Federal Ministry
Women, Science
and Research
Republic of Austria

Federal Ministry
Innovation, Mobility
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Republic of Austria

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Economy, Energy
and Tourism
Republic of Austria

Austrian Research and Technology Report

2025

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Preface

On the occasion of the 30th anniversary of Austria's accession to the European Union, this year's Austrian Research and Technology Report reflects on the impact of EU membership on science, research, innovation and technological development in Austria. Since joining the EU in 1995, Austria has steadily increased its participation in the European Research Framework Programmes, whose budget has continued to rise. Over time, Austria's participation has fostered greater internationalisation of its research and development activities. This was accompanied by enhanced collaboration between business, science and research and, through various Erasmus programmes, an increase in the mobility of Austrian students, teachers and researchers in the European Higher Education Area. Indeed, the current 9th EU Framework Programme for Research and Innovation, Horizon Europe (2021–2027), is the most ambitious research and innovation funding programme in EU history, launched with a budget of €95 billion. Austria's researchers have been notably successful in securing funding under this programme, with approvals exceeding €1.39 billion as of 12 January 2025. The vision of a single market for knowledge and research with the European Research Area (ERA) has been pursued since 2021 through the Pact for Research and Innovation and the first ERA Policy Agenda (2022–2024). Austria is regarded as a pioneer in implementing the ERA, thanks to its National Action Plan (ERA-NAP). The first ERA-NAP (2022–2025) includes 12 initiatives in areas such as open science, research careers and research infrastructures. The second ERA-NAP (2026–2028) is currently being developed based on the second ERA Policy Agenda 2025–2027.

A further focus of this year's report is on key enabling technologies (KETs), which are technologies with high cross-sectoral impact and systemic relevance for Austria's research and innovation ecosystem. KETs are crucial for addressing societal challenges, boosting competitiveness, and avoiding the so-called mid-tech trap, which is also outlined in the Austrian government's programme for 2025–2029. Austria's strengths with regard to key enabling technologies include advanced manufacturing technologies and materials, semiconductors, life sciences, and environmental technologies, as well as quantum physics and photonics. The development and expansion of these areas rely on collaboration across the entire innovation spectrum – from the specialised training of skilled professionals and researchers to basic research, application, and commercialisation of the technologies. Through their explicit focus areas in curricula and research portfolios, as well as their collaboration with companies at both national and European levels, both universities and non-university research institutions are making significant contributions to the research and development of key technologies. Additionally, a number of highly innovative Austrian companies are active in the field of key technologies.

The Research and Technology Report 2025 once again underscores Austria's position among the top three EU countries in terms of research and innovation expenditure. Austria has exceeded the European target of 3% of GDP for the eleventh consecutive year. In other RTI indicators and innovation benchmarks in the EU, Austria also ranks highly. For instance, Austria continues to increase its share of R&D employees within the labour force

and currently leads growth among the top five countries. The European Innovation Scoreboard highlights that Austria remains in the group of Strong Innovators, holding sixth place in the EU. The RTI rankings show that Austria maintains second place for STEM graduates and has increased the proportion of graduates in STEM subjects. Performance agreements with public universities for the years 2025–2027 earmark around one-third of the total budget for STEM fields. In terms of the complexity capital of the Austrian economy, the Economic Complexity Index 2022 reflects a high degree of complexity; Austria ranks third in the EU. And as far as joint publications between public and private partners are concerned, Austria has risen by one position and now ranks third in the EU comparison.

As of the end of April, Statistics Austria has not yet published a research intensity figure for 2025 due to the pending federal budget estimate. However, its global estimate for 2024 shows a 5.5 % increase in total R&D expenditure compared to 2023, reaching € 16.13 billion. This corresponds to a research intensity of 3.35 % of the revised nominal gross domestic product and represents a new arithmetical high. Approximately two-thirds of the R&D expenditure come from the domestic and foreign business enterprise sector, including distributions from the research premium, which rose to € 1.1 billion. The public sector accounted for 34.7 % of R&D expenditure, with the federal government alone contributing around € 4.5 billion – a key factor in the stability of Austria's research system.

In times of crisis, safeguarding the long-term future of society and the economy through science, research, technology, and innovation is more important than ever. The Austrian federal government has affirmed its commitment to maintaining a strong and internationally competitive research location by setting a target of 4 % for the research intensity. This goal will be pursued through clearly defined budgetary priorities in the next RTI Pact for the years 2027–2029, to be adopted by the federal government by the end of 2025.

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Content

Executive Summary

The Research and Technology Report is the status report on federally funded research, technology and innovation in Austria and is prepared on behalf of the Federal Ministry of Women, Science and Research (BMFWF, formerly BMBWF) in agreement with the Federal Ministry of Innovation, Mobility and Infrastructure (BMIMI, formerly BMK) and the Federal Ministry of Economy, Energy and Tourism (BMWET, formerly BMAW).

The research intensity reached a new high of 3.35 % in 2024

Austria's R&D expenditure totalled €16.13 billion in 2024. This corresponds to 3.35 % of gross domestic product (GDP), marking the highest research intensity recorded to date. The funding structure of this €16.13 billion is as follows: 41.87 % was contributed by the business enterprise sector and thus by domestic companies, 28.64 % by the federal government, and 16.20 % from abroad, including foreign companies as well as European Union (EU) and other international organisations. The research premium accounted for 7.21 %, while the regional governments and others, including the higher education and the private non-profit sector, provided 1.73 % and 4.35 %, respectively.

Corporate R&D in Austria is also strongly interconnected with international actors. According to the 2021 R&D survey, 21.59 % of R&D in the business enterprise sector was financed from abroad. This includes funding from the EU and other organisations. Of this share, nearly half was carried out by foreign-controlled companies. This highlights Austria's attractiveness as a research location for foreign companies.

The rising importance of key technologies

Key enabling technologies (KETs) play a critical role in enhancing competitiveness, productivity and addressing major societal challenges. Strategic KETs, such as artificial intelligence (AI), big data, quantum technologies, advanced microelectronics/semiconductors, sustainable technologies and advanced materials, are recognised as drivers of innovation. Austria demonstrates particular strengths in sectors such as production technologies, materials, life sciences and environmental technologies. Quantum research is one of Austria's recognised strengths in science. Within the European context, technological sovereignty – particularly through the promotion of key technologies – is increasingly seen as vital to ensuring global competitiveness, especially in relation to the United States and China.

Austria's universities, non-university research institutions and innovation networks make a significant contribution to this positioning, and thus to competitiveness. However, structural weaknesses remain, particularly in the area of digital technologies (e.g. AI, big data). Austrian policy is therefore implementing targeted funding programmes and measures to develop skilled labour and is investing in substantial infrastructure expansion. At European level, there is also a stronger focus on key technologies, for example through the Competitiveness Compass presented in January 2025 and initiatives such as STEP, IPCEI or the Digital Europe Programme.

Nevertheless, there is a need for an integrated European approach to strengthen key technologies to enable innovation potential in a coordinated and effective manner. In addition to targeted funding and the Excellence Initiative, international cooperation and the promotion of application-oriented expertise in businesses are crucial. All sectors in Austria must focus not only on the development of selected key technologies but also on the broad application of new technologies to ensure sustainable competitiveness. The expansion of critical research infrastructures and deeper participation in European initiatives are essential success factors in this regard.

Austria shows an upward trend in international RTI indicators

Austria's position in the Global Innovation Index (8th place) and on the European Innovation Scoreboard (6th place) has remained stable year-on-year. Austria performs particularly well in the RTI indicator for R&D

personnel. This indicator is above 2% for the second consecutive year. In 2023, Austria not only increased this figure again, but also achieved the highest growth among the top five countries. Austria has also made progress in improving the representation of women in research. In terms of STEM graduates, Austria again ranked second internationally in 2022.

In the number of scientific publications within the eight key technology fields analysed for the first time, Austria is among the leaders in two areas, including quantum technologies. Austria ranked sixth in the European Research Council (ERC) grants in 2023. Once again the goal set in the RTI Strategy 2030 (*FTI Strategie 2030*) of being among the top ten is met. The country also saw a slight improvement in its ranking for venture capital investments.

Austria as a key player in European RTI policy

Austria became a member of the EU on 1 January 1995, when the EU comprised 15 Member States. EU accession had a profound impact on many areas of politics and daily life, including science, research, technological development, and innovation. Austrian businesses, research institutions, universities and researchers quickly recognised and leveraged the benefits of European research funding. Within a few years, Austria transitioned from being a net contributor to a net recipient in this area. This positive development was underpinned by a proactive national research policy that provided adequate funding for R&D as well as advisory support. Austria has been and remains actively involved in shaping the European Research Area (ERA) and the European Higher Education Area, implementing EU-agreed policies across a broad range of national measures and in collaboration with domestic stakeholders. Overall, Austria's accession to the EU has triggered a series of reforms and behavioural changes, from which the excellence, competitiveness and internationalisation of Austrian science, research and innovation continue to benefit.

From the 4th EU Framework Programme for Research, Technology and Development to Horizon 2020 (the 8th European Framework Programme), Austrian R&I actors secured more than €4 billion in funding. This strong participation has continued in the current Horizon Europe Framework Programme. By its halfway point, Austria has successfully acquired a further €1.4 billion. The increasing share of Austrian project coordination is particularly noteworthy, as is the above European average success rate, and the strong involvement of the business enterprise sector, the higher education sector and non-university research institutions. Austrian stakeholders are particularly active in the following Horizon Europe Pillar 2 clusters: "Culture, Creativity and Inclusive Society" (Cluster 2), "Digitalisation, Industry, Space" (Cluster 4) and "Climate, Energy and Mobility" (Cluster 5).

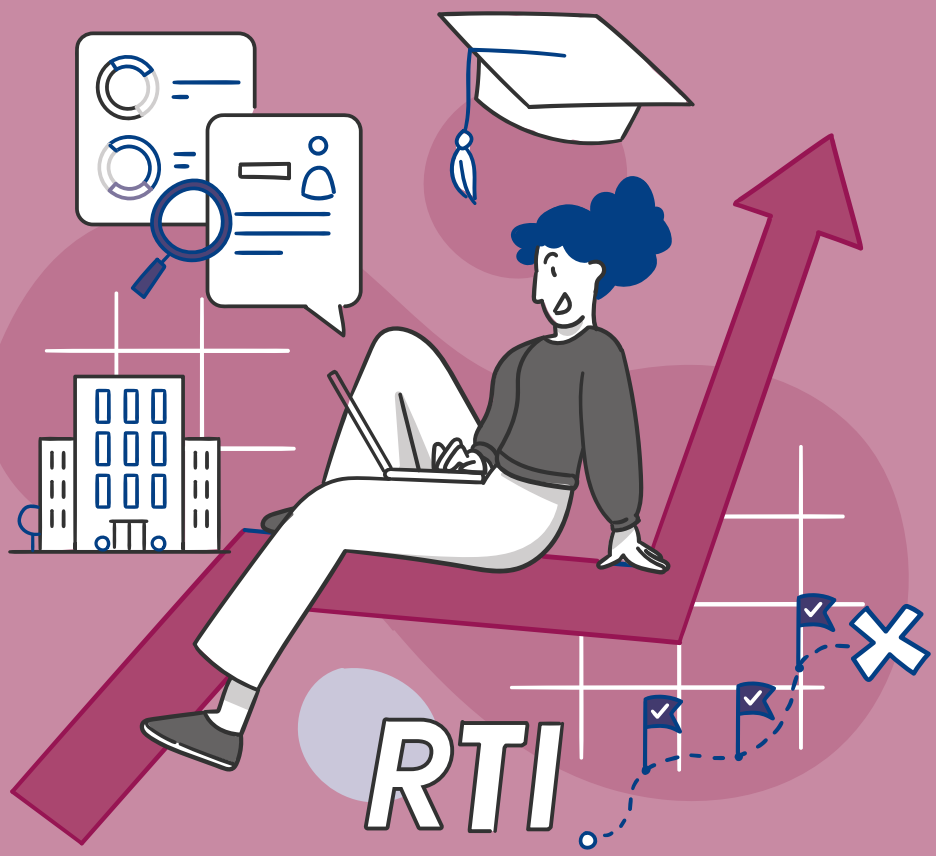
Beyond the Framework Programme, the implementation of the National Action Plan for the European Research Area is progressing rapidly. This translates the European ERA Policy Agenda into a structured set of initiatives, measures and objectives tailored to the Austrian policy context. Austria has established twelve national ERA initiatives to implement the ERA Policy Agenda, each consisting of between two and six individual measures, underpinned by milestones, targets and indicators. The current Research and Technology Report illustrates the progress in implementing the National Action Plan with two initiatives: Initiative 05 "Strengthening trust in science" and Initiative 06 "Participation in European R&I partnerships".

Monitoring in accordance with the Research Financing Act

The RTI Strategy 2030 is built on a clear commitment to improving efficiency and output in the RTI system. Central anchor points include the Excellence Initiative and a comprehensive technology initiative. These elements are fully supported by the federal government's programme for 2025–2029.

Based on the Research Financing Act (FoFinaG) and in accordance with the federal ministries, the RTI Strategy is implemented via three-year RTI Pacts. These RTI Pacts form the basis for performance or funding agreements with the eleven central research and research funding institutions, whose profiles and performance developments are detailed in this Research and Technology Report.

1 Current developments



Chapter 1 provides an overview of current national developments in research, technology and innovation policy as well as higher education policy. Chapter 1.1 outlines the implementation status of the RTI Strategy 2030 from a retrospective and forward-looking perspective. In this context, current, predominantly new RTI sub-strategies and initiatives at federal level are also discussed.

1.1 Implementation of the RTI Strategy 2030, review, current status and outlook

RTI Strategy 2030 – Review

The Research, Technology and Innovation Strategy 2030 (RTI Strategy 2030), serves as Austria's key policy framework for RTI. It succeeds the federal government's first RTI Strategy (2011–2020) and forms part of a forward-looking initiative for research, technology and innovation.[1] It is based on the comprehensive analysis "OECD Reviews of Innovation Policy: Austria 2018".[2]

The strategy focuses on three overarching goals: to catch up with international leaders and strengthen Austria as an RTI location, to focus on effectiveness and excellence, and to prioritise knowledge, talent and skills.[3] The target values (often rankings in international benchmarks) reflect impact indicators, some of which can only be influenced indirectly or to a limited extent by RTI Pact measures (e.g. indicators of the Global Innovation Index or the IMD World Talent Ranking).

The RTI Strategy 2030 reflects a strong commitment to efficiency and increasing output within the RTI system. Core pillars include, for example, the Excellence Initiative and a Technology Initiative. Another important aspect is the strategic focus on "utilising the opportunities of a united Europe". These elements are also fully endorsed by the 2025–2029 government programme, embedded in the overarching goal of increasing the research intensity to over 4 %.

Implementation of the strategy is governed by the Research Financing Act (FoFinaG) through three-year RTI-Pacts in accordance with the federal ministries. These RTI Pacts define the federal government's strategic RTI priorities and the allocated budget for achieving them; the RTI Pact covers the entire research budget of the BMFWF (GB 31.03), BMIMI (UG 34) and BMWET (UG 33). This structure is designed to enhance coordination and efficiency while avoiding duplication in the implementation. The first two RTI Pacts for 2021–2023 and 2024–2026 have established a stable and reliable framework for RTI stakeholders, representing integrative milestones in the Austrian RTI landscape. The FoFinaG also provides the governance framework of the eleven central non-university research and research funding institutions: OeAW, ISTA, AIT, SAL, LBG and GSA as well as FWF, FFG, AWS, CDG and OeAD. Following the adoption of the RTI Pact 2024–2026 in December 2022 and the priorities contained therein, performance or funding agreements with all research and research funding institutions were concluded in 2023 for the full three-year term. These agreements form the essential mechanism through which the RTI Pacts are operationalised.

To ensure the integration of public universities as the principal providers of basic research in Austria, the current Austrian University Development Plan (GUEP) indirectly support the goals and action areas of the RTI strategy and the pact that aligns with the priorities of the GUEP.

Current status and outlook

The development of Austria as a business location in relation to the implementation of the RTI Strategy 2030 is continuously monitored and analysed. Key elements of this process include the current Research and Technology Report, monitoring by the RTI Task Force, and the RTI Monitor of the Austrian Council for Sciences, Technology, and Innovation (FWIT Council).[4] The interministerial RTI Task Force plays a special role in this context. It serves as the coordination and steering body for the implementation of the RTI Strategy 2030

1 See presentation to the Council of Ministers 25/63 of 16 August 2018: Zukunftsoffensive für Forschung, Technologie und Innovation; available at https://www.bundeskanzleramt.gv.at/dam/jcr:d016f93a-bd3f-43da-b5a8-3db5a003fd84/25_63_mrv.pdf

2 OECD Reviews of Innovation Policy: Austria 2018; Paris, 2018; available at: https://www.oecd.org/en/publications/oecd-reviews-of-innovation-policy-austria-2018_9789264309470-en.html

3 See Federal Government of the Republic of Austria (2020).

4 See FWIT: RTI Monitor, in particular the section "Objectives of the RTI Strategy 2030"; available at https://fti-monitor.forwit.at/O/system

and its composition reflects the cross-ministerial governance structure of Austria's RTI policy. Chaired by the BKA (deputy chair: BMF), the RTI Task Force brings together senior-level representatives from the BMFWF, BMWET, BMIMI.

The ten-year RTI Strategy includes a provision for a mid-term external evaluation to assess the progress towards its defined objectives and indicators. In line with this, the departments of the RTI Task Force commissioned a mid-term evaluation in autumn 2024. This will be carried out by the Austrian Institute of Economic Research (WIFO) in cooperation with the Austrian Institute of Technology (AIT).

The evaluation focuses on the following key questions:

- Are the objectives of the RTI Strategy still considered realistic and relevant in light of the changes in framework conditions such as the pandemic, wars, etc.?
- Where do the evaluators see the most urgent need for action to ensure that the individual goals of the RTI Strategy 2030 can be achieved in the course of the third RTI Pact?
- What actionable recommendations emerge from the evaluation in terms of achieving the goals set and implementing the fields of action?

The publication of the evaluation report is scheduled for summer 2025. Both the results of the mid-term evaluation and the proposals of the FWIT Council will be considered in the drafting of the third RTI Pact (2027–2029), which is to be adopted by the federal government by the end of 2025.

RTI-relevant sub-strategies

With the RTI Strategy 2030, Austria aims to position itself internationally as a technology and innovation leader. Numerous sub-strategies initiated within the RTI sector and at the federal level support this overarching goal, some of these strategies are cross-cutting and broad in scope, while others are topic-specific and tailored to selected stakeholder groups.

As a complement to the implementation of the RTI strategy, a selection of current RTI-relevant sub-strategies is presented below. The focus is on recently implemented strategies or significant developments within existing strategies, as many ongoing strategies, such as the Transformation Initiative, the IP Strategy, the Hydrogen Strategy for Austria, etc., have already been presented in detail in previous reports.

Excellence Initiative excellent=austria

The federal government's Excellence Initiative pursues the following key objectives:

- Support for outstanding basic research[5] – open to all disciplines, aligned with the highest international standards and allowing space for unconventional approaches
- Greater promotion of gender equality and diversity, creation of attractive career prospects for excellent junior researchers
- Expansion of sustainable collaborations (national and international) to maximise synergies
- Strengthening Austrian universities and non-university research institutions in global competition
- Enhancing the international reputation of Austrian research institutions
- Promoting the transfer of research results to industry and society

The initiative builds on a 2018 concept of the High Level Group (Chairpersons of the Austrian Science Board, the Austrian Council for RTD, the ERA Council Forum[6] and the President of the FWF) and is designed as a ten-year programme. The Excellence Initiative comprises three funding streams, with the following elements to be implemented by 2026:

5 For the proven short, medium and long-term impact of funded FWF projects, see the study by Janger et al. (2024): https://www.fwf.ac.at/aktuelles/detail/wifo-ihs-jr-grundlagenforschung-lohnt-sich-schneller-und-umfangreicher-als-angenommen; see also the policy brief by Ecker et al. (2024) "Strong basic research for more innovation, competitiveness and social prosperity" at: https://www.wpz-research.com/wp-content/uploads/2025/01/PolicyBriefGrundlagenforschung_Layout_06012024_barrierefrei.pdf

6 Merged into the Austrian Council for Sciences, Technology, and Innovation (FWIT Council) on 1 January 2023.

- Clusters of Excellence (COE): Consolidation of existing strengths into forward-looking large-scale projects
- Emerging Fields (EF): Enabling new research fields and topics with high risk and innovation potential

Since 2023, nine COEs have been approved: The first five in March 2023, followed by four "approved but not funded" COE projects from the first call, which received funding in 2024. These research teams will receive around €260 million over five years – 60% funded by the FWF and 40% contributed by the participating research institutions. The COEs were designed by the High Level Group to be eligible for a further five years of funding, subject to a positive evaluation.

Additionally, five EF projects from the first round of calls totalling €31 million in FWF funding were approved in 2024.

Under the 2024–2026 FWF funding agreement, the excellent=austria initiative will continue, with a further EF call planned for award in 2026.

Austrian Research Infrastructure Action Plan 2030

The Austrian Research Infrastructure Action Plan 2030 was developed by the RTI Research Infrastructure Working Group to accompany the RTI Strategy 2030 and was published in 2023. The action plan focuses on the expansion of research infrastructure in Austria and participation in European and international large-scale research infrastructure. The guiding principle of the action plan is the coordinated procurement and cooperative use of research infrastructure. Research infrastructure activities will be implemented up until 2030 as part of the action plan. The research infrastructure database[7], which is operated continuously and successfully by the BMFWF, serves as a central instrument for monitoring the action plan.

The targeted measures in the action plan up until 2030 relate to

- Creating flexible access to research infrastructures for science and industry
- The integration of national infrastructures into European and international large-scale research infrastructure projects
- Evidence-based planning and long-term (competitive) funding models
- Digitalisation and the expansion of (research) data infrastructures and (research) data management

A significant development was achieved, among other things, as part of the performance agreement negotiations with the public universities: For example, the Austrian Research Infrastructure Action Plan 2030 and the research infrastructure database were contractually included at all universities. In the 2025–2027 performance agreement period, the "guideline of coordinated procurement and cooperative use of research infrastructure" is thus continuously provided for both in the implementation of the action plan and in the further development of the research infrastructure database. In 2024, the research infrastructure database, which serves as a tool to support the Research Infrastructure Action Plan, was recognised by the European Public Service Award (EPSA).

DNAustria

Science plays a central role in fostering social cohesion. This is why DNAustria has set itself the objective of strengthening trust in both science and democracy, as the two are closely interlinked. This includes, in particular, highlighting how science shapes our daily lives, showcasing current research in Austria and its relevance, as well as illustrating how everyone can get involved and contribute to shaping the future.

7 https://forschungsinfrastruktur.bmfwf.gv.at/en

To achieve these goals, the former BMBWF (now BMFWF) has implemented a range of measures and initiatives:

- Austria Science Communication Center (ASCC)[8]
- Austria's largest centre of excellence for contemporary science communication is currently being established at the *Aula der Wissenschaften*. It is operated by the Austrian Academy of Sciences, the University of Vienna, and the Vienna University of Technology.
- Discover.DNAustria[9]
  This new central information platform makes science and democracy education programmes easily accessible to everyone, especially schoolchildren, school classes, teachers, (grand)parents and others interested in science and democracy, with just a few clicks.
- Science meets School (*Wissenschaft trifft Schule*)
  Development and expansion of formats, with a particular focus on STEM (e.g. new peer learning formats like Science Clubs or Science Week).
- Science meets Higher Education Institutions (*Wissenschaft trifft Hochschule*)
  Science communication is also being promoted at the HEIs as part of the 2025–2027 performance agreements, by integrating it into teaching and learning, in particular through the introduction of new and revised course offerings, and also by emphasising outreach activities, including strong participation in those BMFWF initiatives such as Science Ambassadors (*Wissenschaftsbotschafterinnen und -botschafter*).
- Incentives and re-evaluation of performance in science and research
  Another focus of the 2025–2027 performance agreements is the revision of incentive systems and the creation of the necessary conditions for science communication and science engagement. Additionally, the development of performance criteria aims to open up new career paths and prospects for (young) researchers.

Chips Act

The EU Chips Act provides a framework for more comprehensive support of highly innovative projects and products in Austria across sectors such as power electronics, communication technology, packaging, processors, process technologies and sensors. This support is implemented through R&D activities funded under Pillar 1 and the operations of the Chips Joint Undertaking (Chips-JU). Austria is participating in the Pillar 1 measures with around €90 million for the period 2024–2026. Furthermore, production capacity expansion will be supported under Pillar 2. In total, €2.8 billion in public funding has been allocated for investments in chip production through to 2031.

Additional synergies in semiconductor research are expected through an increased budget for the IPCEI Microelectronics II initiative to a total of €225 million.

Responsibility for implementing the EU Chip Act in Austria is shared between the BMWET (lead responsibility for Pillars 2 and 3) and the BMIMI (lead responsibility for Pillar 1). These ministries represent Austria on the European Semiconductor Board, a steering group that promotes harmonised implementation of the regulation, as well as international cooperation and information exchange. Table 1-1 provides an overview of the current status of the individual measures in the various pillars.

8 https://www.oeaw.ac.at/news/oesterreichs-groesstes-science-communication-center-entsteht-in-wiener-innenstadt-1
9 https://discover.dnaustria.at/

Table 1-1: Selected measures in Austria as part of the implementation of the EU Chips Act

Column	Measure	Description	Status
1. Initiative "Chips for Europe"	Competence centres for semiconductors	The core tasks of the competence centres include raising awareness, publicising services, promoting success stories, facilitating access to design platforms and to the pilot lines, supporting interested users in the development of semiconductor solutions through technology transfer; providing access to expertise in areas such as legal compliance and business development or participating in the organisation of a European network of chip competence centres.	Project commenced on 1 January 2025.
	Establishment of pilot lines	Austrian actors are involved in transnational consortia participating in the following pilot lines (PL):[10] • Advanced Fully Depleted Silicon on Insulator Technologies Targeting 7nm (PL2) • Advanced Packaging and Heterogeneous Integration (PL3) • Advanced Semiconductor Devices Based on Wide Bandgap Materials (PL4) • Advanced Photonic Integrated Circuits (PL5)	Project selection for PL2, 3 and 4 has been completed, with some projects already underway. Transnational project selection for PL5 is finalised (national selection process still ongoing).
	Design platform	The design platform plays a crucial role in strengthening Europe's innovative strength and competitiveness in semiconductor technology. The platform is designed to facilitate access to advanced design tools and pilot production lines for prototyping, testing and experimenting with cutting-edge chips. It serves as a one-stop shop, consolidating resources and expertise to support the development and manufacture of new semiconductor products.	Consortium selected to set up the central platform (with AT participation), tender for decentralised nodes planned (both exclusively European funds); additional national co-funded calls for further tools and SME-oriented usage promotion are expected in 2025.
	Quantum Chips	Preparatory measures are underway for the design of transnational quantum technology pilot lines. The objective is to establish stable pilot lines by advancing manufacturing and integration technologies tailored to the needs of the quantum industry over the next decade. Several pilot lines for the production of quantum chips are planned: one based on trapped-ion technology (planned under Austrian coordination), 2–3 additional pilot lines based on alternative technologies (e.g. photonics, diamond or superconductor technologies).	Three European Framework Partnerships were selected in response to 2024 calls (both transnational and national funding). The first three grant agreements are expected to be concluded in 2025. An additional call for a further Framework Partnership is anticipated in 2025, with a possible grant agreement in 2026.
	Chip fund	The term Chip Fund encompasses investment measures by the European Commission, in cooperation with the European Investment Bank Group and promotional banks and institutions from the Member States, aimed at establishing a dedicated investment facility for semiconductor projects. The fund is particularly intended to support the growth of start-ups and SMEs as well as investments along the entire value chain.	Currently in planning (managed by the European Commission (EC), no direct national involvement).
2. development of production capacities	"First of a Kind" production facilities	In autumn 2023, a call for expressions of interest from companies for the promotion of a "First of a Kind" production facility for chip manufacturing. The call generated considerable interest, and the first companies have been identified. Their applications are now under review by the Commission. [11]The programme will be administered by the aws (Austria Wirtschaftsservice).	In the approval process.

10 No Austrian participation in "Pilot line on advanced sub 2 nm leading edge system on chip technology (PL1)".

11 https://www.bmwet.gv.at/dam/bmdwgvat/content/Themen/Wirtschaftsstandort-Österreich/Chips-Act/Aufruf-Interessensbekundung---Chips-Act.pdf

Column	Measure	Description	Status
3. coordination mechanism	Analysing semiconductor supply chains	The Supply Chain Intelligence Institute Austria (ASCII) has conducted an analysis of the semiconductor industry's supply chains, with a focus on identifying regional dependencies, strengths, development potential, and opportunities for new business locations. A risk assessment of semiconductor supply chains is also being carried out at EU level.	Already published.

Diversitec – Leading Innovation

Diversitec – Leading Innovation is an initiative launched by the BMIMI to promote an attractive research and technology sector (RTI) in Austria. The initiative aims to foster open business cultures and demonstrate the added value of diversity to RTI companies. Technology companies that embrace diversity and participation benefit in many ways. They are demonstrably more innovative, more creative and more attractive to highly skilled professionals. In the global competition for top talent, open corporate cultures and modern, inclusive working environments are essential—especially in the RTI sector. Through targeted measures in organisational development and management culture, the initiative supports the leadership of research and technology companies in unlocking these benefits—for their own success and for Austria as a location of innovation. Diversitec collaborates closely with numerous women's and diversity networks, as well as RTI companies, to develop and promote a shared agenda for Austria as a progressive location for innovation.

The initiative offers:

- Overview
  The platform provides an overview of a wide range of events, dedicated networks, support schemes, and funding opportunities for RTI companies.
- Networking
  Online and in-person events foster the direct exchange of experiences, joint learning and visibility.
- Support
  Diversitec brings together expertise on innovation culture and strengthening of diversity, participation and equality in the RTI sector. The initiative offers practical tools including guidelines, case studies, research findings and advice.
- Motivation
  Showcasing leaders and changemakers in the RTI field who are advancing cultural transformation and using their experiences to inspire new approaches to organisational development.

National Energy and Climate Plan (NEKP) – research, innovation and competitiveness dimension

The National Energy and Climate Plan for Austria (NEKP) for the period 2021–2030 outlines strategic goals in the fields of research, innovation and technological development that play a key role in the decarbonisation and transformation of the energy and economic system. The objectives of the NEKP therefore focus on bringing research results to market, enhancing the global visibility of Austrian research institutions and innovative companies and positioning Austria as a technology leader in energy-related sectors.
The measures and activities of the NEKP include

- RTI missions focused on energy and mobility transition, circular economy and production technologies as well as climate-neutral cities.
- Development and large-scale real-world testing of technologies and solutions to expand technological areas of strength.
- Systemic integration of existing technologies and solutions in order to develop overall concepts.

- Promotion of transformative RTI initiatives such as “climate-neutral industry”.
- Active support for social transformation, including skills development, promotion of diversity and equality, as well as training and further education.

The NEKP was updated in 2024 and submitted to the European Commission. Compared to the 2019 version, the revised plan reflects significant changes prompted by new conditions and challenges, particularly in the energy sector. With regard to RTI, the plan refers to new priorities established under the **2024–2026 funding agreement** with the Austrian Research Promotion Agency (FFG), the RTI initiative for the transformation of industry, and a stronger focus on measurable impact compared to 2019.

AI Implementation Plan 2024

With the Artificial Intelligence Mission Austria 2030 (AIM AT 2030), the Austrian federal government has developed a strategy to promote the responsible use of artificial intelligence (AI), strengthen Austria as a centre for research and innovation and secure the country’s competitiveness. The AI Implementation Plan 2024 builds on and expands the existing AI strategy AIM AT 2030 by introducing new measures across the policy areas of all by then twelve federal ministries.

The 2024 implementation plan outlines 47 concrete measures to be implemented or initiated in the short to medium term. These measures are guided by four horizontal focal points, which are considered societal priorities:

- Trustworthiness of AI: Ensuring ethical standards and transparency in the development and deployment of AI systems.
- Resilience and security through and for AI: Supporting the development of robust and secure AI applications that contribute to the resilience of critical infrastructure.
- Climate neutrality and sustainability through and for AI: Leveraging AI to achieve environmental goals, such as energy efficiency and climate protection.
- Technology sovereignty and business location: Strengthening national expertise in key technologies and supporting the domestic economy through AI-driven innovation.

The 47 measures are grouped into the following vertical areas of application:

- Research, innovation and business
- Education and skills
- Administration and citizen services
- Governance and strategic planning

In addition to the adoption of the 2024 implementation plan, which complements and specifies the existing AI strategy AIM AT 2030 with new measures, the organizational structure was further developed to achieve an improved national governance. In addition to the already established AI Policy Forum – an interministerial working group involving all ministries – a new AI Advisory Board, an AI Stakeholder Forum comprising organisations from business, research, civil society, media, and industry, as well as an AI Service Center at RTR GmbH were set up.

Creative Industries Council

The Creative Industries Council aims to increase the visibility of the creative industries and provide impetus for improving the creative industries ecosystem. It also serves as a bridge to other ministries and institutions. In this way, the creative industries are to be anchored even more firmly in innovation policy in the long term and integrated into economic and social transformation.

With the establishment of the Creative Industries Council in September 2024, the Creative Industries Advisory Board of the Ministry of Economic Affairs (now BMWET), which had existed since 2019, was dissolved.

Key goals and functions of the Creative Industries Council are to promote better integration of the creative industries into innovation policy and to emphasise

their importance for economic and social transformation. This is accompanied by numerous activities:

- Advising and supporting the BMWET in the implementation of creative and innovative policy measures.
- Acting as a conduit for the creative industries community
- Strengthening the creative industries as a driver of innovation through targeted support measures.
- Supporting the implementation of the Innovation Programme for the Creative Industries 2030 to ensure that the full potential of the creative industries is realised.

Innovation Programme Creative Industries 2030

Building on the Creative Industries Strategy 2016, the Innovation Programme Creative Industries 2030 aims to enhance competitiveness and foster innovation within Austria's creative sector, with a focus on ecological, social, and digital transformation.

Core components of the programme include:

- Creation of supportive conditions for sustainable and digital innovations.
- Expanding skills: Strengthening the skills of the creative industries to actively shape the transformation to sustainability and digitalisation.
- Expand partnerships: Promoting collaboration between business, academia, research institutions and public bodies.
- Strengthen internationalisation: Utilisation of global networks for the further development and promotion of innovations.
- Developing new markets: Tapping into future markets through creative services and innovative business models.
- Creating supportive framework conditions: Promoting an environment that favours innovation and transformation.

The Innovation Programme for the Creative Industries 2030 introduced an enhanced framework that places greater emphasis on economic, social and environmental transformation. The creative industries are recognised as key players in the innovation ecosystem, making a significant contribution to shaping a sustainable future through their creative and innovative capacities. The strategic focus emphasises partnerships between business, science and research as well as the contribution of the creative industries to achieving the Sustainable Development Goals (SDGs) and the EU Green Deal.

Startup Council

The Startup Council is a committee of experts from Austria's startup ecosystem, established to improve the framework conditions for startups and innovative growth companies in Austria.

Founded in 2022, the Startup Council provides ongoing advice to the BMWET on the development of startup-related measures. Its work is embedded within a comprehensive startup strategy, which is structured around two strategic goals: firstly, embedding a culture of innovation across society, science, industry and the public sector. Secondly, creating attractive framework conditions for Austria as a location for innovation-driven business.

The Startup Council advocates in particular for greater mobilisation of private capital and for process simplification. It emphasises the need for an innovation ecosystem that significantly strengthens Austria as a business location (acceleration of developments) through disruptive solutions. Key areas for improving framework conditions are talent, capital, market and infrastructure access, and process efficiency. The Council acts as an independent, non-directive advisory body to the BMWET. The members of the Council perform their duties on an honorary basis.

aws Spin-off Initiative

The aim of the aws Spin-off Initiative is to further develop a strong ecosystem for academic spin-offs in Austria by promoting the commercialisation of research and development results. The initiative is intended to strengthen the bridge between academic research and the business sector and to improve access to venture capital.

Launched in September 2024, the initiative is expected to:

- increase the number of founded spin-offs and spin-ins in Austria,
- improve the connections between academic research and business,
- strengthen innovation potential and competitiveness, and
- improve access to venture capital for research-based start-ups.

The initiative consists of two modules:
Module 1: Start-up support for professional spin-off structures at universities

- Support for the establishment of spin-off hubs at universities
- Partial coverage of operational costs in the start-up phase
- Volume: €1 million

Module 2: Start-up funding for private investors

- Mobilisation of private venture capital for spin-offs
- Capital commitments to experienced venture capital (VC) funds
- Investments at standard market terms
- Volume: €7 million

A particular focus will be placed on mobilising private venture capital through targeted investment structures. This will be supported by:

- Expansion of investment opportunities through cooperation with experienced VC funds
- Providing structured support for the development of spin-off hubs at higher education institutions

1.2 Current developments in the higher education sector

Higher education institutions are among the key players in an internationally competitive research, technology and innovation (RTI) system. In addition to providing high-quality education and training, they play a central role in both basic and applied research, thereby contributing significantly to Austria's overall innovation landscape. For some time now, knowledge and technology transfer—along with the establishment of businesses such as spin-offs—have increasingly come into focus within Austrian RTI policy. Through collaborative, interdisciplinary and inter-university approaches in both teaching and research, universities are also supporting socio-ecological and economic transformations with scientific insights and knowledge generated within higher education institutions.

Against this backdrop, an overview is provided on the conclusion of the new performance agreements with Austria's public universities and the 30th anniversary of the Austrian universities of applied sciences. A particular focus on exploring new approaches in academic education and research is the driving force behind the newly established Institute of Digital Sciences Austria (Interdisciplinary Transformation University, IT:U), which is currently being developed. Similarly, the newly founded Ignaz Semmelweis Institute, an inter-university institute, aims to become a national centre for medical research in the field of infectious diseases.

Conclusion of the performance agreements with the public universities 2025–2027

With the conclusion of the performance agreements (*Leistungsvereinbarungen*), Austrian public universities will have access to a budget of around €16 billion for the period 2025–2027, which is more funding than ever before. Compared to the previous period 2022–2024, this represents an increase of €3.9 billion or 31.7%. In addition to offsetting inflation, this increase reflects the continued strong political commitment to supporting the universities' growth trajectory.

Of the approx. €16 billion, €14.5 billion will be allocated to the public universities via performance agreements. From 2016–2027, this marks an increase of €5.7 billion, equivalent to a 65.5% rise in the university budget. This does not include the budget for the newly established IT:U in Upper Austria. In addition, €140.6 million will be made available under § 12 (10) of the Universities Act (UG) as part of a reserve for special funding requirements and to supplement performance agreements. Further initiatives that are important for Austria's scientific and university landscape will also receive funding, including:

- €430 million for construction projects due to be realised during the 2025–2027 period. These include, for example, the Meduni Campus *Mariannengasse* of the Medical University of Vienna and the Graz Centre of Physics. Both are currently in the development phase.
- Funding for ongoing additional clinical expenses, covering increased costs for medical teaching, research and science at hospitals, including support for the Medical Faculty of the University of Linz, and a reserve to address potential increases in personnel costs at the medical universities.
- €45 million for the new focus on cybersecurity, intended to strengthen science and academic security at Austria's universities and to ensure the development of a secure technical infrastructure.

The indicators used in student place funding continue to highlight the importance of study accessibility in connection with exam activity. In light of this, the BMFWF emphasised the importance of initiating and implementing a wide range of qualitative measures to improve access and studyability in addition to quantitative targets in the respective 2025–2027 performance agreements, not least in order to reduce structural barriers. The initiatives are designed to cover the entire student life cycle – starting from information on study choices, through the commencement and progression of studies, and extending all the way to graduation.

In addition, the performance agreements 2025–2027 again provide for a reserved budget for social measures (keyword: social dimension) of €67 million (up to 0.5% of the global budget), which will be retained by the BMFWF. This portion of the budget will only be disbursed to the public universities in the third year of the performance agreement period, i.e. 2027, upon evidence of successful implementation of the planned measures.

Thematically, two thirds of the 2025–2027 performance agreement budget is allocated to the fields of life sciences and STEM (science, technology, engineering, and mathematics). Specifically, €5.3 billion or 36.4% is earmarked for life sciences including medicine, while €4.4 billion or 30.2% is designated for STEM subjects. This also supports the goals of the RTI Strategy 2030 to increase the proportion of STEM graduates by 20% and to raise the percentage of women among graduates in technical disciplines by 5% compared to 2020.

The effectiveness of these measures is reflected in the rising popularity of computer science programmes, which, as of the winter semester 2023/24, became the second most enrolled field of study at Austrian universities.

In the academic year 2019/20, Austrian universities recorded a total of 5,544 first-time STEM graduates. With a view to tackling skills shortages especially in areas vital to the development and application of key technologies, the target for 2025/26 is to achieve 6,065 first-time STEM degrees across all universities

concerned. In 2030, this figure is expected to reach a total of 6,500, with a female participation rate of 43 %.

30 years of universities of applied sciences in Austria – expansion and innovation, with a focus on increasing study places in STEM

With their practice-oriented, application-based education, universities of applied sciences (UAS) make a significant contribution to meeting the labour market demand for STEM professionals. Based on the Development and Financing Plan for universities of applied sciences 2018/19–2022/23 and the subsequent Development and Financing Plan 2023/24–2025/26, a total of 2,969 additional federally funded study places have been created in the sector since the 2018/19 academic year, 2,520 of which are in the future-oriented fields of STEM and digitalisation and sustainability. Throughout this period, the expansion of the universities of applied sciences has focused on increasing the number of study places and thus the number of graduates in STEM and related areas such as digitalisation and sustainability.

In 2024, Austria's universities of applied sciences celebrated their 30th anniversary – a fitting occasion to initiate the most significant expansion phase since the early 2000s. Starting in the 2025/26 academic year, a total of 800 additional federally funded UAS places will be made available. This figure is more than double the 350 additional places listed in the current UAS Development and Financing Plan and 100 places more than originally planned in the call for applications for the 2025/26 expansion.

This expansion of the UAS will deliver graduates who are urgently needed as specialists and leaders in the labour market, particularly in future areas such as key technologies.

Of the total of 800 additional first-year UAS places, 351 are allocated to STEM, digitalisation and sustainability; 449 relate to other areas with a particularly acute need for specialists, such as social work.

This means that the current UAS plan has therefore not only been realised but exceeded: According to the current UAS Development and Financing Plan 2023/24–2025/26, a total of 1,050 new federally-funded study places in future fields of STEM with focus on digitalisation and sustainability are to be created by 2026. The first 350 places were already implemented in the winter semester 2023/24, followed by another 353 in autumn 2024. The third call for proposals has thus successfully completed the last expansion step for the current period of the 2025/26 academic year.

Looking ahead, €2 billion in total investment is earmarked for the UAS sector for the period 2024–2027. The federal government is providing €94.5 million by 2027 for the expansion of UAS based on the UAS plan and also to mark the 30th anniversary.

In 2019/20, UAS recorded 2,986 first-time STEM graduates. By 2023/24, the number of graduates had increased to 3,155. The aim of increasing STEM study places is to further increase the number of STEM graduates. The target has been set to reach 4,300 first-time STEM graduates by 2030. The proportion of female graduates in technical subjects was at 21.8 % in the 2019/20 academic year, compared to 25.7 % in 2022/23. The federal government's expansion strategy also aims to further increase the share of women among graduates in technical fields. In doing so, the UAS sector makes a significant contribution to achieving the quantitative goals of the RTI Strategy, in particular to increase the number of STEM graduates by 20 % and to raise the female share in technical fields by 5 %.

Institute of Digital Sciences Austria (Interdisciplinary Transformation University, IT:U)

Technical progress and the increasing digitalisation in all areas of society and the economy pose major challenges, which is why the Austrian federal government announced the establishment of the new Technical University for Digitalisation and Digital Transformation in summer 2020 and formally founded it by law on 1 July 2022.

In autumn 2024, IT:U[12] started its regular study and teaching activities. Since the start of the 2024/25

12 https://it-u.at/en/

winter semester, eleven founding professors with their own research groups, and over 30 PhD students have been active at IT:U. In the future, IT:U is set to expand gradually as outlined in its 2025–2027 performance agreement.

A defining feature of IT:U is its flexible and agile structure, both in terms of organisation and working methods, especially in teaching and learning. IT:U pursues a project-based, practice-orientated learning approach and its own educational model that emphasises small group learning. To this end, IT:U has already set up six LearnLabs, not only to apply a project-based learning methodology but also to further develop it. By 2027, an additional three to five LearnLabs are planned.

Another unique feature of IT:U is that English is the working language across the entire university and its study programmes. This plays a key role in attracting international students and academics, a fact already reflected in the current high proportion of non-German-speaking PhD students at IT:U.

IT:U is strongly committed to interdisciplinary research. In addition to its core research focus "Computational X", which encompasses basic research at the intersection between computer science and other disciplines, three socially and technologically significant research priorities were identified in 2024. These are: "Trust", which addresses the challenge of how digital systems can be designed and developed to inspire public confidence; "Collaboration", which explores the question as to how people can collaborate in digital systems; and "Learning", which explores the question as to how learning can be effectively supported through and with digital systems in the future.

