the first Spanish university to obtain international accreditation from the American Dental Association.

"When it comes to the future, we want to continue encouraging students to interact and collaborate. We also want to innovate and we are working on establishing AI courses in all our programs, each applied to its respective field, all online."

This last fact is particularly important as the university has recognized the impact emerging technologies will have on the future of education. This has led to UIC Barcelona developing courses that help prepare students for the evolving global labor market.

"It is evident that AI is redefining higher education worldwide and we have had to rethink the evaluation process, especially with tools like ChatGPT. The submission of work is now accompanied by discussions and public debate," says Méndiz. "We are also developing methods to use AI in the classroom, which means reinventing the teaching profession. We have developed a project called ALFA, 'AI Learning for All, for both students and professors. This is driven by the Observatory on AI and New Technologies.

"We are also exploring how we can integrate AI into all programs, for example, in communications, medicine, law and any other field related to AI. At UIC Barcelona, simulation-based learning is very important. We are determined to be a cutting-edge university, which means observing how AI is being integrated into the curriculum. We also want to see that students are concerned about what is happening in society and how their knowledge can contribute to current problems, all while focusing on human-



Alfonso Méndiz Rector, UIC Barcelona

ism and care for people, not just technology." In addition to a focus on AI, the university is also implementing specific initiatives and practices to raise awareness around sustainable behaviors. This has seen UIC Barcelona named the most sustainable private university in Spain.

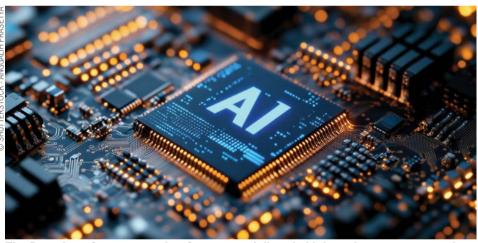
"Sustainability is one of the key pillars of our strategic plan," outlines Méndiz. "There is a unit that presents proposals to the board of directors on practical policies, such as eliminating plastic bottles from the cafeteria and policies to reduce consumption. We also installed solar panels to take advantage of Spain's sunlight and reduce energy consumption.

There is also a sustainability workshop where students from all degree programs participate. This has included architecture students creating a network of housing for the homeless and and literacy projects in Latin America. These projects can change lives."

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The Barcelona Supercomputing Center specializes in high performance computing.

Powering the Al revolution

Catalonia hosts many high-tech centers that are home to the world's most authoritative experts

elebrating its 20th anniversary this year, Barcelona Supercomputing Center-Centro Nacional de Supercomputación (BSC-CNS) has plenty to exalt given the prestigious entity has blazed a trail in promoting high performance computing (HPC) as an essential tool for global competitiveness in science and engineering.

From its sleek base in the heart of Barcelona, the public consortium manages the Red Española de Supercomputación (RES), and is a founder and host member of the former European HPC infrastructure PRACE (Partnership for Advanced Computing in Europe). BSC-CNS is now hosting entity for EuroHPC JU, the joint undertaking that leads large-scale investments and HPC provision in Europe.

The dynamic center is an active participant in core European HPC initiatives, which are carried out in close cooperation with other European supercomputing operators. BSC-CNS' research focuses on five key fields: computer sciences, life sciences, earth sciences, computer applications in science and engineering and computational social sciences and humanities.

BSC-CNS currently has more than 320 researchers working on the development of AI projects aligned with European values in a diverse range of areas. "Conceptual designs and engineering system developments are becoming increasingly complex and they require the use of the appropriate digital tools and extraordinary computing power," explains Mateo Valero, BCS-CNS director. "[We aim] to contribute to enhancing the technological sovereignty of the future Spanish and European technological and industrial base."

Such is the international standing and appeal of the supercomputing center, it recently enticed Cristian Canton from the US headquarters of Facebook owner, Meta, to the role of associate director. The industry expert was



Mateo Valero **Director, Barcelona Supercomputing Center**

head of responsible AI at the North American technology giant, a challenging role that stands him in good stead in his mission to maintain BSC-CNS' position at the forefront of AI research applied to multiple disciplines.

This especially important given it comes at a time when trade barriers and geopolitical uncertainty mean self-sufficiency in state-of-theart technology manufacturing like microchip production is more vital than ever before.

"With the current geopolitical context, achieving sovereignty is crucial — otherwise you depend on others," he told local media this summer. "We depend heavily on American and Asian chipmakers. It would be fantastic to have chips made in Spain or Catalonia.

There is also dependence on AI developed outside Europe. Building AI with European values is a key challenge. BSC-CNS is critical in the sovereignty race. We are one of many European players pushing forward."