IT:U currently operates a doctoral school offering two PhD programmes: the PhD programme "Digital Transformation in Learning", run in cooperation with the Johannes Kepler University Linz (JKU), explores methods of innovative teaching and learning using intelligent learning technologies such as AI and digital tools; the second PhD programme "Computational X" supports interdisciplinary research by combining natural sciences, social sciences and humanities with computer sciences, the programme remains open in terms of thematic focus. Both PhD programmes started with a total of around 15 students. The first Master's degree programme in Interdisciplinary Computing will start in winter semester of 2025/26, aiming for a total of 232 students by 2027. Preparations are also underway to begin offering the first Bachelor's degree programmes from 2029.

As a network university, IT:U places strong emphasis on collaboration. Accordingly, the research infrastructures are designed to be "open for collaboration", particularly for joint projects with industry partners. The same applies to the use of research data and the commitment to visibility and engagement at the European level. In addition, IT:U plans to establish numerous strategic partnerships in Austria and abroad in the coming years.

In the period 2025–2027, another goal is to further define and develop interdisciplinary research priorities through a strategy process involving the IT:U professors. This will be accompanied by an expansion in academic staff, with the aim of appointing 32 tenured or tenure-track professorships at IT:U by 2027.

Med-Impuls 2030 and developments in infectious diseases – establishment of the Ignaz Semmelweis Institute

The Ignaz Semmelweis Institute (ISI),[13] which was established as part of the Uni-Med-Impuls 2030 initiative, officially opened in January 2025. Its mission is to create an inter-university network for public health, epidemiology and infectiology, serving as a platform for intensive interdisciplinary and cross-regional scientific collaboration. The founding universities of ISI (the Medical Universities of Vienna, Graz and Innsbruck, the Medical Faculty at the University of Linz and the University of Veterinary Medicine Vienna) will each contribute a professorship to infection research within the institute. The infrastructure of the ISI will be based at the Medical University of Vienna and will support

13 https://semmelweisinstitute.ac.at

the design and implementation of epidemiological and laboratory-based analyses as well as research into the causes, diagnosis and prevention of communicable diseases on a broad scale. The ISI will also promote pooling and networking of existing expertise, promote new areas of knowledge in the field of infectiology, and offer advanced training and continuing education in the field of infection medicine and research. Its core tasks are research-driven and carried out in cooperation with other universities and higher education institutions as well as non-university research institutions. In addition to the five professorships' research groups, around 10–15 further research groups will be established at the Vienna site, with others at the decentralised locations. In any case, existing facilities that are already engaged in infection research at the founding universities will also be available to the ISI.

The ISI plays a central role in Austria, not least due to its commitment to engaging the public – with the aim of fostering a better understanding of pathogens, diseases and countermeasures through increased scientific communication. In the context of pandemic preparedness and response, ISI has also committed to reacting to newly emerging pandemics in real time and in coordination with national and international partners.

2
Facts, figures and trends in research, technology and innovation

Chapter 2.1 focuses on the funding and implementation of R&D, including the revised R&D intensity for 2024 based on data from Statistics Austria. Particular attention is paid to the specific characteristics of R&D funding by foreign companies in Austria. Following this section, Chapter 2.2 addresses the topical subject of key technologies from the perspective of RTI policy as well as knowledge and economic policy. Starting with a definition, the chapter discusses areas of strength at both European and Austrian levels, identifies key stakeholders, and outlines measures ranging from basic to applied research. Chapter 2.3 subsequently analyses Austria's position in key RTI and science indicators. International rankings are used to provide a comprehensive picture of Austria's innovation capability. Chapter 2.4 covers a variety of topics concerning Austria in the context of the EU science, research, technology and innovation policy. Thirty years of EU membership offer an opportunity to review Austria's participation in the European Framework Programmes over time. An overview of Austria's current performance in Horizon Europe, along with updates from the European Research Area, completes the picture. Finally, Chapter 2.5 examines Austria's well-established RTI evaluation culture and presents key findings from selected recent evaluation studies.

2.1 Funding and implementation of R&D in Austria

R&D expenditure

- **At €16.13 billion, R&D expenditure reached a new peak in 2024. The research intensity stood at 3.35%, the highest level recorded to date.**
- **In 2024, 41.87% of R&D expenditure was attributable to domestic companies, 28.64% to the federal government and 16.20% to other countries (mainly foreign companies).**
- **No estimate can yet be made for 2025, as the budget estimate for 2025 was not available at the time the report was prepared.**

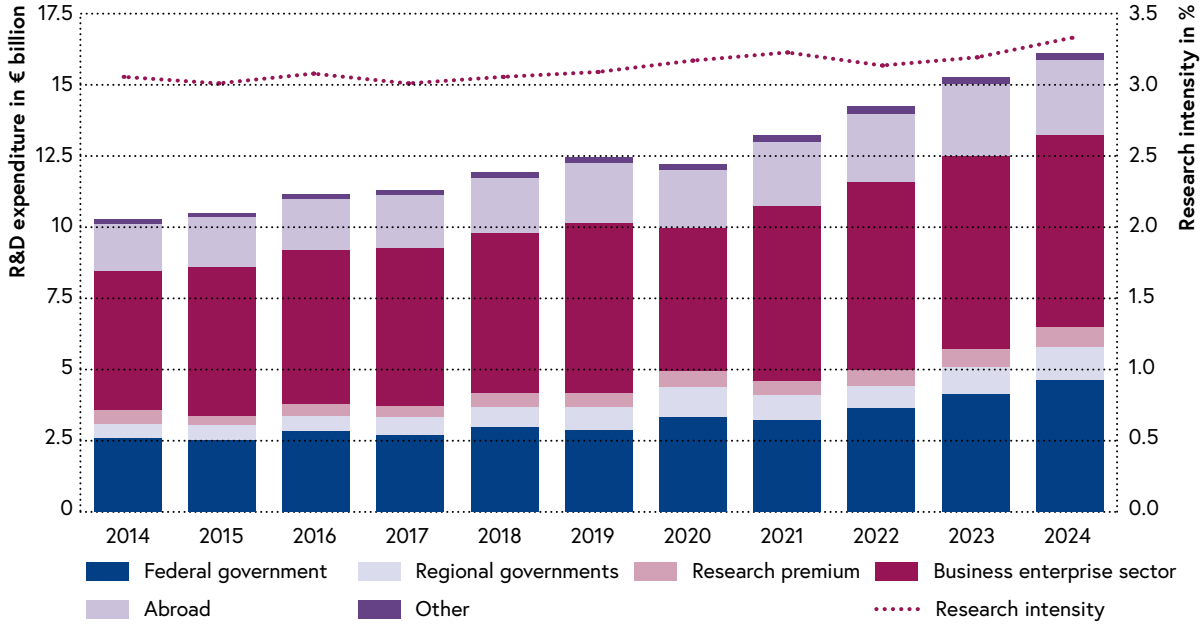
In 2024, R&D expenditure amounted to €16.13 billion, equivalent to 3.35% of GDP, representing the highest research intensity recorded to date. The funding of this €16.13 billion in 2024 was provided as follows: 41.87% came from the business sector, i.e. domestic companies; 28.64% from the federal government; 16.20% from abroad – primarily from foreign companies but also including the EU and international organisations; 7.21% from the research premium; 4.35% from the regional governments; and 1.73% from other sources, including the higher education sector and the private non-profit sector.

2.1.1 Global estimate

As no budget estimate for 2025 was available in April 2025, any estimates for that year would have been too imprecise. For this reason, this report does not include the usual forecast for the current year. Instead, Statistics Austria has revised its global estimate for 2024. The revised figures now serve as the basis for the following presentation of R&D funding in Austria. According to the global estimate from Statistics Austria, Austria's research intensity – defined as R&D expenditure as a proportion of GDP – reached a new record of 3.35 % in 2024. This was slightly higher than the estimate of 3.34 % published in April 2024.

In the end, both R&D expenditure and GDP were significantly lower than expected in April 2024: Total R&D expenditure in Austria amounted to €16.13 billion, while GDP was €481.94 billion. This means that R&D expenditure in 2024 was therefore ultimately 3.08 % or €512.0 million lower than forecast in April 2024 and GDP was 3.41 % or €17.03 billion lower, resulting in a slight increase in the research intensity of 0.01 percentage points. The research premium, by contrast, turned out to be significantly higher than expected, amounting to €1.163 billion, 16.32 % or €163.2 million more than forecast in April 2024.

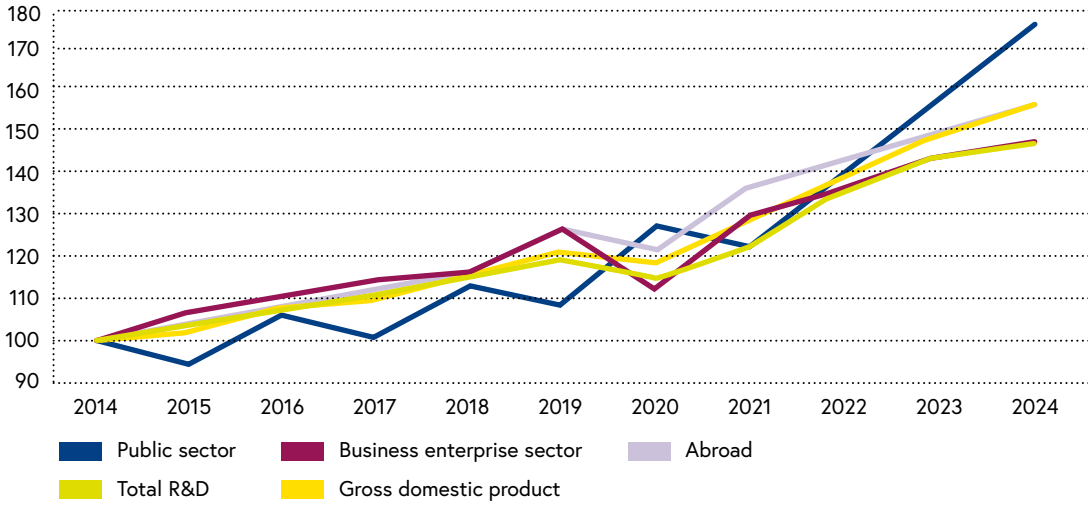
Figure 2-1: Development of R&D funding and research intensity in Austria, 2014–2024



Note: The category "Other" combines the two categories "Other public funding" (incl. higher education sector) and "Private non-profit sector".
Source: Statistics Austria, global estimate from 22 April 2025; illustration: WPZ Research.

R&D activities are financed from various sources; the total volume has increased nominally from €10.28 billion in 2014 to the aforementioned €16.13 billion. Figure 2-1 illustrates the different sources of R&D funding for each year using bar charts, alongside the development of the research intensity depicted as a curve. The research intensity has been consistently above the EU target of 3 % of GDP since 2014 (2014 was the first year in which Austria exceeded the 3 % threshold) and has remained at no less than 3.18 % throughout the current decade.

Figure 2-2: Development of R&D funding, 2014–2024 (index, 2014=100)



Note: The category "Public sector" contains the categories "Federal government", "Regional governments" and "Other" (= "Other public funding" (incl. higher education sector) + "Private non-profit sector"), the category "Business enterprise sector" contains the categories "Business enterprise sector " and "Research premium".

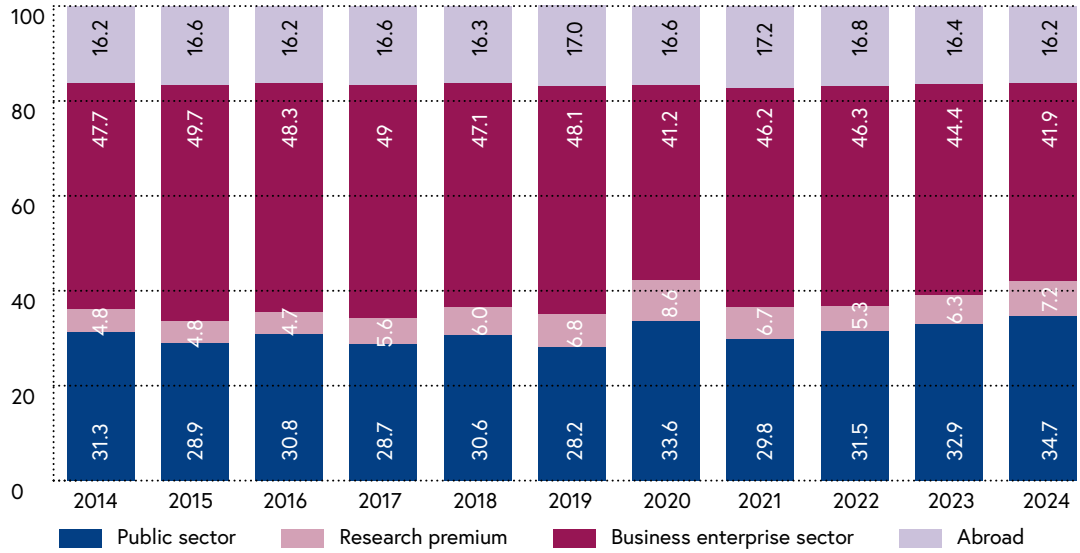
Source: Statistics Austria, global estimate of 22 April 2025; illustration: WPZ Research.

The relative development of funding is shown in Figure 2-2, where the funding categories are expressed as percentages relative to the base year 2014.[14] The diagram is based on nominal values and therefore does not reflect actual growth, but instead enables a comparison of which categories have grown faster than others. Unlike in Figure 2-1, the research premium is not shown separately here, but it is included in the business enterprise sector; the regional governments and "Other" are categorised together with the federal government as the "Public sector". The "Abroad" category mainly includes foreign companies, but also includes funding from the EU and international organisations (for further details on R&D funding from abroad, see Chapter 2.1.2). Funding from domestic companies, including the research premium, is covered under the "Business enterprise sector" category.

The two additional categories in Figure 2-2, "Total R&D" and "Gross domestic product", allow for a direct comparison of development. As the research intensity increased during the observation period from 2014 to 2024, the "Total R&D" curve lies above the "Gross domestic product" series in the diagram. In fact, all categories grew more strongly than GDP over the observation period; the strongest growth by far was recorded in the public sector funding. The "Abroad" and "Total R&D" categories show a similar trend, indicating that funding from abroad has grown more rapidly than GDP. The "Business enterprise sector" and "Gross domestic product" curves also show a similar trend. This means that funding from the business enterprise sector has lagged behind overall R&D expenditure throughout the entire period. It is important to distinguish between the developments of the past decade – the first half of the observation period shown in Figure 2-2 – and those of the current decade. Until 2019, funding from the business sector increased significantly faster than overall R&D expenditure; since then, it has grown markedly more slowly.

14 The unusual development of the "Public sector" has methodical reasons and is due to the fact that the R&D survey takes place in odd-numbered years and the funding figures for the federal governments are taken from the state budgets in even-numbered years.

Figure 2-3: Shares of R&D funding by sources of funds, 2014–2024

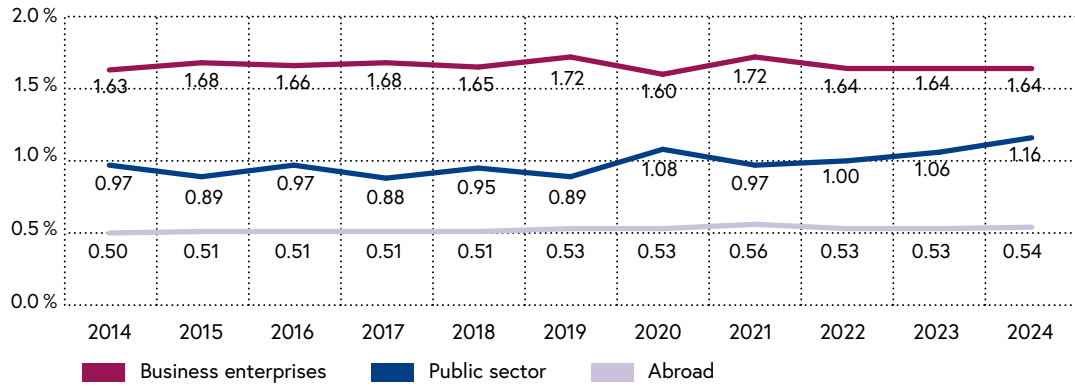


Note: The category "Public sector" includes the categories "Federal government", "Regional governments", and "Other" (= "Other public funding" (incl. higher education sector) + "Private non-profit sector").

Source: Statistics Austria, global estimate of 22 April 2025; calculation and illustration: WPZ Research.

With the varying development of funding sources over time, the respective shares of the total volume also change. These shares are shown for the years 2014–2024 in Figure 2-3, with the research premium displayed separately (in Figure 2-2 it is included as part of the business enterprise sector). It can be seen that the lower shares of the business enterprise sector in the current decade are offset by increases in funding from the public sector and the research premium. In contrast, the share financed from abroad remains largely constant and also shows no statistical trend.

Figure 2-4: R&D expenditure as a percentage of GDP by sources of funds, 2014–2024



The category "Public sector" contains the categories "Federal government", "Regional governments" and "Other" (= "Other public funding" (incl. higher education sector) + "Private non-profit sector"), the category "Business enterprises" contains the categories "Business enterprise sector" and "Research premium".

Source: Statistics Austria, global estimate of 22 April 2025; calculation and illustration: WPZ Research.

With the changes in the share of funding in the total volume and the development of GDP, the contributions of R&D funding relative to GDP also change. The corresponding development of funding contributions from 2014–2024 is shown in Figure 2-4. Once again, a clear increase in the contribution from the public sector can be observed in the current decade, whereby in Figure 2-4, as in Figure 2-2, the research premium is allocated to the business enterprise sector (share of the research premium in GDP in 2024: 0.24 %). While the foreign share of total R&D funding has remained virtually constant, it shows a growing trend in relation to GDP (due to the rising research intensity), with an annual increase of around 0.004 percentage points over the period 2014–2024.

2.1.2 Funding from abroad

From a global perspective, R&D conducted abroad by multinational corporations is a relatively recent phenomenon that was hardly present until the 1980s but then increased significantly and reached a peak in 2010.[15] In the 1990s, the spread and exchange of knowledge were facilitated by advances in information and communication technologies, which also made the management of international R&D easier. As a result, it became more attractive for business enterprises to carry out R&D abroad – particularly with a view to three strategic objectives: firstly, to conduct R&D closer to the target market; secondly, to benefit from geographically localised knowledge spillovers; and thirdly, to reduce costs.

In international comparison, Austria is among those countries with a particularly high proportion of R&D carried out or financed by foreign-controlled business enterprises. This is not surprising and can largely be explained by geography: in smaller countries, cross-border transactions are more likely to occur over the same distance and under otherwise similar conditions than in larger countries. For the same reason, small countries tend to have higher export ratios. In Austria, similarly to Belgium and Ireland, cross-border R&D is further facilitated by institutional and cultural proximity to neighbouring countries. It is therefore not surprising that these three countries rank among the EU-15 with the highest shares of R&D performed by foreign-controlled companies.[16]

The following section provides a more detailed analysis of R&D funding of companies classified as foreign-controlled.[17] The data and the classifications are based on the 2021 R&D survey by Statistics Austria together with additional analyses.[18] In total, enterprises in Austria spent €9.062 billion on R&D in 2021, of which €4.515 billion (49.82 %) was accounted for by domestic companies and €4.548 billion (50.18 %) by legal entities of foreign-controlled enterprises.[19]

Figure 2-5 shows the sources of this €4.548 billion in R&D funding. Over two-thirds (68.87 %) of the R&D funding came from within Austria,[20] nearly a quarter (24.18 %) from affiliated foreign companies[21] and around one-sixteenth (6.46 %) from other foreign enterprises.[22] The remainder is spread across other foreign sources, including the EU.

15 See Dachs et al. (2024).

16 Based on 2017, see also Dachs et al. (2022).

17 Foreign-controlled companies are those with a foreign ownership share of more than 50 % in the company's registered capital; they are typically subsidiaries of multinational corporations that conduct R&D in Austria.

18 Statistics Austria (2024): Research and experimental development (R&D) 2021, available at: https://www.statistik.at/services/tools/services/publikationen/detail/1771

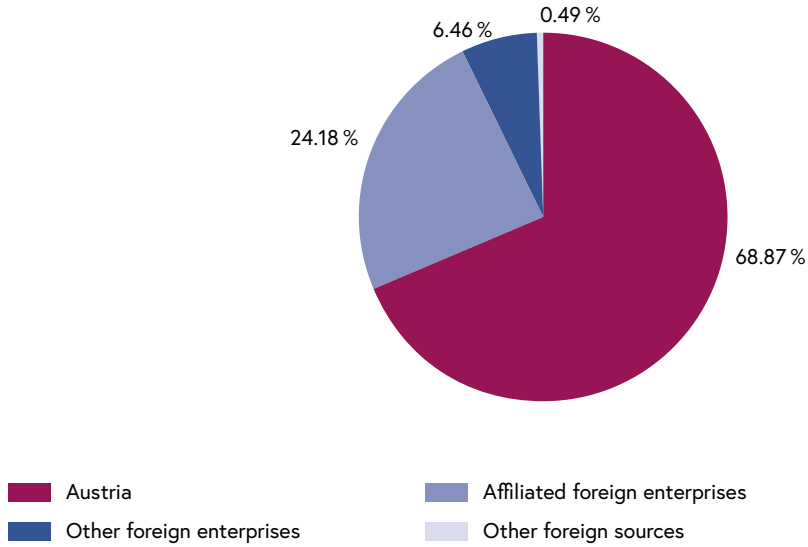
19 The stated €9.062 billion refers to those companies included in the Structural Business Statistics survey. In total, business R&D expenditure in 2021 amounted to €9.108 billion.

20 Funding from Austria primarily comprises the Austrian subsidiaries' own resources, as well as R&D contracts from other Austrian companies (contract research) and public funding (e.g. funding via the FFG).

21 Affiliated foreign companies are those that are not based in Austria but belong to the same group as the R&D performing company located in Austria; these are often the parent companies of Austrian subsidiaries.

22 This refers to R&D contracts awarded by foreign companies to foreign-controlled companies based in Austria, without any ownership link between them.

Figure 2-5: Sources of financing for R&D expenditures of foreign-controlled enterprises in Austria, 2021



Source: Special analysis by Statistics Austria based on R&D survey 2021; illustration: WPZ Research.

In Figure 2-6, the left-hand bar illustrates how the €4.548 billion in R&D expenditure is distributed according to foreign parent companies: with 45.80 %, almost half is spent by enterprises headquartered in Germany, followed by companies based in Switzerland, which account for 11.70 %. The right-hand bar shows how the €1.100 billion financed by affiliated foreign companies and spent by foreign-controlled companies is distributed. It can be assumed that the volumes predominantly originate from those countries in which the respective parent companies are based.[23] Accordingly, the dominance of German-speaking companies is even more pronounced: 64.38 % of R&D volume comes from Germany and 15.28 % from Switzerland.

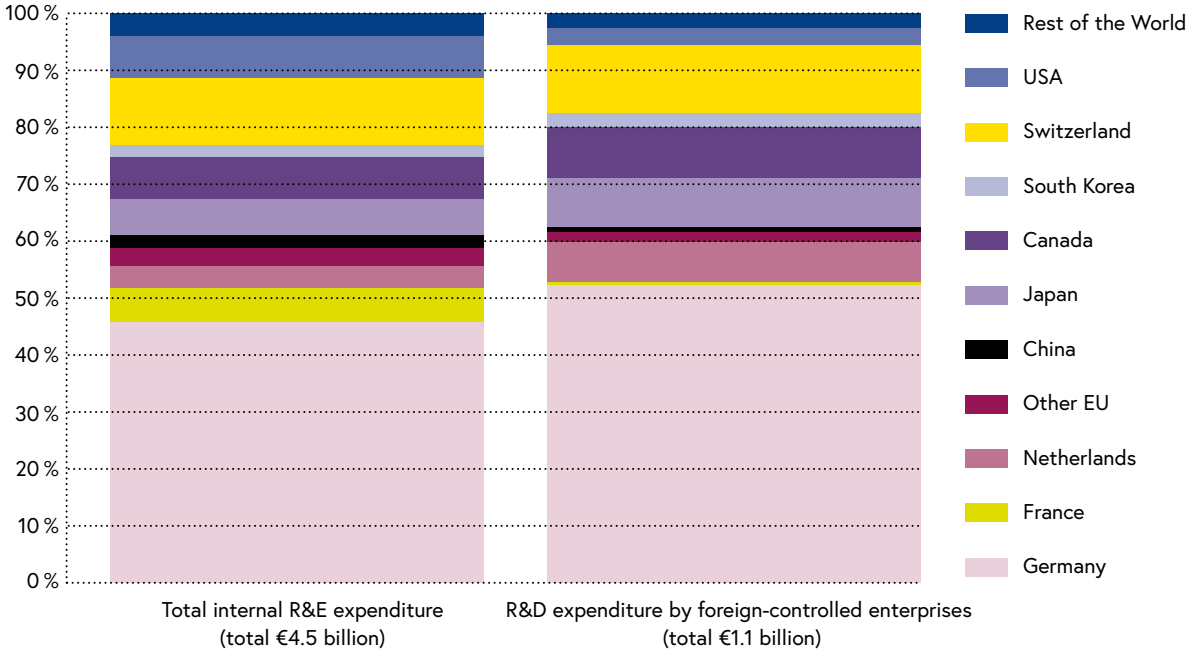
The development of foreign R&D expenditure is particularly relevant for national RTI policy over time. Figure 2-7 shows two trends for the period 2009–2021: firstly, the share of R&D expenditure by foreign-controlled enterprises in total business R&D expenditure,[24] and secondly, the share of business R&D expenditure in Austria's total R&D expenditure. It should be noted that the share of business R&D in total R&D expenditure rises until 2015 before declining again.[25] Over the same period, the share of R&D expenditure by foreign-controlled enterprises in total business R&D decreases. The increase in business R&D activity up to 2015, therefore, primarily concerned domestic companies. It is also worth noting that the share of total business R&D is more volatile than the share of foreign R&D. The variances of the shares in Figure 2-7 are 2.59 and 1.10, respectively.

23 Explanation: The €1.100 billion corresponds to the 24.18 % share of the €4.548 billion shown in Figure 2-5.

24 Due to data availability, the shares of R&D expenditure by foreign-controlled companies in Figure 2-3 refer to total R&D expenditure, whereas the analyses above refer to those sectors covered by the Structural Business Statistics survey but not by the R&D survey. The difference is minor: for 2021, Figure 2-3 shows 49.93 % instead of the 49.82 % stated above.

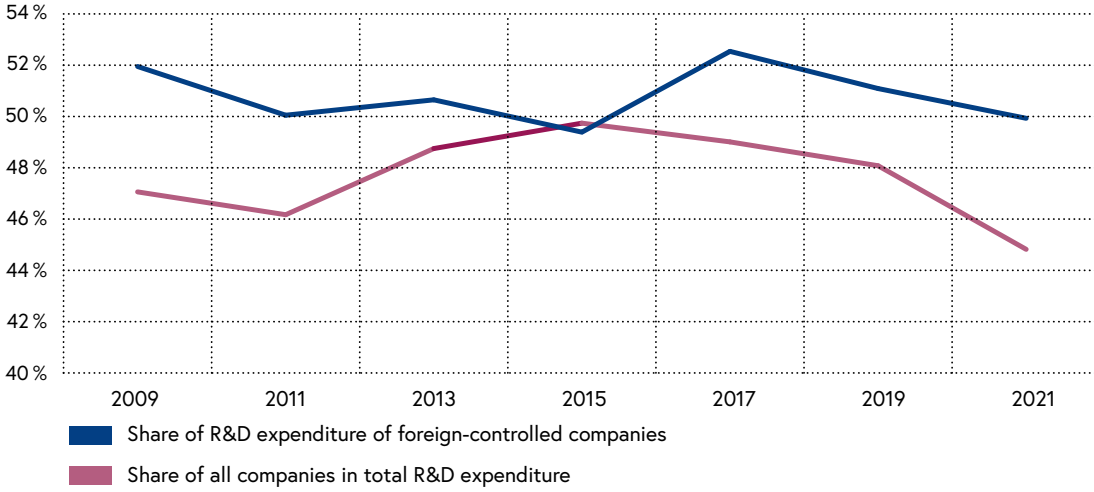
25 The decline in 2017 is partly due to the reclassification of several major R&D-performing institutions – in particular, the Austrian Institute of Technology (AIT) and Joanneum Research Forschungsgesellschaft mbH are now classified as part of the government sector rather than the business enterprise sector.

Figure 2-6: Expenditure and financing by affiliates of foreign-controlled enterprises in Austria by country from which the company is controlled, 2021



Source: Special analysis by Statistics Austria based on R&D survey 2021; illustration: WPZ Research.

Figure 2-7: Share of R&D expenditure of foreign-controlled companies in total corporate R&D and of all companies in total R&D expenditure (in %), 2009–2021



Source: Special analysis by Statistics Austria based on R&D surveys 2009, 2011, 2013, 2015, 2017, 2019, 2021; illustration: WPZ Research.

Business R&D in Austria is far more closely intertwined with foreign countries than R&D funding alone might suggest. According to the 2021 R&D survey, 21.59 % of business sector R&D was funded from abroad (including the EU and other organisations), yet around 50 % of business R&D was carried out by foreign-controlled companies. Austria is therefore a highly attractive research location for foreign companies.

2.2 The role of key enabling technologies in a new industrial and research policy

Key enabling technologies are cross-sectoral and systemically relevant technologies and are therefore of great importance, as they contribute both to overcoming central societal challenges and to strengthening economic competitiveness. Against this background, the following chapter provides an overview of Austria's positioning in key technology areas in the context of current European developments. Chapter 2.2.1 begins by defining the framework for identifying relevant areas of technology. Chapter 2.2.2 briefly describes European and Austrian initiatives focusing on areas of strength, followed by Chapter 2.2.3 with a presentation of important players from basic to applied research, including an empirical analysis of innovation funding for key enabling technologies by the Austrian Research Promotion Agency (FFG). Chapter 2.2.4 briefly describes current measures at (both) European and national levels that are important for the Austrian innovation system.

In fact, key enabling technologies play a central role in competitiveness, productivity and overcoming social challenges and are therefore an essential component of a modern industrial and innovation policy, which in turn is based on a strong research policy and infrastructure. Europe and Austria will only be able to maintain their competitiveness, especially in relation to the USA and China, if they focus on their areas of strength and consistently develop these further as part of a comprehensive European strategy to overcome fragmented industrial and scientific structures. In addition, companies must be able to strategically integrate new technologies such as AI or big data into their existing business models in order to secure their competitive position in their traditional markets through digitalisation, as otherwise the productivity gap between Europe, the USA and Asia will widen.

2.2.1 Context and definition

Internationally, the promotion of key enabling technologies is becoming increasingly important.[26] The Austrian Government Programme 2025–2029 emphasises their role as the basis for an innovative future.[27] It stresses the significant role Austria's cutting-edge research in key enabling technologies is playing in successfully achieving structural change, securing high-quality jobs, developing security technologies and strengthening the resilience of value creation and competitiveness. Building on existing areas of strength, targeted investments in key technologies – from basic research to application – are to be systematically promoted as part of a technology initiative.

At the European level[28], the strategic promotion of key technologies is emphasised as crucial for Europe's competitiveness – particularly in view of China's growing role in these areas. Key enabling technologies are also central to technological sovereignty[29], which is to be strengthened in the face of complex global supply chains through the expansion of European production capacities and the development of expertise. Initiatives such as the Chips

26 See OECD (2003), Kroll et al. (2022).
27 See Republic of Austria (2025).
28 See Draghi (2024a, 2024b); European Commission (2024a); Letta (2024).
29 See Ramahandry et al. (2021); Council for Technological Sovereignty (2021, 2024).

Act[30] or Advanced Materials for Industrial Leadership[31] aim to strengthen Europe's independence. In addition, key enabling technologies are seen as making a significant contribution to overcoming major societal challenges[32] – for example, in areas such as energy transition, resource efficiency, sustainable mobility, and vaccine development.

Defining key technologies over time

The definition of key (enabling) technologies has changed over time, reflecting broader research and economic policy interests and needs.[33] In the early 2000s, for example, the focus was on technological developments and innovation potential as well as the social absorption capacity of new technologies.[34] After the 2008 financial crisis, the European Commission placed an explicit focus on promoting the competitiveness of clearly defined Key Enabling Technologies (KETs)[35] in order to better bridge the "valley of death" between knowledge production and economic utilisation. In recent years, their contribution to key future issues has been increasingly emphasised alongside competitive aspects.[36] Geopolitical developments, in particular new trade restrictions, the war of aggression in Ukraine and the COVID-19 pandemic, have since led to an increasing focus on technological sovereignty and security policy.[37] Due to their complexity, these technologies cannot be clearly differentiated from one another,[38] there is no standardised definition. The different key technology areas are characterised by interdependencies and can converge in key applications.

The definition of key enabling technologies in Austria

As part of a study commissioned by the BMIMI (formerly BMK) and in consideration of national and international perspectives on the matter,[39] the definition of key enabling technologies was refined.[40] A definition by the EU Commission[41] from 2009 served as a basis, supplemented by aspects such as highly specific production capacities, social relevance, and the interdependence of key enabling technologies:

Key enabling technologies are knowledge-intensive and are associated with high research intensity, rapid innovation cycles, high capital expenditure and highly-skilled employment as well as highly specialised production capacities. They enable process, goods and service innovation throughout the economy and society. They are multidisciplinary and cut across many technology areas, with a trend towards convergence, integration and interdependence. They are of systemic relevance, as input to critical key applications and through their potentially high impact on the sustainable development of society, the economy and the environment.[42]

Based on this definition, specific key technology areas were identified.[43] For each of these areas, Table 2.1 lists examples of technologies and of products for some, that can be categorised as key enabling technologies and for which significant leaps in development are expected in the near future.

30 See European Parliament & Council of the European Union (2023).
31 See European Commission (2024b).
32 See High-Level Group on Industrial Technologies (2018).
33 See Frantz & Warta (2025).
34 See Key Technologies Expert Group (2005).
35 See European Commission (2009, 2012).
36 See High-Level Group on Industrial Technologies (2018).
37 See Ramahandry et al. (2021).
38 See Frantz & Warta (2025).
39 See Hofmann et al. (2024); Strander et al. (2024).
40 See Frantz & Warta (2025).
41 Original: KETs are "knowledge intensive and associated with high R&D intensity, rapid innovation cycles, high capital expenditure and highly-skilled employment. They enable process, goods and service innovation throughout the economy and are of systemic relevance. They are multidisciplinary, cutting across many technology areas with a trend towards convergence and integration." (European Commission, 2009, 2).
42 See Frantz & Warta (2025, 3).
43 The selection of these areas is based on multiple reference sources, including the European Commission's recommendations on strategic and critical technology areas for Europe's economic security (see European Commission, 2023b), a technology trends report (Izsak et al., 2021a), and the key technologies outlined in the "Digital Decade Programme 2030" (European Commission, 2023d) and the "Net Zero Industry Act" (European Commission, 2023c). The German Innovation Indicator on Key Technologies (Frietsch et al., 2024) was also taken into account. Specific technology areas of particular relevance to Austria were also incorporated into the selection.

Table 2-1: Key technology areas in Austria and exemplary key applications

Key (enabling) technology areas	Key technologies and key applications – exemplary
Advanced materials including nanotechnology	Nanomaterials, biomaterials, metamaterials, energy materials, additive manufacturing materials, advanced ceramic materials, functional coatings and surface treatment
Artificial intelligence, Big data, Digital and information technologies	Artificial intelligence: e.g. machine learning, neural networks, natural language processing (NLP), reinforcement learning Big data: e.g. data analysis tools, data visualisation, databases, data mining Digital information technologies: e.g. cloud computing, Internet of Things (IoT), blockchain technology, cybersecurity technologies, etc.
Quantum technology and photonics	Quantum Computing, Quantum Communication (incl. Quantum Key Distribution), Quantum Meteorology, Quantum Sensing and Quantum Simulation
Advanced microelectronics/ semiconductors	Processors, high-frequency chips, nanoelectronics and integrated circuits, semiconductor manufacturing equipment, space-qualified semiconductor technologies
Advanced production technologies and robotics, advanced sensor technology	Additive manufacturing, Industry 4.0 concepts, AI-supported manufacturing, collaborative robots, predictive maintenance, chemical sensors, biological sensors, radiation sensors, magnetometers, magnetic field gradient meters, electro-optical sensors, underwater electrosensors, gravimeters, gravitational wave detectors
Life sciences technologies	Nanobiotechnology, agricultural biotechnology, synthetic biology, regenerative medicine, medicinal products for advanced therapies, vaccines, biologicals and biosimilars, bioinformatics, bioprocess technology, biooptics and imaging techniques, new genetic engineering
Energy generation and storage	Advanced batteries and energy storage (e.g. solid-state batteries, flow batteries), smart grid technologies, alternative fuels, renewable energy technologies (incl. solar technologies, wind power technologies, heat pumps, electrolysers, fuel cells, etc.).
Sustainable technologies: circular economy, buildings, waste/water	Recycling technologies for returning materials to the material cycle, clean and sustainable technologies in the building sector, clean and sustainable technologies in the waste/wastewater sector, carbon capture and storage

Source: Based on Frantz and Warta (2025), drawing on the European Commission (2009, 2023b, 2023c, 2023d), and Izsak et al. (2021a).

Research and technology policy measures must take into account the diverse dynamics of the key technology areas described, as well as the European and global context of implementation. This is discussed in the following chapters by analysing areas of strength at European and national levels as well as the measures taken in the research and innovation ecosystem.

2.2.2 European and Austrian areas of strength

In recent years, the monitoring of key technology areas at the European level has been advanced through a series of projects. Since 2021, the "European Monitor of Industrial Ecosystems" (EMI) has systematically analysed technology trends within the framework of fourteen industrial ecosystems, as defined by the European Commission's current industrial strategy.[44] The EMI identifies the EU's primary strengths in production technologies, whereas it highlights a relative weakness in digital technologies compared to the United States and increasingly also China.

Key technologies are a central focus in the "Industry Plan for the Green Deal for the Climate Neutral Age".[45] They are essential both for achieving the EU's climate neutrality targets and for maintaining competitiveness. This includes aspects such as the security and diversification of supply chains and the development of technological expertise within Europe.

44 See European Commission (2021).
45 See European Commission (2023a).

The results of the EMI Report 2025[46], which is based on trade, patent and production data as well as additional indicators such as technology start-ups, private investment, equity and venture capital financing, skilled workers, and public procurement, confirm the strengths and weaknesses of the EU already identified in previous analyses. At the same time, the report provides a more differentiated assessment of individual key enabling technology areas, particularly in the fields of sustainable and digital technologies.

- In terms of the global share of patent applications for green technologies, the EU, after holding a leading position in 2020, ranked third in 2021 with 21.7 %, behind Japan (25.2 %) and China (21.9 %), but still ahead of the USA (19.5 %). The EU continues to lead in renewable energies, accounting for 32.3 % of global patents in this field, particularly in wind power (61.3 % of global patents) as well as geothermal energy and biomass (28.5 %). The EU also remains the global leader in recycling technologies, with a share of 26.5 % of patents. In contrast, China has taken a clear lead in solar energy, with almost 46.6 % of global patents, compared to around 16 % for the EU. For energy-saving technologies, the EU ranks fourth, behind China (60.6 %), the USA (just under 20 %), and Japan (around 6.5 %). According to foreign trade data, the EU shifted from being a net exporter to a net importer of green technologies between 2012 and 2022. However, the EU was able to maintain a positive trade balance in the fields of recycling technologies, biotechnology, and clean production technologies.
- Since 2008, the EU's share of patent applications in the field of digital technologies has declined, primarily due to the rapid growth of patent activity in China. Nevertheless, in 2021 the EU's share of global digital technology patent applications stood at 20.5 %, remaining at a similarly high level to the United States (21.9 %), China (21.5 %), and Japan (21.1 %). The EU continues to lead globally in advanced manufacturing technologies, the Internet of Things (IoT), and digital mobility. It also holds a strong second position in quantum computing, digital security technologies, and photonics. In terms of trade in products, the EU remained a net exporter only in advanced manufacturing technologies.

Other international analyses (ASPI[47], EFI[48], JRC[49], BDI[50]) show that Europe holds strong, but not leading, positions in key technology areas such as digital twins, AI, biotechnology, energy and the environment. These positions tend to be stronger in publications than in patents. There is a need to catch up with the USA and China, particularly in digital technologies. Digital technologies such as cloud computing, AI and IoT are increasingly being used in various industrial ecosystems, including in traditional European areas of strength such as manufacturing. If Europe does not successfully integrate these digital technologies, this may lead to a loss of competitiveness for the EU in areas where it currently still holds a strong position. Moreover, the European R&D system is highly fragmented, lacks players of critical size and lacks a stronger pooling of European forces in the research area. The report published in 2024 by Mario Draghi on the future of European competitiveness points to weaknesses in the commercialisation of innovations caused by funding gaps and regulatory hurdles, as well as dependencies on critical raw materials.[51] Consequently, the European

46 See European Commission (2025a).
47 See Leung et al. (2024).
48 See EFI (2022).
49 See Eulaerts et al. (2025).
50 See Frietsch et al. (2024).
51 See Draghi (2024a, b). EU Special Representative for Competitiveness; former President of the European Central Bank, among others.

Commission published a "Compass for EU Competitiveness" at the beginning of 2025, which includes the establishment of AI gigafactories and action plans for strategic technology areas such as advanced manufacturing technologies, quantum and biotechnologies, robotics and space technologies.[52]

Austria's areas of strength lie primarily in advanced production technologies and materials, life sciences, environmental technologies, and, in science, also in quantum technologies.

Between 2010 and 2020, Austria showed strong patent activity in advanced production technologies and materials, renewable energies, and micro- and nanoelectronics, also recording a trade surplus in technology-based products in the areas of agriculture and food, healthcare, mobility, renewable energies, aerospace and defence.[53]

A further study on key technologies in Austria reaffirms the country's strengths and additionally identifies industrial biotechnology, photonics, and the IoT, among other areas, as sub-domains of strength.[54]

While Austria and the EU are relatively well positioned in digital technologies in the field of IoT, there are still structural weaknesses in areas such as AI and big data. Quantum technologies are a promising technology area with high cross-sectional potential. Austria has a high level of research strength in this area, based on excellent basic research, targeted funding and strong international cooperation.[55]

As explained in Chapter 2.3.2, Austria occupies a leading position in this field in an EU comparison: 2nd place for publications per million inhabitants and 3rd place for patents relative to R&D employment. While Europe as a whole lags behind Asia and North America in photonics and micro- and nanoelectronics, Austria is able to achieve very good results in certain areas through targeted specialisation. These strengths are confirmed by publication data, which place Austria among the top group in the EU in several key technologies, for example, in quantum technology and photonics, microelectronics/semiconductors and advanced production technologies.

2.2.3 Key enabling technologies from basic research to applied research

The RTI Strategy 2030, the RTI Pact 2024–2026, and the Government Programme 2025–2029 explicitly commit to strengthening both basic research and application-oriented research in key technologies. The focus is on expanding excellent, open-topic research with a clear strategic profile, particularly in areas such as digitalisation, quantum technologies, health and life sciences. High-risk interdisciplinary approaches should provide new impetus. To implement these goals, the federal government is promoting measures such as the Excellence Initiative, the intensification of international cooperation and greater involvement in European programmes such as Horizon Europe, as well as initiatives such as the European Institute of Innovation & Technology (EIT) and Important Projects of Common European Interest (IPCEI) (see chapter 2.2.4). These measures aim to enhance Austria's position as a location for internationally competitive frontier research and to lay the foundation for technological and societal innovation.

All of the above-mentioned documents consistently emphasise that the promotion of application-oriented research in key enabling technologies is an essential component of Austrian innovation policy. The focus should not only be on technological developments, but also on their economic impact, transformation capability and international competitiveness. The policy pursues a combination of mission-orientated management, technological openness, European integration, and interdisciplinary networking. The 2025–2029 government programme anchors key enabling technologies in the planned industrial and innovation strategy. The technology areas of quantum physics/quantum tech-

52 See European Commission (2025b).
53 See Däßler & Wydra (2024).
54 See Hofmann et al. (2024).
55 See Janger et al. (2024).

nology, microelectronics, AI, production technologies, life sciences, materials research and space research are particularly emphasised due to their high potential on the one hand and Austria's existing strengths on the other.

The identified key technology areas are to be systematically supported along the entire innovation chain — from basic research to application and market deployment. Planned measures include:

- The targeted strengthening of cutting-edge research in key technologies with high transformation potential;
- Open-technology RTI funding to promote structural change and support emerging fields;
- Talent-oriented measures to attract excellent researchers and build critical mass in strategically relevant domains.

Austria benefits from a robust institutional landscape: Numerous research organisations have been active in key technology areas for many years and have established a strong national and international reputation for excellence. In recognition of their strategic importance, a selection of nationally central institutions engaged in key enabling technologies is briefly presented in the following section.

Austria's public universities and universities of applied sciences as players in key technology areas

Austrian public universities and universities of applied sciences contribute to the research and development of the eight defined key enabling technology areas with different focuses. They are broadly positioned both in (application-orientated) basic research and in the training of future specialists. The key technology areas of digital and information technologies, AI and big data as well as sustainable technologies are particularly emphasised in strategic documents. These are explicitly anchored in the European Higher Education Strategy,[56] in the Austrian University Plan 2030[57] and in the UAS Development and Financing Plan[58]. Energy generation and storage, as well as advanced microelectronics, are also specifically mentioned in the European Higher Education Strategy. Life sciences technologies are addressed separately in the development plan for universities of applied sciences. The research specializations of university departments and, indirectly, the general STEM (science, technology, engineering, and mathematics) focus on university education cover the remaining key technology areas.

A key contribution universities make to education is the teaching of future-relevant skills and knowledge. The strategies mentioned above, especially Universities and Digital Transformation 2030[59], emphasize embedding digital skills and data literacy into curricula. The integration of the STEAM approach[60] and targeted support for STEM (MINT) study programs strengthen interdisciplinary learning. The latter is also a focus of the performance agreements for 2025–2027, where about two-thirds of the total budget is allocated to STEM and life sciences. Since 2018/19, the federal government has prioritized expanding STEM fields at universities of applied sciences, creating 2,520 additional study places in future-oriented areas such as STEM, digitalization, and sustainability.

Comprehensive measures have been agreed upon with the universities along the student life cycle to combat the shortage of skilled labour: from approaching potential students and promoting women in STEM subjects, to support services designed to improve studyability and reduce drop-out rates. At the same time, AI research is being strengthened in a

56 See European Commission (2022a).

57 See BMBWF (2022a).

58 See BMBWF (2023).

59 https://www.bmfwf.gv.at/dam/bmafjgvat/BMBWF/Hochschule---Universit%C3%A4t0/Hochschulgovernance/Leitthemen/Digitalisierung/Universit%C3%A4ten-und-digitale-Transformation-2030.pdf

60 The German term MINT (Mathematik, Informatik, Naturwissenschaften, Technik) corresponds to the English term STEM (Science, Technology, Engineering, Mathematics). In the international discussion, the STEM approach has been expanded to include the cultural sciences, social sciences and humanities. The term STEAM (Science, Technology, Engineering, Arts [& Humanities], Mathematics) or MINKT reflects this expansion; see also European Commission (2020).

targeted manner – among other things by expanding the Vienna Scientific Cluster through the integration of the high-performance computer MUSICA. The special feature of this project, which is being implemented by TU Wien, the University of Vienna, BOKU, the University of Innsbruck, TU Graz and JKU, is the distribution of hardware across several locations and thus the linking of high-performance computing and cloud computing. With the newly founded Institute of Digital Sciences Austria (Interdisciplinary Transformation University, IT:U), an innovative technical university has also been established that is breaking new ground in research and teaching at the interface between digitalisation/AI and other disciplines.

Projects to implement education for sustainable development and future skills are funded via the Austrian University Development Plan and the performance agreements. The Alliance of Sustainable Universities, an association of 19 universities, also contributes its specialist expertise in areas such as climate neutrality, sustainable mobility and sustainable procurement. In the area of universities of applied sciences, the 2023/24–2025/26 development and funding plan envisages a central role in the qualification of specialists and managers for the ecological transition. Universities of applied sciences are also involved in key technology areas through specialised degree programmes and research facilities such as the Josef Ressel Centers. In the Alliance of Sustainable Universities, 15 universities of applied sciences have joined forces to actively contribute to achieving the sustainability goals in their field of activity.[61]

In the area of research, several universities are characterised by distinct focal points in various key technologies, which are documented in their performance agreements. The University of Vienna focuses on a broad range of subjects, in particular quantum technologies, computer science, life sciences and environmental technologies. This broad positioning enables the university to play a central role in interdisciplinary research and to make an active contribution to scientific development in these areas.

The Vienna University of Technology, Graz University of Technology and the University of Leoben have focused on technology-oriented research areas that are of great importance for industrial and social development. Particularly noteworthy are AI, big data, digital technologies, advanced materials, energy generation and storage as well as sustainable technologies. With its focus on smart materials, responsible and circular systems and sustainable processes, the University of Leoben is positioning itself as a pioneer in the areas of advanced materials and sustainable production processes. The Vienna University of Technology has a clear focus on artificial intelligence and quantum physics, and together with the University of Vienna it is jointly advancing Vienna's ambitions as a (global) centre for AI research. In addition to the larger or broad-based universities, specialised institutions such as the University of Natural Resources and Life Sciences (BOKU), the Johannes Kepler University Linz (JKU), the University of Innsbruck and the Medical Universities in Vienna, Graz and Innsbruck also make a significant contribution to the development of key enabling technologies. BOKU is particularly active in the areas of life sciences, biotechnology and sustainability research and is strengthening its role as a leading institution in these areas. The University of Innsbruck and the University of Graz also focus on interdisciplinary research, for example in sustainability, climate research, quantum physics and biohealth research.

Austrian Academy of Sciences (OeAW)

In addition to the universities, the OeAW[62] institutes contribute to the advancement of the key technology areas through interdisciplinary basic research. Given the close proximity of their research activities to fundamental science — with potential applications across a wide range of technologies — only selected key research fields are presented below as representative examples.

61 https://www.nachhaltige-hochschulen.at/

62 https://www.oeaw.ac.at/institute

In 2024, the AITHYRA – Research Institute for Artificial Intelligence in Biomedicine was inaugurated at the Vienna BioCenter. With a funding volume of €150 million provided by the Boehringer Ingelheim Foundation, AITHYRA operates at the intersection of artificial intelligence and life sciences, and aims to accelerate biomedical research through advanced AI applications. The internationally renowned OeAW institutes IMBA – Institute of Molecular Biotechnology, CeMM – Research Centre for Molecular Medicine, GMI – Gregor Mendel Institute for Molecular Plant Biology and the Cori Institute for Molecular and Computational Metabolism Research, located in Graz, are also active in the life sciences.

The Erich Schmid Institute for Materials Science (ESI) in Leoben conducts cutting-edge research on structural materials, materials for information technology, energy and high-temperature materials and novel nanocrystalline materials. With this portfolio, ESI contributes directly to the advanced materials technology area.

In the field of quantum technology and photonics, the two Institutes for Quantum Optics and Quantum Information (IQOQI) in Innsbruck and Vienna are specialised research institutions. Their scientific outputs have broad application potential in other key technology areas, including AI, big data, digital and information technologies, and microelectronics.

The Johann Radon Institute for Computational and Applied Mathematics (RICAM) represents a transdisciplinary research centre with relevance across all key technology domains, due to its methodological focus and wide-ranging applications.

The OeAW institutes also maintain close collaborations with universities and non-university research institutions, while simultaneously pursuing translational goals that support innovation in business and society. A notable example is the Cori Institute, which focuses on the development of innovative therapeutic approaches for metabolic diseases.

Institute of Science and Technology Austria (ISTA)

Currently, more than 80 research groups are active at ISTA, conducting theoretical and experimental work across a wide range of disciplines, including mathematics, computer science, physics, chemistry, neuroscience, biology, earth sciences, and astrophysics.[63] A central goal of ISTA's research agenda is to overcome traditional disciplinary boundaries and foster interdisciplinary collaboration. Many of the institute's research outcomes contribute directly to the advancement of key technologies as defined at both national and European levels. Examples include:

Quantum technologies: A recent breakthrough in the complete optical readout of superconducting qubits significantly reduces reliance on complex cryogenic systems. This development brings the practical use of fibre optic networks for quantum computers operating at room temperature closer to reality.

Advanced materials and 3D printing: Novel 3D printing methods for high-performance and sustainable thermoelectric materials have been successfully implemented. These methods reduce production time, costs, and material and energy waste, with potential applications in electronics, medical therapies, and energy generation from waste heat.

Microscopy and neuroscience: In the area of microscopy, ISTA researchers have achieved high-resolution visualisations of brain architecture using light microscopy, including in living brain tissue. These advances are made possible by combining innovative labelling techniques, high-resolution imaging, and deep learning technologies, along with interdisciplinary expertise from physics, data science, and cell biology.

Ludwig Boltzmann Society (LBG)

The LBG thematically focuses on medicine, life sciences, and the social sciences.[64] Research takes place in the Ludwig Boltzmann Institutes (LBI) and also in the Clinical Research Groups (KFG) at the medical universities.

63 https://ist.ac.at/de/home/
64 https://lbg.ac.at/

By promoting and conducting basic research with a translational orientation, the LBG contributes to the development of novel solutions to complex societal problems. Currently, 14 LBI and three KFG provide specific impetus in the area of health sciences, while interdisciplinary research across several key technology areas is conducted in AI, big data and digital information technologies in particular.

Austrian Institute of Technology (AIT)

The seven organisational units (centres) of the AIT[65] are active in nearly all key technology areas – with the exception of advanced microelectronics and semiconductors. Five centres focus on AI, big data and digital and information technologies, three centres conduct research in advanced production technologies, robotics, and sustainable technologies, two centres are active in energy generation and storage, and the fields of life sciences and advanced materials each have one centre dedicated to them.

The AIT's work in the key technology areas includes innovative 3D printing techniques, such as wire-based additive manufacturing, to optimise production of light metal alloys; and research on battery technologies, ranging from fundamental materials optimisation to semi-industrial-scale production technologies, including sensor systems for cell monitoring and integrated system design. The institute also develops modern automation solutions, including autonomous working machines, intelligent assistance systems, high-performance image processing systems for inline inspection, and industrial automation technologies aimed at improving quality, productivity, and resource and energy efficiency in production, services, and administration. Other research focuses include AI, quantum communication, in particular quantum key distribution (QKD) and post-quantum cryptography, as well as cybersecurity for industrial control systems, sensor technologies and biometric systems for safeguarding critical infrastructures and digital identities.

Silicon Austria Labs (SAL)

SAL is a research organisation that acts as a bridge between basic and application-oriented research, with a strong focus on collaborative innovation with industry. Its core areas of activity include advanced microelectronics and digital technologies, while it also supports technological solutions for renewable energy utilisation.[66] All key technology areas are addressed by SAL's research divisions, with five divisions active in the field of advanced microelectronics and semiconductors, three in AI, big data, digital and information technologies, two in quantum technology and photonics, and the remaining key technology areas each have one division devoted to them. (see Table 2-1).

Selected research highlights are as follows: In the field of quantum sensor technology, SAL is working on innovative quantum gyroscopes aimed at enhancing navigation systems reliability. SAL is also developing laser ignition systems for space applications and printed electronics designed for use in the healthcare sector. In the Digineuron project, SAL is developing an integrated circuit (chip) capable of running AI algorithms in miniature form, with very low energy consumption. In the field of power electronics, SAL is developing a bidirectional onboard charger ("Tiny Power Box") for electric vehicles, designed to deliver high power density and energy efficiency. In the NEUROKIT2E project, SAL is collaborating with partners to develop a deep learning platform tailored for embedded hardware environments.

Christian Doppler laboratories and Josef Ressel centers

Each year, the Christian Doppler Research Association (CDG) supports approximately 100 Christian Doppler (CD) laboratories and 15 to 18 Josef Ressel (JR) centers, where excellent, application-oriented basic research is conducted in close cooperation with industry.[67] The knowledge generated in these research units is directly integrated into the development of new products and processes by the participating company partners.

65 https://www.ait.ac.at/
66 https://silicon-austria-labs.com/ueber-sal/leitbild
67 https://www.cdg.ac.at/

The CDG's thematically open funding programmes enable flexible responses to a broad spectrum of industry-driven research questions, while also serving as an early indicator of emerging technological developments. Since 2024, the association has also supported innovation-driven entrepreneurship through the new "Transfer Science to Spin-off" (Transfer.S2S) programme, which specifically aims to promote start-ups originating from research.[68]

The diversity of funded research areas is illustrated by the following examples. The Christian Doppler Laboratory for Ageing of Polymer Laminates under Mechanical Stress and Environmental Exposure operates in the advanced materials technology field and has developed a temperature-resistant special film used in seasonal heat storage systems, contributing to the utilisation of renewable energy. The Christian Doppler Laboratory for MIR Laser Spectroscopy in (Bio)Process Analysis (TU Wien) focuses on highly sensitive sensors and spectroscopic methods for biotechnological process monitoring, with applications in the pharmaceutical industry and environmental analysis. This lab contributes to the fields of photonics and life sciences. The Josef Ressel Center for Automation of System-on-Chip Design works on automating the design process of integrated circuits, supporting innovation in modern semiconductor technologies and contributing to the key technology area of advanced microelectronics.[69]

COMET centers

The COMET (Competence Centers for Excellent Technologies) programme supports application-oriented cutting-edge research across all key technology areas. These centres are established and operated through joint initiatives between scientific institutions and industry partners, and are co-financed by the federal ministries (BMIMI and BMWET) and the respective regional governments.

As of early 2025, there are 24 COMET centers in operation, with distribution across the key technology areas as follows: Eight centres (including, for example, the CDP – Centre for Digital Production or the K1-MET – Competence Centre of Sustainable Digitalized Metallurgy for a Climate Neutral and Resource Efficient Planet) are active in the field of advanced production technologies with different focuses. Five COMET centers are active in each of the two priority areas of life sciences (e.g. ACMIT – Austrian Center for Medical Innovation and Technology or the ACIB – Next Generation Bioproduction) and AI, big data, digital and information technologies (e.g. VRVis – Vienna Research for Visual Computing). There are four COMET centers in the field of energy generation and storage (e.g. Battery4Life – Optimised Safety and Increased Sustainability of Batteries or HyCentA – Hydrogen Research Center Austria) and three in the field of advanced materials including nanotechnology (e.g. MCL – Materials Center Leoben or AC2T – InTribology). There is also a COMET center in quantum technology and photonics with the SCCH – Software Competence Center Hagenberg.

Austrian Cooperative Research (ACR)

As an interface between science and industry, the ACR network promotes the advancement of central key technologies. Its primary focus is on supporting small and medium-sized enterprises (SMEs) in their innovation and digitalisation efforts. The 19 ACR institutes conduct cooperative research projects, promote knowledge transfer, and in some cases also assist with certification processes and market entry for new products and technologies. They are active in areas such as sustainable technologies, energy, AI, big data, digital applications, advanced materials and production technologies.[70]

Companies as central players in key enabling technology areas

With a share of around two-thirds of total R&D expenditure (see Chapter 2.1), Austrian companies play a major role in financing R&D. This contributes to a research intensity of 3.29 % of GDP, placing Austria

68 https://www.cdg.ac.at/en/funding-programmes/translate-to-english-transfer-science-to-spin-off
69 For further examples, see: https://www.cdg.ac.at/forschungseinheiten/alle-einrichtungen
70 https://www.acr.ac.at/institute/

third among EU Member States. A significant portion of this is driven by the activities of foreign-controlled enterprises, which are particularly active in R&D. While Austria's corporate R&D is primarily concentrated in medium technology intensity sectors, companies are involved in all key technology areas. In practice, however, the boundaries between technologies are increasingly blurred – for example, between photonics, AI, robotics, and micro/nanoelectronics – with overlaps also affecting environmental technologies, advanced production, and materials science.[71] At the same time, Austria is making targeted progress in specific high-tech areas such as semiconductors, biotechnology, and medical technology. These emerging areas require continued and strategic support in order to fully realise their potential.

Despite the strengths described in Chapter 2.2.2, challenges remain in converting research results into commercially viable innovations.[72] Moreover, the widespread adoption of key digital technologies is still limited. A certain path dependency in traditional industries – further aggravated by structural issues such as skilled labour shortages – continues to pose obstacles.

To address these challenges, Austria's RTI policy has introduced targeted funding programmes, expanded research infrastructure, and invested in skills development, particularly in the ICT sector. The overarching goal is to convert existing R&D investments into marketable innovations more effectively and to enable companies – especially SMEs, start-ups and leading companies – to utilise key enabling technologies productively. Cross-industry cooperation, international networks and research transfer are also supported.

2.2.4 Policy measures in the European Union and Austria

As the following discussion illustrates, both the EU and Austria possess a variety of instruments to support the implementation of measures in key enabling technologies.

Horizon Europe

The EU's Horizon Europe framework programme provides funding for key enabling technologies, particularly in the second pillar, "Global Challenges and European Industrial Competitiveness", which accounts for the largest share of the Horizon Europe budget with around €53.5 billion in funding. Of all Austrian participations, 67 % of participations (1,768) and 61 % of funding (around €748.85 million) are allocated to projects in this pillar.[73] Most of the participations and the largest funding volume are attributable to the Digital, Industry and Space, and Climate, Energy and Mobility clusters.[74] The first pillar, "Excellence in Science", indirectly promotes key technologies by supporting talent (e.g. ERC grants) and expanding research infrastructures. With a budget of €16 billion under Horizon Europe (2021–2027), the European Research Council (ERC) supports exceptional researchers at all stages of their careers in realising ground-breaking projects (frontier research) in the areas of natural sciences and technology, life sciences, social sciences and humanities. Awards are made exclusively on the basis of scientific excellence. Since 2007, a total of 545 Austrian projects have received funding totalling €983 million, including 181 projects (€312 million) in the life sciences and 234 projects (€369 million) in the physical sciences and technology.[75]

The European Commission's Competitiveness Compass, presented in January 2025, deepens the strategic focus on key enabling technologies already addressed by Horizon Europe.[76] The Compass

71 See also Hofmann et al. (2024).
72 See Bello, Ravanos, and Smallenbroek (2024, table 1) and Mazak-Huemer and Reinstaller (2025).
73 See FFG (2024).
74 Ibid.
75 See ERC dashboard, available at https://erc.europa.eu/projects-statistics/erc-dashboard
76 See European Commission (2025b) and https://ec.europa.eu/commission/presscorner/detail/en/ip_25_339

refers to Horizon Europe as part of a broader economic policy strategy and also proposes the consolidation of existing instruments such as Horizon Europe, InvestEU or the Innovation Fund to generate more ground-breaking innovations (Omnibus II). The Competitiveness Coordination Tool is intended to support the EU Member States in coordinating priorities and projects in the central high-tech sectors, and the Competitiveness Fund supports investments in key technologies. This will be complemented by European action plans to be developed for advanced materials, quantum, biotechnology, robotics and space technologies.

European Partnerships

Since their launch in 2002, European Partnerships have become a key instrument of Horizon Europe and the European Research Area (ERA). They promote long-term collaboration between EU partners and support the implementation of EU policy priorities by facilitating joint research and innovation activities. Austria is involved in institutional and co-programmed partnerships to promote the harmonisation, coordination and bundling of R&D activities in the EU in line with national RTI policy objectives.[77]

According to the European Commission's monitoring report from 2024, Austrian stakeholders are involved in 21 of 22 possible partnerships, with a budget of €310 million. Two of these partnerships are coordinated by Austrian institutions. In particular, Austria actively participates in institutionalised partnerships such as the Chips Joint Undertaking, which focuses on microelectronics and supports the implementation of the European Chips Act. Austria also coordinates the co-financed partnership "Clean Energy Transition", which focuses on achieving climate neutrality by 2050. Austria is also involved in co-programmed partnerships that also address key enabling technology areas such as AI and sustainable technologies.[78]

Digital Europe Programme

The Digital Europe Programme (DIGITAL) is an EU funding programme that provides targeted funding for key digital areas, including supercomputing, AI, cybersecurity, and digital skills and also supports the broad deployment of digital technologies in business and society through initiatives such as the European Digital Innovation Hubs (EDIH). Since September 2023, the programme has also included semiconductor technologies. With a budget of over €8.1 billion, DIGITAL contributes to Europe's digital transformation and supports the goals of the Digital Decade 2030.[79] It complements other EU funding programmes such as Horizon Europe, the Connecting Europe Facility (CEF) and the Recovery and Resilience Facility (RRF). DIGITAL Europe is also part of the Strategic Technologies for Europe Platform (STEP).[80]

Strategic Technologies for Europe (STEP)

The STEP platform initiated by the European Commission aims to promote the development and production of strategically important technologies within the European Union. The focus is on forward-looking innovations with high economic potential or technologies that contribute to reducing the European Union's strategic dependencies. To support these objectives, STEP pools resources from eleven different EU programmes to facilitate the financing, development and production of relevant technologies. One of STEP's objectives is to help individual projects benefit from cumulative funding from several EU budget instruments. To this end, the European Commission also awards a label of excellence (STEP Seal) to promising projects, which is intended to facilitate the acquisition of further public and private funding and support critical technologies, particularly in later stages of development. The award is intended to provide investors with guidance and increase the attractiveness of investments in strategically relevant technologies. STEP focuses on the key technology

77 https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en

78 See European Commission (2024c).

79 https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_de

80 https://strategic-technologies.europa.eu/index_en

groups of digital and deep tech technologies, clean and resource-saving technologies and biotechnologies. Among other things, STEP enables the promotion of large companies investing in critical technologies in certain regions of Austria supported by funding from the EU's Just Transition Fund.[81]

Important Projects of Common European Interest (IPCEI)

With the introduction of IPCEI, the EU aims to strengthen its technological sovereignty and accelerate the development of key enabling technologies that are essential for addressing global challenges and safeguarding the competitiveness of European industry.[82] IPCEI are large-scale projects carried out collaboratively by multiple EU Member States, involving companies and research institutions that implement individual but coordinated project components. Austria is currently participating in five IPCEI in the areas of microelectronics, batteries and hydrogen. The IPCEI in the areas of microelectronics and communication technology[83] and hydrogen production and technologies[84] involve Austrian companies and research institutions and are financed through a combination of company investments, national funding from the participating Member States, and European funding, including instruments such as NextGenerationEU.

As part of NextGenerationEU, the EU provides funding to Member States to support projects and initiatives aimed at achieving climate goals, advancing the digital transformation, and strengthening economic and social resilience.[85] Austria's Recovery and Resilience Plan is supported with EU grants totalling €3.96 billion.[86] At the EU level, the Joint European Forum for IPCEI (JEF)[87] is working to improve the IPCEI instrument, with the goal of enhancing its efficiency, speed, and long-term impact. The forum also focuses on identifying new potential IPCEI in strategically relevant key technology areas, and Austria is actively involved in this process.

In this context, the Austrian Council for Sciences, Technology, and Innovation (FWIT) recommends further strengthening of pre-competitive research in key technologies. It also calls for increased use of the IPCEI instrument in critical technology areas that are essential for securing European technological sovereignty.[88] The Austrian Government Programme explicitly acknowledges the strategic importance of IPCEI as a European funding instrument. It is committed to active participation in the strategic coordination of IPCEI at EU level and the proactive use of IPCEI in supporting key industries.[89]

Research infrastructures

The Austrian Research Infrastructure Action Plan 2030, together with the ESFRI Roadmap Update 2026, takes important steps to promote national, European and international research infrastructure, with a focus on the expansion of national infrastructures and Austria's active participation in major international research infrastructures by 2030. The BMFWF disburses around €50 million per year supporting membership of European and international research infrastructures and institutions. These include the European Nuclear Research Centre CERN, the European Molecular Biology Conference (EMBC) and the European Molecular Biology Laboratory (EMBL). Austria is currently involved in 21 European Strategy Forum on Research Infrastructures (ESFRI) (research infrastructure) projects, including five in the field of physics and technology, four in the field of the environment and four in the field of health and nutrition.[90] The

81 https://www.efre.gv.at/news/newsdetail/grossunternehmen-interessensaufruf-fuer-step-foerderung-bis-30-september
82 The Research and Technology Report 2024 contains a focus chapter on Austria's participation in IPCEI.
83 https://www.ffg.at/news/startschuss-fuer-groesste-europaeische-mikroelektronik-initiative-unter-oesterreichischer
84 https://www.bundeskanzleramt.gv.at/eu-aufbauplan/aktuelles/zweites-ipcei-wasserstoff-grossvorhaben-gestartet.html
85 https://austria.representation.ec.europa.eu/strategie-und-prioritaten/der-europaische-aufbauplan-fur-osterreich_de, https://www.bmwkms.gv.at/themen/kunst-und-kultur/schwerpunkte/eu-international/eu-aufbau-und-resilienzfazilitaet/ueberblick.html
86 https://www.bmwkms.gv.at/themen/kunst-und-kultur/schwerpunkte/eu-international/eu-aufbau-und-resilienzfazilitaet/ueberblick.html
87 https://competition-policy.ec.europa.eu/state-aid/ipcei/joint-european-forum-ipcei_en
88 See FWIT (2024).
89 https://www.bundeskanzleramt.gv.at/dam/jcr:8d78b028-70ba-4f60-a96e-2fca7324fd03/Regierungsprogramm_2025-2029.pdf
90 https://www.bmfwf.gv.at/forschung/forschung-eu/eu-forschungsinfrastrukturen.html

BMIMI also finances the development of international research infrastructures, for example through its membership contributions to ESA (around €70 million annually) and EUMETSAT (around €10 million annually).[91] In total, the federal government makes annual contributions of around €131 million to international organisations that aim to promote research and research funding.[92]

Clusters of Excellence and Emerging Areas of the Austrian Science Fund FWF

In the area of basic research, the FWF's Clusters of Excellence and Emerging Areas are particularly noteworthy for R&D in key enabling technology areas. There are currently nine Clusters of Excellence in which hundreds of researchers at locations throughout Austria conduct research, promote national and international knowledge exchange and actively contribute to research training and the promotion of young talent. For a period of five years, a total of €260 million is available for cluster funding and €31 million for the funding of five Emerging Areas. The central themes of the Clusters of Excellence include energy storage, quantum technology, global health, the future of knowledge, brain research, Eurasia's cultural heritage, healthy ageing, AI and materials research. The following clusters represent examples of the key enabling technologies defined above; each cluster is implemented in cooperation with different research institutes, including (technical and medical) universities as well as non-university institutions such as ISTA or the Austrian Academy of Sciences:

The "Quantum Science Austria" cluster is dedicated to basic research into quantum physical phenomena such as space, time, gravity, quantum information and many-body systems. In the "Bilateral AI" cluster, six institutions are pooling their expertise to develop a generalist, ethically reflected AI (Broad AI) with a higher capacity for abstraction and reasoning; this is integrated into the European ELLIS network.[93] The Cluster of Excellence Materials for Energy Conversion and Storage aims to make a contribution to the energy transition and comprises the subclusters Electrocatalysis, Photocatalysis and Computational Modelling & Materials Simulation. In the "Circular Bioengineering" cluster, five universities are researching the development of platform chemicals and materials from renewable raw materials to establish a circular bioeconomy. In the field of life sciences, two clusters are focusing on medical research:

"Neuronal Circuits in Health and Disease" develops concepts for personalised therapies for mental illnesses, while "Metabolic Control of Aging and Disease" deals with age-related disorders of metabolic control to extend healthy lifespans. This area is complemented by two Emerging Areas: "Devising Advanced TCR-T Cells to Eradicate OsteoSarcoma" aims to find personalised therapies targeting bone cancer, while Brain Resilience investigates factors influencing healthy brain development where there is a predisposition to neurological developmental disorders. The Emerging Field "Resilience and Malleability of Social Metabolism" addresses the social significance of resource flows and stocks and contributes to research in the field of sustainable technologies.

Promotion of company-related research by the FFG

In addition to the strong participation of Austrian companies in European initiatives such as IPCEI and Horizon Europe, the Austrian Research Promotion Agency (FFG) serves as a central national contact point for companies seeking to advance key enabling technologies and apply them in practice. Support is provided through the centres and laboratories mentioned above, open-topic funding schemes, and thematic programmes tailored to specific technological fields and application areas.

Notably, the share of funding allocated to thematic programmes (in terms of financial volume) has increased significantly over the past decade, underscoring their growing importance in Austria's innovation funding landscape.

91 https://www.bmfwf.gv.at/forschung/forschung-oesterreich/forschungsinfrastruktur.html

92 See BMF (2023).

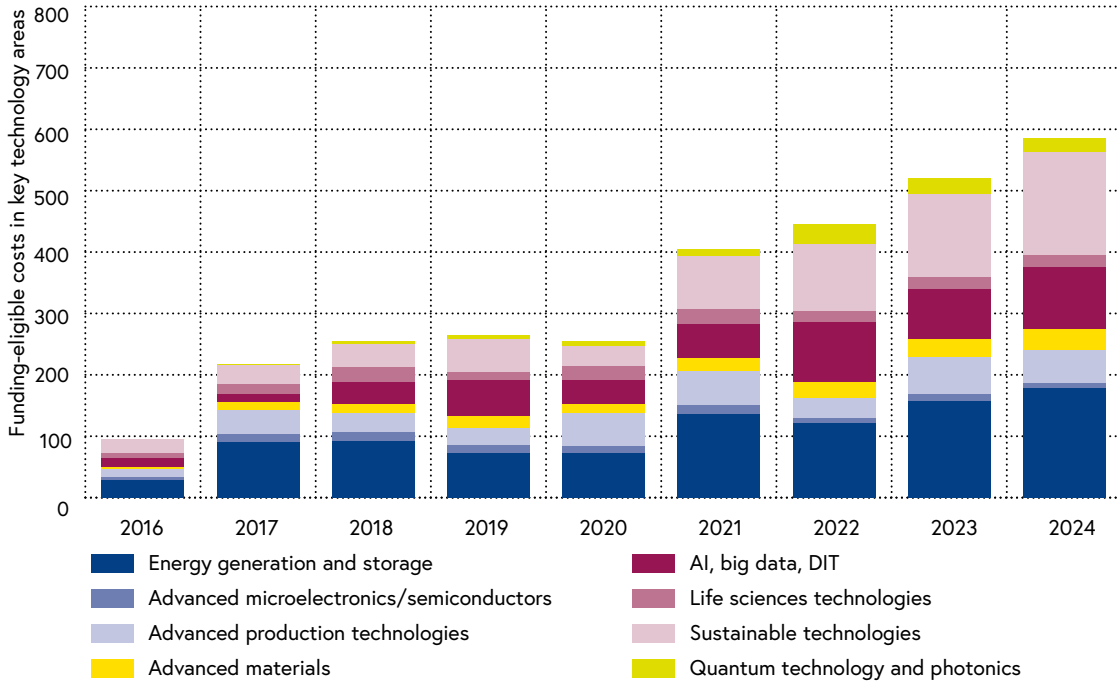
93 ELLIS: The European Laboratory for Learning and Intelligent Systems.

Figure 2-8 below illustrates the development of the eligible costs of R&D projects approved annually that are attributable to the eight key enabling technology areas.[94] Over time, the funding volume allocated to these areas has increased significantly. A closer comparison of the eight areas reveals that quantum technology, photonics, and sustainable technologies have shown particularly strong growth over the past four years, outpacing the overall development of the funding portfolio. In contrast, the budget development in the remaining key technology areas has largely mirrored the general trend of total R&D funding.

It is important to note that individual projects may be assigned to multiple key technology areas. In such cases, the projects – including their eligible funding costs and total project costs – are counted more than once in the analysis.[95]

The key enabling technology area of energy generation and storage recorded both the highest number of projects and the largest funding volume in the period from 2016 to 2024. It is followed by the areas of sustainable technologies, and AI, big data, and digital technologies. By contrast, quantum technology and photonics, advanced microelectronics/semiconductors, life sciences, and advanced materials, all explicitly identified as Austrian strengths, received significantly lower numbers of projects and funding volumes. This distribution suggests a tendency toward smaller, more specialised innovation ecosystems in these areas. These ecosystems tend to co-finance their application-oriented research and development through alternative mechanisms, such as research centres, specialised laboratories, and European funding instruments, in addition to FFG-supported research projects.

Figure 2-8: Development of the FFG funding portfolio in key enabling technology areas, 2016–2024



Note: AI … Artificial Intelligence, DIT...Digital and Information Technologies. All FFG programmes and initiatives related to R&D were taken into account, i.e. not infrastructure projects. Funding-eligible costs are rounded to €1 million. Individual projects can be assigned to more than one key technology area and are counted more than once in this case.

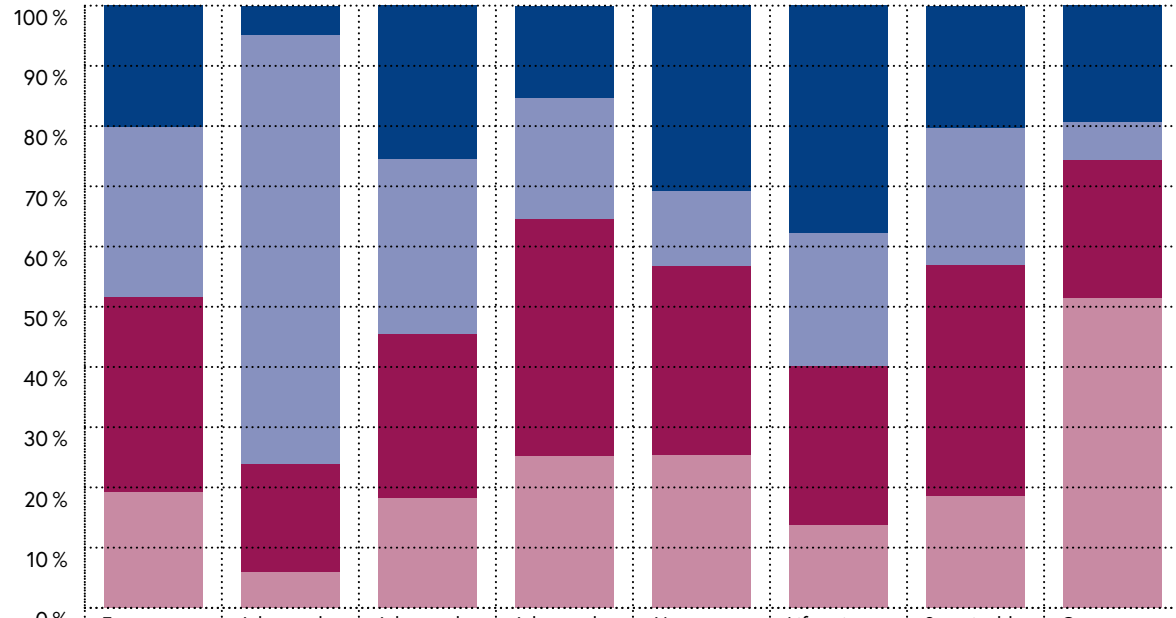
Source: FFG and Austrian Institute for SME Research.

94 This assessment is based on project data from the FFG, which was determined using a combined search strategy of selecting relevant projects using subject index codes in addition to conducting a keyword search of the project titles and summaries based on the defined key technology areas. Several key technologies relevant in a single project result in multiple counting.

95 A total of 6,940 projects (including multiple counting: 8,336 projects) were assigned to the eight key technology areas between 2016 and 2024.

An analysis of the organisational profiles in Figure 2-9 reveals notable structural differences across the individual key technology areas. University research institutions dominate project activity in the field of quantum technology and photonics. In contrast, large industrial enterprises play a central role in microelectronics. The advanced materials sector is primarily shaped by non-university research institutions. The life sciences field is marked by the strong presence of companies, particularly SMEs. In addition, the areas of AI, big data, digital technologies, and life sciences are expected to exhibit above-average involvement from start-ups, indicating dynamic innovation ecosystems in these areas.

Figure 2-9: Distribution of FFG funding-eligible costs (in %) and amount of eligible costs (in € million) in key enabling technology areas by type of organisation, 2016–2024 in total



	Energy generation and storage	Advanced microelectronics/semiconductors	Advanced production technologies	Advanced materials	AI, big data, DIT	Life sciences technologies	Sustainable technologies	Quantum technology and photonics
SMEs	185	5	91	27	149	63	133	21
LE	259	72	104	35	61	37	148	7
AUF	298	18	98	69	152	44	250	25
HEI	176	6	65	44	123	23	121	56

Note: SMEs… Small- and Medium-sized enterprises, LE … large enterprises, AUF...non-university research institutions, HEI...higher education institutions/universities, AI … Artificial Intelligence, DIT...digital and information technologies. All FFG programmes and initiatives related to R&D were taken into account, i.e. not infrastructure projects. Funding-eligible costs are rounded to €1 million. Individual projects can be assigned to more than one key technology area and are counted more than once in this case.

Source: FFG and Austrian Institute for SME Research.

Institutional funding and other measures in Austria

For the years 2024 to 2026, Austria's central research and research funding institutions receive financial resources through their performance or financing agreements, some of which are specifically earmarked to support key technologies. The FWF receives approximately €1.15 billion from the BMFWF to strengthen basic research projects with a strong relevance to key technologies.[96] The LBG receives over €38 million from the BMFWF to further strengthen the life sciences, in particular by the funding of clinical research groups.[97] The CDG receives around €65 million as part of its agreement with the BMWET,[98] and ISTA receives a global budget and a performance-based budget of up to €575.8 million from the BMFWF.[99] For the years 2024–2026, the Austrian Academy of Sciences' budget amounts to around €529 million.[100] The BMIMI provides the AIT with around €200 million and SAL with more than €60 million for the broad portfolios described above across several key technologies.[101] The FFG and aws receive funding from the BMIMI and BMWET for the multi-year funding agreement. The BMIMI supports the FFG with a total of more than €1.1 billion, half of which is also allocated to key technology-relevant areas such as digital technologies, energy and mobility transition, circular economy and production technologies, space and aviation technologies and climate-neutral cities. The BMWET provides the FFG with funds totalling around €400 million, primarily for the transformation initiative, digital technologies and key technologies, life sciences, IPCEI, competence centres (both co-financed with the BMIMI) and various capacity-building measures.[102]

The funding agreements between the federal ministries BMWET and BMIMI and the Austrian promotional bank aws for the period 2024–2026 allocate approximately €60 million from BMIMI and €80 million from BMWET for the research- and innovation-relevant segment of the aws budget. These funds are aimed at supporting innovative business ideas, technology- and innovation-driven start-up initiatives with environmental and societal relevance, intellectual property protection for start-ups and SMEs, and the competitiveness of highly innovative frontrunner companies.

Support is provided for start-ups, spin-offs, and scale-ups in a range of areas such as AI applications, digitalisation, GreenTech, quantum technologies, sensor technology, and life sciences, covering both business foundation and company growth phases. This funding is complemented by high-visibility competitions and awards to promote broad participation and recognition.[103] Similar to the IPCEI projects, the establishment of the Austrian Institute of Precision Medicine and the Quantum Austria funding initiative are financed through the EU's Recovery and Resilience Facility (RRF).[104] Quantum Austria, initiated by the BMFWF and jointly implemented by the FWF and FFG, aims to support research, development, and innovation in quantum science and technology. With a total volume of €107 million, the initiative is designed to strengthen both basic research and the development of practical applications.[105]

96 https://www.fwf.ac.at/aktuelles/detail/fwf-investierte-349-millionen-euro-in-exzellente-grundlagenforschung#:~:text=Dank%20der%20

97 https://lbg.ac.at/news/neue-leistungsvereinbarung-mit-lbg-staerkt-medizinische-forschung-und-life-science-standort-oesterreich/

98 https://www.bmwet.gv.at/Presse/Archiv/Archiv-Pressemeldungen-BMAW/BMAW-Pressemeldungen-2024/Mai-2024/CDG-Finanzierung.html

99 https://www.bmfwf.gv.at/forschung/forschung-oesterreich/forschungseinrichtungen/ista.html

100 https://www.oeaw.ac.at/detail/news/oeaw-budget-steigt-um-28-prozent

101 https://www.bmk.gv.at/themen/innovation/FTI-Politik/Gesetzlicher-Rahmen-und-Budget.html?utm_source=chatgpt.com

102 https://www.bmwet.gv.at/Presse/Archiv/Archiv-Pressemeldungen-BMAW/BMAW-Pressemeldungen-2024/Maerz-2024/FFG-Finanzierungsvereinbarung-.html

103 https://www.aws.at/modul-seedfinancing-deep-tech/

104 See BMF (2021).

105 See FFG and FWF (2024).

The MUSICA supercomputer cluster is funded under the RRF as part of the Quantum Austria initiative, with additional support from the BMFWF.[106]

Under its agreement with the BMWET, the ACR network receives around €5 million annually to fund application-oriented research projects and networking activities, many of which contribute to the dissemination of key technologies.[107]

In addition, technology platforms help in promoting cooperation and knowledge exchange among universities, research organisations, industry, and public institutions. They contribute to strengthening Austria's position in key enabling technologies by covering all key technology areas, drafting strategy documents, serving as information hubs, supporting community building, and facilitating collaboration among members.[108]

2.2.5 Summary

Key enabling technologies play a central role in competitiveness, productivity, and addressing societal challenges, and are therefore an essential component of a modern industrial and innovation policy. Today, industrial policy is understood as a comprehensive location policy that integrates science and innovation policy, labour market, and education policy as cross-cutting issues. The goal is to support the transformation of economic sectors and to avoid preserving "outdated structures".[109]

This requires a coordinated approach within the framework of a pan-European industrial strategy alongside European partners, aimed at deepening the development of the single market, reducing strategic dependencies in future industries, enhancing one's own competitiveness, and simultaneously avoiding potential negative effects of unilateral industrial policies.[110] In this context, nation states can make a highly productive contribution through coordinated policy measures.

Austria possesses sectoral strengths that offer targeted innovation potential and thus opportunities for future competitiveness. These areas of strength are primarily found in advanced production technologies and advanced materials, life sciences, environmental and energy technologies, as well as in quantum technologies and photonics within the scientific domain.

However, structural weaknesses exist in artificial intelligence and big data, despite a strong position in the Internet of Things (IoT). Moreover, there is a lack of large technology companies ("super firms") that broadly develop key technologies and scale internationally.[111] The establishment of such firms is possible either through targeted location policies or by fostering their development in close cooperation with the European innovation ecosystem.

The Austrian Productivity Board and the Austrian Council for Sciences, Technology, and Innovation (FWIT) have submitted their recommendations to the federal government in the following areas of action:

(a) Digitalisation, AI and cybersecurity;
(b) energy supply and ecological transformation;
(c) labour potential and human capital; and
(d) start-up activity in the business enterprise sector – all of which are highly relevant for strengthening key enabling technologies but cannot be elaborated upon here due to their detailed nature.[112]

Participation in EU programmes and international research infrastructures not only provides access to substantial research and development funding but also fosters the development of international partnerships and the exchange of best practices among leading nations. Moreover, international collaboration and

106 https://www.tuwien.at/tu-wien/aktuelles/news/musica-oesterreichs-naechster-supercomputer
107 https://www.bmwet.gv.at/Presse/Archiv/Archiv-Pressemeldungen-BMAW/BMAW-Pressemeldungen-2024/Februar-2024/ACR-Budget.html
108 See BMVIT (2019) and Hofmann et al. (2024).
109 See Felbermayr (2023, p. 16).
110 See Hodge et al. (2024).
111 See Mazak-Huemer and Reinstaller (2025).
112 Ibid.

resource pooling, along with enhanced cooperation between research institutions, industry, and public bodies, are essential to overcome the fragmentation of the European research landscape and to build a critical mass of expertise capable of generating key innovations in these highly competitive technology areas.

In response to the Draghi Report, the European Commission launched the Competitiveness Compass 2025 — an initiative aimed at significantly strengthening European ecosystems for key technology areas, provided that Member States align their activities well.

Austrian universities and non-university research institutions broadly cover all key technology areas through diverse research specialisations and a wide range of educational programmes. However, some stakeholders – particularly in the area of digitalization – occasionally question the scope of the training and the number of graduates, issues which are being addressed through performance agreements with universities and research institutions.

In collaboration with industry, these institutions set further priorities for research and development in key enabling technologies within national initiatives (e.g., CD laboratories, COMET centers, JR centers, LBG and OeAW institutes) as well as European programmes (e.g., Horizon Europe, European Partnerships, IPCEI, Chips Act, and STEP). An illustrative example is AI Factory Austria (AI:AT), coordinated by AIT, which was selected by the European Commission in March 2025 as one of six new European AI centres.

Key enabling technology areas have gained increasing importance within research funding organisations in recent years. The Austrian Science Fund (FWF) has established clear priorities through its Clusters of Excellence and Emerging Areas programmes, while funding for key enabling technology areas has reached record levels at the Austrian Research Promotion Agency (FFG). The FFG's business-oriented funding programmes have concentrated substantial resources on energy generation and storage, followed by sustainable and digital technologies.

Relatively smaller amounts of FFG funding was allocated in project support to explicit areas of strength such as quantum technology and photonics, microelectronics, life sciences, and advanced materials. This suggests that companies in these sectors operate within specialised innovation ecosystems that, alongside traditional R&D project funding, also leverage alternative funding instruments such as centres, laboratories, and European initiatives.

Overall, this funding portfolio has developed positively in recent years. However, it will require further strategic refinement to align with the newly introduced Competitiveness Compass at the European level, as well as with forthcoming European action plans targeting individual key enabling technologies areas.

2.3 Austria's position in international comparison

This chapter focuses on Austria's position in research, technology and innovation in an international context. Chapter 2.3.1 analyses Austria's performance in research and development based on a set of selected key input and output indicators. Chapter 2.3.2 focuses on scientific performance, while Chapter 2.3.3 evaluates Austria's position in global innovation rankings. Chapter 2.3.4 presents an international comparison of Austria's position in key areas such as digitalisation, future technologies, artificial intelligence and quantum technologies. Chapter 2.3.5 then explores Austria's innovation capability from an international perspective. Finally, Chapter 2.3.6 considers Austria's position in terms of ecological sustainability and resilience, with particular attention paid to their social and economic relevance. Advancing the digital, green and sustainable transformation of societal and economic systems is a key objective of the federal government's RTI Pact 2024–2026 and therefore also guides Austrian RTI policy.

Each chapter in this report presents a comparison of relevant indicators from different sources for the 27 EU Member States. The EU average values shown in each case are calculated from the data available for EU Member States.[113] Depending on the data available, comparisons are also made with Switzerland, which has been a consistently strong performer in science and innovation, as well as with economies from other continents, such as the USA, China, Brazil, South Africa and Australia.

Key findings from important indicators are highlighted at the beginning of each chapter. The indices used for the empirical analysis are described in more detail in the chapters themselves, and long-term trends are presented for selected RTI indicators. Where possible, indicator developments are also compared with the corresponding targets in the RTI Strategy 2030.[114] With reference to the focus topic of this report "Key technologies" (Chapter 2.2), this chapter also addresses Austria's position in key technology fields based on selected indicators. The data sources used are listed in Annex I.

113 For some indicators, values (possibly for the year under review) are missing for individual countries in the data sets. As the indicators come from different sources, there are differences in the year of the data currently available.

114 See Federal Government of the Republic of Austria (2020).

2.3.1 The development of Austria's position in key RTI indicators

RTI indicators

- **R&D expenditure in 2023 (Eurostat): 3rd place; Austria continues to occupy a strong position in the EU and once again ranks fifth in terms of R&D employees.**
- **Venture capital 2023 (European Innovation Scoreboard): 14th place; Austria continues to lag slightly behind, but has advanced by one place.**
- **Patent intensity 2022 (OECD): 7th place; Austria improved by two places.**

In this section, Austria's position in terms of performance and efficiency in research, technology and innovation is presented in an international comparison. For this purpose, classic input and output indicators are analysed. Input indicators include expenditure on research and development, venture capital investments and R&D personnel, whereas output indicators include patent intensity (triadic patents), scientifically cited publications, European funding (ERC grants) and the number of outstanding universities in the country (measured by the Times Higher Education World University Ranking[115]). Austria's position in global innovation rankings, such as the Global Innovation Index[116] and the European Innovation Scoreboard[117], is also analysed.

R&D expenditure

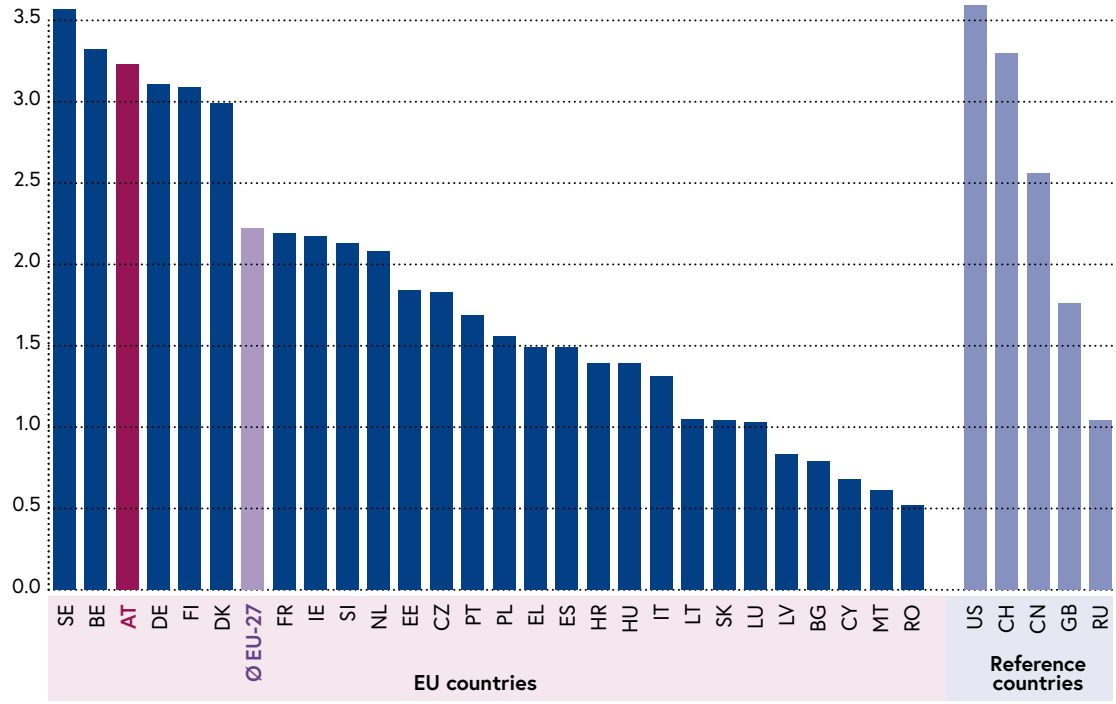
R&D expenditure, i.e. the total gross domestic expenditure on research and development, is set in relation to gross domestic product (GDP) and thus indicates the research intensity. This input indicator for R&D is one of the classic, central and most widely recognised indicators for a country's RTI system. In its RTI Strategy 2030, Austria has defined the goal of being one of the top 5 nations in this respect.[118]

Figure 2-10 shows a country comparison of the research intensity for 2023. Sweden leads the ranking with a research intensity of 3.57, followed by Belgium (3.32) and Austria (3.23). Austria's research intensity has increased slightly compared to the previous year. With its high research intensity, Austria is once again among the top 3 nations in the EU.

Globally, Austria continues to rank 9th in 2023, behind Israel, South Korea, Taiwan, Sweden, the United States, Japan, Belgium and Switzerland.[119] According to OECD data, Austria's research intensity is 0.16 percentage points below that of the United States, which ranks 5th (3.29 compared to 3.45). This means that the RTI Strategy 2030 goal of gradually increasing R&D expenditure as a percentage of GDP in order to catch up with the global leaders (top 5) has not been achieved.

115 See Times Higher Education (2024).
116 See WIPO (2024).
117 See European Commission (2024c); European Commission (2024d).
118 See Federal Government of the Republic of Austria (2020, p. 7).
119 See OECD (2025b). Data for Switzerland from 2021.

Figure 2-10: Share of R&D expenditure in gross domestic product (in %), 2023



Note: Data for the United States and China are from 2022, for Switzerland from 2021, and for the United Kingdom and Russia from 2019. No data are available for Australia, Brazil and South Africa. The data for 2023 are provisional figures from Eurostat.

Source: Eurostat (2024), Statistics Austria (2024); illustration: iit.

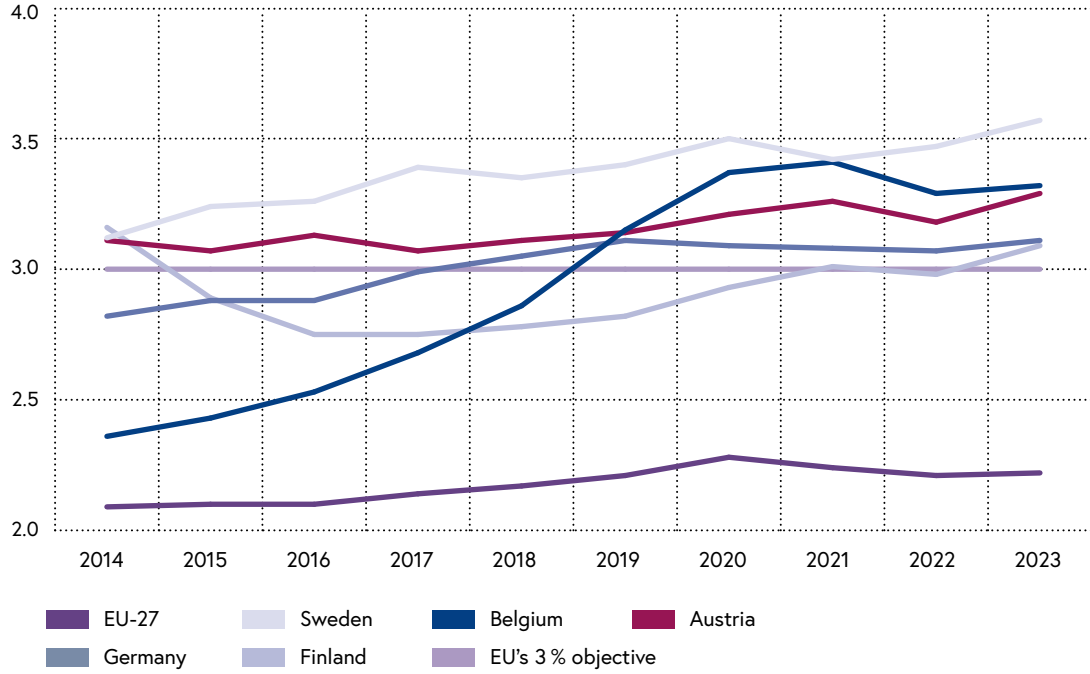
Figure 2-11 illustrates the development of research intensity in Austria and selected EU Member States over time from 2014 to 2023.[120] Sweden notably had the highest research intensity almost every year. Belgium was able to significantly increase its research intensity and achieved the second-highest value since 2019. In 2023, Austria achieved an almost equally high research intensity.

The research intensity also increased in Finland, but it showed little change in Germany, while the EU-27 average remained nearly constant and well below the EU's 3 % target. Austria therefore remains among the leading EU nations that exceed this target.[121]

120 The development of Austria's research intensity is discussed in detail in Chapter 2.1.1.

121 The European Council adopted the Europe 2020 strategy in summer 2010 (see European Commission, 2010). One of the central goals of the Europe 2020 strategy is to increase expenditure on research and development to 3 % of gross domestic product. Since the Europe 2020 strategy, no new target for the research intensity has yet been announced by the European Commission, but the European Commission has confirmed the European innovation targets and European R&D expenditure in the New European Innovation Agenda (European Commission, 2022b).

Figure 2-11: Share of R&D expenditure in gross domestic product over time (in %), 2014–2023



Note: The data for 2023 are provisional figures from Eurostat.

Source: Eurostat (2024); illustration: iit.

A country's R&D expenditure is calculated based on various sectors. Statistically, a distinction is made between the business enterprise sector, the higher education sector, the public sector and private non-profit organisations. However, the same survey is not carried out consistently in all EU-Member States in terms of differentiating between the state sector and private non-profit organisations (this applies to Ireland and the Netherlands, among others). Against this background, Figure 2-12 shows the composition of R&D expenditure by implementation sector in an international comparison. Despite the difficult framework conditions, the business enterprise sector is still the most important R&D performing sector in almost all Member States (with the exception of Latvia). In 22 of the 27 EU countries, the business enterprise sector accounts for over 50 % of total R&D expenditure[122]. The EU-27 average is 66.7 %, and among the top 5 nations, the share ranges between 69.2 % (Netherlands) and 89.9 % (Ireland). The second-highest R&D expenditure is in the higher education sector (exceptions here are Slovenia, Bulgaria and Romania),[123] while the proportion of R&D expenditure in the public sector and in private non-profit organisations is lower.

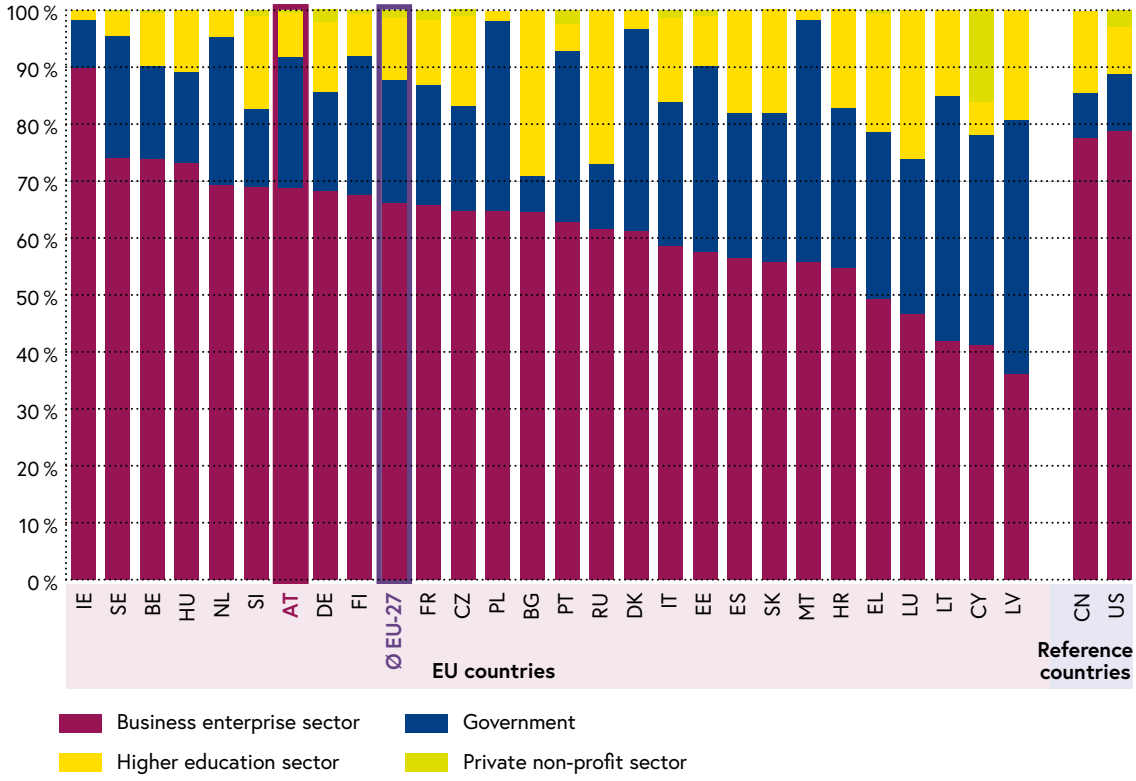
For Austria, the breakdown of R&D expenditure remains almost unchanged compared to 2022. In 2023, the business enterprise sector was responsible for around two thirds (68.8 %) of R&D expenditure[124] and the higher education sector for around a quarter (23.0 %), while the public sector and non-profit private organisations accounted for 7.6 % and 0.6 % respectively.

122 Exceptions are Greece (49.3 %), Luxembourg (46.6 %), Lithuania (41.9 %), Cyprus (41.2 %) and Latvia (36.1 %).

123 The EU-27 average share of the higher education sector is 21.3 %. Bulgaria (6.3 %), Ireland (8.3 %) and Romania (11.5 %) have the lowest shares among the Member States, while the highest shares are found in Latvia (44.6 %), Lithuania (42.9 %) and Malta (42.6 %).

124 The proportion of corporate R&D expenditure in Austria is the seventh highest in an EU-27 comparison.

Figure 2-12: R&D expenditure by sector in international comparison (in %), 2023



Note: No data are available for Australia, Brazil, Russia, South Africa, the United Kingdom and Switzerland. The data for China and the United States are from 2022. The data for 2023 are provisional figures from Eurostat. Source: Eurostat (2024); illustration: iit.

Venture capital

For many newly founded innovative companies, venture capital investments are particularly important in the start-up and growth phase in order to successfully establish themselves on the market. A country's venture capital volume can therefore be considered an indicator of future stimulus for the economy. In 2023, venture capital investments in Austria accounted for 0.110 % of the country's GDP, based on the EIS three-year average for 2021–2023.[125]

This places Austria 14th among the EU-27. Estonia leads with 1.00 %, followed by Finland and Denmark, each with 0.40 %. Although Austria is still below the EU-27 average of 0.17 %, it was once again able to increase the volume of venture capital investments – measured as a three-year average – and advance one place compared to the previous year (2022: 15th place; three-year average 2020–2022: 0.115 %). However, an analysis of the value in individual years shows that venture capital investment in 2023 at 0.019 % has returned to the starting level of the RTI strategy,[126] following a positive outlier of 0.211 %[127] in 2021. Austria has thus met the target set in the RTI Strategy 2030 of increasing venture capital investment as a percentage of gross domestic product from 0.02 % to 0.1 % in the three-year average 2021–2023, the last time the positive outlier in 2021 was included in the calculation.[128]

125 The European Innovation Scoreboard shows the three-year average of venture capital investments in order to minimise the effect of outliers.

126 The annual data comes from Invest Europe, the organisation on whose data the information in the European Innovation Scoreboard is also based.

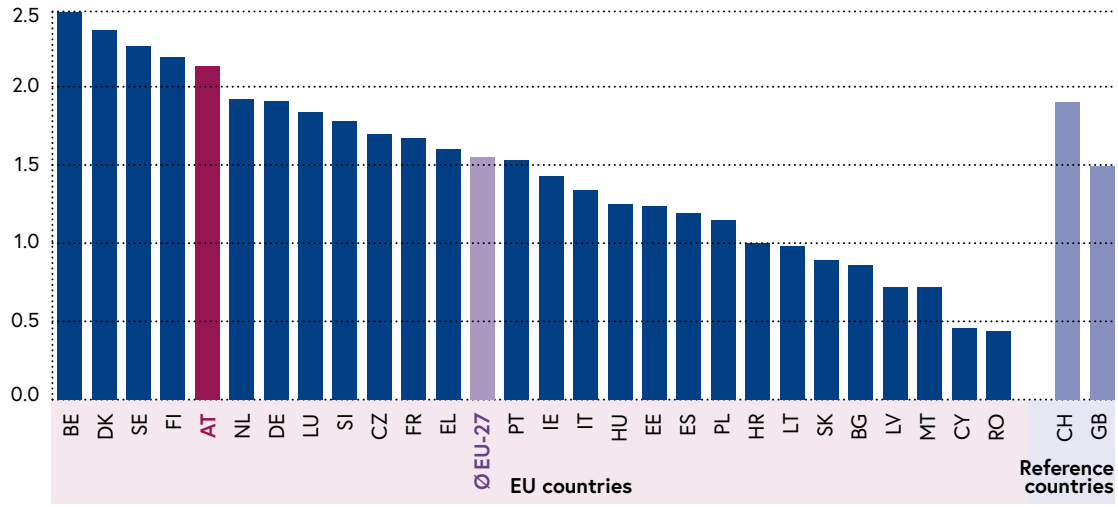
127 The investments in the companies Bitpanda and GoStudent are the reason for the high venture capital investments in 2021.

128 See Federal Government of the Republic of Austria (2020, p. 7).

R&D employees

The proportion of R&D personnel in the labour force is another key input indicator for the RTI system.[129] R&D personnel includes all persons directly involved in research and development activities, i.e. technical personnel in addition to scientific personnel (researchers). Figure 2-13 shows the share of R&D employees in the total labour force in 2023 in an international comparison. With R&D personnel accounting for 2.13 % of the labour force, Austria ranks fifth among the EU-27, placing it among the leading countries and – as in the previous year – behind Belgium (2.48 %), Denmark (2.36 %), Sweden (2.26 %) and Finland (2.19 %). In 2023, Austria continued the growth of previous years in R&D personnel, reaching a share of over 2 % for the second time (2022: 2.02 %). Compared to the previous year, Austria recorded an increase of 0.11 percentage points and thus the highest growth among the top 5 countries. In contrast, the EU-27 average increased only slightly (+0.02 percentage points).

Figure 2-13: R&D staff as percentage of the working population (in %), 2023



Note: The data for Switzerland are from 2021 and for the United Kingdom from 2019. No data are available for Australia, Brazil, China, Russia, South Africa and the United States. The calculations in the figure are based on full-time equivalents (FTE) for better comparability.
Source: Eurostat (2024); illustration: iit.

Figure 2-14 provides a closer look at women working in R&D by showing the proportion of female researchers among all researchers[130] – again in an international comparison. The percentage of female researchers is shown across all sectors (government, companies, universities, private non-profit organisations) and measured in headcount. Compared to 2019, in 2022 Austria increased the proportion of female researchers from 30.4 % to 31.3 %.[131] This figure remained unchanged compared to 2021. However, this had little impact on the ranking, and Austria still lags behind, placing 21st. The need for improvement is particularly evident in the proportion of female researchers measured in full-time equivalents, which stood at just 25.0 % in Austria in 2021. The EU's

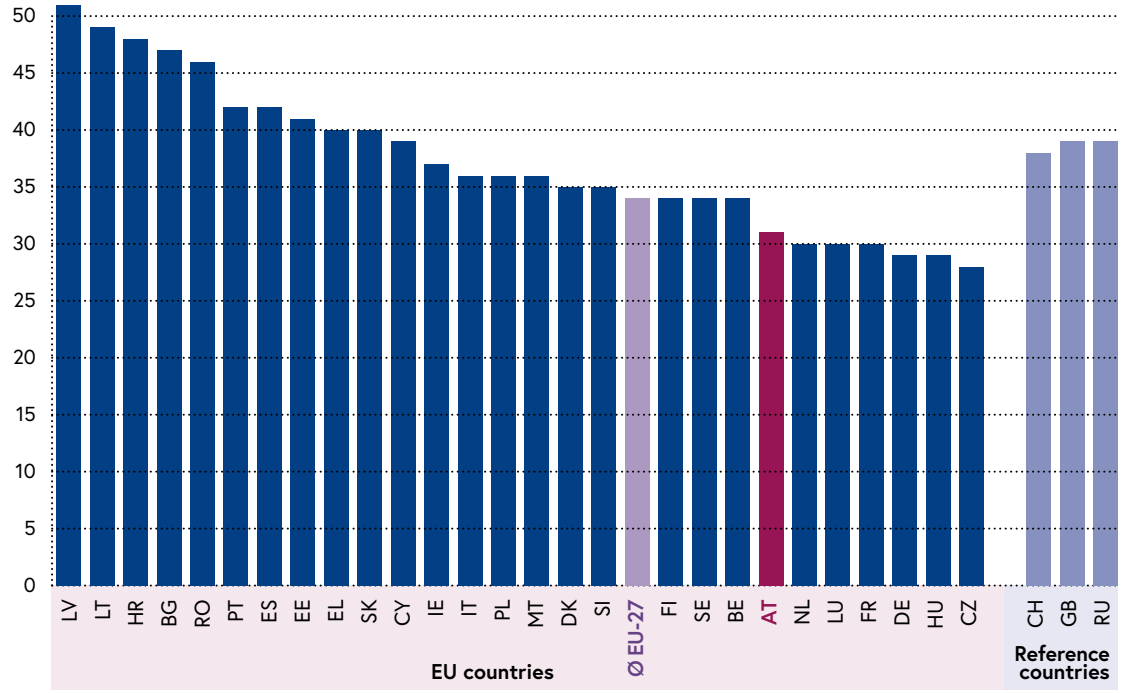
129 "The R&D personnel of a statistical unit include all persons directly involved in R&D, i.e. staff employed by the statistical unit, external staff fully involved in the R&D activities of the statistical unit and persons providing direct services to the R&D activities (such as R&D managers, administrative staff, technical staff and office staff)" (Frascati Manual 2015, § 5.6.).

130 "Researchers are professionals involved in the conceptualisation and creation of new knowledge. They conduct research and improve or develop concepts, theories, models, techniques, instruments, software or procedures" Frascati Manual 2015, § 5.35).

131 No data are available for Austria for 2020.

new She Figures Index,[132] which measures progress towards gender equality in research and innovation, shows that Austria was in the lower mid-range in 2024. With an index value of 69.5, Austria ranked 20th in the EU. The EU-27 average was 72.9, with the highest values achieved by Sweden (87.6) and Lithuania (84.5). Compared to 2021, Austria improved by 1.5 points (from 68.0), but at the same time dropped six places (2021: 14th place).

Figure 2-14: Share of women in research (in %), 2022



Note: The data for the EU-27, Belgium, Germany, Ireland, Cyprus, Luxembourg, Austria, Sweden and Switzerland are from 2021, for Denmark and Russia from 2019 and for the United Kingdom from 2018. No data are available for Australia, Brazil, China, South Africa and the United States.
Source: Eurostat (2024); illustration: iit.

Applications for triadic patents

Triadic patents are a "family" of patents for the same invention that are filed simultaneously with the three major patent offices: Europe (European Patent Office, EPO), Japan (Japan Patent Office, JPO) and the United States (United States Patent and Trademark Office, USPTO).[133] As filing patents is resource-intensive and time-consuming, filing a triadic patent is considered an indicator of invention quality.

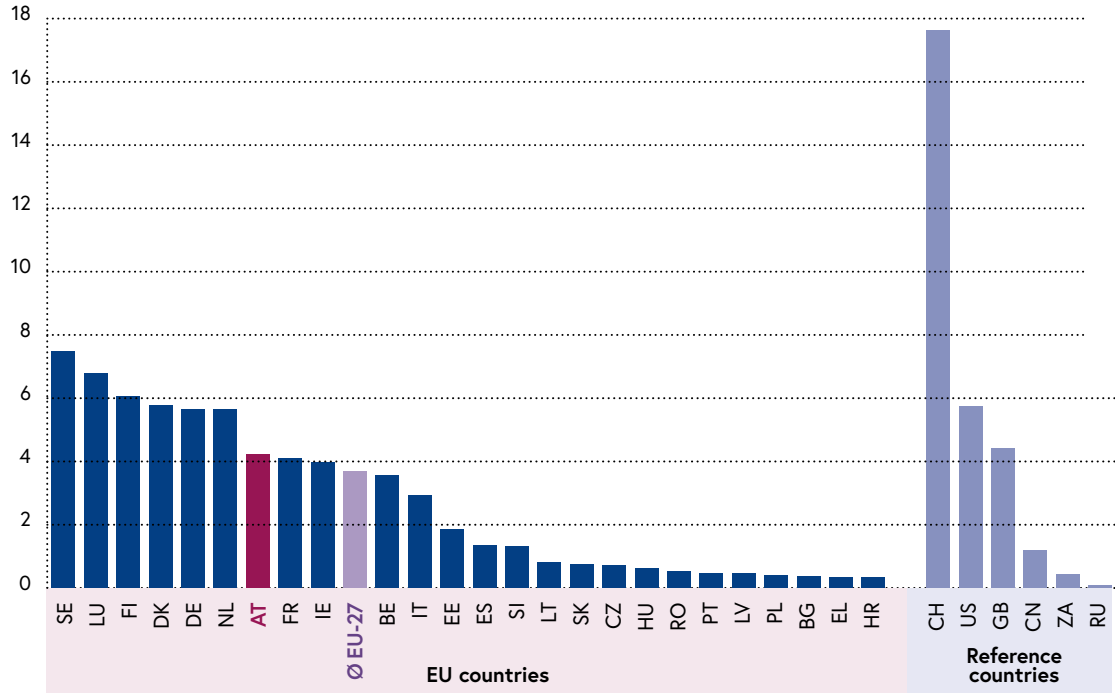
Figure 2-15 shows the number of triadic patents per 1,000 R&D employees ("triadic patent intensity") by country of origin. In an international comparison, Switzerland continues to hold an outstanding position with a triadic patent intensity of 17.62. In an EU-27 comparison, Sweden is again at the top in 2022 with a triadic patent intensity of 7.49, followed by Luxembourg and Finland. Austria improved its position by two places compared to 2021 and is now in 7th place. With a value of 4.21, Aus-

132 The She Figures Index consists of the following six dimensions: segregation in the talent pipeline, research careers and sectors, career progression, representation in decision-making positions, research participation and the gender dimension in R&I content. See European Commission (2025c).

133 See OECD (2024a).

tria is above the EU-27 average (2022: 3.68). As the data for the triadic patents since 2020 are OECD estimates for the individual countries based on the latest trends in patent applications in the three patent offices,[134] Austria's true position may differ. In addition, the OECD switched to a new platform for data dissemination last year and the data may still change as a result of further updates.

Figure 2-15: Patent intensity (triadic patents) per 1,000 R&D employees, 2022



Note: No data are available for the triad of patents for Malta, Cyprus and Brazil. The data on R&D personnel for South Africa, the United States and Switzerland are from 2021, for Russia from 2020 and for the United Kingdom from 2017. No data on R&D personnel are available for Malta, Cyprus, Australia and Brazil. Source: OECD (2024), OECD (2025b); Illustration: iit.

134 The OECD chooses the priority date, i.e. the date of the first international registration of a patent, as the reference date. Counting patent families according to the earliest priority date has the disadvantage that not all information is available. The time span between the priority date and the availability of information on patent applications can be up to four years.

2.3.2 Austria's international position in science

Science

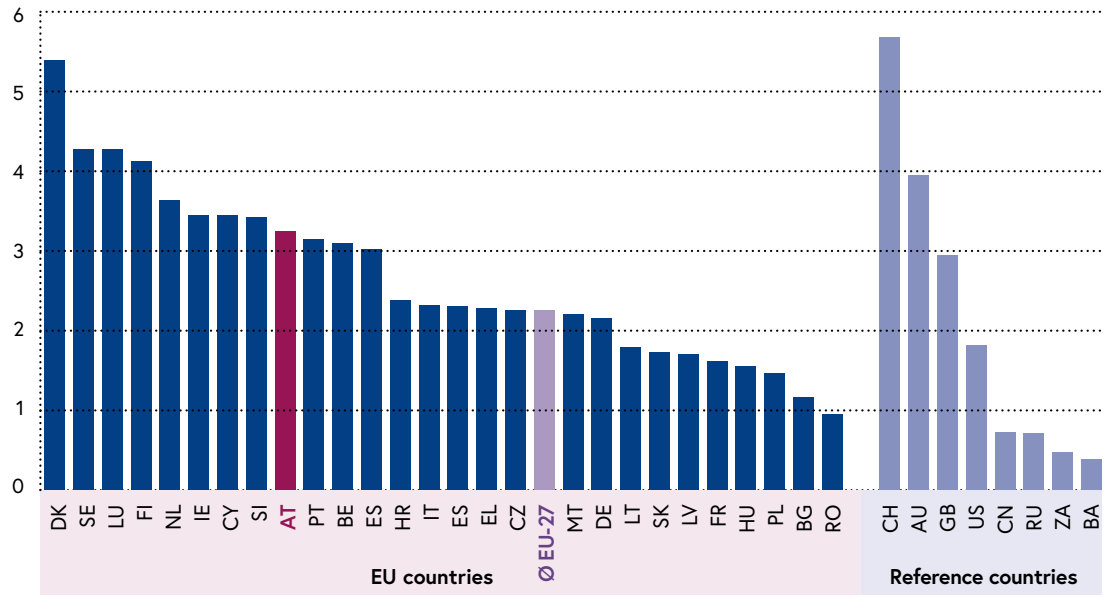
- **Scientific publications in 2023 (Scimago): 9th place; no change compared to the previous year.**
- **ERC grants 2023 (European Research Council): 6th place; the RTI Strategy 2030 target of being among the top 10 is met.**
- **Times Higher Education World University Ranking 2025: No placement of Austrian Universities among the top 100. The University of Vienna advanced to 110th place.**

The following section examines (i) the number of scientifically citable publications, (ii) the number of European funding (ERC grants) awarded and (iii) the Times Higher Education World University Ranking in order to illustrate Austria's scientific performance in an international context.

Citable scientific publications

Scientific findings are published in specialised journals and can serve as the foundation for new technologies and services. The number of citable scientific publications in a given country therefore provides a quantitative measure of scientific performance. Figure 2-16 shows the results of a bibliometric analysis based on the Scimago publication database.[135] The analysis considers citable publications (including scientific studies, reviews, books, articles) per country, with the total number of publications set in relation to the country population.[136]

Figure 2-16: Number of scientific (citable) publications in all disciplines standardised by country population, 2023



Source: Scimago Journal & Country Rank (2024), World Bank (2024); illustration: iit.

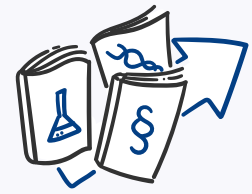
135 The data basis for the Scimago Journal & Country Rank is Scopus.

136 See Scimago Journal & Country Rank (2024).

At 3.24 citable publications per 1,000 inhabitants, the value of this indicator for Austria has not changed from the previous year. In an international comparison, Austria was able to maintain 9th place and thus remains in the upper mid-range. The number of citable publications also remained almost unchanged overall among the EU-27 Member States. The EU-27 average fell slightly from 2.26 citable publications per 1,000 inhabitants in 2022 to 2.25 in 2023. Once again, Denmark(5.39) as well as Sweden and Luxembourg (both 4.27), lead this indicator in an EU-27 comparison, followed yet again this year by Finland (4.12). In a global comparison, Switzerland remains the leader (5.68).

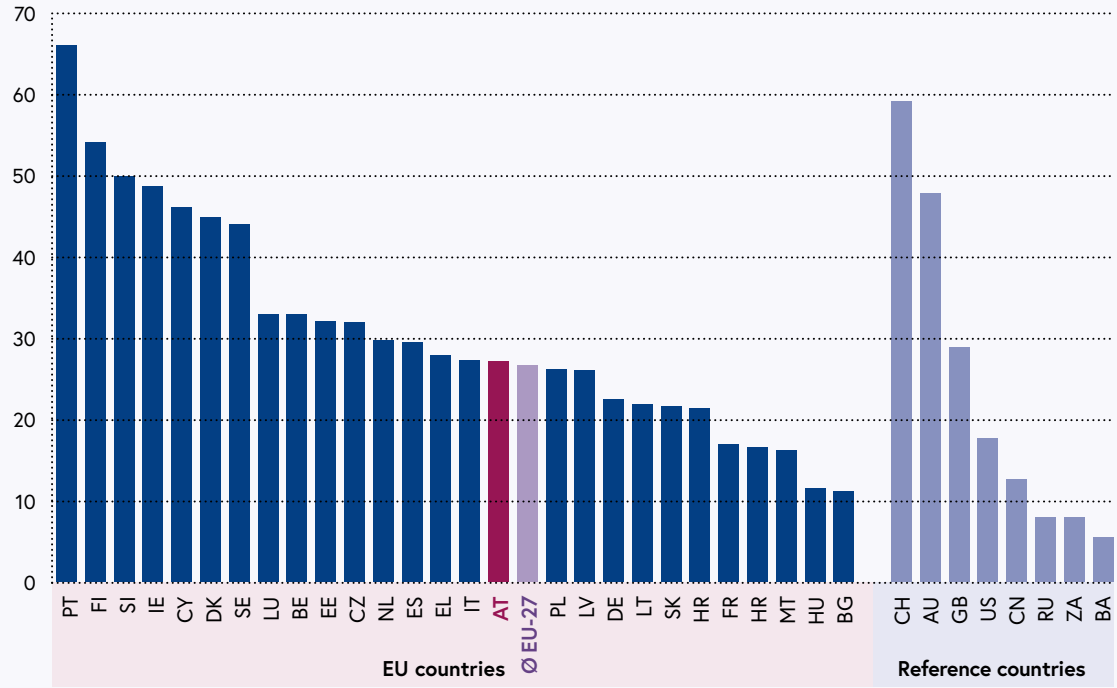
Excursus: Scientific publications in key technology fields

For the first time, scientific publications in eight key technology fields are shown in the Austrian Research and Technology Report. The two fields "Artificial intelligence, big data, digital and information technologies" and "Quantum technology and photonics" are analysed in more detail in section 2.3.4. The results for the six other key technology fields for 2023 are presented in detail here. Overall, an analysis of the publications in the relevant key technology fields demonstrates that a number of countries in the EU-27 occupy several top places, including Denmark, Sweden, Luxembourg and Finland, which also occupy top places in the overall ranking. As expected, Switzerland, which stands out in the overall analysis, also achieves very high values for publications in most key technology fields. To summarise, in terms of the number of scientific publications, Austria belongs to the top group in the EU-27 in three key technology fields ("Quantum technology and photonics", see Chapter 2.3.4, "Advanced microelectronics/semiconductors", "Advanced production technologies and robotics, Advanced sensor technology"), and to the upper midfield in three fields ("Artificial intelligence, big data, digital and information technologies", see Chapter 2.3.4, "Life sciences technologies", "Sustainable technologies: circular economy, buildings, waste/water") and to the mid-range in two fields ("Advanced materials incl. nanotechnology", "Energy generation and storage").



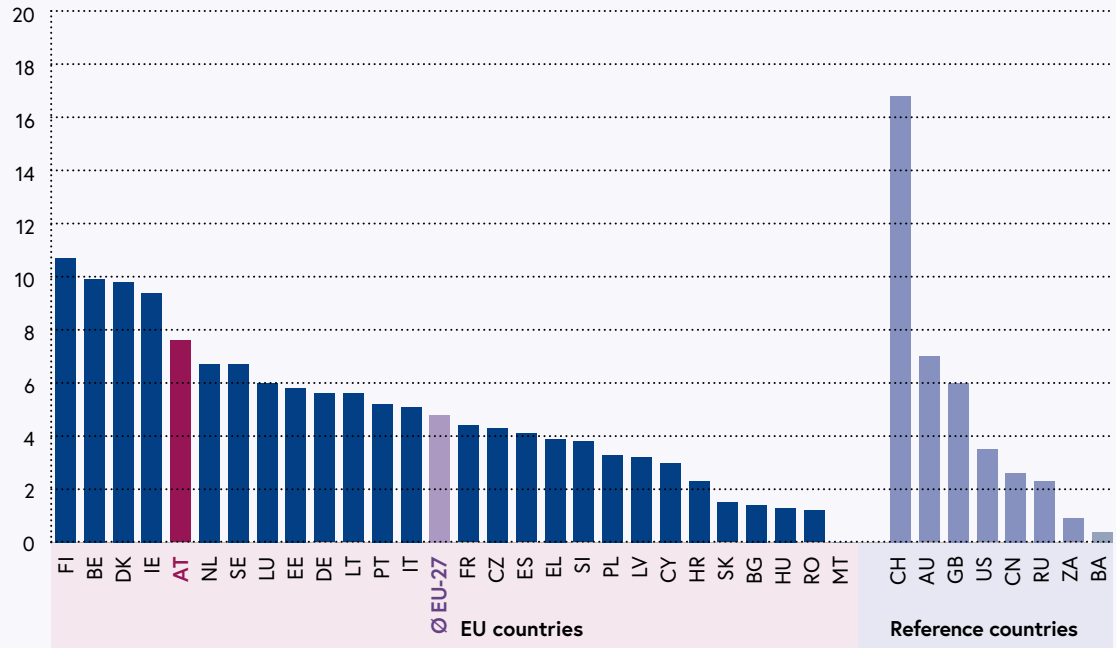
An analysis of individual fields shows the following: In the field of "Advanced materials including nanotechnology", Austria achieves a mid-table ranking in the EU-27 with 27.2 citable publications – measured here and in the following per 1 million inhabitants – only slightly above the EU-27 average (16th place, see Figure 2-17). Portugal in first place and Switzerland in second place have more than twice as many publications in this field. In the field of "Advanced microelectronics/semiconductors", Austria achieved a place among the top 5 in the EU-27 with 7.6 publications (5th place, see Figure 2-18). However, Switzerland achieved a value more than twice as high with 16.8 publications. In the field of "Advanced production technologies and robotics, advanced sensor technology", Austria is also among the top five in the EU-27 (rank 4, see Figure 2-19). With 28.9 publications, Austria is almost on a par with Switzerland (30.0 publications). In the field of "Life sciences technologies", Austria ranks in the upper mid-range (9th place, see Figure 2-20) with 33.7 publications. Nevertheless, Switzerland also has twice as many publications in this field (67.3 publications). In the field of "Energy generation and storage", Austria is in the middle range in the EU comparison with 11.9 publications (rank 12, see Figure 2-21). Although Switzerland is higher in this field with 17.6 publications, it is in some cases significantly outperformed by five other EU countries. In the field of "Sustainable technologies: circular economy, buildings, waste/water", Austria is in the upper mid-range (8th place, see Figure 2-22). The number of publications in Switzerland in this field is also almost twice as high (34.0 compared to 17.7 in Austria).

Figure 2-17: Number of scientific (citable) publications in the key technology area "Advanced materials incl. nanotechnology" standardised by country population, 2023



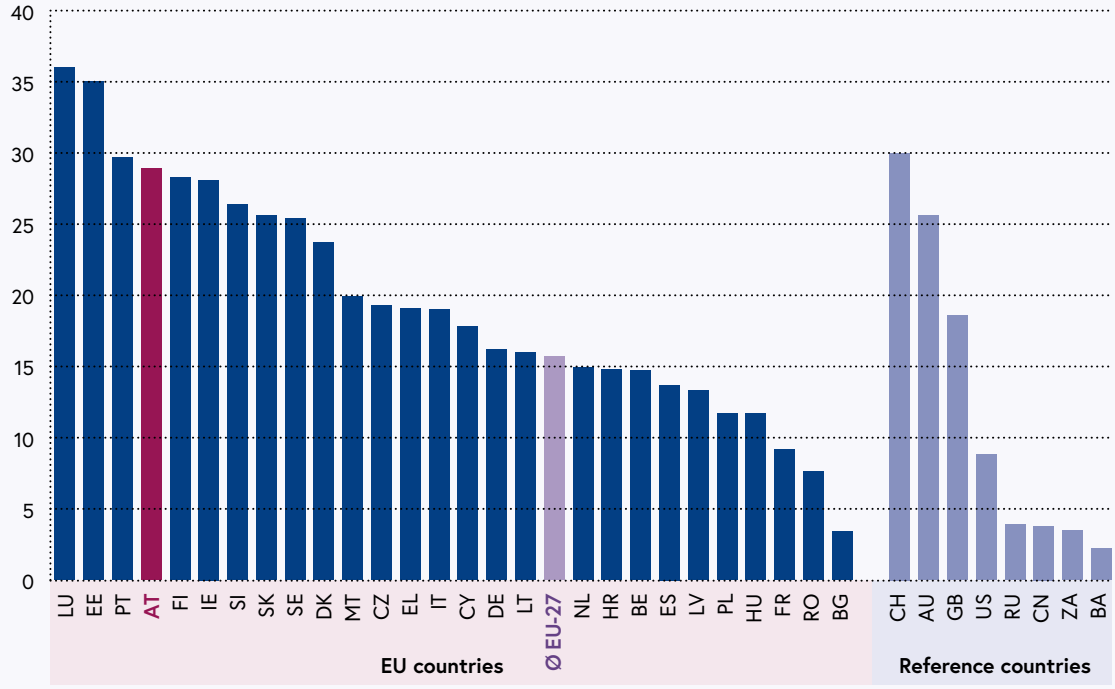
Source: Scopus (2025), World Bank (2024); Illustration: iit.

Figure 2-18: Number of scientific (citable) publications in the key technology area "Advanced microelectronics/semiconductors" standardised by country population, 2023



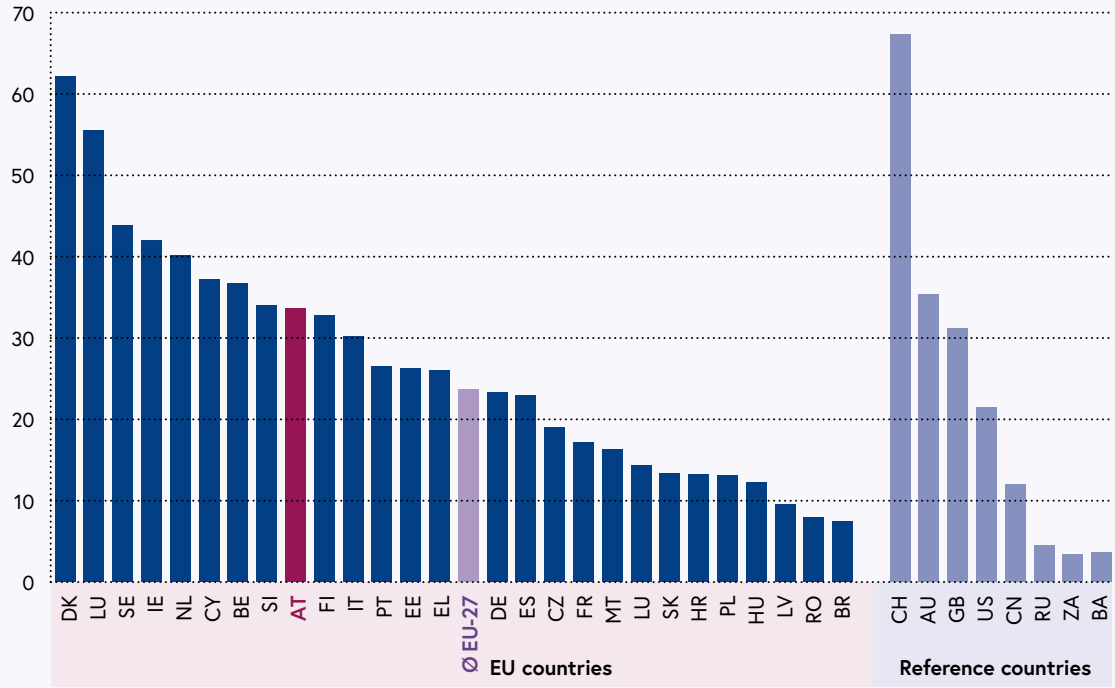
Source: Scopus (2025), World Bank (2024); illustration: iit.

Figure 2-19: Number of scientific (citable) publications in the key technology area "Advanced production technologies and robotics, advanced sensor technology" standardised by country population, 2023



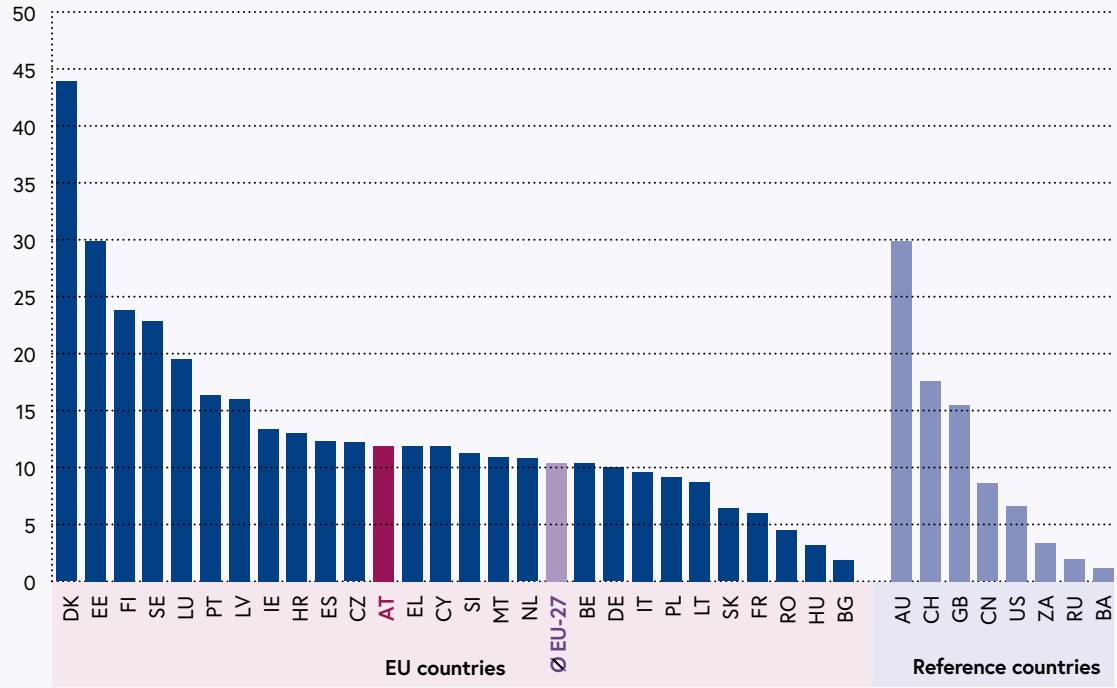
Source: Scopus (2025), World Bank (2024); illustration: iit.

Figure 2-20: Number of scientific (citable) publications in the key technology area "Life sciences technologies" standardised by country population, 2023



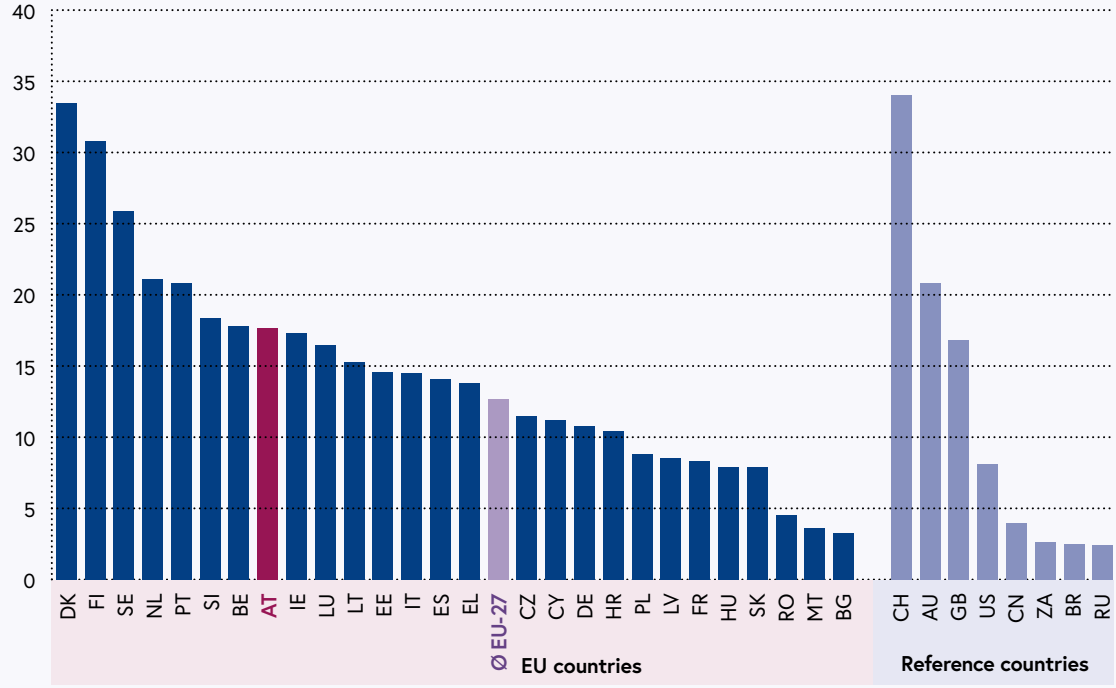
Source: Scopus (2025) World Bank (2024); illustration: iit.

Figure 2-21: Number of scientific (citable) publications in the key technology area "Energy generation and storage" standardised by country population, 2023



Source: Scopus (2025), World Bank (2024); illustration: iit.

Figure 2-22: Number of scientific (citable) publications in the key technology area "Sustainable technologies: circular economy, buildings, waste/water" standardised by country population, 2023



Source: Scopus (2025), World Bank (2024); illustration: iit.

European Research Council (ERC) grants

The number of ERC grants awarded[137] is considered an indicator of the quality of a country's scientific system as well as indicator of future high-quality scientific research results. ERC grants are part of the Excellence Science pillar of the Horizon Europe programme and are considered particularly prestigious among the scientific community. They also contribute to innovation and technological progress, as they often lead to patent applications and the commercial exploitation of patents.[138] In principle, ERC grants are awarded in five different categories, namely ERC Starting Grant, ERC Consolidator Grant, ERC Advanced Grant, ERC Proof of Concept and ERC Synergy Grant.[139]

Figure 2-23 shows the number of ERC Starting Grants, ERC Consolidator Grants and ERC Advanced Grants awarded in 2023 per million inhabitants. The data come from the FFG's EU Performance Monitor (2025) and are provided by the FFG. The analysis examines ERC grants in Horizon Europe that were acquired in the role of coordinator. The ERC Proof of Concepts are not included due to the comparatively low funding volume. Similarly, the ERC Synergy Grants are not presented in a country comparison, as two to four researchers from different countries are funded by one grant. When all three ERC grant categories are combined, Austria acquired 5.4 ERC grants per million inhabitants in 2023 (2022: 5.1), ranking 6th (2022: 3rd place). With this ranking, the goal defined in the RTI Strategy 2030 of being among the top 10[140] continues to be achieved overall. The two most successful countries are once again the Netherlands with 6.8 and Denmark with 6.4 ERC grants per million inhabitants. In the individual analysis of ERC grants, Austria is once again among the top 10 for ERC Starting Grants (4th place) and ERC Consolidator Grants (6th place). Austria fell to 13th place for ERC Advanced Grants (2022: 3rd place) and is no longer among the top 10. This is mainly due to the fact that the number of ERC grants acquired is relatively small and changes from year to year. In 2023, for example, Austria acquired 4 ERC Advanced Grants, compared to 13 in the previous year.

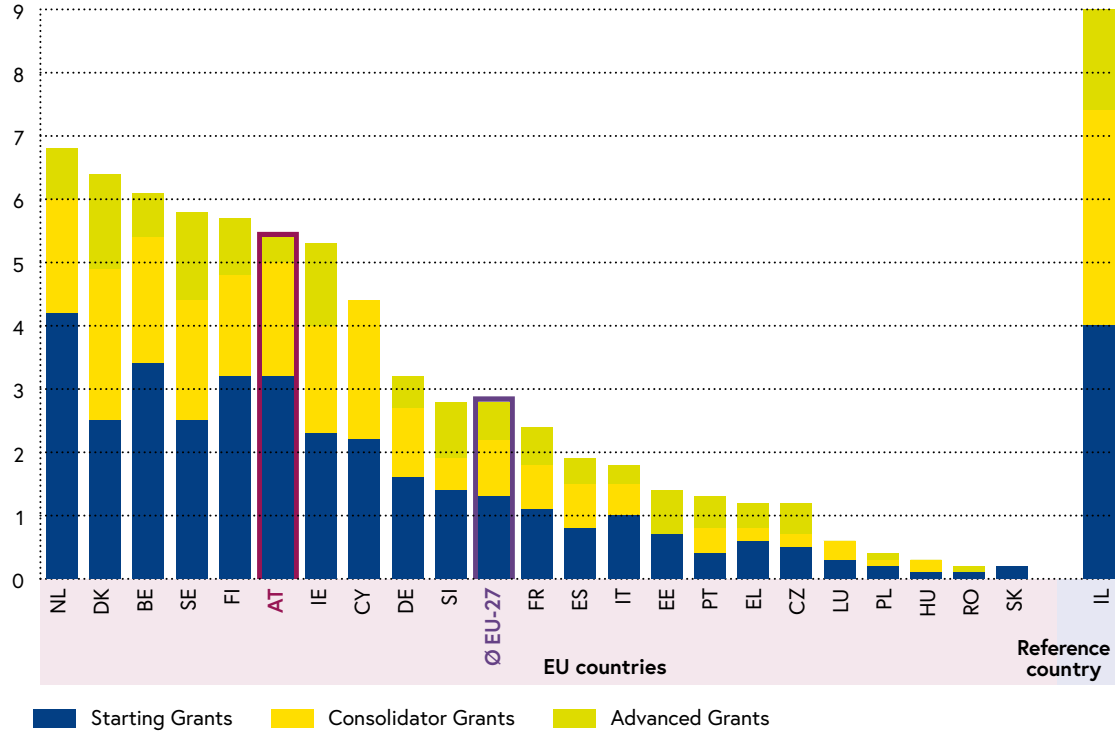
137 The ERC grants are funding from the European Research Council to support top-level research in all research fields.

138 The ERC has published a new analysis showing that 44 % of ERC grantees use their patented inventions commercially, mostly through licensing and founding start-ups. The patent evaluation survey, which was conducted in November 2023, refers to around 1,500 patent applications from ERC-funded projects. ERC grantees with a Proof of Concept Grant are significantly more likely to use their patents commercially. See European Research Council (2024).

139 See European Commission (2024e).

140 See Federal Government of the Republic of Austria (2020, p. 7).

Figure 2-23: Number of European science awards (ERC grants) in Horizon Europe per million inhabitants, 2023



Note: Only countries that have acquired ERC grants in 2023 are listed. ERC grants that were acquired in the capacity of coordinator are shown. Source: Data from the FFG's EU Performance Monitor (2025) as of 1/2025; illustration: iit.

Universities

One output indicator for a country's scientific performance is the number of outstanding universities. Universities are key players in the national knowledge and innovation system, as their activities include generating new knowledge, driving technological developments and registering patents.[141] International university rankings such as the Times Higher Education University World Ranking (THE Ranking)[142] can therefore be considered an indicator of a country's academic performance. The THE ranking compares universities on the basis of 18 performance indicators in the areas of teaching (learning environment), research environment (volume, income and reputation), research quality (citation impact, research strength, research excellence, research influence), internationality (staff, students and research) and industry (income and patents).[143] In the THE Ranking 2025, no Austrian universities were ranked among the 100 best universities worldwide. However, the University of Vienna improved compared to the previous year and is now ranked 110th worldwide (2024: 119th). The international leader is still the United States, with 38 universities among the 100 best universities worldwide, an increase from 36 universities in 2024. As in previous years, this is followed by the United Kingdom with eleven universities, and Germany and China, with seven universities each. Switzerland is represented by two universities in the top 100 (ETH Zurich in 11th place and EPFL in 32nd place). A look at the Austrian universities reveals a mixed picture. Thus, the

141 The proportion of patent applications in the EU-27 in which universities were directly or indirectly involved was 10.2 % in 2019. See European Patent Office (2024).

142 See Times Higher Education (2024).

143 In the THE Ranking 2024, additions were made to the 13 performance indicators, meaning that there are now 18. In addition, the names of the five areas in which performance indicators are collected have been changed. This also limits the comparability of the results with the years prior to 2024.

University of Vienna was able to position itself in the top 200 in the THE Ranking 2025 for the second year in a row. The Medical University of Graz and the Medical University of Vienna no longer placed in the top 200 in the current ranking; both are now placed in the top 250.[144] Although Austria has not yet been able to meet the RTI Strategy 2030 goal of placing two universities in the top 100 in 2025, it has made progress by placing the University of Vienna in 110th place.

2.3.3 Austria's position in global innovation rankings

Austria's position in global innovation rankings

Global innovation rankings: Global Innovation Index (GII) & European Innovation Scoreboard (EIS)

- **GII 2024 (WIPO): 8th place (EU-27 comparison); no change compared to the previous year.**
  - **19th place in the overall ranking in the innovation output sub-index; down four places from the previous year.**
  - **20th place in the overall ranking in the innovation input sub-index; down two places from the previous year.**
- **EIS 2024 (European Commission): 6th place (EU-27 comparison); no change compared to the previous year.**
  - **In five sub-dimensions (Attractive research systems, Finance and support, Innovators, Linkages and Intellectual assets) over 125 %.**
  - **Below 125 % in the other seven sub-dimensions**

The Global Innovation Index (GII)[145] and the European Innovation Scoreboard (EIS)[146] are two important and well-established international indices for which the following targets have been set in the RTI Strategy 2030: a top 10 ranking in the GII and a top 5 ranking in the EIS.[147]

Table 2-2: Austria's international position in the GII and EIS, 2024

	Global Innovation Index (GII)	European Innovation Scoreboard (EIS)
Publisher	WIPO	European Commission
Publication rhythm	Annually (autumn)	Annually (summer)
Current issue	2024	2024
Number of reference countries	133	39
Top 3 nations	Switzerland, Sweden, USA	Switzerland, Denmark, Sweden
Top 3 EU 27	Sweden, Finland, Netherlands	Denmark, Sweden, Finland
Rank Austria	17	8
Rank Austria EU-27	8	6
Number of sub-indices	2 sub-indices and 7 dimensions	4 main types and 12 innovation dimensions
Number of indicators	78	32

Source: WIPO (2024); European Commission (2024f); illustration: iit.

144 For a possible explanation, see the previous footnote.
145 See WIPO (2024).
146 See European Commission (2024f).
147 See Federal Government of the Republic of Austria (2020, p. 7).

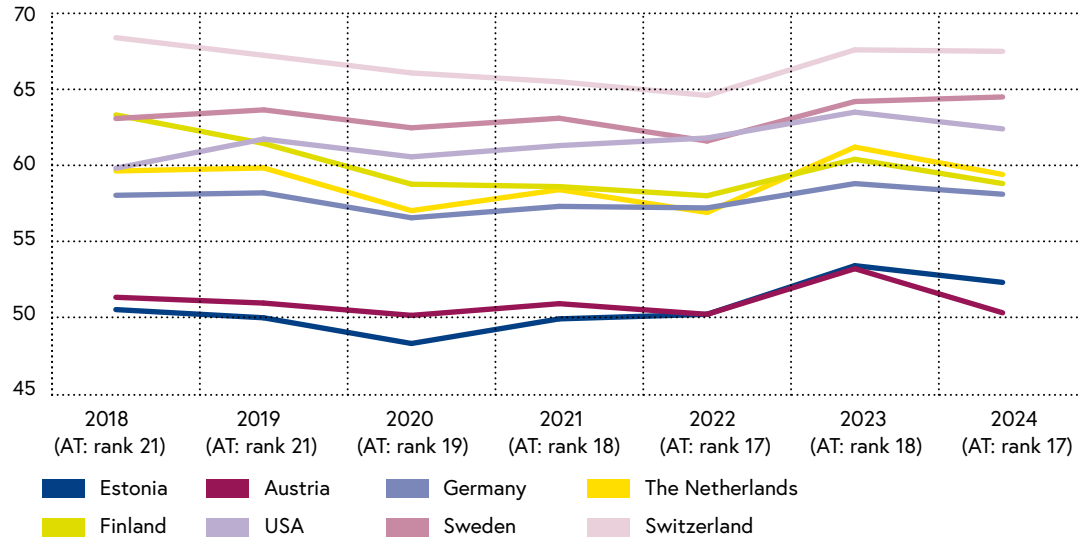
Both indices summarise the various individual areas of innovation into an overall index and enable an overarching international classification of a given country's innovation capability and performance.

The Global Innovation Index 2024 (GII) consists of two equally weighted sub-indices and represents a measure of a country's innovation capability and performance. The innovation input sub-index consists of five dimensions that contain the economic elements that enable and facilitate innovative activities (e.g. institutional framework conditions, human capital or information and communication technologies). The innovation output sub-index consists of two dimensions and measures the output of innovative activities in the economy (e.g. knowledge creation, knowledge dissemination or creative goods and services).

In the GII 2024, Austria ranks 8th in the EU-27 comparison and 17th in the global comparison. Despite a decline in the index value from 53.2 in 2023 to 50.3 in 2024, Austria improved by one place in the ranking and achieved 17th place in the global comparison. Austria's position in the EU-27 remained the same as the previous year (8th place). In order to achieve the goal formulated in the RTI Strategy 2030 (10th place), further improvements are necessary in the coming years, for example in the area of the innovation input sub-index in the dimensions "Institutions" and "Business sophistication". If the sub-indices of the GII 2024 for Austria are considered in the overall ranking, there is a drop of two places in the innovation input sub-index (2023: 18th place; 2024: 20th place). In three out of five dimensions of this sub-index, the country improved its ranking, in some cases significantly. In "Human Capital and Research" by three places (8th place), in "Infrastructure" by two places (10th place) and in "Market sophistication" by seven places (32nd place). The positions have declined in two dimensions: in "Institutions" by five places (18th place) and in "Business sophistication" by four places (23rd place). In the innovation output sub-index, Austria's position has dropped by four places compared to the previous year (19th place), but is still higher than its position in 2022 (21st place).

Figure 2-24 shows the development of the overall GII index value in an international comparison for the period of 2018–2024. In 2024, Switzerland led the ranking of the most innovative economies for the thirteenth time in a row, with an almost constant index value.

Figure 2-24: Global Innovation Index (GII) over time, 2018–2024



Source: WIPO (2024); illustration: iit.

Sweden, in second place, was also able to maintain its position and slightly reduce the gap between itself and Switzerland by improving its index value. The USA, in third place, was able to maintain its position despite a slight fall in its index value. All other comparative countries (Finland, the Netherlands, Germany and Estonia) saw slight decreases in their index values in 2024. Although the fall in the index value in Austria is no exception, the reduction here was larger than in other countries. In a global comparison, Austria was able to improve by one place (from 18th to 17th place) despite a lower index value. Examining all of Austria's rankings in the years 2017 to 2024, an upward trend can be observed: while Austria was ranked either 20th or 21st in the period 2017 to 2019, it has been in the top 20 in each of the last five years (see Figure 2-24).

The European Innovation Scoreboard (EIS) is used to assess the research and innovation performance of EU Member States and to evaluate the relative strengths and weaknesses of research and innovation systems. The EIS considers four dimensions, namely: i) framework conditions, ii) investments, iii) innovation activities and iv) impacts. Each dimension consists of three sub-dimensions, which in turn are each made up of two to three indicators. A total of 32 indicators are thus collected in the EIS. The overall performance of each country's innovation system is expressed in a composite indicator, the Summary Innovation Index. In addition to the 27 EU Member States, 12 neighbouring countries are also assessed, in 2024 the Republic of Moldova was included for the first time.

In the EIS, EU Member States are defined as Innovation Leaders if their overall index value relative to the EU average in the current year is greater than 125 %, and as Strong Innovators if the overall index value is between 100 % and 125 %. Among the EU-27 Member States, Denmark, Sweden, Finland and the Netherlands are the Innovation Leaders in the EIS 2024 and therefore belong to the top group. Denmark leads the ranking of the Innovation Leaders group, and the Netherlands is the country with the lowest overall index value in this group. Austria belongs to the group of Strong Innovators and thus to the upper mid-range, as do Belgium, Ireland, Luxembourg, Germany, Cyprus, Estonia and France. Austria is the second strongest country among the Strong Innovators, while France is at the bottom of this group. With a value of 116.3 %,[148] Austria has lost ground compared to the previous year (2023: 118.0 %), but is still above the average value for the group of Strong Innovators (111.3 %)[149]. In 2024, Austria will still not reach the RTI Strategy 2030[150] goal of ranking among the group of Innovation Leaders (with more than 125 %), although in 2017 this goal was already within reach (2017: 123.3 %).[151] In the EU-27 ranking in 2024, Austria was able to maintain the 6th place it had already achieved in 2023 but did not achieve a top 5 position. In the individual sub-indices of the EIS, Austria achieved a score of more than 125 % in 2024 only in the five sub-dimensions "Attractive research systems" (148.9 %), "Finance and support" (128.0 %), "Innovators" (127.3 %), "Linkages" (171.7 %) and "Intellectual assets" (139.5 %). Austria still falls behind in the other seven sub-dimensions, particularly in "Digitalisation" (89.6 %) and "Sales impact" (76.9 %), which have not shown much improvement since 2017. In the sub-dimension "Use of information technologies", Austria has lost the lead it had in 2017 altogether (2017: 128.7 %; 2024: 100.9 %).[152]

Figure 2-25 compares the EIS values for Austria and selected nations over the years 2017 to 2024. Each index value in Figure 2-25 shows the performance relative to the EU in the base year 2017 and therefore differs from the overall index values mentioned above, which relate to the current year 2024. The EIS indicators were changed to a greater extent in 2021. The values

148 This EIS value indicates the performance relative to the EU in 2024.

149 See European Commission (2024d).

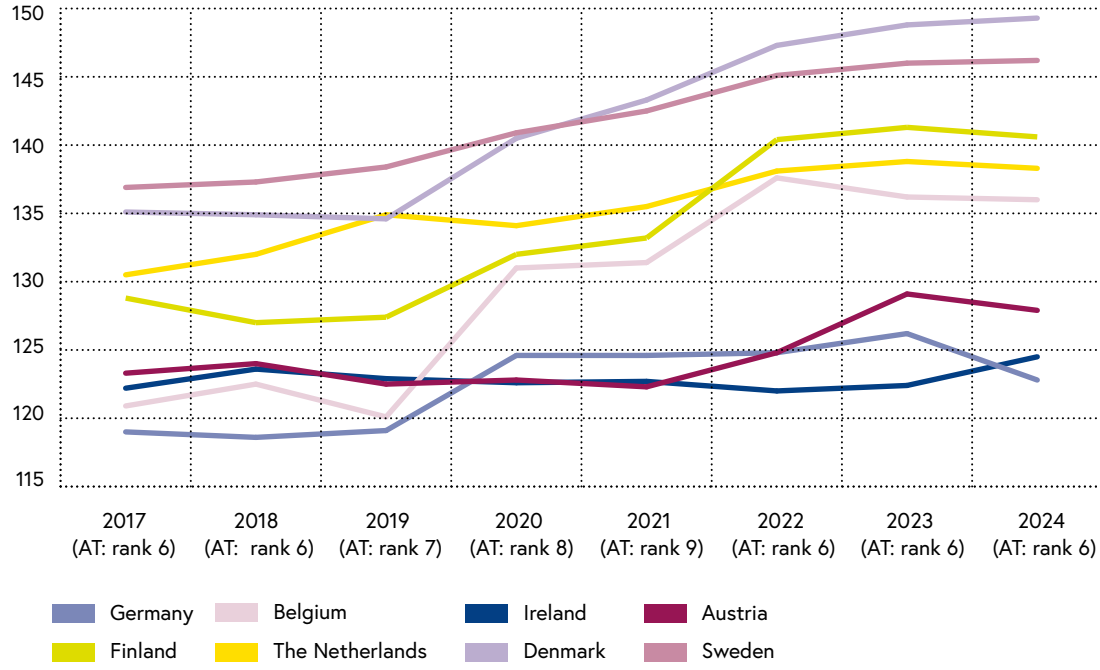
150 See Federal Government of the Republic of Austria (2020).

151 See European Commission (2024e).

152 For a more detailed analysis of Austria's position in the EIS indicators, see https://www.wpz-research.com/wp-content/uploads/2024/09/WPZ-Research_EIS-2024.pdf

shown in the figure were recalculated on the basis of these revised indicators for the years 2017–2020.[153] Austria's value in the Summary Innovation Index has improved overall in recent years. While the index value fell from 124.0 % to 122.3 % in the years 2017–2021, it has increased again since 2021 and, after peaking in 2023 (129.1 %), reached a value of 127.9 % in 2024. This is also reflected in Austria's ranking. While Austria fell to 9th place in 2021, in the following years, including in 2024 it continually ranked 6th. This is the same ranking as in the starting year 2017. As Figure 2-25 highlights, important EU comparison countries have improved over time since 2017. Denmark and Sweden in particular show a clear upward trend, starting from a high value in 2017. The highest increase can be observed in Belgium, which still had a comparatively low value in 2017. In Ireland and Germany, the value increased only slightly over the entire 2017–2024 period. After overtaking Germany in 2022, Austria was able to further extend its lead in comparison. However, at 5 percentage points, Austria's increase in the EIS value in the 2017–2024 period is lower than the average growth rate of 11 percentage points for the Strong Innovators group.[154]

Figure 2-25: European Innovation Scoreboard (EIS) over time, 2017–2024



Source: European Commission (2024d); illustration: iit.

153 It is not possible to compare the EIS values in this research and technology report with the EIS values stated in previous research and technology reports, as the reference year for which a country's performance is calculated changes annually. For example, the EIS values in the 2024 Research and Technology Report indicated a country's changes relative to those of the EU in 2016. In this research and technology report, however, the performance of a country is stated relative to that of the EU in 2017.

154 See European Commission (2024d).

2.3.4 Austria's position in digitalisation

This RTI highlights Austria's progress in digitalisation in recent years, particularly in the areas of AI and quantum technology. With the adoption of the Digital Austria Act[155] in 2023, the federal government initiated a comprehensive digital work programme with 117 measures and 36 digitalisation principles that address all areas of citizens' lives. In addition, the expansion of e-infrastructures in the science and research sector has progressed, including the expansion of the Vienna Scientific Cluster (VSC) for high-performance computing and the MUSICA project as part of the "Quantum Austria" initiative. In the following section, Austria's digitalisation progress is examined in an international comparison using four selected indices and indicators, namely the performance indicators of the Digital Decade and the Readiness for Frontier Technologies Index, as well as indicators relating to future technologies, such as artificial intelligence and quantum technology.

Performance indicators of the Digital Decade

Performance indicators of the Digital Decade

- **Austria is above the EU-27 average in 7 out of 13 performance indicators of the Digital Decade.**
- **"Access to electronic patient records": 6th place; Austria's strongest performance indicator.**
- **"Gigabit network connection" remains in 24th place; "Fibre to the end customer" improved by one place to 23rd; there is still some catching up to do in these performance indicators.**

As part of the Digital Decade Policy Programme 2030, the EU Commission publishes an annual report on the Digital Decade. This report provides an overview and analysis of the digital transformation in the European Union, and assesses progress towards the objectives set out in the programme, including the digitalisation targets for the period up to 2030.[156] To this end, the DESI has been integrated into the State of the Digital Decade report. The indicators are assigned to four dimensions: i) digital skills, ii) digital infrastructure, iii) digitalisation of companies and iv) digitalisation of public services.[157] In this context, the performance indicators (KPIs) of the Digital Decade Policy Programme 2030 are discussed in more detail below and Austria's respective positioning in an international comparison is presented. A description of the content of the KPIs, their metrics and data source can be found in the glossary KIPs of the Digital Decade in the appendix. Table 2-3 provides an overview of Austria's position in the respective KPIs; it also lists the three leading nations and shows whether Austria is above or below the EU-27 average. Overall, Austria is only above the EU-27 average in 7 of 13 performance indicators, with no leading position (places 1–3) in any performance indicator. With 6th place, Austria achieved its best ranking in "Access to electronic patient records"[158] (dimension "Digitalisation of public services"). Austria's second-best ranking follows with 8th place for the indicators "At least basic digital skills" and 9th place for "Artificial intelligence". Austria is also in the top third of all EU Member States for the indicators "ICT specialists", "SMEs with at least basic digital intensity" and "Online provision of important public services for citizens". There is still a

155 See Federal Government of the Republic of Austria (2023).

156 See European Commission (2022b).

157 See European Commission (2024g).

158 See definition in European Commission (2024g), p. 9: "Measured as: (i) the nationwide availability of online access services for citizens to their electronic health data (via a patient portal or mobile patient app) with additional measures to enable certain groups of people (e.g. guardians of children, people with disabilities, older people) to also access their data, and (ii) the percentage of people who have the ability to obtain or use their own minimum set of health-related data currently stored in public and private electronic health record systems."

clear need for improvement with regard to the indicators "Gigabit network connection" in 24th place and "Fibre to the end customer" in 23rd place. Austria ranks average among the other performance indicators of the Digital Decade (between 11th and 18th place).

Table 2-3: Performance indicators of the Digital Decade, 2024

Digital goals	KPI	Top 3 EU-27	Rank Austria EU-27	Austria above the EU-27 average
Digital skills	At least basic digital skills	The Netherlands, Finland, Ireland	8	Yes
	ICT specialists	Sweden, Luxembourg, Finland	10	Yes
Digital infrastructure	Gigabit network connection	Malta, The Netherlands, Denmark	24	No
	Fibre optics to the end customer	Spain, Romania, Portugal	23	No
	5G network coverage	Cyprus, Denmark, Malta	12	Yes
Digitalisation of companies	Cloud computing	Finland, Denmark, Sweden	16	No
	Data analytics	Hungary, Croatia, Denmark	22	No
	Artificial intelligence	Denmark, Finland, Luxembourg	9	Yes
	SMEs with at least basic digital intensity	Finland, Sweden, The Netherlands	13	Yes
	Unicorns	Germany, France, Sweden	12	No
Digitalisation of public services	Online provision of important public services for citizens	Malta, Estonia, Luxembourg	14	Yes
	Online provision of important public services for companies	Finland, Ireland, Malta	18	No
	Access to electronic patient records	Belgium, Denmark, Estonia	6	Yes

Note: Data from 2023. For further information on the performance indicators of the Digital Decade, see explanations in Annex I.
Source: European Commission (2024h); illustration: iit.

Ability to apply future technologies (Readiness for Frontier Technologies Index)

Readiness for Frontiers Technologies Index

- **Readiness for Frontier Technologies Index 2024 (United Nations): 12th place in the EU-27 comparison (2022: 11th place), 25th place in the global country comparison (2022: 23rd place).**

Future technologies take advantage of digitalisation and connectivity and range from artificial intelligence (AI) to green hydrogen and biofuels. These technologies have experienced strong growth over the last two decades. While the total market value of future technologies in 2023 was around 2.5 trillion US dollars in 2023, it is estimated that this could grow to up to 16.4 trillion US dollars by 2033.[159] To measure a country's ability to develop, adopt, utilise and adapt future technologies, the Readiness for Frontier Technologies Index 2024[160] is used below and compared with the index values from 2022. The index covers five areas:

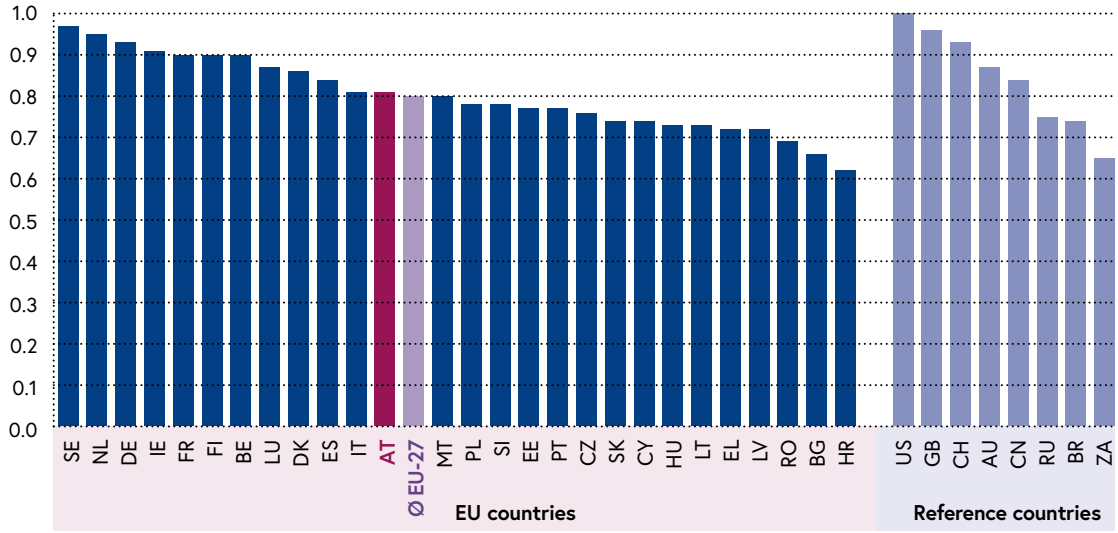
i) ICT deployment, ii) skills, iii) R&D activities, iv) industry activities and v) access to finance, with each area consisting of two indicators, except for the area "Access to funding", which consists of only one indicator. The indicators for the five areas were described in more detail in the Research and Technology Report 2024.

159 See United Nations (2025). At the current exchange rate, this corresponds to €14.6 trillion.
160 Ibid.

In the overall analysis of the Readiness for Frontier Technologies Index 2024 (Figure 2-26), Austria is once again in the upper mid-range in the EU-27 country comparison, this time in 12th place (2022: 11th place). The index value has increased slightly, from 0.79 in 2021 to 0.80 in 2022 and 0.81 in 2024 (EU-27 average 2024: 0.80). The leading EU-27 countries are once again Sweden, the Netherlands and Germany. In a global country comparison, Austria ranks 25th out of 170 nations in 2024 (2022: 23rd). Globally, Austria continues to be one of the countries in the highest rating category, led by the USA, Sweden and the United Kingdom. With a score of 0.93, Switzerland is once again in 6th place globally, while China (up from 28th to 21st place) and India (up from 48th to 36th place) have improved significantly.

A differentiated analysis of the five index areas shows that Austria ranked 39th globally in 2024 in the area of ICT deployment, 26th in skills, 25th in R&D activities, 28th in industry activities and 32nd in access to finance.[161]

Figure 2-26: Readiness for Frontier Technologies Index, 2024



Source: United Nations (2025); illustration: iit

161 The rankings in the five index areas are not compared with previous years, as the data should not be compared with each other due to data updates, changes in the weighting factors and the number of countries. See United Nations (2025), Table III.1.

Artificial intelligence (AI)

Artificial intelligence (AI)

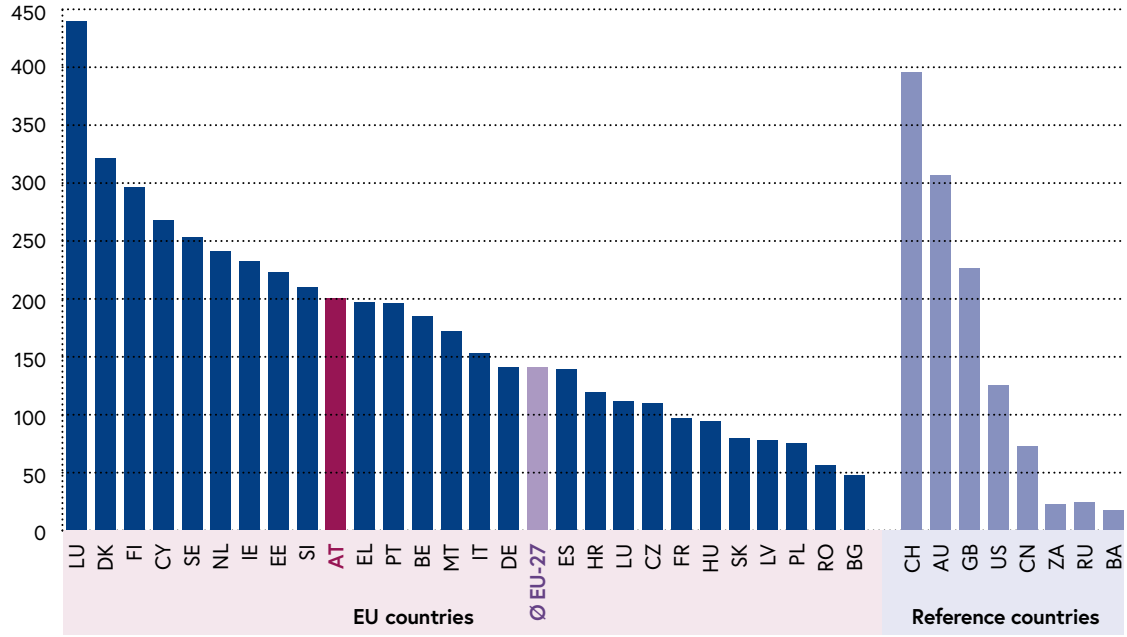
- **Scientific publications in the field of AI 2022 (Scopus): Austria holds a stable 10th place in the EU-27 comparison. Overall, the number of scientific publications in the field of AI has increased noticeably.**
- **Patents in the field of artificial intelligence per 10,000 R&D employees, 2022 (European Patent Office 2025): Rank 14; improvement of two ranks.**
- **Percentage of companies with at least one AI in use, 2023 (Eurostat, 2024): 9th place; improvement of one place.**

In the field of artificial intelligence, Austria has defined a clear roadmap for the responsible use of AI technologies with its Artificial Intelligence Mission Austria 2030 (AIM AT 2030) strategy. The strategy aims to utilise AI for the benefit of society, position Austria as a location for research and innovation and strengthen the country's competitiveness. A current implementation plan from 2024 concretises these goals with specific measures. At a legal level, Austria has created a national framework for digitalisation with the Digital Austria Act. In addition, the European AI Act, which aims to create a standardised legal framework for the use of AI in the EU, will also be applied in Austria and complement national efforts.

Figure 2-27 shows the standardised number of scientifically citable publications in the field of AI in a country comparison and is the result of a bibliometric analysis carried out on the basis of the Scopus publication database[162]. In Scopus, the keywords "ai" and "artificial intelligence" were used to identify all publications in 2023 that were published as scientific articles, reviews, books, book chapters, notes, short surveys or letters. In contrast to the analyses in the previous year, the search was expanded for the current report to include the search terms from FAIR-AI[163] and the data for the years 2022 and 2023 was calculated on the basis of the FAIR-AI search terms. Overall, the number of scientific publications has increased significantly compared to the previous year. While an EU-27 average of 2,072 scientific publications were published in the field of AI in 2022, this figure had already risen to 2,340 (+13 %) by 2023. Austria was also able to increase the number of scientific publications in the field of AI: with 201 publications per million inhabitants in 2023, the country is well above the total from the previous year (183 publications per million inhabitants) and again above the EU-27 average (141 publications per million inhabitants). Despite this increase, Austria ranked 10th in 2023 (2022: 9th place according to the FAIR AI search terms, 10th place according to the search terms used to date). Luxembourg (440 publications), Denmark (322 publications) and Finland (297 publications) are the leading nations in the EU comparison. A look at the comparative countries shows that Switzerland continues to play a leading role with 395 publications in the field of AI per million inhabitants and, as in 2022, is ahead of Denmark but behind Luxembourg.

162 See Scopus (2025).
163 See Kasztler and Wolfmayr (2024).

Figure 2-27: Number of scientific (citable) publications in the field of AI standardised by country population, 2023

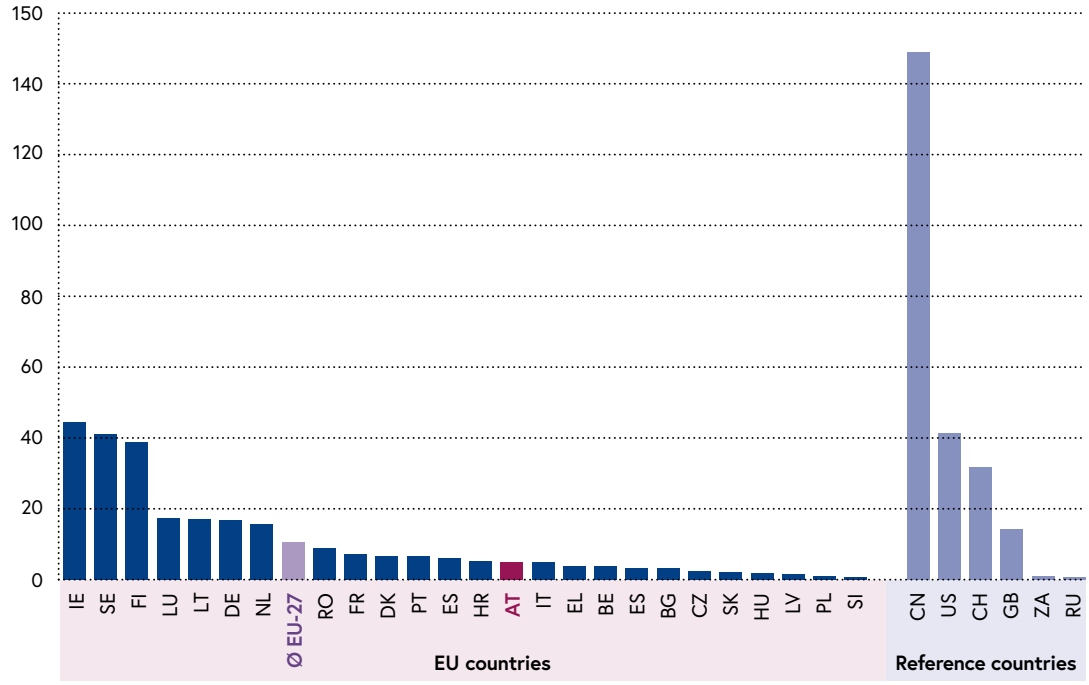


Source: Scopus (2025), World Bank (2024); illustration: iit.

A patent analysis was also carried out to measure Austria's innovation and performance in the field of artificial intelligence. For this purpose, the FAIR AI search terms were used to filter out the patent applications (hereinafter referred to as patents) displayed at the European Patent Office.[164] Figure 2-28 shows the number of patents in the field of AI per 10,000 R&D employees (measured in FTEs). As patent applications are usually published 18 months after the filing date at the European Patent Office, the year 2022 was chosen for the patent analysis. Overall, the number of patent applications in the field of AI has once again increased. While 3,243 patents were filed with the European Patent Office by the EU-27 Member States together in 2021, this figure rose to 3,451 patent applications in 2022. This corresponds to an increase of 6.4 %. With 45 patent applications in the field of AI in 2022, Austria was also able to slightly increase the number compared to 2021 (with 41 applications). Overall, Austria is in the lower mid-range in the EU and well below the EU-27 average: In relation to the number of R&D employees, Austria ranks 14th in the EU country comparison in 2022 with 4.9 patent applications per 10,000 R&D employees, after ranking 16th in 2021 with a value of 4.7. The EU-27 average is more than twice as high at 10.7. The top three countries in the EU are Ireland (44.6), Sweden (41.2) and Finland (38.9), all of whom occupied the top three places in 2021. Ireland, as the frontrunner, has thus achieved a value more than nine times higher than Austria in terms of patent applications per 10,000 R&D employees. Switzerland's figure of 31.8 is also more than six times higher.

164 See European Patent Office (2025).

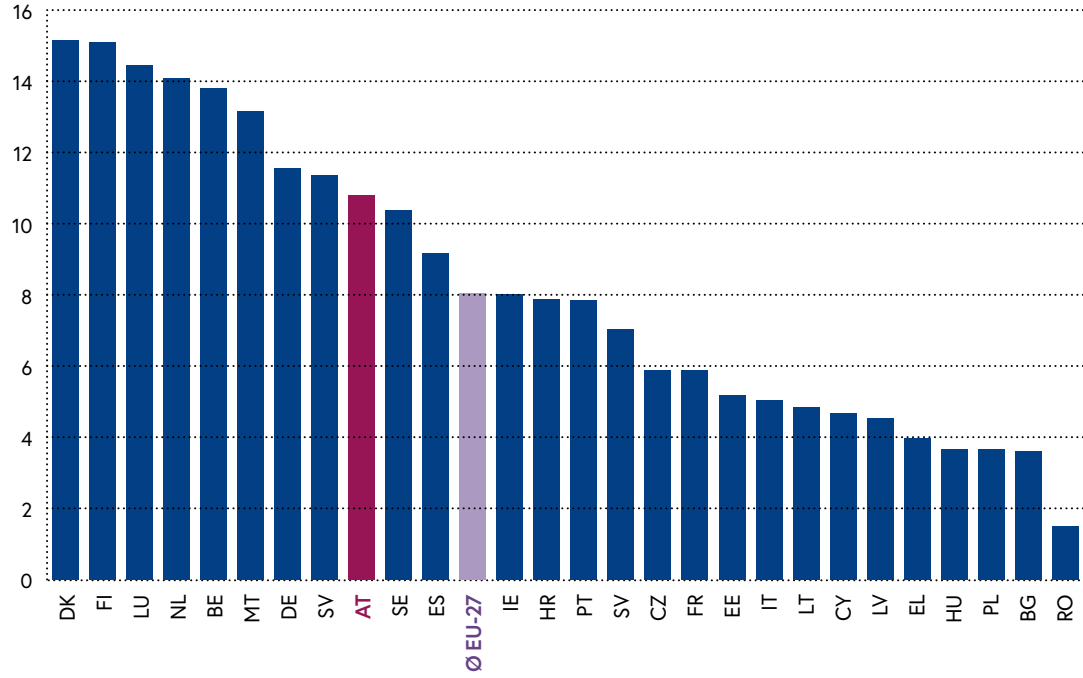
Figure 2-28: Patents in the field of artificial intelligence per 10,000 R&D employees, 2022



Note: For methodological reasons, the search for Spain was conducted without the search term "machine translation".
The data on R&D personnel for the United States, Switzerland and South Africa are from 2021, for Russia from 2020 and for the United Kingdom from 2017. No data on R&D personnel are available for Malta, Cyprus, Australia and Brazil.

Source: European Patent Office (2025), OECD (2025); illustration: iit.

Figure 2-29: Percentage of companies with at least one AI in use, 2023



Note: Data are only available for EU countries. No data are available for the reference countries outside the EU.

Source: Eurostat (2024); illustration: iit.

Figure 2-29 shows the percentage of companies with at least one AI in use in 2023. For this indicator, Austria has an above-average share of 10.8 % compared to the EU-27, putting it in 9th place. Compared to the first EU survey of this indicator in 2021, Austria has improved by almost 2 percentage points (2021: 8.8 %) and by one place (2021: 10th place). In contrast, the EU-27 average rose by just under 0.4 percentage points from 7.7 % in 2021 to 8.0 % in 2023. The top group in the EU for the use of AI in companies includes Denmark (15.2 %), Finland (15.1 %) and Luxembourg (14.5 %).

Quantum technology

Quantum technology

- **Patents 2022 (European Patent Office): 3rd place; stable positioning in a strongly growing research area with 24.2 % more patents in the EU-27 Member States.**
- **Publications 2022 (Scopus): Again 2nd place for scientific publications.**

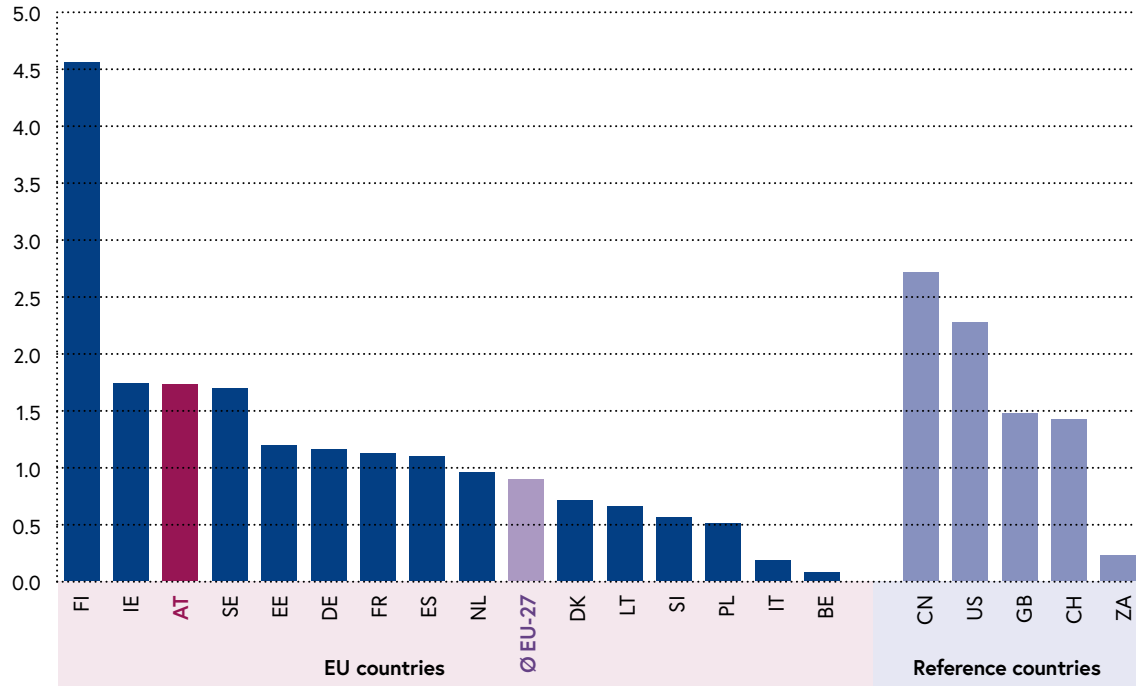
The field of quantum technologies has the potential to produce a large number of far-reaching innovations in a wide variety of areas. Austria is also prioritising quantum technologies as an important future technology. As a result, considerable amounts of funding have been allocated to research in this field in recent years. A country's innovation and performance in the field of quantum technology can be measured using both patent analysis and bibliometric analysis. For the patent analysis, Cooperative Patent Classification Codes (CPC codes) and keywords were used to filter out the relevant patent applications (hereinafter referred to as patents) registered with the European Patent Office[165]. CPC codes and keywords from four different areas of quantum research were used for the analyses,[166] namely: quantum computing, quantum key distribution, entanglement and cold atom interferometry.[167]

165 See European Patent Office (2025).

166 The CPC codes used for the patent analysis and the keywords used for the bibliometric analysis are based on the Joint Research Center analyses (see Travagnin, 2019).

167 See European Commission (2025d).

Figure 2-30: Patents in the field of quantum technology per 10,000 R&D employees, 2022

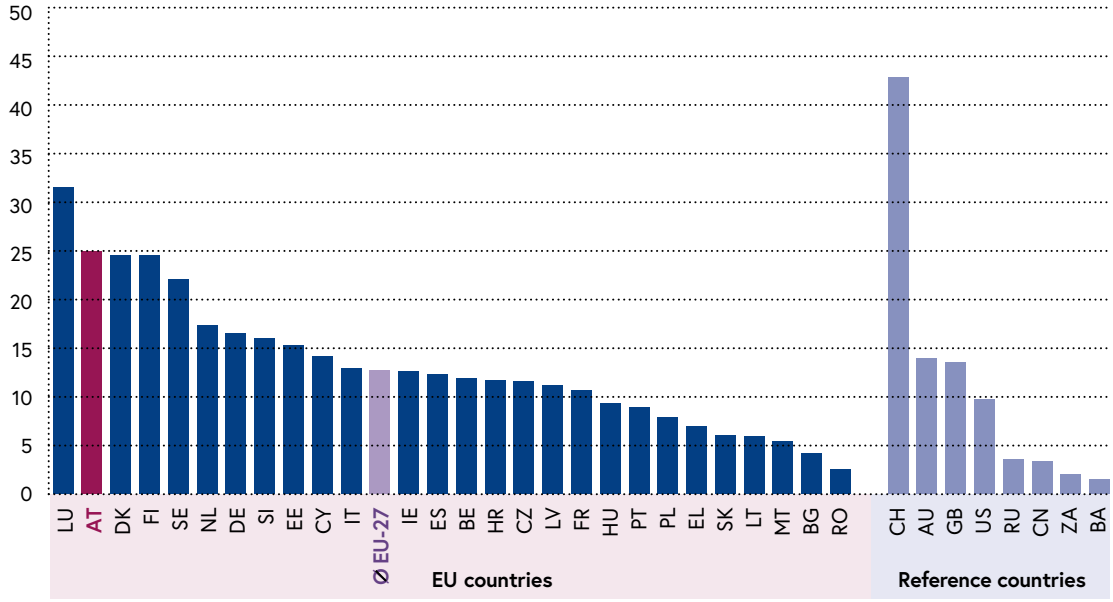


Note: There were no patent applications in 2022 for Luxembourg, Romania, Portugal, Croatia, Greece, Bulgaria, the Czech Republic, Slovakia, Hungary, Latvia, Malta, Cyprus and Russia. The data on R&D personnel for the United States, Switzerland and South Africa are from 2021, for Russia from 2020 and for the United Kingdom from 2017. No data on R&D personnel are available for Malta, Cyprus, Australia and Brazil.
Source: European Patent Office (2025), OECD (2025); illustration: iit.

Figure 2-30 shows the number of patents across all four areas of quantum technologies per 10,000 R&D employees (measured in FTEs). As patent applications are usually published 18 months after the filing date at the European Patent Office, the year 2022 was chosen for the patent analysis, analogous to the evaluation of AI patents. Overall, the number of patent applications in the field of quantum technologies has once again increased. While 2,201 patents were filed with the European Patent Office by the EU-27 Member States and the reference countries together in 2021, this figure rose to 2,734 patent applications in 2022. This corresponds to an increase of 24.2 % and represents a further significant increase compared to the 19.7 % growth from 2019 to 2020. Of the 2,734 patents in the field of quantum technologies, 1,729 were filed by China alone, 608 by the USA and only 288 by all EU-27 countries combined. Austria was only able to increase the number of patent applications in the field of quantum technologies by 6.7 % in 2022 with 16 patent applications (2021: 15), while it increased by 21.0 % in the EU-27 (2021: 238). Standardised by R&D employees, Austria once again ranks third in the EU-27 comparison with 1.73 patent applications per 10,000 R&D employees, just behind Ireland (1.74). As in 2021, the top-ranked EU country is Finland (4.56). At 1.43 patent applications per 10,000 R&D employees, Switzerland has a slightly lower figure than Austria in the field of quantum technologies.

Figure 2-31 shows the result of the bibliometric analysis for the year 2023, which was carried out using the Scopus publication database. Scientific articles, reviews, books, book chapters, notes, short surveys or letters published in the field of quantum technologies were included in the analysis.[168]

Figure 2-31: Number of scientific (citable) publications in the field of quantum technology standardized by country population, 2023



Source: Scopus (2025), World Bank (2024); illustration: iit.

With 25 publications per million inhabitants, Austria achieved second place in 2023, making it one of the top 3 nations in the EU-27 country comparison for the fourth year in a row. With around 31.5 publications per million inhabitants, Luxembourg now takes first place, followed by Denmark (24.6) and Finland (24.5) in third and fourth place, almost on a par with Austria.

The EU-27 average increased to 12.7 (2022: 11.5). In an international comparison, Switzerland remains unrivalled and by far the leader in scientific publications in the field of quantum technologies with 42.9 publications per million inhabitants (2022: 42.7).

168 See Scopus (2025). Keywords used: qbit; qbits; qubit; qubits; quantum computer; quantum computers; quantum computation; quantum computations; quantum memory; quantum memories; quantum error correction; quantum simulation; quantum simulations; quantum key distribution; qkd; quantum cryptography; photon; photons; photonic; entangled; or entanglement; entangling; entangle; cold atom; atom; atoms; atomic; interferometer; interferometry.

2.3.5 Austria's innovation capability

In the following section, indicators that provide information about a country's capability for innovation are presented in a country comparison. This refers to the ability to generate new ideas and translate them into competitive products, processes and services. Innovation capability plays a central role in the RTI system, as it is one of the most important prerequisites for competitiveness and prosperity in developed economies. In order to evaluate a country's innovation capability, indicators are used that depict the initial situation or framework conditions for innovative activities. These indicators cover three areas: Human capital, complexity capital and relational capital. Human capital is understood as knowledge, in particular that of working people; complexity capital as the diversity of useful knowledge that allows complex products to be manufactured, and relational capital as the ability to pool knowledge across organisational boundaries. The significance of human and relational capital as important determinants of innovation capability is also reflected in several studies in the context of intellectual capital reporting.[169] Complexity capital draws on the theoretical considerations and empirical data on which the Atlas of Economic Complexity[170] is based.

Human capital

Talents

- **IMD World Talent Ranking 2024: 5th place; improvement of one place in the EU-27 in contrast to 2023.**
- **Tertiary education qualifications in 2023 (OECD): Again 14th place when looking at the proportion of 25–64 year olds with a tertiary degree, slight increase in Master's degrees.**
- **STEM graduates in 2022 (UNESCO): Ranked 2nd again; the proportion of graduates in STEM subjects increased.**
- **Continuing education/lifelong learning 2023 (European Commission): 7th place; improvement of one rank due to a slight upward trend in the proportion of 25- to 64-year-olds participating in further training.**

Human capital is a key factor in an economy's ability to innovate, as innovations can only be achieved through initial ideas and their implementation by individuals. Overall, the state of human capital in Austria is analysed in an EU country comparison using four indicators, namely: i) IMD World Talent Ranking (WTR), ii) percentage of 25 to 64-year-olds with a tertiary degree, iii) percentage of graduates in STEM subjects, and iv) percentage of 25 to 64-year-olds who participate in further education.

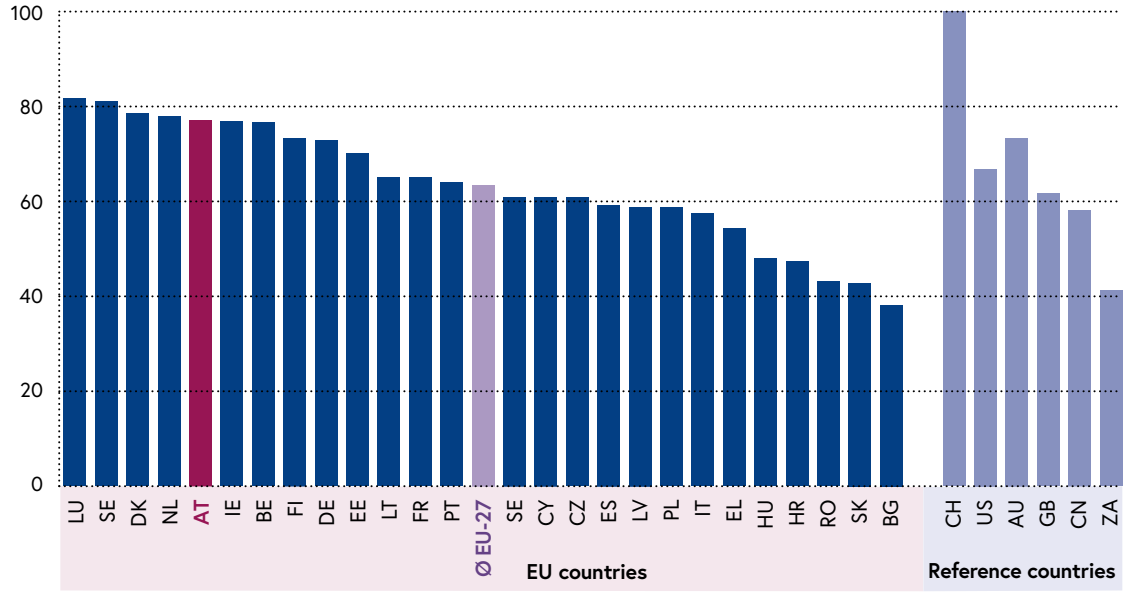
The IMD World Talent Ranking (WTR)[171] combines quantitative education data (e.g. public spending on education) with qualitative factors (e.g. the perceived quality of management training) and presents the development of skills and the international attractiveness for and retention of highly skilled workers. In the RTI Strategy 2030, Austria has set the goal of being among the top three nations in this ranking.[172]

Figure 2-32 illustrates the IMD World Talent Ranking 2024 for the EU Member States and selected comparative countries. Compared to the previous year (2023), Austria has risen one place to 5th place. Looking at the

169 See Secundo et al. (2020), Mertins et al. (2016) and Alwert (2006).
170 See Hausmann et al. (2013).
171 See IMD World Competitiveness Centre (2024).
172 See Federal Government of the Republic of Austria (2020, p. 7).

three sub-factors of the WTR, Austria has lost one place in the Investment and Development factor (4th place in the EU-27 comparison) and has gained four places in the Readiness factor (10th place to 6th place in the EU-27 comparison). In appeal factor, Austria was able to improve its ranking in the EU-27 comparison from 8th to 6th place.

Figure 2-32: IMD World Talent Ranking (Switzerland=100), 2024



Note: No data are available for Malta and Russia. The EU-27 average is therefore calculated from 26 countries.
Source: IMD World Competitiveness Centre (2024); illustration: iit.

The more people with a higher qualification at tertiary level, the larger the pool of people who are particularly capable of contributing to innovation. The following section focuses on the proportion of tertiary-level qualifications and the proportion of graduates in STEM subjects. This focus is particularly relevant because STEM graduates are seen as having strong innovation potential, as their education equips them to understand and apply complex scientific and technical concepts in the development and implementation of innovative processes[173].

Against this background, Figure 2-33 shows the percentage of 25- to 64-year-olds with a tertiary qualification. Both short-term tertiary education (e.g. university courses, in Austria this also includes 4th/5th year of vocational and teacher training colleges[174]) and bachelor's and master's degrees are considered. In 2023 Austria once again ranked 14th in the EU-27 comparison and the overall participation in tertiary education in Austria rose by 1 percentage point to 36.6 %. This brought the country closer to the EU average, which stood at 38.4 % in 2023. A breakdown of the various tertiary education qualifications shows that the increase in the overall share in Austria is largely due to a 0.8 percentage point increase in Master's degrees to 14.4 % in 2023 (2022: 13.6 %). Bachelor's degrees saw a slight increase of 0.2 percentage points to 5.8 % (2022: 5.6 %). In contrast, there were no significant changes in the other degree types: Short-term tertiary degrees rose slightly to 15.2 % (2022: 15.1 %) and doctorates remained the same at 1.2 %. The leaders in the EU comparison are Ireland (55.3 %), Luxembourg (51.3 %) and Sweden

173 See Centre for Security and Emerging Technology (2023).

174 In Austria, this also includes colleges, master craftsman, foreman and building craftsman schools, advanced courses, vocational academies, and university courses. See https://www.statistik.at/fileadmin/pages/331/Gliederung_der_oesterreichischen_Bildungsgaenge_ISED2011.pdf

(49.4 %), although their strengths vary. While Ireland and Sweden have the highest proportion of Bachelor's degrees (Ireland 35.3 %, Sweden 20.2 %), Luxembourg's strength lies in Master's degrees (30.1 %).

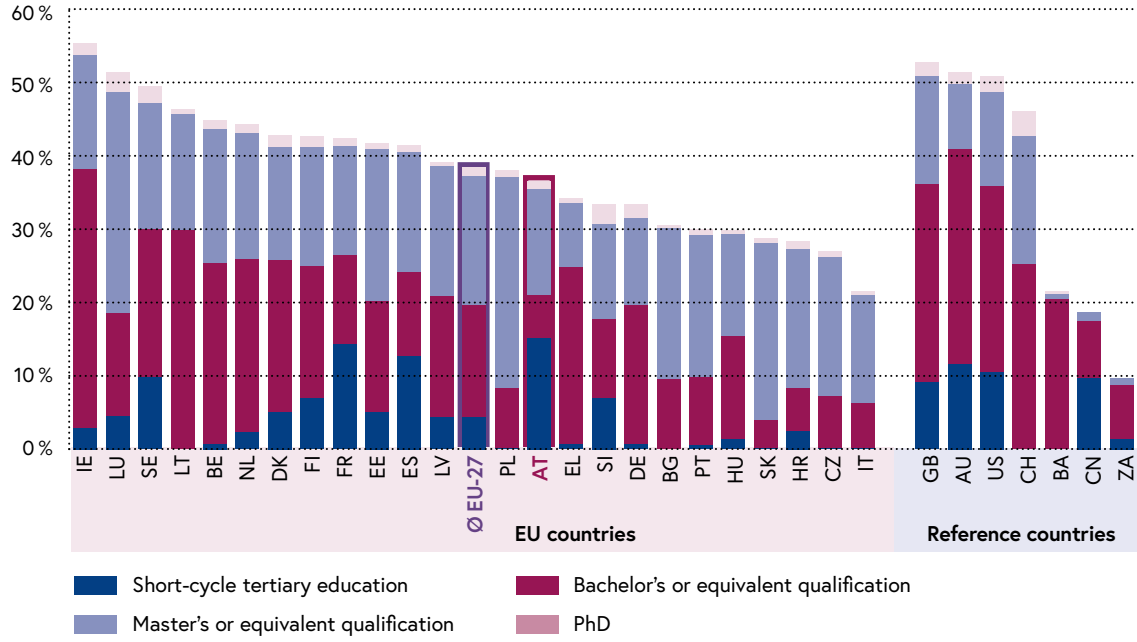
It should be noted that a comparison of the proportion of tertiary education qualifications between Austria and the group of leading countries is only of limited value, as there are important structural differences between the education systems. In the German-speaking countries, dual vocational education and training has a similarly high status and share in the education system as academic education. Therefore, in German-speaking countries, the area of continuing vocational education and training is more fragmented and more strongly characterised by non-formal and informal learning; this form of continuing education and training is not always certified with standardised educational qualifications.[175] As OECD statistics only record formal educational qualifications lasting two years or more, it can be assumed that the significance of the indicator for German-speaking countries is limited and that the associated innovation potential is therefore rather underestimated. Accordingly, it makes sense to compare Austria with Germany and Switzerland. Austria (36.6 %) is 3.2 percentage points ahead of Germany (33.4 %), which was also able to increase its value compared to the previous year (Germany: +0.9 percentage points; Austria: +1.0 percentage point). Switzerland improved by 1.3 percentage points to 46.0 % and thus remains well ahead of Austria.

Remarkably, those countries in which dual vocational training plays a central role in the training of skilled workers are leading in terms of the proportion of graduates in STEM subjects.[176] Figure 2-34 shows the proportion of graduates in STEM subjects in an international comparison. Austria has improved by 0.5 percentage points in 2022 and, at 31.1 % (2021: 30.6 %), is once again in second place in the EU-27 comparison. Germany remains in first place in this ranking with 35.9 % (2021: 35.1 %) and France is close behind Austria in third place with 30.5 % (2021: 25.6 %). Switzerland is well behind Austria with 25.2 %. Graduates in STEM subjects are important future specialists in technology-based industries. Having a large proportion of STEM graduates therefore can lead to lasting positive prospects for the country's future innovation capability. Although Austria has a high proportion of STEM graduates compared to the EU-27, this number slightly declined between 2019 and 2020 (2019: 31.4 % to 2020 and 2021: 30.6 %), before rising again in 2022 (31.1 %).

175 See Bliem et al. (2016).

176 However, this does not necessarily mean that this correlation can be interpreted causally. For example, Switzerland is not the leader in graduates in STEM subjects and is only slightly above the EU-27 average.

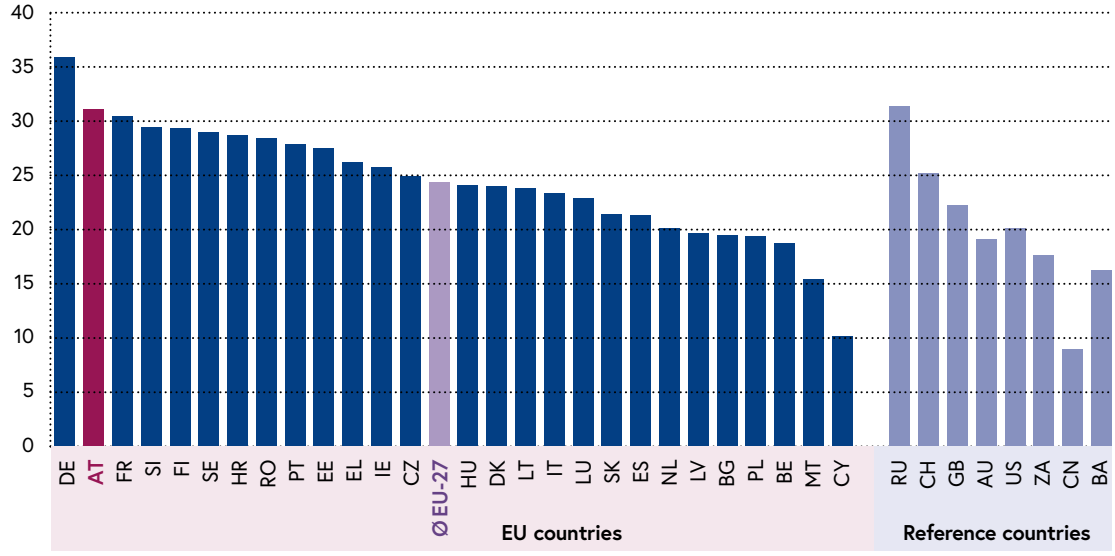
Figure 2-33: Proportion of 25 to 64-year-olds with a tertiary education (in %), 2023



Note: No data are available for Cyprus, Malta and Russia. No data are available for China and South Africa for "Doctorate". No data are available for Lithuania, Bulgaria, Switzerland and Brazil for "Short-term tertiary education". The data for China are from 2020. The EU average is calculated from 25 countries; for "Short-term tertiary education" from 22 countries; for "Bachelor's or equivalent education", "Master's or equivalent education" and "Doctorate" from 24 countries. Only the total is available for Romania (18.6 %).

Source: OECD (2024a); illustration: iit.

Figure 2-34: Proportion of graduates in STEM subjects (in %), 2022

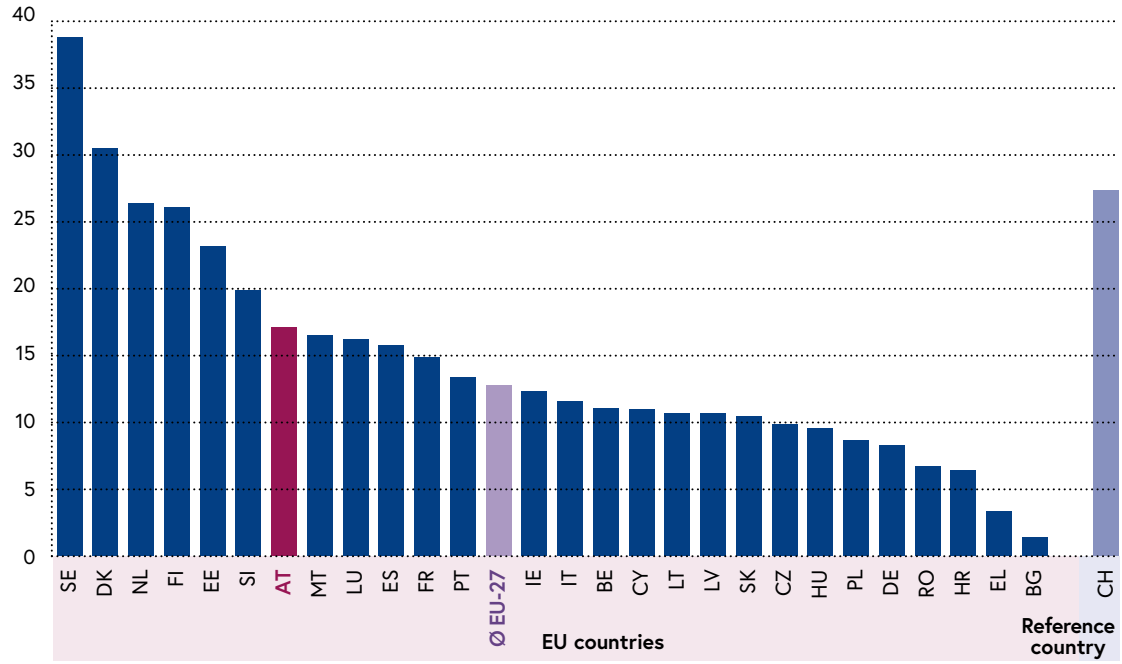


Note: The data for Denmark, the United States and the United Kingdom are from 2021, for Bulgaria from 2020 and for Russia from 2019.

Source: Unesco (2024); illustration: iit.

Ongoing scientific and technological change has made lifelong learning essential for most employees to remain competitive in the labour market over the long term. Employees can bring new impetus into companies through various forms of further training, which is why further training is generally considered an important contributor to innovation capability. Figure 2-35 shows the percentage of 25 to 64-year-olds who have participated in continuing education or lifelong learning in a country comparison for the year 2023. Austria was able to advance to 7th place and increase its share of continuing education from 15.8 % to 17.1 %. This puts Austria well above the EU average, which rose to 12.8 % in 2023 (2022: 11.9 %). Sweden again leads the ranking in 2023 with a share of 38.8 %, followed by Denmark (30.5 %) and the Netherlands (26.4 %).

Figure 2-35: Proportion of 25- to 64-year-olds participating in continuing education (in %), 2023



Note: For Australia, Brazil, China, Russia, South Africa, the United States and the United Kingdom there are no data available.
Source: European Commission (2024f); illustration: iit.

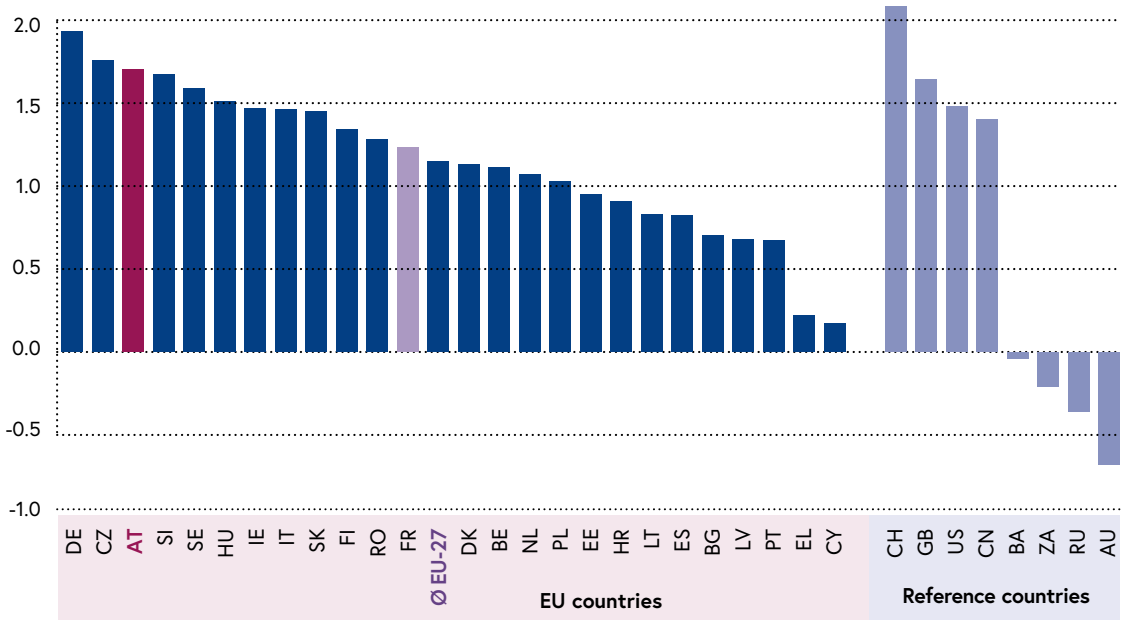
Complexity capital

Complexity capital

- **Economic Complexity Index 2022 (The Growth Lab at Harvard University): 3rd place in the EU-27, 8th place worldwide.**
- **The Austrian economy continues to be characterised by a very high level of complexity.**
- **Complexity increased slightly in Austria and the EU as well in 2022.**

In addition to human capital, complexity capital is an important dimension for analysing a country's innovation capability. Complexity capital is subsequently measured using the Economic Complexity Index (ECI).[177] This index is used not only to analyse the absolute number of products manufactured and exported in the country, but also to examine how complex and diverse these products are. If the number of complex products in a country's total export volume increases, the value of economic complexity increases, too. On the other hand, the value decreases if the number of countries, that also export this product, increases. The ECI is calculated on the basis of export data and is standardised to values between -2.5 and +2.5.

Figure 2-36: Economic complexity, 2022



Note: No data are available for Luxembourg and Malta. The EU-27 average is therefore calculated from 25 countries. The Economic Complexity Index is calculated on the basis of export data and is standardised to values between -2.5 and +2.5.

Source: The Growth Lab at Harvard University (2024); illustration: iit.

Figure 2-36 shows the economic complexity in a country comparison for 2022. At EU-27 level, the average value in the last five reporting years ranged between 1.19 (2018) and 1.14 (2020 and 2021) and rose slightly to a value of 1.15 in 2022. For the leading nations Germany (1.93), the Czech Republic (1.76) and Austria

177 See The Growth Lab at Harvard University (2024).

(1.70), the value rose slightly in 2022 compared to the previous year. Austria's complexity increased slightly by 0.02 percentage points to 1.70 in 2022 (2019: 1.77; 2020: 1.70, 2021: 1.68).[178] With the current value, the Austrian economy is still in the top group, achieving 3rd place in the EU country comparison and characterised by a very high level of complexity. In a global comparison, Austria's position remains high, but is declining slightly (2021: 7th place, 2022: 8th place).

Relationship capital

Relationship capital

- **Cooperations of SMEs 2022 (European Commission): Austria improves by one place in the number of collaborations between SMEs and other companies and is in 7th place in the upper midfield.**
- **Joint publications by public and private partners 2023 (European Commission): 3rd place; a further improvement of one rank in the EU-27 comparison.**

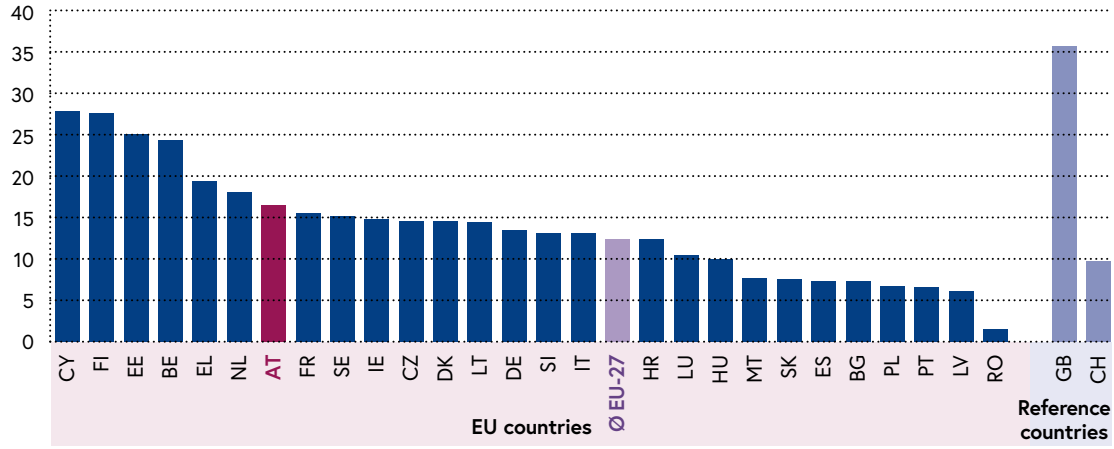
Innovations and new products are often the result of cooperation between research institutions and industry. Knowledge and technology transfer and cooperation networks are therefore decisive factors in increasing research efficiency and accelerating the development of new or improved products and technologies. In order to illustrate Austria's relational capital, the following section analyses the cooperation between SMEs and other companies as well as the number of joint publications by public and private partners with domestic and foreign participation.

Figure 2-37 shows the proportion of SMEs cooperating with partners in the innovation process in 2022. This indicator relates to the flow of knowledge between public research institutions and companies as well as between companies. The indicator is limited to SMEs, as almost all large companies are already involved in innovation collaboration.[179] Austria was able to move up one place and is now ranked 7th (2021: 8th), well above the EU average in the upper mid-range. The downward trend since 2016 has thus been reversed. Cyprus, Finland, Estonia and Belgium are the frontrunners in the area of collaborations between SMEs and partners in the innovation process.

178 Austria is already at a very high level in terms of economic complexity. Starting from this high level, it is not easy to increase complexity: the higher the complexity of a country, the more likely it is that an increase will no longer be possible or that economic complexity will decrease again. A further increase can be achieved by developing new complex products in the country. Although a comparatively large number of new products have been added in Austria in recent years, this is not only the case for very complex products such as vehicles, pharmaceutical products or industrial machinery, but also in moderately complex areas such as ICT and less complex areas such as transport, mineral oil and beverages. In addition, Austria has lost market shares, particularly in highly complex products, such as mechanical engineering (https://atlas.cid.harvard.edu/countries/15).

179 See European Commission (2024b).

Figure 2-37: Collaborations of SMEs with partners in the innovation process (% of SMEs), 2022

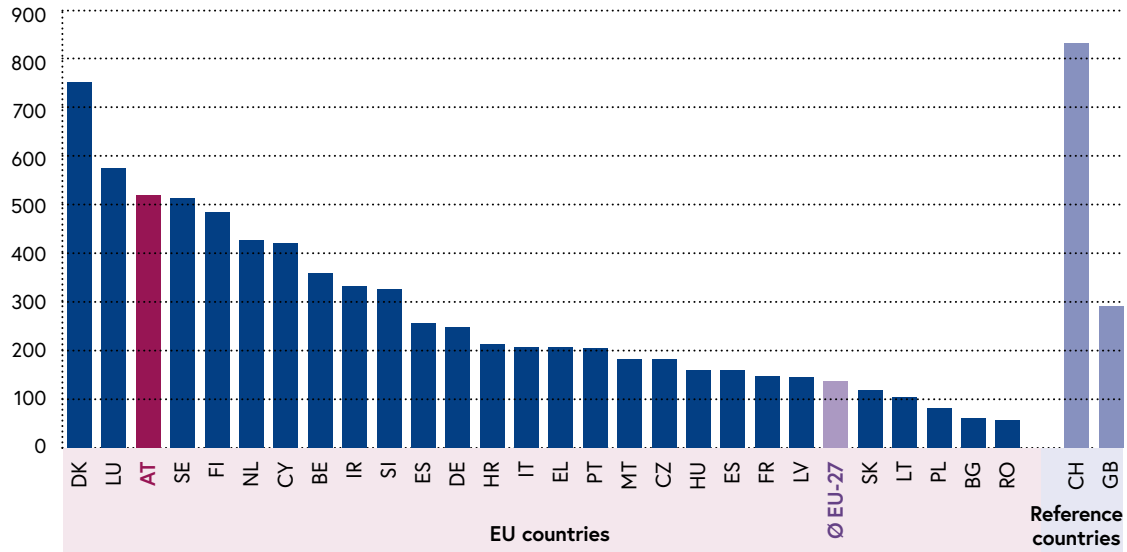


Note: The data are based on the Community Innovation Survey CIS 2022. CIS 2022 data were available for the following countries Bulgaria, Czech Republic, Germany, Estonia, Greece, Spain, Finland, France, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Portugal, Romania, Slovenia, Slovakia and Sweden. For all other countries, the data were imputed with data for 2020 where possible. The data for Switzerland are from 2016. No data are available for Australia, Brazil, China, Russia, South Africa and the United States.

Source: European Commission (2024f); illustration: iit.

Figure 2-38 shows the number of joint publications by public and private partners with domestic and foreign participation in 2023 in relation to the country population (per million inhabitants). With 517.8 joint publications per million inhabitants, Austria is in third place behind Denmark (750.8) and Luxembourg (575.8) and has once again improved by one place compared to the previous year (2021: 5th place, 2022: 4th place). In an international comparison, Switzerland is still ahead of Denmark with 831.2 joint publications.

Figure 2-38: Joint publications by public and private partners per million inhabitants, 2023



Note: The data for the United Kingdom are from 2022. No data are available for Australia, Brazil, China, Russia, South Africa and the United States.

Source: European Commission (2024f); illustration: iit.

2.3.6 Austria's position on environmental sustainability

In light of the climate crisis and the current energy crisis, RTI represents a key area of action in the RTI Pact 2024–2026 for achieving climate and energy goals, particularly the goal of achieving climate neutrality by 2040. Research, technology development and integration as well as system innovation in the field of ecological sustainability (e.g. in the energy transition and circular economy) are necessary for promoting ecological sustainability.

The following section outlines Austria's position in the international context based on four indicators in the area of environmental sustainability (national expenditure on environmental protection, utilisation rate of reusable materials, resource productivity and share of renewable energies in gross final energy consumption).

Environmental sustainability

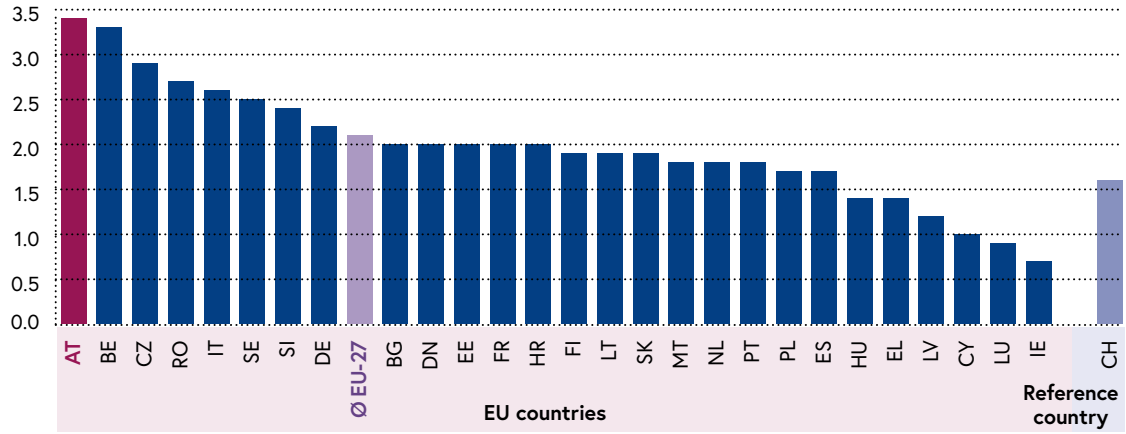
Environmental sustainability

- **National expenditure on environmental protection (Eurostat 2021): 1st place in the EU-27.**
- **Circular material use rate (Eurostat 2023): Repeatedly ranked 7th; above-average positioning in the EU-27.**
- **Resource productivity (Eurostat 2023): 10th place again; slightly above the EU-27 average.**
- **Gross final energy consumption (Eurostat 2023): 6th place; overall high and increasing share of renewable energies in gross final energy consumption.**

Figure 2-39 shows the share of national expenditure on environmental protection as a percentage of gross domestic product for 2021.[180] The expenditure corresponds to the sum of current expenditure on environmental protection activities and investments, including net transfers to the rest of the world, used by resident units to protect natural habitats in a given period. With a value of 3.4 %, Austria is in the top position in this indicator compared to the EU-27 countries (2020: 3rd place, 2019: 2nd place) and is therefore in a comparatively good starting position to advance the digital, green and sustainable transformation of the economy and society. Belgium follows in second place (3.3 %).

180 Characteristics that must be reported for environmental protection expenditure include: output of environmental protection services (distinguishing between market output, non-market output and output from ancillary activities), intermediate consumption of environmental protection services by specialised producers, imports and exports of environmental protection services, VAT and other taxes less subsidies on products on environmental protection services, gross fixed capital formation and acquisitions less disposals of non-financial non-produced assets for the production of environmental protection services, final consumption of environmental protection services and transfers (received and paid) for environmental protection.

Figure 2-39: Share of national expenditure on environmental protection in gross domestic product (in %), 2021

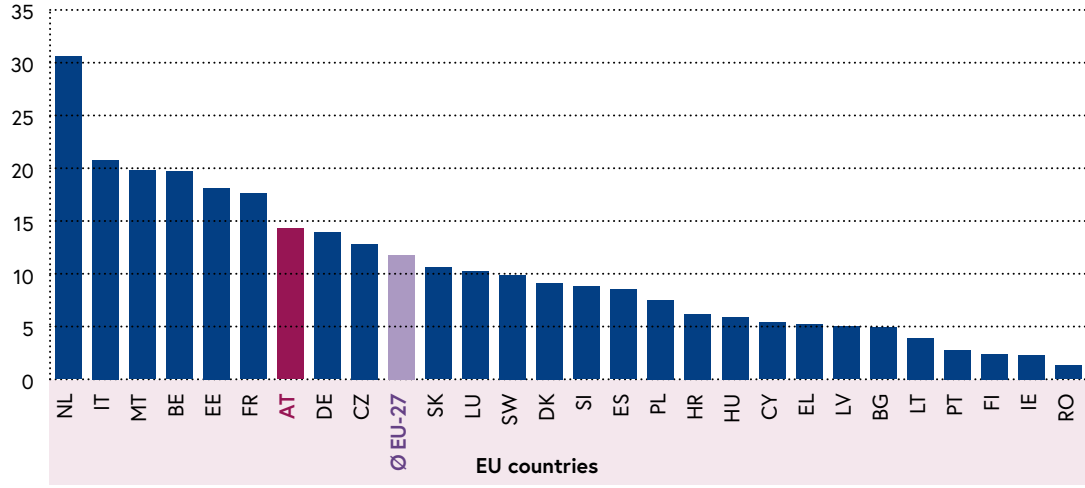


Note: No data are available for Australia, Brazil, China, Russia, South Africa, the United States and the United Kingdom.
Source: Eurostat (2025); illustration: iit.

Another indicator of environmental sustainability is the utilisation rate of reusable materials in relation to the circular use of materials.[181] Figure 2-40 shows the circular material use rate in an EU comparison. Austria was able to increase its rate from 13.8 % (2022) to 14.3 % (2023), more than the increase in the EU-27 average (from 11.5 % to 11.8 %). Austria thus remains in 7th place and above the EU average.[182]

Since 2020, Austria has been able to increase the utilisation rate of reusable materials by a total of 2.8 percentage points. The Netherlands leads the EU 27 (30.6 %), followed by Italy (20.8 %) and Malta (19.8 %). For France and Belgium, there was a significant decline in this indicator in some cases (Belgium: 2.5; France: 1.7), while Malta recorded an increase of 4.7 percentage points.

Figure 2-40: Circular material use rate (in %), 2023



Note: No data are available for Australia, Brazil, China, Russia, South Africa, the United States, the United Kingdom and Switzerland.
Source: Eurostat (2024); illustration: iit.

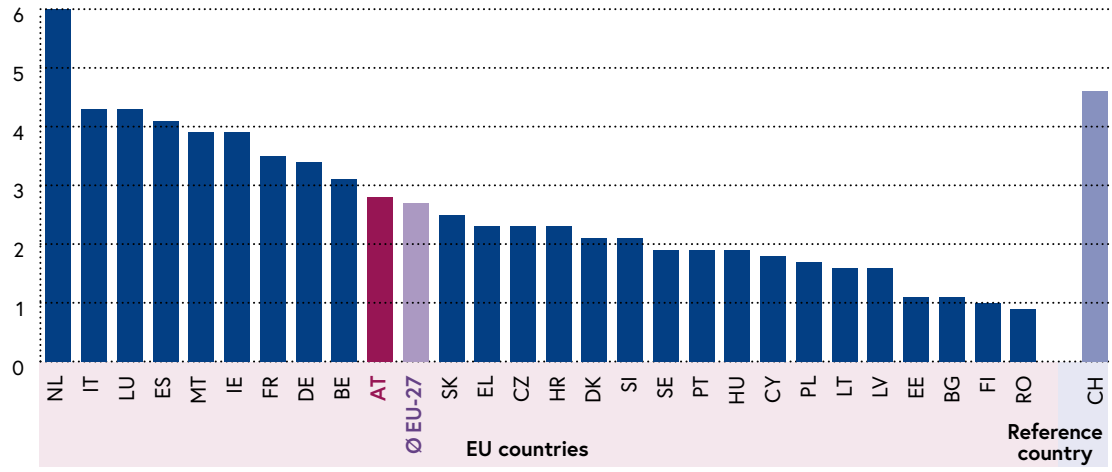
181 A definition of the indicators was described in detail in last year's report (FTB, 2024). Increasing the utilisation rate of reusable materials, also known as the circularity rate, to 18 % in 2030 is one of the goals of the Austrian circular economy strategy. For a detailed presentation relating to Austria, see BMIMI (2024).

182 Eurostat provides provisional (estimated) figures for 2022 for all countries (except Luxembourg).

Figure 2-41 shows resource productivity in the EU in 2023. Resource productivity is calculated by dividing gross domestic product by domestic material consumption.[183] Austria remained in 10th place, as in the previous year, and thus continues to be ranked in the mid-range, only slightly above the EU-27 average. The Netherlands continues to lead in resource productivity with a significantly better value compared to the previous year, followed by Italy and Luxembourg.

In an international comparison, Switzerland also has high resource productivity figures. Austria was once again able to significantly increase its value from 2.5 to 2.8 purchasing power-adjusted GDP units per kg. This means that Austria is experiencing a positive development and has not yet been able to achieve the target set in the circular economy strategy of the BMK (now BMIMI)[184] for 2030 of a 50 % increase compared to 2015.

Figure 2-41: Resource productivity, 2023



Note: The data for Switzerland are from 2020. No data are available for Australia, Brazil, China, Russia, South Africa, the United States and the United Kingdom. Source: Eurostat (2024); illustration: iit.

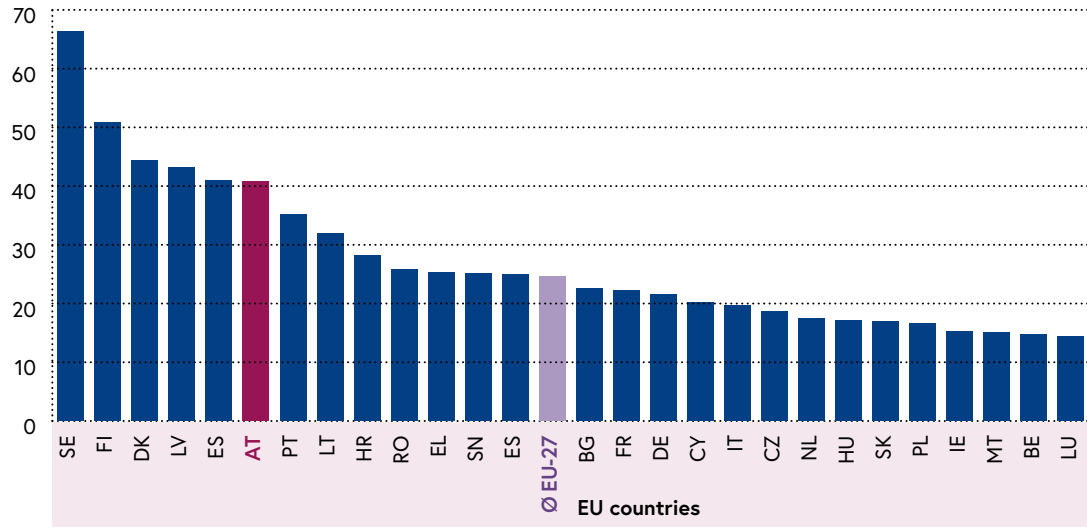
In terms of the share of renewable energy in gross final energy consumption (Figure 2-42),[185] Austria remains in the top group in 2023, in 6th place (2022: 6th place): The share rose significantly from 34.1 % in 2022 to 40.8 % in 2023, with Sweden in the leading role, reporting a share of 66.4 %.

183 A definition of the indicators was described in detail in last year's report (FTB, 2024).

184 See BMK (2022). For a detailed presentation of resource productivity in relation to Austria, see BMIMI (2024).

185 Gross final energy consumption is calculated from the energy consumption of end consumers plus grid losses and the power plants' own consumption.

Figure 2-42: Share of renewable energies in gross final energy consumption (in %), 2023



Note: No data are available for Australia, Brazil, China, Russia, South Africa, the United States, the United Kingdom and Switzerland.
Source: Eurostat (2025); illustration: iit.

2.3.7 Summary

In this chapter, Austria's positions in international comparison in the areas of research and development, digitalisation, innovation capability and environmental sustainability were analysed using various indicators. Selected key results are summarised as a radar chart in Figure 2-43. The red segment of the figure includes basic indicators of performance in research and development, the blue segment contains indicators of the status of digitalisation, the yellow segment shows indicators of innovation capability and the green segment shows indicators of environmental sustainability.

The key RTI indicators show that Austria was largely able to maintain its positions compared to the previous year. There were no changes in ranking in the RTI indicators R&D expenditure, R&D personnel, proportion of women in research and scientific publications. Although there was no change in ranking, the RTI indicator R&D personnel (above 2 % for the second time in a row) once again managed to increase the value compared to the previous year and even achieved the highest growth among the top 5 countries in 2023. In contrast, the RTI indicator proportion of women in research remained constant compared to the previous year but is still higher than in 2019. The ranking for the RTI indicator scientific publications remained the same, and their number also remained almost the same. In the number of scientific publications in eight key technology fields analysed for the first time, Austria is in the top group in two fields, in the upper midrange in three fields and in the midrange in two fields. In terms of ERC grants, Austria fell from third place in 2022 to sixth place in 2023 but still achieved the RTI Strategy 2030 goal of being among the top 10.

The ranking for GII and EIS remained unchanged compared to the previous year. Austria improved slightly in terms of venture capital investment (+1 place). In the Times Higher Education World University Rankings, the position in the categories remains the same (only one university in the top 200), but the University of Vienna was able to improve its position from 119 to 110. In terms of patent intensity, Austria improved from 9th to 7th place.

Austria's performance in the area of digitalisation is mixed. Austria fell one place to 12th in the Readiness for Frontiers Technologies Index in the EU-27 comparison. Austria is above the EU-27 average in 7 of 13 performance indicators of the Digital Decade but does not

occupy any top positions; the same applies to scientific publications in the field of AI (10th place). Austria was able to maintain its position at the forefront in terms of patent applications in the field of quantum technologies (3rd place) and scientific publications in the field of quantum research (2nd place).

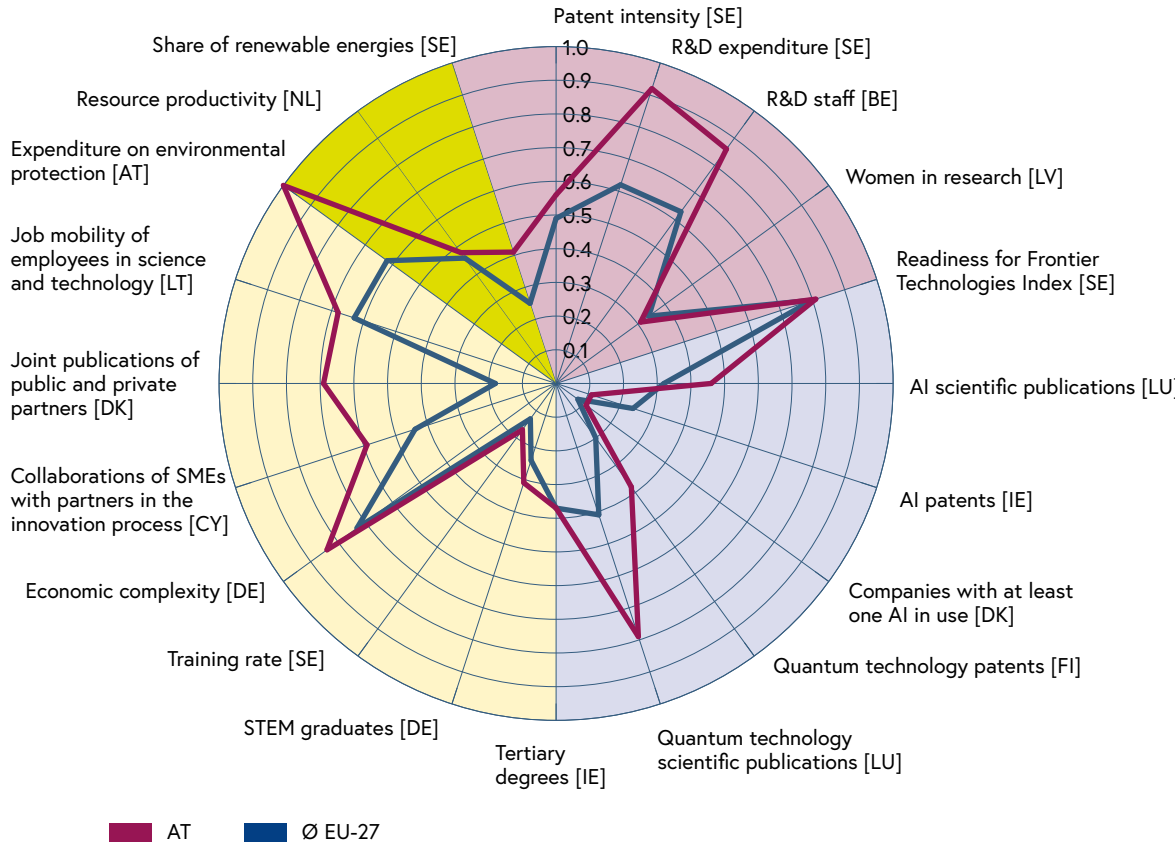
There are differences among the indicators for innovation capability. In terms of human capital, tertiary degrees are still slightly below the EU average, but the proportion has increased, particularly for Master's degrees. In terms of the proportion of STEM graduates,[186] Austria remains in the top group (again in second place in the EU-27) and was able to further increase its share. The comparatively low figure for tertiary degrees can be partially explained by the lack of comparability of the education systems analysed and the strong focus on vocational education in German-speaking countries. This peculiarity is less relevant when looking at participation in continuing education, where Austria is well above the EU-27 average and has improved by one place in the country ranking (7th place).

Austria gained one place in the IMD World Talent Ranking and is now once again among the top 5 nations in Europe. As in previous years, Austria ranks third in complexity capital, once again demonstrating its outstanding ability to produce complex products. In terms of relationship capital, public-private co-publications were analysed, where Austria was able to improve from fourth to third place. Austria is also in the upper mid-range (7th place) when looking at the number of co-operations between SMEs and other companies.

A mixed picture emerges when looking at Austria's position in the environmental sustainability indicators. Austria achieved first place for national expenditure on environmental protection and fell one place to sixth for the share of renewable energies in gross final energy consumption, despite a high value. Austria remained stable in the indicators "utilisation rate of recyclable materials" (7th place) and "resource productivity" (10th place).

186 In Figure 2-43, the proportion of STEM degrees appears comparatively low. This is due to the fact that this figure shows the comparison to the possible maximum value (100 % STEM graduates), which is not a desirable goal. However, in order to enable a comparison with the other indicators, this form of presentation is appropriate. In fact, Austria has the second-highest proportion of STEM graduates among the EU Member States.

Figure 2-43: Summary of Austria's position compared to the EU average

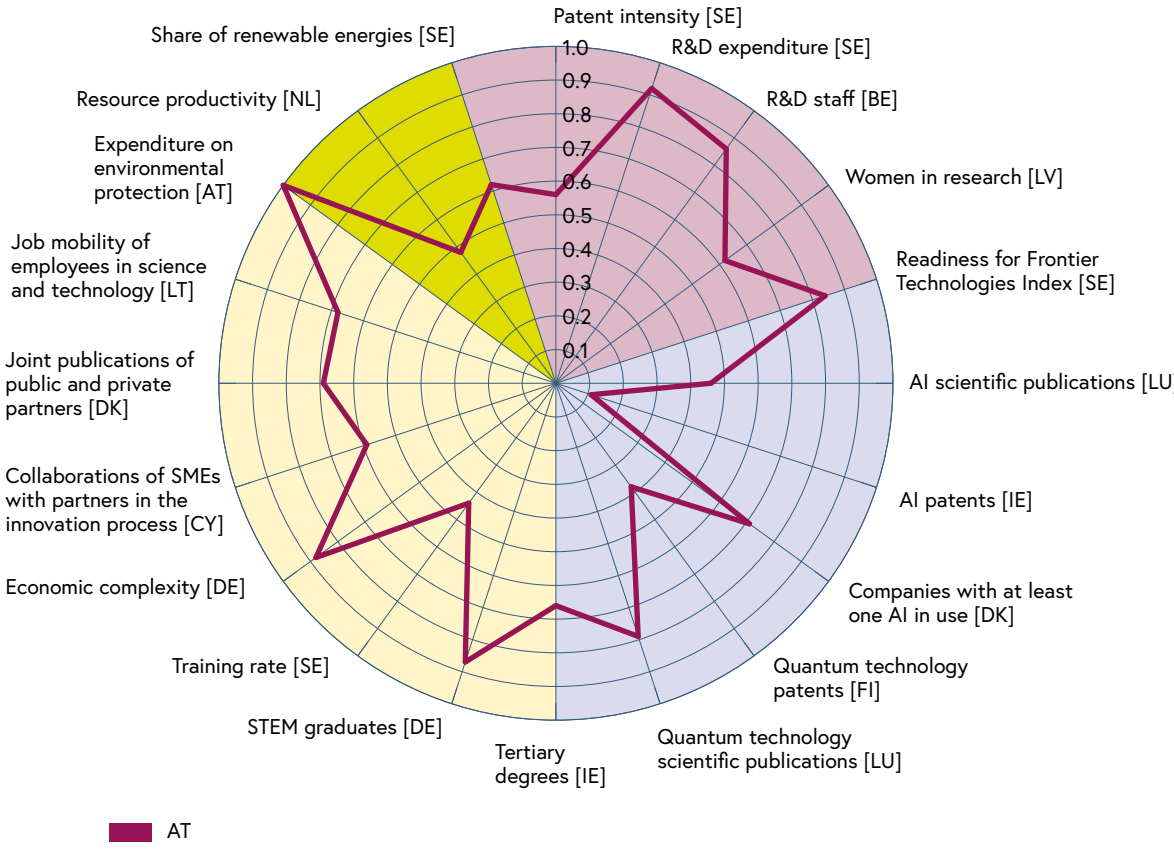


Note: In order to present the different indicators together in one graph, the various scales were standardised to values between 0 and 1. The value 1 represents the maximum value in the EU-27, except for the proportion of women in research, companies with at least one AI in use, tertiary degrees, STEM graduates, continuing education rate and proportion of renewable energies (maximum value 100 in each case). The red line visualises Austria's standardised value and the grey line visualises the standardised value of the EU-27 average in the respective indicator. The countries whose abbreviations are in brackets are the countries with the maximum value in the EU-27. Illustration iit.

Figure 2-44 visualises the distance to the leading nation for each indicator (shown in square brackets), i.e. the proportion of Austria's value in relation to the highest value in the EU. This provides a different perspective on Austria's strengths and weaknesses in an international comparison.

This clearly shows Austria's outstanding, and in some cases leading, position in terms of R&D expenditure, R&D personnel, publications in the field of quantum technologies, STEM graduates, economic complexity and national expenditure on environmental protection. In contrast, there is a need to catch up with the leading EU-27 Member State in terms of the continuing education rate. Here, Austria only achieves 44 % of the value of the leading nation. Austria also achieves 38 % of the highest value in the EU in the "quantum technologies patents" indicator. Another indicator in which Austria only achieves around half the value of the leading EU-27 Member State is scientific publications in the field of AI (46 %) and resource productivity (48 %).

Figure 2-44: Summary of Austria's score compared to the leading score



Note: In order to present the various indicators together in one graph, the different scales were standardised to values between zero and one. The red line visualises the distance between Austria and the respective leading country in the EU-27. Illustration iit.

2.4 Austria and European science, research, technology and innovation policy

Austria became an EU Member State on 1 January 1995. In Chapter 2.4.1, we take this as an opportunity to reflect on the diverse effects of Austria's accession to the EU on research, technological development and innovation. It should be noted that Austria's accession to the EU triggered a series of reforms and behavioural changes in RTI policy, R&D funding and among researchers themselves, from which the excellence and competitiveness of Austrian science, research and innovation still benefit today. Sketching a historical outline, we identify a pioneering, early phase that lasted roughly until the fifth EU Framework Programme for Research and Technological Development. This was followed by an expansion phase characterised by the establishment of the European Research Area from 2000 onwards and the increased European significance of research and innovation, which manifested itself not least in noticeable budget increases from the 6th Framework Programme onwards. For Austria, this phase began with the achievement of the break-even point in 2002, when the calculated returns from the Framework Programme to Austria exceeded its own calculated contributions to the EU budget for R&D for the first time. This was followed by a continuous trend towards ever-increasing Austrian participation, characterised, among other things, by increasing amounts of funds raised. In order to open up the diverse spectrum of European research and innovation and delve deeper into specific areas, Chapter 2.4.1 also contains three excursuses on the European Universities Alliances, Horizon 2020 and Austrian links to the humanities, social sciences and cultural studies (SSH) in the EU's research framework programmes between 1995 and 2025.

As every year, Chapter 2.4.2 provides an update on Austria's performance in the current EU Framework Programme, focusing on the performance of Austrian stakeholders in the respective pillars and thematic areas of Horizon Europe. This review is supplemented by an analysis of Austrian participation differentiating between the higher education sector, the non-university research sector and the business enterprise sector.

Finally, Chapter 2.4.3 summarises current developments relating to the implementation of the European Research Area at European and Austrian level.

2.4.1 30 years of EU accession – a retrospective on six European Research Framework Programmes

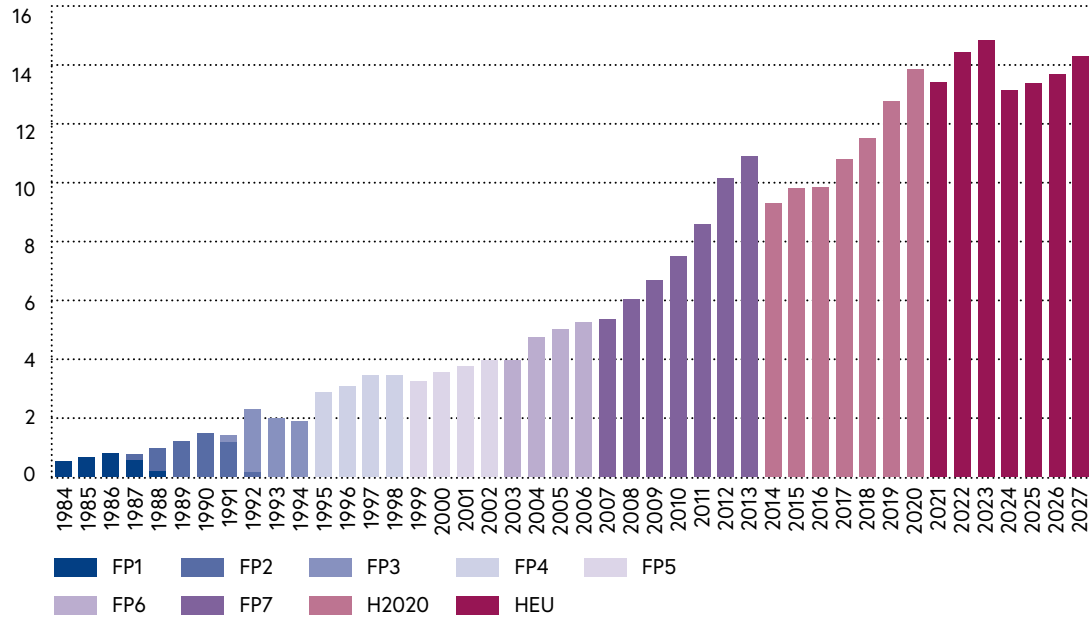
The European Framework Programme (FP) for research and technological development (RTD[187]) was launched at the beginning of the 1980s to support European industry and increase competitiveness by bundling existing individual research programmes for strategic technology development at European level into a common framework. Today, the FP contains a differentiated portfolio of topics, measures and instruments, which, in addition to economic competitiveness, also makes provisions for basic research and a number of political agendas, such as the European Green Deal.

187 Over the years, the research framework programmes have been renamed and are no longer RTD but R&I. See later in the body text.

While FPs were still a comparatively marginalised European area with modest budgets in the 1980s and 1990s, the increased importance of FPs today is clear in their budgetary expansion (see Figure 2-45).

However, the FPs for RTD cannot always be clearly distinguished from one another in terms of strategy, content and instrumental orientation. This is partly because their terms did not necessarily coincide with the mandate of the elected European Parliament, the composition of the European Commission, or its political guidelines. From the Austrian perspective, a distinction can be made between a pioneering or early phase and an expansion phase, particularly with regard to the interactions with Austrian RTI policy, on the basis of which the developments in the 30 years since Austria joined the EU can be outlined as follows.

Figure 2-45: Annual budgets of the Framework Programmes (in € billion)



Source: State Secretariat for Education, Research and Innovation.[188]

The early pioneer phase

Austria's official accession process to the EU began with its application for membership, submitted to the European Community (EC) in July 1989. Following approval from the European Council, the European Commission and the European Parliament, a referendum was held in Austria on 12 June 1994, in which two thirds of voters supported accession. After the Austrian parliament ratified the treaty in November of that year, Austria joined the EU alongside Sweden and Finland on 1 January 1995. This increased the number of EU Member States from twelve to fifteen.

188 https://backend.sbfi.admin.ch/fileservice/sdweb-docs-prod-sbfitestch-files/files/2025/01/31/dac14efe-cc20-404a-a658-3de60c861d0b.pdf

EU accession has brought a number of benefits for Austrian citizens[189] and was accompanied by a fundamental modernisation of the Austrian industry following the industrial upheavals of the 1980s, which had particularly affected the formerly nationalised industry. Austria's bilateral trade with other EU Member States increased by around 46 % in the first 20 years after EU accession and contributed to Austrian real GDP growth of 15.6 % (compared to a scenario without EU accession).[190]

Largely unnoticed by the public, EU accession also offered new opportunities for Austrian science and research, which were gradually utilised. This is most evident in the participation of Austrian researchers and research institutions from industry and academia in the European Framework Programmes for Research and Technological Development (see Table 2-4).

Table 2-4: Path from the 4th to the 8th European Research Framework Programme for RTD

Framework programmes	FP4	FP5	FP6	FP7	H2020
Terms	1994–1998	1998–2002	2002–2006	2007–2013	2014–2020
Approved projects with Austrian participation	1,444	1,384	1,324	2,478	3,237
Approved Austrian participations*	1,923	1,987	1,972	3,637	5,175
Share of approved Austrian participations in total approved participations	2.3 %	2.4 %	2.6 %	2.6 %	2.8 %
Share of AT coordinators of total nr. of coordinators	1.7 %	2.8 %	3.3 %	2.7 %	2.8 %
Rate of return rate (juste retour; Austrian share of spent FP-funding)	2.0 %	2.4 %	2.6 %	2.6 %	2.9 %
Funding received for Austrian organisations and researchers in € million	194	292	425.5	1,191.5	1,955.4

Note: * Participations refer to the number of project partners from Austria. More than one Austrian project partner may be involved in an approved project.

Source: Data for FP4, FP5 and FP6 from PROVISO 2009, p. 47. Data for FP7 and H2020 from the FFG's EU Performance Monitor.

It should be noted that European research and technology policy itself took several decades to develop into a mainstay of European policy, as R&D was only institutionalised as a priority policy area of the EC[191] with the entry into force of the Single European Act in 1987.[192] From a historical perspective, the decline of the information and communication technology sector in Europe in the late 1970s and early 1980s and the European Commission's efforts to upgrade this sector through the creation of the ESPRIT programme (European Strategic Programme for Research in Information Technology) can be seen as the starting point for the development of an EC-managed European research and technology policy (Sharp 1989). The first ESPRIT calls for proposals were launched in February 1983, followed by other thematic programmes such as RACE (Research in Advanced Communications in Europe), BEP (Biomolecular Engineering Programme), BAP (Biotechnology Action Programme) and BRITE (Basic Research in Industrial Technologies for Europe).[193] In spring 1985, the regulations and budgets of these programmes were merged into a first FP for RTD,[194] which ran until 1987

189 See Breuss (2025).

190 See Oberhofer (2019).

191 See Schuch (2005).

192 Art 130f, European Act states that *"The Community's aim shall be to strengthen the scientific and technological basis of European industry* and to encouraging it to become more competitive at international level". https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A11986U024

193 See Schuch (2005).

194 See Edler (2000).

with an endowment of 3.3 billion ECU (European Currency Unit). The second FP for RTD ran from 1987–1991 with a budget of ECU 5.4 billion and the third from 1991–1994 with €6.6 billion.[195]

Austria's accession to the EU coincided with the start of the fourth FP (1994–1998). However, as Austria had already been able to participate in the first three FPs for RTD on the basis of its own funds, the official entry into FP4 did not represent a total break with previous practices. In addition, Austria had been involved in the European Cooperation in Science and Technology (COST) programme[196] since the 1970s and in EUREKA[197] since 1985. According to the EU Dashboard, Austria had three participations in FP1, 59 in FP2 and as many as 222 in FP3.[198] Nevertheless, these overall modest figures gave rise to concern that Austria could possibly become a net contributor to the FP for RTD due to its catch-up process in the R&D sector[199] that was only initiated in the mid-1980s.[200] To counteract this, the Austrian R&D policy has established the Office for International Research and Technology Co-operation (BIT), not least to minimise the access barriers and transaction costs for Austrian researchers to the FP for RTD.[201] On 1 January 2004, the BIT, together with the Research Promotion Fund for Industry, the Austrian Space Agency and the Technologie-Impulse-Gesellschaft, was integrated into the then newly created Austrian Research Promotion Agency (FFG), where it continues to serve researchers in Austria and the administration as the European and International Programmes (EIP) division .[202]

In retrospect, it should be emphasised that the BIT was jointly budgeted and supervised by the respective ministries responsible for R&D agendas (at that time the Ministry of Science, the Ministry of Economic Affairs and the Ministry of Infrastructure) and the Austrian Federal Economic Chamber, which underlined the ambition of the state as a whole to make the best possible use of the opportunities offered by the FP. The interdepartmental collaboration and cooperation with the Austrian Federal Economic Chamber were also continued in the EIP,[203] whose offers and services are in high demand and appreciated by the Austrian research community.[204] However, the political management of the European R&D agendas was concentrated in the Ministry of Science from the outset and coordinated from there with the other ministries, a decision that has proved its worth in the long term of Austria's outward presentation of a united standpoint. Compared to the three previous FPs, three horizontal programmes were added in FP4: international cooperation, dissemination and exploitation of results and promotion of training and mobility of researchers. However, the thematic research areas (information technology and telecommunications, industry, environment, life sciences, energy and transport) remained dominant and absorbed 87% of the budget.[205] FP5 (1998 to 2002), which was adopted under

195 https://www.sbfi.admin.ch/en/eu-framework-programmes-1984-2020

196 https://www.cost.eu/

197 https://eurekanetwork.org/

198 https://dashboard.tech.ec.europa.eu/qs_digit_dashboard_mt/public/sense/app/1213b8cd-3ebe-4730-b0f5-fa4e326df2e2/sheet/d23bba31-e385-4cc0-975e-a67059972142/state/analysis

199 See Biegelbauer (2010). Note: It is difficult to determine a chronological caesura. In any case, the founding of the FFF (Austrian Industrial Research Promotion Fund) and the FWF (Austrian Science Fund) in 1967 should be mentioned. According to Biegelbauer (2010), Austrian technology policy only emerged in the 1980s, in particular through the transfer of various programmes to the Innovation and Technology Fund. A systemically understood innovation policy (Lundvall, 1992) developed in Austria in the 1990s (Pichler 2010, Pichler et al. 2007; Gassler et al. 2006), which led to more research programme development, more calls for proposals, more competition and evaluations, not least through the use of the Technology Billion adopted in 1997.

200 See Herlitschka (2010).

201 The objectives of the BIT as a nationwide service centre included securing and increasing the participation of Austrian companies and research institutions in international research and technology programmes and initiatives by providing information, advice, support and assistance in the search for partners, especially in the FPs for RTD and in EUREKA and COST. See: https://dafne.at/projekte/bit-2002

202 https://www.ris.bka.gv.at/NormDokument.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20003449&FassungVom=2024-10-26&Artikel=&Pa-ragraf=2&Anlage=&Uebergangsrecht=&ShowPrintPreview=True

203 The "European and International Programmes" division of the FFG is commissioned by the Republic of Austria represented by BMWET, BMIMI, BMLV, BMLUK, BMASGPK under the leadership of the BMFWF and the WKO.

204 Dinges et al (2018).

205 https://www.sbfi.admin.ch/en/eu-framework-programmes-1984-2020

the first Austrian EU Council Presidency, differed little from FP4, both thematically and in terms of budget.

The original fears concerning Austria's mediocre performance in the FPs did not materialise in the medium term (see Table 2-4). The cost recovery point was reached for the first time in 2002, when the calculated return flows from the FP to Austria exceeded Austria's calculated own payments to the EU budget in the field of R&D for the first time. Since 2005, the gap between calculated payments and returns from the FPs has widened in Austria's favour.[206] While the return rate measured against the Austrian contribution to the EU budget was only 70 % in FP4, it rose to 104 % in FP5 and 117 % in FP6.[207] Although the thematic focus of the FPs has changed over the decades, Austrian specialisation patterns have emerged in the FPs since FP4. Compared to the European average, Austria was particularly successful in the programme lines that dealt with energy, digital and industrial technologies or socio-economics, for example, while its performance in the field of life sciences, for instance, was comparatively below average. It is also interesting to note that the FPs were very well received by the non-university R&D sector in Austria from the outset, although the latter is well behind the higher education institutions in terms of R&D capacities. However, with the exception of the technical universities and the University of Natural Resources and Life Sciences, Vienna (BOKU), the higher education sector participated below expectations and potential in the FPs in terms of their capacities and their dominant position in the public R&D sector.[208] With the somewhat later introduction of ERC grants, which have become the "academic currency" in international reputation comparisons over the last 15 years and have been heavily acquired by Austrian universities, the Austrian Academy of Sciences and ISTA, particularly in the last two FPs, there is an observable increase in the importance of FPs in the higher education sector with regard to the "idea of excellence". In contrast, the participation of the business enterprise sector can be assessed as stable from the outset and in line with the pan-European distribution.

The FPs have not only contributed to a massive boost in the Europeanisation and internationalisation of Austrian R&D, which has benefited above all from networking activities and the associated knowledge and skills spillovers, but also to the further consolidation of joint R&D efforts between companies and research institutions in collaborative projects, which has also been a strong concern of national R&D policy since at least the 1990s.

In the 1990s and early 2000s, a large number of new R&D programmes were developed in Austria that were strongly influenced by the FP in terms of their thematic and structural orientation.[209] Some of these programmes were also intended to provide a national thematic basis for better European networking and coordination with corresponding EU programmes. One example of this is the Austrian genome research programme GEN-AU, which launched the first calls for proposals in 2001. The GEN-AU programme document stated among its research policy objectives that *"the programme is intended to create a basis for influencing the "European Research Area" and ensuring the most successful possible participation in the EU's research framework programmes".*[210]

The shift towards competitive R&D funding and more institutional openness as well as the associated professionalisation of third-party funding administration[211] and third-party funding generation has been accompanied by a generational change and associated positive dynamics in Austrian R&D administration.[212] The evaluation of national R&I policies and R&I instruments has also received significant impetus from international

206 See PROVISO 2009, p. 48
207 See PROVISO 2009, p. 47.
208 See Martinuzzi (2010).
209 The so-called "technology billion", which was applied from 1996 and in the years following, merits particular mention in this respect,
210 See bm:bwk n.d., p. 7.
211 See Lichtenecker (2010).
212 See Pichler (2010).

discussion and practice. This in turn has contributed to Austria's development from a laggard to a pioneer with a comparatively good evaluation culture, which has actively contributed to evidence-informed reflexivity in R&I policy design and R&I policy implementation.[213] The founding of the Austrian Platform for Research and Technology Policy Evaluation (fteval) in 1996, of which all relevant ministries and funding institutions entrusted with R&I agendas are members today, should be mentioned as a milestone in this context.[214] In conclusion, it should be noted that the FP has initiated a reform push and a change in mentality in the area of R&I policy and R&D funding in Austria.

In 1999, the so-called Bologna Declaration also laid the foundation for the European Higher Education Area (EHEA) to enable borderless study and research in Europe on the basis of quality-assured, transparent and comparable study programmes with recognition of academic achievements.[215] The EHEA has received great support from the Erasmus programme, which was adopted by the European Council on 15 June 1987. By supporting the mobility of more than five million students, the Erasmus programme has become a success story of European integration[216] and was awarded the Charlemagne Prize for its services to Europe in 2019.

Austrian students were able to benefit from an Erasmus study visit to another European country for the first time in 1992. Over the years and with changing programme names – Socrates I and II as well as the Lifelong Learning Programme – study-related internships and the mobility of teachers and general university staff were also made possible in the higher education sector. The Erasmus+ 2014–2020 programme,[217] the EU programme for the promotion of general and vocational education, youth and sport in Europe, not only integrated the areas of youth and sport, but also the EU third country programmes TEMPUS (promotion of academic exchange between Western and Eastern European countries) and Erasmus Mundus (Master's degree programmes for excellent students in Europe and beyond), which had previously been run independently in the higher education sector. International mobilities were also made possible for the first time. The current Erasmus+ 2021–2027 programme[218] focuses on the priorities of social inclusion, green and digital transitions and promoting young people's participation in democratic life, thereby supporting the priorities and activities set out in the European Education Area[219], the "Digital Education Action Plan"[220] and the "European Skills Agenda"[221]. At the same time, the programme has an impact on the implementation of important national strategies such as the "Austrian University Development Plan" (GUEP)[222], the "Higher Education Mobility and Internationalisation Strategy 2020–2030" (HMIS2030)[223] or the "National Strategy on the Social Dimension in Higher Education".[224]

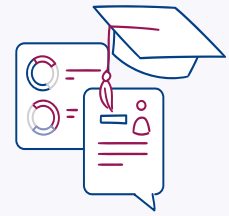
In addition to the "classic" long-term stays for study and internship stays of between two and twelve months, short-term stays, especially in combination with virtual components (blended mobilities) are also offered to the higher education sector under the current programme. "Blended Intensive Programmes", short physical group mobilities combined with a virtual phase for students and university staff, are also becoming increasingly popular and enable people who are unable to undertake longer stays (e.g. working students) to gain experience abroad. After the COVID-19 pandemic, the number of applications for physical mobilities rose

213 See Polt and Stampfer (2010).
214 https://fteval.at/en/plattform/
215 https://www.bmfwf.gv.at/wissenschaft/ehr.html
216 https://www.etnmagazine.eu/erasmus/erasmus-was-born-out-of-a-disappointment-sofia-corradi-from-student-to-mother-erasmus/
217 https://www.bildungsserver.de/bisy.html?a=8287&spr=0
218 https://erasmus-plus.ec.europa.eu/en/about-erasmus/what-is-erasmus
219 https://www.bmbwf.gv.at/Themen/euint/ebr.html
220 https://education.ec.europa.eu/en/focus-topics/digital-education/action-plan
221 https://employment-social-affairs.ec.europa.eu/policies-and-activities/skills-and-qualifications/european-skills-agenda_en
222 https://www.bmfwf.gv.at/wissenschaft/hochschulgovernance/steuerungsinstrumente/guep.html
223 https://www.bmfwf.gv.at/wissenschaft/ehr/bolognaprozess.html
224 See BMWFW (2017).

noticeably again. As part of the mobility agreements between Austrian universities and the OeAD, around 7,500 student and staff mobilities were approved in 2021; in 2024 there were already around 11,700 approved mobilities.

Erasmus+ also offers numerous opportunities for cooperation between organisations and institutions in Europe and beyond. For example, the "Erasmus Mundus Joint Master's Degrees & Erasmus Mundus Design Measures" and "Centres of Vocational Excellence" were established, in which Austrian higher education institutions participate very successfully. However, Austrian higher education institutions have also successfully faced international competition in other programmes such as "Capacity Building in Higher Education", "Innovation Alliances" and as part of the "Jean Monnet measures". Important thematic projects that support the various priorities of the programme were funded as part of the national cooperation partnerships managed by the OeAD. One particularly ambitious project is the creation of "European Universities Alliances", which was piloted for the first time in 2018 as part of an Erasmus+ call for proposals.[225]

Excursus: European Universities Alliances



"European Universities Alliances" are cross-border and future-oriented higher education networks that have developed close, sustainable, structured and systemic cooperation, offer better mobility opportunities and strive for top quality and excellence in education and research. Currently, 17 Austrian higher education institutions participate in the "European Universities Alliances", two of them in a coordinating role. Eleven Austrian public universities, five universities of applied sciences and one private university are successfully participating in the initiative. Austrian higher education institutions are therefore involved in around 27 % of the Alliances in Europe.

Other Austrian universities and universities of applied sciences work in European university consortia, are actively involved in the Community of Practice for European Universities Alliances and will submit corresponding applications at the next opportunity.

The studies carried out on the "European Universities Alliances"[226] confirm that the Alliances have considerable transformation potential just a few years after their launch and have made significant progress in achieving the goals set. Students benefit from an expanded, high-quality and innovative educational programme as well as increased mobility opportunities. The increasing development of joint study programmes allows students to study more flexibly at different partner universities within the alliance.

The higher education institutions appreciate the higher institutional visibility, the international reputation and the improved opportunities for cooperation. Close collaboration in strategically important fields of research has created stronger links between teaching, research and innovation. The Alliances thus increase the quality, attractiveness and competitiveness of both their institutions and the national and European higher education systems.

However, the European Universities Alliances are facing major challenges for which answers are needed

225 https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/f0e0e83a-47ec-11ef-aea6-01aa75ed71a1
226 See Grumbinaitė, I. et al. (2025); O'Neill, G. and Acheson, H. (2024) and Craciun et al. (2023).

to ensure their success. Long-term and sustainable funding of the alliances across all their dimensions remains crucial. Reforms are needed at both EU and national level to give alliances a legal status that meets their needs. Legal and administrative barriers hinder the development and quality assurance of joint study programmes, the introduction and development of common digital infrastructures, ensuring full interoperability and the establishment of common data management. The eleven participating Austrian public universities enjoy long-term security and predictability for their activities planned within the framework of the Alliance through the anchoring of corresponding projects in the performance agreements.

Support for the further development of the European Universities Initiative and the removal of barriers to close transnational cooperation remain the focus of national and European higher education policy.

The expansion phase

The European Research Area (ERA) was first propagated in the EC communication "Towards a European Research Area" in 2000 and adopted shortly afterwards by the European Council in Lisbon. It has since become a driving force behind European, and therefore Austrian, R&I policy, albeit after several attempts.[227] It can be understood as a systemic attempt to integrate EU scientific resources and harmonise joint European R&I efforts, whereby the declared goal of creating a common European "research market" that fully opens up nationally administered funds to applicants from other EU countries has not yet been achieved. With the declaration of the so-called "Barcelona target" (2002), which provided for an increase in R&I expenditure to 3 % of GDP at EU level and in the EU Member States by 2010, as well as the introduction of the "Open Method of Coordination" (OMC) in 2003 as an alternative to legal regulations, a stronger political operationalisation of the ERA began. The OMC made it possible to discuss structural issues in national research and innovation systems for the first time, but its overall impact on reform efforts in most EU Member States was limited. Although there have been repeated rifts between Austria and Brussels (e.g. in relation to EURATOM and embryonic stem cell research)[228], Austria has been strongly committed to and within the ERA from the outset, which was reflected in its multi-year co-chairmanship of the European Research and Innovation Area Committee, among other things. In 2018, a reorganisation of the ERA was finally initiated under the Austrian Presidency of the European Council. In 2021, this led to a decision by the European Council for a "Pact for Research and Innovation in Europe" and the adoption of the "ERA Policy Agenda 2022–2024", which contains a catalogue of voluntary structural measures that contribute to the defined European priority areas and are implemented by the EU Member States, partly in cooperation with the EC. In December 2022, the Austrian government adopted the relevant national action plan, under which 15 of the 20 European packages of measures are being implemented, including the areas of national implementation of the "European Missions", human resources and gender equality, "green" hydrogen and strengthening confidence in science.[229] In Austria, the measures are being implemented on the basis of joint coordination with key stakeholders.[230]

Overall, it should be noted that the normative priorities set by the ERA and the FPs have been echoed in Austrian R&I policy and their importance has been recognised and promoted. This applies, for example,

227 In 2009, the ERA was explicitly recognised in Article 179(1) of the Treaty on the Functioning of the European Union, which elevated the creation of the European Research Area to the level of an objective of the European Union. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:research_area and Herlitschka (2010).

228 See Seiser (2010).

229 See BMBWF, BMK and BMAW (2022).

230 See also the evaluation of the ERA 2019-2024 mission in section 2.5.2.

to the topics of effectiveness, knowledge transfer and the utilisation of research results, or currently, to the discussion of research security aspects, which were strongly initiated at the European level.

The ERA programme also influenced FP6, which ran from 2002–2006 with a budget of €19.1 billion, for the first time. Although the majority of the budget continued to flow into thematic areas such as information technologies, health, sustainable development and transport, the horizontal programmes now increasingly served to structure the ERA. A good example of this was the establishment of the "European Strategy Forum on Research Infrastructures" (ESFRI) to contribute to the strategy-led and coordinated development of large-scale research facilities and research infrastructure networks and to overcome fragmentation in the EU in this area.[231] Other examples of coordinated, structured approaches include increased attention to the issue of gender equality and the promotion of even greater intra-European mobility of researchers through mobility-based training programmes such as the "Marie Skłodowska-Curie Actions".[232] In addition, two new instruments were created in FP6: (i) the integrated projects and (ii) the so-called networks of excellence, each of which were large-scale projects with a high level of funding. These were intended to ensure the sustainable integration of the partners' research capacities into a joint programme of activities, but[233] were modified or abolished after FP6 due to a lack of effectiveness and high administrative costs. To further support Austrian participation in FP6 and FP7, project preparation funding and co-financing support[234] were made available, but these were abolished during FP7.[235]

Ten Central, Eastern and Southern European countries also joined the EU during FP6. Measured in terms of the number of countries and people, this fifth wave of enlargement was the largest to date.[236] It was supported bilaterally by Austria in the area of R&D, which was perceived positively at European level, as was Austria's commitment to supporting the integration of the so-called Western Balkan states into the ERA.[237] Nevertheless, it should be noted that this commitment to coordinating European policies with other countries has not led to sustainable coalitions, as the quiet fading away of the "Salzburg Group"[238] has shown. Rather, Austria's R&I policy coalitions with other like-minded EU countries were flexible and strongly dependent on the respective topics, although over the years a trend towards increased coordination with countries with excellent national R&D systems can be observed.

The paradigm shift of the FP from a funding programme for applied technology development to a strategic R&I programme with a claim to structural effectiveness was reinforced in FP7. For the first time, this programme extended over a period of seven years (2007–2013) due to its link with the duration of the multi-annual financial framework. In addition, its budget was significantly expanded to €55.6 billion. FP7 reflected the increased importance of R&D in the light of the Lisbon Strategy. Its aim was to make Europe the most competitive and dynamic knowledge-based economic area in the world. In relative terms, the thematic

231 https://www.bmfwf.gv.at/forschung/forschung-eu/eu-forschungsinfrastrukturen.html

232 https://cordis.europa.eu/article/id/17745-research-council-reaches-political-agreement-on-fp6

233 https://www.sbfi.admin.ch/en/eu-framework-programmes-1984-2020

234 See Court of Audit (2014). Report of the Court of Auditors. National measures under the 7th EU Framework Programme for Research, Technological Development and Demonstration Activities.

235 Due to identified deadweight effects and the failure to achieve the intended effect, the project preparation funding was discontinued in November 2010, whereupon the BMWF launched the "TOP-EU-Funding" programme in October 2010 to secure EU reflows in the area of non-university research institutions in the humanities, social sciences and cultural sciences, although this only ran for a short time. See also Arnold et al. (2010).

236 https://european-union.europa.eu/principles-countries-history/eu-enlargement_en

237 See Seiser (2010).

238 The "Salzburg Group" was initiated by former Science Minister Dr. Johannes Hahn in 2007 as an informal network of small and medium-sized EU Member States to explore joint approaches and alliances with regard to shaping the European Research Area. However, the Salzburg Group only lasted a few years. https://bilaterales.bmbwf.gv.at/wp-content/uploads/2009/12/bilaterales_dok_1544.pdf

programmes continued to lose some of their importance in FP7. One particularly effective innovation was the establishment of the European Research Council (ERC) in 2007 as a funding mechanism for excellent basic research, which was strongly orientated towards the Anglo-American understanding of science. [239]

The ERC's mission is to promote cutting-edge research in Europe through competitive funding and to support frontier research in all fields, driven by individual researchers and based on scientific excellence.[240] The "European Institute of Innovation and Technology" (EIT), was another innovation that was founded in 2008 as an independent institution of the European Union. In this institutional European R&I funding approach, the EIT attempts to bring together leading companies, educational and research organisations in cross-border partnerships, the so-called "Knowledge and Innovation Communities" (KICs[241]), in an interplay between research, education and innovation. The purpose of the KICs, which are independent in terms of their internal structure and administration, is to develop innovative products and services, establish new companies and create a new generation of entrepreneurs.[242]

With the start of FP7, the first preparatory projects for implementing the EU research infrastructures of the first ESFRI roadmap also began. The unique feature of the roadmap was that the list included not only large-scale facilities at one location, but also networks of decentralised research infrastructures. This was the starting signal for European research infrastructures outside the fields of physics, energy and computer sciences. The list therefore also included research infrastructures in the humanities, social and cultural sciences (SSH), environmental sciences, biomedicine and life sciences. The diverse ESFRI infrastructures have now become a strategic flagship of the European Research Area. Austria is currently a member of 21 ESFRI research infrastructures and is preparing for further membership. Austria is the host country of the ESFRI infrastructure BBMRI-ERIC (European Biobank Research Infrastructure).

FP7 was also characterised by the will of the EC to further advance the ERA and to leverage national R&D funds for common European purposes. This was initially achieved in particular through the coordination of public institutions of the EU Member States (especially through national research funding institutions) in ERA-NET projects (networks of the European Research Area in which programmes of the EU Member States were coordinated) and the Joint Programming Initiatives (JPI) for joint programme planning involving a range of different instruments. The Austrian ministries and agencies entrusted with R&I funding agendas were very quickly and extensively involved in the Public-Public Partnerships (P2P), ERA-NETs and JPIs, which led to a strong diffusion of European cooperation and European R&I agendas in Austrian administration and research funding. The aim was to bring about greater benefits for the system as a whole by linking national R&D programmes.

In addition, new instruments for cooperation with the private sector have been increasingly created at European level (so-called "Joint Undertakings"[243]), which set their own research agenda and allocate their funds mainly on the basis of open calls for proposals.[244] This has enabled the EC to develop Public-Private Partnerships (PPPs) with the aim of increasing the competitiveness of European industry and to involve industry more closely. However, with an increasingly unmanageable number of new European Partnerships (P2P, PPP), it soon became clear that Austria, as a medium-sized European country, could not play a role in all European Partnership

239 See König (2017).

240 https://erc.europa.eu/about-erc/erc-glance

241 So far, a total of nine KICs have been established in the areas of climate, energy, digitalisation, health, raw materials, environment, mobility, manufacturing and creative industries. Each KIC has regional points of contact, known as co-location centres or innovation hubs.

242 https://www.horizont-europa.de/de/Europaisches-Innovations-und-Technologieinstitut-EIT-1778.html

243 In accordance with Art. 187 on the functioning of the EU.

244 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:joint_undertaking

projects and that a new strategic approach relevant to research and industrial policy was needed.[245]

Participation in European Partnerships took place in particular where compatible national thematic programmes were available, which was particularly true for the BMIMI (formerly BMK), while the other ministries responsible for R&D did not have these opportunities to the same extent, especially as the Austrian R&I system is traditionally strongly bottom-up and self-directed. In fact, it has not yet been possible to centralise national co-funding for European Partnerships, e.g. through a separate national "co-funding pot". Austrian participation in the mainstream of FP7 and FP8 collaborative projects was also so successful that the increasing importance of European Partnerships during the same period did not initially attract any particular attention from researchers or R&I policy-makers.[246] The funding acquired by Austria during this period rose from €0.5 million in FP6 to over €1 billion in FP7 and almost €2 billion in FP8.

Horizon 2020 (H2020, 2014–2020), the eighth FP for RTD, continued the path taken in FP7 towards the integration of European research through European Partnership programmes. It was endowed with a budget of €82 billion. In terms of content, the proportion of thematic programmes fell further from 62 % in FP7 to 54 % in Horizon 2020.[247] Thematic areas that could be linked to the United Nations Sustainable Development Goals (SDGs) published in 2015 gained in importance. As part of the implementation of the SDGs, the EC committed Horizon 2020 to dedicating at least 60 % of its budget to sustainable development.[248] In addition to the Partnership programmes, the main beneficiaries of the budget expansion of Horizon 2020 were basic research (from 14 % to 16 %) and the new "Access to Risk Finance" programme (3.7 %). The aim of the latter programme was to remedy the problem of the gap between research results and concrete applications on the market with loans at a more or less secure interest rate. In this context, the reinterpretation of the FP for RTD into an FP for research and innovation (R&I) should also be mentioned, whereby the increased importance of R&I was expressed in higher technology readiness levels (TRL) and the transition to innovation. Accordingly, the business enterprise sector secured the majority of Austrian participations in Horizon 2020 (36.9 %).[249] It should also be noted that the success rates of the Austrian business enterprise sector since FP7 have been above the overall average for all European countries.[250] Horizon 2020 also saw the introduction of the SME-specific instrument (SMEI), whose phase structure is based on the US Small Business Innovation Research Programme (SBIR)[251] and replaced the "Research for SMEs" and "Research for SME Associations" funding lines implemented in the previous FPs, which had not brought the hoped-for added value. Austrian SMEs were characterised by a success rate in SMEI that was well above the European average and by a high utilisation of Phase 1 projects (concept and feasibility assessment) compared to innovation projects.[252] The SMEI focus on young SMEs with high growth potential was ultimately continued systematically in the successor programme Horizon Europe with the piloting of the EIC at the end of Horizon 2020.

245 Dinges et al (2018).

246 See Dinges et al. (2018). Note: However, there was also justified criticism of the European Partnerships, which in principle continues to this day. This concerns their delimitation and added value with regard to the other parts of the FP, the partly incomprehensible prioritisation and selection, the inadequate coordination and governance including the involvement of the EU Member States and the lack of transparency, especially – but not only – with regard to participation data. See also European Commission (2024). Opinion of the Partnership Knowledge Hub on European Partnerships under the future EU Framework Programme (FP10). Brussels, September 2024.

247 https://www.sbfi.admin.ch/en/eu-framework-programmes-1984-2020

248 https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A52016DC0739; see also Meyer and Schuch (2019).

249 See BMBWF, BMK and BMDW (2021).

250 See BMBWF, BMK and BMDW (2020).

251 See Di Minin, De Marco and Karaulova (2016).

252 See Frey, C. and Lata, R. (2019).

Excursus: Results and impacts taking Horizon 2020 as an example

The final evaluation[253] of Horizon 2020, which was completed in 2024, recorded the key results and impacts of the programme.[254] In general, it can be said that Horizon 2020 has achieved a very high level of mobilisation. The programme funded 35,000 projects involving 40,000 organisations. Individual applications (e.g. for Marie Skłodowska-Curie Actions or ERC) were received from 177 countries.[255] In total, a further €159 billion would have been required to fund all high-quality proposals submitted, which demonstrates the FP's weakness in terms of its enormous oversubscription and at the same time the higher potential of the European research programmes for R&I. The impacts of Horizon 2020 can be divided into scientific, social and economic impacts.

In terms of scientific impact, Horizon 2020 outperformed the number of FP7 scientific publications, which are cited twice as often as the global average and of which 3.9 % are among the top one per cent of the world's most cited publications.[256] Horizon 2020 made a significant contribution to scientific breakthroughs and advances, particularly in medical sciences, quantum mechanics, chemical engineering and materials. More than a quarter of all publications are related to new, rapidly developing areas of research. 33 Nobel laureates were funded in Horizon 2020 either before or after receiving their prize. 82 % of the funded publications were free and publicly accessible in line with the Open Science principle[257]. 50,000 researchers were supported in cross-sector and transnational mobility and 24,000 were given access to large research infrastructures. Although these figures speak for themselves, many other important aspects relating to scientific impact do not appear to be fully represented. These include the diverse subjective learning experiences and skills gains of many researchers at different qualification levels and fields, the establishment of stable cooperation partnerships, efficiency gains based on the division of labour, as well as broader multi- and transdisciplinary research designs, to name just a few aspects.

The societal impact of Horizon 2020 can be measured less clearly in terms of performance figures, partly due to attribution problems and the long period of time required to demonstrate the societal impact of projects. However, they should by no means be underestimated. The central focus of Horizon 2020, and to some extent its predecessor programme FP7, on promoting our understanding of climate change and its consequences, has led to the development of practical solutions for climate protection measures (both in the area of prevention and adaptation). 10 % of the scientific publications cited by the United Nations Intergovernmental Panel on Climate Change can be traced back to one of the two programmes. Another indication of the societal impact of Horizon 2020 was its response to emerging health crises. For example, the Ebola and Zika epidemics and the COVID-19 pandemic were responded to quickly. FP7 and Horizon 2020 are among the third most frequently cited sources of funding for COVID-19 research worldwide. The European programme also demonstrates added value in research into rare diseases, which should not be underestimated. In addition, efforts in the areas of food security, energy supply, transport and mobility, environmental sustainability, inclusive societies and

253 It is incorrectly labelled as ex-post, although at the time of the final evaluation 41 % of the projects that will achieve further results and impacts had not yet been completed.

254 See European Commission, 29 January 2024, COM/2024/49 final.

255 All information on the impact of Horizon 2020 is taken from European Commission, 29 January 2024 COM/2024/49 final.

256 This exceeds the citation frequency of studies from other major international funders, including the US National Science Foundation.

257 Compared to 65 % at the start of the programme in 2014.

security have contributed to improved EU policies, processes and practices, guidelines and standards, civil society engagement and social innovation, without these being quantifiable.

While the social impact could only be logically deduced but often not quantified, the economic impact of Horizon 2020 looks better in this respect. Econometric analyses modelled that the programme is estimated to make an average annual contribution of €15.9 billion to the EU's GDP by 2040, which amounts to a cumulative total of €429 billion. Its leverage effect is therefore approximately 1:5, which means that for every euro that the programme costs, an economic benefit of around €5 is generated.[258] The greatest leverage effect in terms of private co-investment has been achieved with the European Partnerships. These have more than doubled the volume of EU funding in cash or in kind. Overall, it can be stated that the participating companies in Horizon 2020 were able to achieve a higher average increase in employment of 20 % and an increase in turnover and total assets of 30 % compared to the companies that did not receive funding despite high-quality applications. To reduce the latent problem of insufficient risk and venture capital in the EU, the Horizon 2020 facility mobilised €77.5 billion in debt and equity capital for more than 38,000 organisations to reduce the critical high-risk funding gap at national and regional level. Although the programme has led to thousands of innovations, the gap between high-quality research and market innovation can by no means be considered closed today. This is also a key finding with regard to the areas where there is still room for improvement. In addition to the demand for better dissemination, utilisation and application of R&D results, these also include an expansion of participation, a reduction in the administrative burden, greater participation of women and the strengthening of synergies with other initiatives at EU, national and regional level.

The current 9th EU Framework Programme for Research and Innovation, Horizon Europe, runs from 2021 to 2027. With a budget of €95 billion at the start of the programme, it is the most ambitious research and innovation funding programme in the history of the EU to date. With the adoption of the European Green Deal in 2019, the narrative of green and digital change dominated the first years of Horizon Europe, not least in order to strengthen competitiveness. Due to the global COVID-19 crisis and the associated economic upheavals, such as vulnerabilities in supply chains, as well as geopolitical crises such as the Russian Federation's invasion of Ukraine and the resulting defence and energy resilience considerations, Horizon Europe today appears to be confronted with significantly more different sectoral requirements than its predecessor programmes, which were almost exclusively of an R&D policy nature at their core (not least as a substitute for a less effective European industrial policy). The cross-sectoral orientation is actively taken up in the new instrument of the so-called "European Missions" introduced in Horizon Europe. The idea of the "EU Missions" is to support the transformation of Europe into a greener, healthier, more inclusive and more resilient continent through a portfolio of measures – such as research projects, political measures or legislative initiatives.[259]

At the same time, elements from previous FPs have been retained. For example, scientific excellence, investment in cutting-edge research and a highly skilled workforce will continue to be driven by the ERC and the MSCA, and Europe's industrial competitiveness and innovation performance will be promoted through knowledge-based innovation in the thematic research areas and in the programmes of the European Innovation Council (EIC) and the European Institute of Innovation & Technology (EIT). In this context, the direct combination of grants and equity made possible by

258 All information on the economic impact of Horizon 2020 comes from European Commission, 29.1.2024.

259 https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe_en

the EIC and the EIC's Pathfinder-Transition-Accelerator funding lines, which build on each other, are particularly worth mentioning. Support for the ERA, including in the "Widening Participation and Strengthening the European Research Area" programme line, is also continued in Horizon Europe.

In order to better balance the diverse requirements, multi-year "strategic plans" are being developed for the first time for the duration of Horizon Europe against the backdrop of the current challenges. These plans represent the strategic focal points that the EU is particularly aiming for across different programmes. Nevertheless, taking into account the diverse agendas, the question of overloading the framework programme and overburdening its governance, which must succeed in ensuring connectivity with the various policy areas as well as the implementing stakeholders such as companies and research institutions, is increasingly being raised.

Excursus: Austria and the humanities, social and cultural sciences (SSH) in the EU Research Framework Programmes 1995–2025

As a further development of the technology-focused programmes of the 1980s and 1990s, FP4, which began in 1994 following the Maastricht Treaty, included a separate funding programme for the social and economic sciences for the first time, the "Targeted Socio-Economic Research" (TSER) programme.[260] The discussion on FP5 focused more strongly on the idea of orienting the FP towards social and economic needs in addition to technological development.[261] The humanities were explicitly taken into account from FP6 onwards.[262] After the SSH had further established themselves in FP7 and provided specific expertise on the science system in the additional "Science in Society" programme line, a controversy arose at the beginning of the Horizon 2020 negotiations. The SSH were not to receive their own funding line, which led to a Europe-wide support campaign and high-profile statements from prominent researchers. In the end, a programme line for the SSHs was created in Horizon 2020 with Societal Challenge 6 "Europe in a changing world".[263] In the pursuit of more interdisciplinarity, the research policy approach of integrating the expertise of the SSH into natural and technical science projects in all parts of the FP was pursued under the term "SSH integration". This approach was continued in Horizon Europe and also utilised for research to achieve the "EU Missions".

Over the years, the focus has been on the economic aspects of Europe, in line with the EC's objectives of competitiveness and economic cohesion.[264] Social issues such as the social impact of technological developments, educational issues and social inequality were also a continuous focus. Cultural topics gained in importance from FP5 onwards and were prominently represented in Horizon 2020 and Horizon Europe, most recently through the establishment of the European Collaborative Cloud for Cultural Heritage (ECCCH). There was a flexible response to social crises, for example, with calls for proposals focusing on topics such as the financial crisis, youth unemployment, migration, the social consequences of the COVID-19 pandemic and the new geopolitical challenges facing Europe.

The budget share for the SSH-relevant funding programme has initially been around 1% since FP4,

260 See Kastrinos (2010).
261 See Reillon (2017).
262 See Smith (2003).
263 See König (2019).
264 See Schögler and König (2017).

but has risen slightly over the years, reaching 1.7% in Horizon 2020[265] and over 2% in Horizon Europe. In absolute figures, this meant a budget of around €2.3 billion for Horizon Europe.

The FPs have developed into an important funding channel for SSH research in Austria: Austrian research institutions received over €26 million from Horizon 2020 through the SSH Societal Challenge 6 programme line. In Horizon Europe, over €41 million has been raised to date in 117 project participations through Cluster 2 "Creativity, Cultural Heritage, Inclusive Society" (as of 11/2024, FFG Cockpit Report). The SSH in general and Austria in particular have also benefited from the expansion of basic research through the establishment of the ERC in 2007: researchers from the SSH have received 114 ERC grants totalling around €196 million to date (as of 1/2025, ERC Dashboard).[266]

From the outset, the interplay between European and national funding as part of the development of the European Research Area was also important for the SSH. Co-funded by FP6, the ERA-NET programmes HERA (humanities) and NORFACE (social sciences) were launched, as well as CHANSE (SSH) in Horizon 2020, in which Austria participates through the FWF. The joint programming approach played a role in the 2010s, for example with the joint programming initiatives "More Years, Better Lives" on demographic change and "JPI Cultural Heritage", in which Austria was involved through the BMFWF and the FFG. The instrument of European Partnerships is being implemented for the first time in the SSH in Horizon Europe through "Resilient Cultural Heritage" and "Social Transformations and Resilience", two European Partnerships that are currently being established and to which Austria committed itself at an early stage.

A European Institute of Innovation and Technology (EIT) Knowledge and Innovation Community (KIC) was also developed in an SSH thematic area for the first time in Horizon Europe: the EIT Culture & Creativity KIC focusing on culture and the creative industries.

Furthermore, the European research infrastructures are a success story for the SSH in Austria: Austria was a founding member of pioneering ESFRI research infrastructures, such as ESS, CESSDA, CLARIN, DARIAH and SHARE[267]. Further participations followed in GGP, EHRI and E-RIHS. Austria is home to the headquarters of "Monitoring Electoral Democracy" (MEDem), a new research infrastructure in the field of democracy research, which has submitted an application for inclusion in the ESFRI Roadmap 2025.

2.4.2 Austria's performance in Horizon Europe

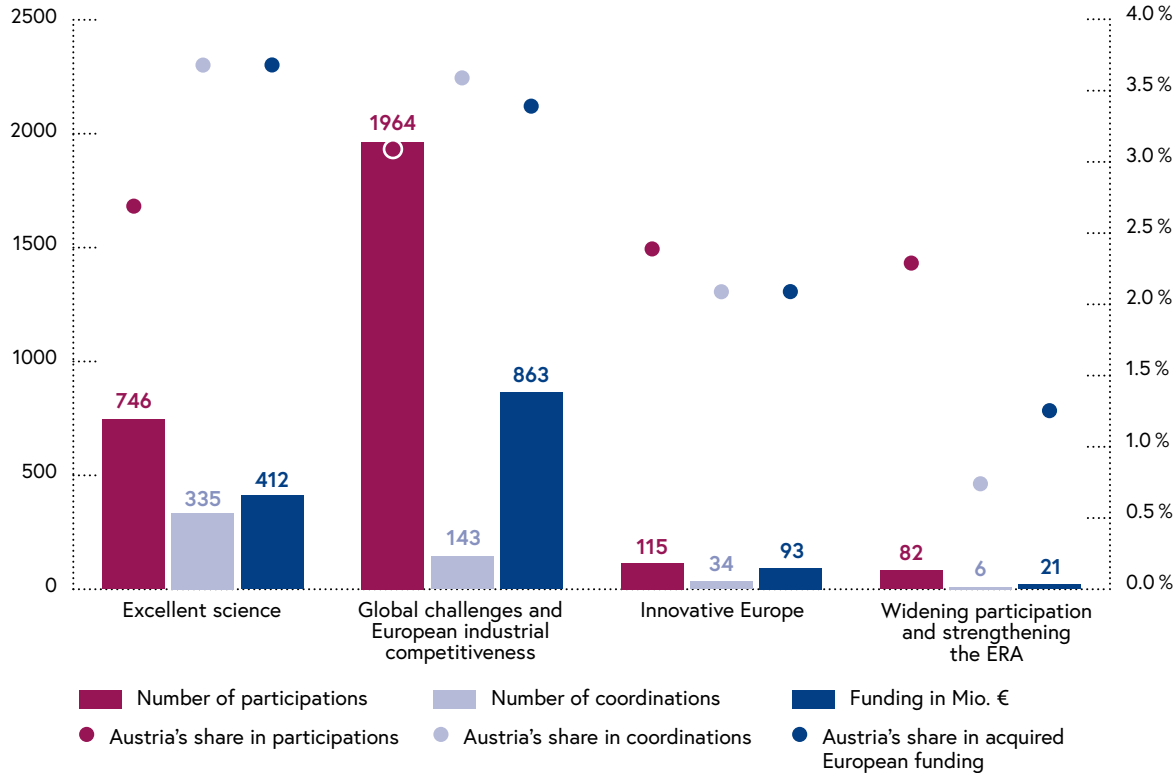
The European Commission's ninth research framework programme, Horizon Europe, started with the first calls for proposals in spring 2021 and will provide a total of around €95 billion by 2027 to strengthen European research and innovation and the European Research Area. The following section presents the participation of Austrian stakeholders in Horizon Europe as of 12 January 2025. The participation data is provided periodically by the European Commission and enables statements to be made on participation patterns, which are differentiated according to submissions, approvals and participations in various programme tracks. The overview of Austrian participation in Horizon Europe is based on contract data, i.e. on funding agreements between the European Commission and the project participants (usually consortia of several organisations). The data was retrieved via the European Commission's eCORDA monitoring system in January 2025 and processed by the FFG.[268]

265 Ibid.
266 https://erc.europa.eu/projects-statistics/erc-dashboard
267 https://www.bmfwf.gv.at/forschung/forschung-eu/eu-forschungsinfrastrukturen.html
268 As in previous Austrian Research and Technology Reports, projects on the reserve list or contracts in preparation were not included in the analysis.

After the first four years of implementing the Research Framework Programme and with more than 2,900 funded participations by Austrian stakeholders, the trends identified in the last Austrian Research and Technology Reports have been confirmed. The total amount of approvals, i.e. the funding acquired by Austrian institutions from the EU, totalled €1.39 billion on the reporting date, which corresponds to around 3.3 % of the funds allocated by the European Commission. The share of Austrian coordinators amounts to 3.4 % of all coordinators and corresponds to a total of 518 consortium leaders in absolute figures. Of the total of 98,918 participations in the funded Horizon Europe projects, 2,907 are from Austria. This corresponds to a share of 2.9 % and puts Austria in ninth place in a European comparison, well behind the eighth-ranked United Kingdom (4,206 participations), but ahead of Portugal (2,803), Sweden (2,768), Denmark (2,477), Finland (2,396) and Switzerland (2,306). Naturally, in absolute terms, most of the participations are in the large European countries (Germany: 11,136; Spain: 11,117; Italy: 9,579 and France: 9,153). Austrian actors have a success rate of 21.1 %, which corresponds to a decrease of 1.1 percentage points compared to the last Austrian Research and Technology Report. The average success rate for the EU-27 is 19.8 %. Austria has the seventh highest success rate among the EU Member States. Belgium (24.5 %), the Netherlands (23.6 %) and France (23.4 %) have the highest success rate of the EU Member States in Horizon Europe. Compared to the last Austrian Research and Technology Report, however, the success rates of these countries fell more sharply than those of Austrian applicants.

The involvement of Austrian participants in the individual pillars of Horizon Europe and their individual thematic areas varies greatly. This applies in particular to the sub-programmes within the three major programme areas (pillars) of "Scientific Excellence" (Pillar 1), "Global Challenges and EU Industrial Competitiveness" (Pillar 2) and "Innovative Europe" (Pillar 3) (for a comprehensive overview, see Figure 2-47 and Table 2-5). Most of the funding totalling €863.4 million was acquired by Austrian stakeholders in the second pillar "Global Challenges and EU Industrial Competitiveness". Pillar 2 is the pillar with the highest total budget in Horizon Europe. The Austrian share in Pillar 2 corresponds to 3.4 % of the funding spent across all contracts in this pillar. In Pillar 1 "Excellence in Science", €412.2 million was acquired by researchers working in Austria, which equates to a share of 3.7 % in this pillar. In Pillar 3 "Innovative Europe", €93.1 million has been raised by Austria to date, which corresponds to a funding share of 2.1 %. Finally, these three pillars are supplemented by a structurally R&I-politically characterised programme area "Widening participation and strengthening the European Research Area", in which actors active in Austria have so far been able to raise €20.9 million (1.3 %). However, it should be noted here that many of the calls for proposals in this programme area are explicitly aimed at countries that are weaker in terms of research and innovation.

Figure 2-46: Austria's absolute and relative participations, coordinations and funding amounts by Horizon Europe programme pillars



Source: FFG, adjusted data from eCorda as of 12 January 2025; illustration: ZSI.

On average, Austrian stakeholders are involved in 2.9 % of all projects and coordinate 3.4 % of them. In Pillar 1 "Scientific excellence", the proportion of participations is slightly below the Austrian average at 2.7 %, but the number of coordinations is higher at 3.7 %. Participation and the proportion of coordinations from Austria in Pillar 2 "Global challenges and European industrial competitiveness " are above the Austrian average at 3.1 % and 3.6 % respectively. In contrast, Austrian participation and coordination in Pillar 3 "Innovative Europe" is below the Austrian average at 2.4 % in each case. Austrian participation in the area of "Widening participation and strengthening the European Research Area" amounts to 2.3 %, whereby the share of Austrian project coordinations is only 0.8 % due to the programme requirements, which benefit EU Member States with weaker R&I systems. In absolute figures, only six projects in this area have so far been coordinated by Austrian actors.

Table 2-5: Austria's success in Horizon Europe by pillar, project participation, coordination and budget

	Funded participations (all countries)	Funded Austrian participations	Austrian share in % of participations	Funded coordinators (all countries)	Funded coordinators (Austria)	Austrian share in % of coordinations	EU funding in € million (all countries)	EU funding in € million (Austria)	EU funding Austrian share in %
Horizon Europe total	98,918	2,907	2.9%	15,237	518	3.4%	42,678	1,390	3.3%
Pillar 1 overall: Scientific excellence	27,537	746	2.7%	9,067	335	3.7%	11,172	412	3.7%
of which ERC	5,010	194	3.9%	4,188	179	4.3%	7,310	306	4.2%
Pillar 2 overall: Challenges and competitiveness	63,102	1,964	3.1%	4,016	143	3.6%	25,515	863	3.4%
of which Cluster 1: Health	8,894	200	2.2%	565	13	2.3%	4,303	119	2.8%
of which Cluster 2: Culture, creativity, society	3,786	122	3.2%	322	16	5.0%	990	43	4.3%
of which Cluster 3: Civil security	2,346	67	2.9%	145	5	3.4%	611	25	4.0%
of which Cluster 4: Digitalisation, industry, aerospace	16,324	604	3.7%	1,103	39	3.5%	7,432	253	3.4%
of which Cluster 5: Climate, energy, mobility	18,644	643	3.4%	1,159	51	4.4%	7,962	312	3.9%
of which Cluster 6: Food, bioeconomy, agriculture, natural resources	13,108	328	2.5%	722	19	2.6%	4,217	112	2.7%
Pillar 3: Innovative Europe	4,727	115	2.4%	1,405	34	2.4%	4,366	93	2.1%
Widening participation and strengthening the European Research Area	3,552	82	2.3%	749	6	0.8%	1,626	21	1.3%

Note: The slight deviations in the totals for EU funding (all countries and Austria) in data line 1 are due to rounding differences when comparing the addition of sub-items. Source: FFG, adjusted data from eCorda as of 12 January 2025; illustration: ZSI.

Within Pillar 1 "Excellent science", the results in the "European Research Council" (ERC) programme line are above average with 3.9% for participations and 4.3% for coordination. In the Marie Skłodowska-Curie Actions (MSCA) programme line, both participations (2.5%) and funding awards (3.2%) are slightly below the Austrian average in Pillar 1. The Austrian shares are also below average in terms of participations (2.3%) and funding amounts (2.4%) in the "Research infrastructures" programme line of Pillar 1.

Within Pillar 2 "Global challenges and the industrial competitiveness of the EU", Austrian applicants perform particularly well in Cluster 2 "Culture, creativity and inclusive society", Cluster 5 "Climate, energy and mobility" and Cluster 4 "Digitalisation, industry, space". In Cluster 2, the proportion of participations is 3.2%, the proportion of coordinations is very high at 5.0% and the proportion of funding raised is 4.3%. Cluster 5 also has a high share of participation (3.4%) and an above-average share of funding (3.9%) raised by Austrian applicants. Furthermore, this cluster also has a high proportion of coordinators from Austria (4.4%). Cluster 4 "Digitalisation, industry, space" has above-average participation (3.7%) and coordination (3.5%) as well as an above-average share of acquired funding (3.4%), measured against the total participation and acquired funding of Austrian actors in Pillar 2. Cluster 3 "Civil security for society" has a high share of acquired funding (4.0%) with average Austrian participation (2.9%) and coordination (3.4%). In contrast, the shares of Austrian participation (2.5%), funding raised (2.7%) and coordination (2.6%) in Cluster 6 "Food, Bioecon-

omy, Natural Resources, Agriculture and Environment" are slightly below the average in Pillar 2. In Cluster 1 "Health", the key figures (2.2 % of participations; 2.8 % of funding raised and 2.3 % of coordinations) are consistently below the Austrian average for Pillar 2.

With a total of 1,405 projects and 4,727 participations from all countries, Pillar 3 is the smallest in Horizon Europe. Within Pillar 3 "Innovative Europe", there are two programme lines in addition to the European Institute of Innovation and Technology (EIT), namely the "European Innovation Council" (EIC) and the "European Innovation Ecosystems" (EIE) programme line. With around 1,114 projects, the EIC is the largest programme line within Pillar 3. In the projects funded by the EIC, Austrian stakeholders account for 95 participations (2.7 %), 29 coordinations (2.6 %) and a funding volume totalling €81.1 million (2.8 %)[269]. In the EIE, the Austrian participations (1.4 %), the funding volume (2.1 %) and the number of coordinations (1.8 %) are even more clearly below the Austrian Horizon Europe average.

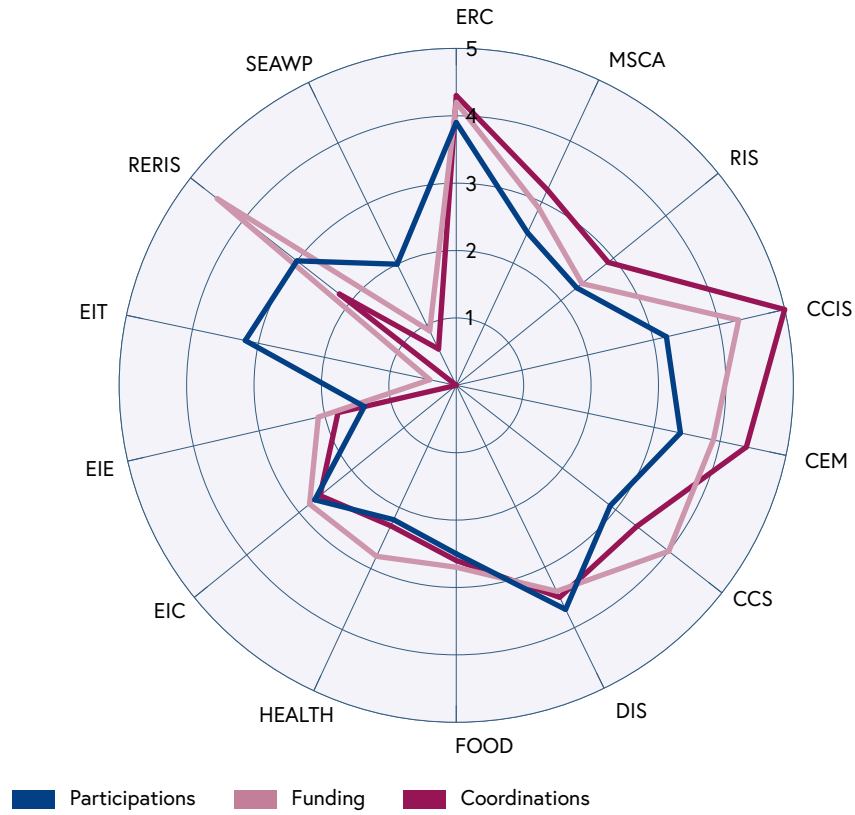
With regard to the EIT, the statistics reported in eCorda, the European Commission's monitoring system, are unfortunately not very meaningful because only those of the co-location centres based in Austria are shown among the participations. A brief evaluation of the FFG[270] shows that in 2021 and 2022, a total of 2.25 % of the amounts distributed by the EIT were awarded to participants based in Austria. In the years 2023 to 2025, this figure fell to 1.64 %, whereby the year 2025 is incompletely depicted as not all calls have yet been completed. In total, the return flow from the EIT to Austria in the period 2021 to 2025 has so far amounted to €30.3 million. Measured against the total return flows to Austria, almost 2/3 of the return flows to Austria were achieved via EIT Manufacturing (38.0 %) and EIT Health (26.9 %). Both have co-location centres in Austria.[271] Figure 2-47 provides an overall overview of Austria's share in the individual programme lines.

269 The information in the individual programme sections of Horizon Europe includes funding. For the sake of completeness, it should be noted that the EIC Accelerator programme line, which accounts for around 2/3 of total EIC funding, also includes an equity share financed from Horizon Europe funds that is not shown in the EU funding statistics.

270 Internal FFG data evaluation based on EIT data as of March 2025. The evaluation is available to the authors.

271 See also the special chapter on the European Institute of Innovation and Technology in the Austrian Research and Technology Report 2024.

Figure 2-47: Austria's shares in the individual programme lines by participation, coordination and funding amount



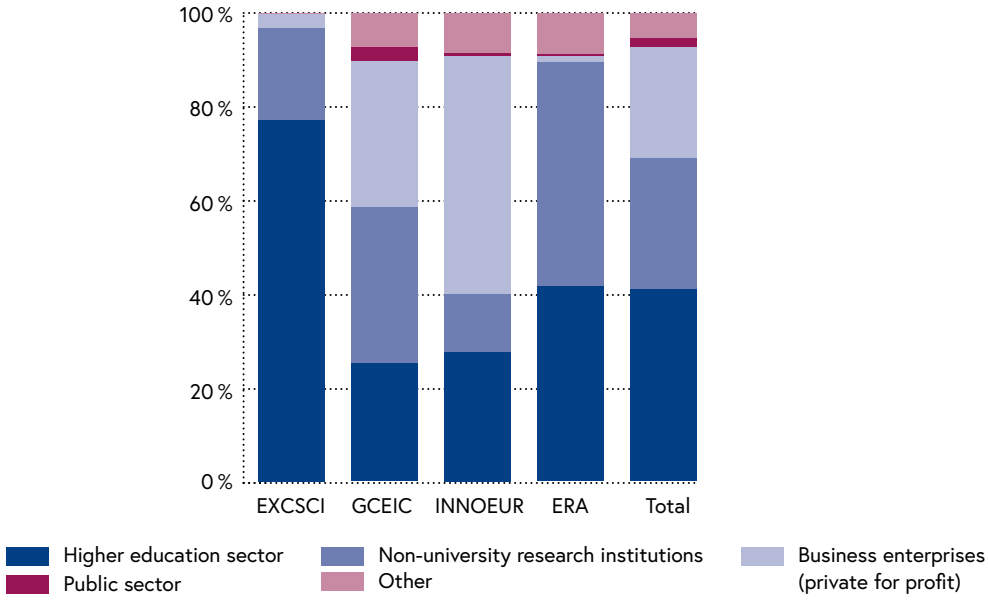
Note: ERC – European Research Council; MSCA – Marie Skłodowska-Curie Actions; RIS – Research Infrastructures; CCIS – Culture, Creativity, Society; CEM – Climate, Energy, Mobility; CSS – Civil Security; DIS – Digitalisation, Industry, Space; FOOD – Bioeconomy, Agriculture, Natural Resources; HEALTH – Health; EIC – European Innovation Council; EIE – European Innovation Ecosystems; EIT – European Institute of Innovation and Technology; RERIS – Reforming and Strengthening the European R&I System; SEAWP – Widening Participation and Spreading Excellence. Due to a lack of comparability, the data shown for the EIT does not come from the above-mentioned brief evaluation by the FFG. Source: FFG, adjusted data from eCorda as of 12 January 2025; illustration: ZSI.

In the programme area of "Widening participation and strengthening the European Research Area", Austria performs significantly better in the programme line "Reforming and strengthening the European R&I system" than in the programme line "Widening participation and disseminating excellence". The latter is aimed primarily at those European Member States or associated countries whose research and innovation performance is below average.

Measured in terms of funding received, the higher education sector was most successful in Horizon Europe on the reporting date, as illustrated in Figure 2-48, with €570 million (this corresponds to a 41% share of the funding received by Austria), followed by the non-university research sector with €391 million (28%) and the business enterprise sector (private for profit) with €328 million in funding received (24%). Other institutions in the public sector, such as the BMFWF, the BMIMI or the large national research funding institutions, in particular the FFG, were able to raise €27 million (2%) in funding. €74 million (5%) went to other organisations that cannot be allocated to the aforementioned groups. Of the total of 892 participations by Austrian companies, 45.2% were SMEs. This is below the overall European share of SMEs among the participating companies, which is 51.9%.

Similarly, in terms of funds raised, the share of Austrian SMEs among all Austrian companies is 43.5%, well below the European average of 52.4%.

Figure 2-48: Distribution of the funding by type of organisation and programme pillar



Note: EXCSCI: Excellence in Science; GCEIC: Global Challenges and EU Industrial Competitiveness; INNOEUR: Innovative Europe; ERA: Widening participation and strengthening the European Research Area.

Source: FFG, adjusted data from eCorda as of 12 January 2025; illustration: ZSI.

In Pillar 1 "Scientific excellence", the tone is set by universities (77 %) and non-university research institutions (20 %) performing strongly in basic research, particularly with regard to the ERC grants. A similar pattern can be found in the Marie Skłodowska-Curie Actions. The situation is completely different for the funding acquired from the "Research Infrastructures" programme line. Non-university research institutions dominate here with a share of more than 50 %. One third of the funding in this programme line was acquired by Austrian universities and 8 % by companies operating in Austria. In Pillar 2 "Global Challenges and the Industrial Competitiveness of the EU", which has the highest budget overall, participation by type of organisation is significantly less concentrated than in Pillar 1. Measured in terms of the funding raised, the non-university research sector is ahead in Pillar 2 with a share of 33 % (measured in terms of all funds raised by Austria in Pillar 2). The business enterprise sector holds 31 % and the higher education sector 25 %. In the "Civil Security for Society" cluster the non-university research institutions stand out with more than 60 % of the funds raised. In contrast, in the "Health" cluster non-university research institutions are represented with only 19 % (universities dominate here). Universities, on the other hand, account for 49 % of the funding raised in the "Culture, Creativity and Inclusive Society" cluster. Their share of 14 % in the "Climate, energy and mobility" cluster, on the other hand, is relatively low. The Austrian business enterprise sector is the leading type of organisation in the clusters "Digitalisation, Industry, Space" with 40 % and "Climate, Energy and Mobility" with 38 % of the funds raised from Austria in this cluster. The share of the business enterprise sector is particularly low in the "Health" cluster and the "Culture, Creativity and Inclusive Society" cluster, at 15 % in each case.

In Pillar 3 "Innovative Europe", the business enterprise sector dominates in terms of funding acquired, accounting for around 51 % of funding. The higher

education institutions hold a share of 28 %. At 9 %, the share of funding of non-allocable organisations[272] from Austria in this pillar is also relatively high, which is due to their particularly active participation in the programme line "European innovation ecosystems", where these organisations are responsible for around 89 % of the funding raised.

In the area of "Widening participation and strengthening the European Research Area", Austrian non-university research institutions are dominant in the programme line "Reforming and strengthening the European R&I system" with a share of 68 %, while in the programme line "Widening participation and disseminating excellence," the higher education sector was able to secure the most funding with 63 %, followed by the non-university research sector with 33 %.

In the fourth year of Horizon Europe Monitoring, it can therefore be summarised that the research institutions and active researchers based in Austria continue to accept the European Framework Programme for Research and Innovation very well and perform very well in it. Their success rate is well above the European average. As in the previous framework programmes for research and innovation, Horizon Europe also shows that the various pillars of the framework programme are received differently by the different types of organisation (companies, higher education institutions, non-university research institutions, other public institutions and others), depending on their strategic orientation. This is demonstrated in particular by a strong representation of basic research-oriented institutions in Pillar 1, a strikingly active use of Pillar 2 by non-university research institutions and the active participation of companies in Pillars 3 and 2. Within Pillar 2, which receives the most funding, the clusters "Climate, energy and mobility" and "Culture, creativity and inclusive society" and, to a lesser extent, "Civil security" and "Digitalisation, industry, space" emerge as Austrian areas of strength in comparison with the European average.

2.4.3 News from the European Research Area

The ERA Policy Agenda 2022–2024

Building on the "Pact for Research and Innovation in Europe" of November 2021, the European Council adopted the first "ERA Policy Agenda" for the years 2022–2024.[273] It calls on the European Commission and the EU Member States to implement the agenda in partnership. The ERA Policy Agenda takes up the priority areas of the "Pact for Research and Innovation in Europe" and backs them up with concrete ERA actions. The EU Member States decide for themselves which of the 20 ERA actions they want to contribute to; implementation takes place both at EU level and at national level. At EU level, the implementation of the 20 specific measures of the first ERA Policy Agenda 2022–2024 has been completed. Figure 2-49 below shows Austria's commitments broken down by priority area.

272 Some of these are so-called intermediary organisations.

273 See also the corresponding sections in the last two Austrian Research and Technology Reports.

Figure 2-49: ERA Policy Agenda (2022–2024) and Austria's commitments

Priority 1: Deepening a truly functioning internal market for knowledge								
1. Enable Open Science, including through EOSC	2. Propose an EU copyright and data legislative framework for research	3. Reform the Assessment System for research, researchers and institutions	4. Promote attractive research careers, talent circulation and mobility	5. Promote gender equality and foster inclusiveness	6. Protect academic freedom in Europe	7. Upgrade EU guidance for a better knowledge valorisation	8. Strengthen research infrastructures	9. Promote international cooperation
Priority 2: Taking up together the challenges posed by the twin green and digital transition, and increasing society's participation in the ERA					**Priority 3: Amplifying access R&I excellence across the Union**		**Priority 4: Advancing concerted research and innovation investments and reforms**	
10. Make EU R&I missions and partnerships key contributors to the ERA	11. An ERA for green transformation	12. Accelerate the green & digital transition of Europe's key industrial ecosystems	13. Empower Higher Education Institutions	14. Bring Science closer to citizens	16. Improve EU-wide access to excellence	17. Enhance public research institutions' strategic capacity	19. Establish an ERA monitoring system	

Note: Austria's commitments in the ERA Policy Agenda (2022–2024) are highlighted in colour; those actions without commitments are highlighted in white. Action 15 "Build-up research and innovation ecosystems to improve excellence and competitiveness", Action 18 "Support the development of EU countries' national processes for the ERA implementation" and Action 20 "Support research and innovation investments and reforms" were not implemented. Source: European Commission; illustration: Technopolis Group.

The implementation of various measures in the ERA priority areas began in Austria with the adoption of the ERA NAP by the Council of Ministers on 21 November 2022. Meanwhile, for their part, the other EU Member States are also implementing activities in the ERA priority areas.

On 21 November 2024, the Austrian ERA Symposium 2024 took place in Vienna, and the topics of "research management" and "science for policy" were reflected upon and discussed from the perspective of science, business and civil society. In addition, the all-day event[274] with around 250 participants reflected on the implementation of the National Action Plan for the European Research Area (ERA-NAP) 2022–2025 to date and provided a preview of the considerations for the next ERA Policy Agenda.

As part of a mid-term review after four years, the European Commission concluded in October 2024 that the objectives and challenges identified in 2020, particularly in relation to resilience and recovery from the COVID-19 crisis and to supporting the green and digital transitions through research and innovation, remain relevant. In cooperation with the EU Member States, initial successes have already been achieved in the implementation of activities, such as reducing the fragmentation of research and innovation systems.[275]

274 https://www.ffg.at/veranstaltung/era-symposium-2024-summary
275 European Commission (2024i).

At the same time, the Draghi Report (2024a) points to a need for further action with regard to the scope and coordination of public investment in R&I in the EU, which is too fragmented, insufficiently coordinated and inadequately funded.

The implementation status of the National ERA Action Plan

For Austria, a recent progress analysis of the ERA-NAP 2022–2025[276] shows that the implementation of the actions and measures outlined is progressing as planned in most cases. The ERA NAP translates the ERA Policy Agenda into a structure of initiatives, measures and objectives that takes the Austrian policy context and responsibilities into account. To implement the ERA Policy Agenda, Austria has set up twelve national ERA initiatives for the ERA NAP, comprising between two and six individual measures and backed by milestones, targets and indicators. The implementation of the ERA-NAP is coordinated by the BMFWF, with the BMIMI closely involved. While the first ERA-NAP expires at the end of 2025, the second ERA-NAP (2026–2028) will be developed by autumn 2025 on the basis of the new ERA Policy Agenda. Progress in the implementation of the ERA-NAP (2022–2025) is exemplified below by two initiatives, "Strengthening trust in science" (initiative 05) and "Participation in European R&I partnerships" (initiative 06).

In the area of "Strengthening trust in science", the ERA-NAP provides for various measures for participation in European projects and exchange formats as well as the funding of citizen science projects as part of the Sparkling Science 2.0 programme. These measures were able to build on a good foundation of existing activities by various stakeholders in Austria and were implemented successfully and according to plan. For example, Austria took part in the Plastic Pirates go Europe! pilot project implemented by BOKU, enabling more than 1,900 students and young people to take part in recording plastic waste on and in bodies of water in Austria, thereby achieving the project objectives. At national level, the BMFWF is funding a total of 61 citizen science projects in two calls so far as part of Sparkling Science 2.0. Here, scientific and educational institutions work together and often involve other partners from research, industry and society, such as citizen researchers. Another measure was the organisation of the European Citizen Science Association Conference in Austria in April 2024, which was attended by more than 400 participants from the European citizen science community. The conference was organised by "*Österreich forscht*" together with the Natural History Museum Vienna, both of whom are important stakeholders in the Austrian citizen science community. Most recently, Austrian stakeholders were prominently involved in the "Mutual Learning Exercises" on Citizen Science as part of the Commission's Policy Support Facility.

European R&I Partnerships are a strategic instrument of EU research funding at the interface between national and European level in order to strengthen the long-term networking of R&I stakeholders around important scientific and/or technological topics. Their importance has increased further in Horizon Europe. Against this background, the corresponding ERA initiative pursues the goal of more strategically aligning and coordinating Austria's participation in the Partnerships. The aim is to better utilise the potential of the instrument, including with regard to thematic synergies with EU missions. This initiative therefore focuses less on the individual Partnerships and more on better communication and coordination with the stakeholders at a meta-level, e.g. for exchange and learning, monitoring and the expansion of the circle of stakeholders. To this end, the measures provide for greater involvement in European processes and stronger national coordination as well as the establishment and operation of ongoing monitoring by the FFG. The milestones planned in this area have also been reached.[277]

276 See Dudenbostel et al. (2025).

277 The corresponding monitoring report will be published in 2025.

Outlook for the European Research Area and the new ERA Policy Agenda

Letta's report (2024) emphasises the need for further action in relation to the European Research Area. Research and innovation also play a central role in the European Commission's Competitiveness Compass. It announces an ERA Act that aims to increase R&D investment and achieve the target of 3 % of GDP by focusing research funding more strongly on strategic priorities, intensifying coordination between the funding priorities of the EU and its Member States and by promoting the dissemination of knowledge and the exchange of talent across Europe.

The next ERA Policy Agenda 2025–2027 is to be adopted by the Competitiveness Council of the European Union on 23 May 2025.[278] The ERA Policy Agenda 2025–2027 builds on the measures of the first agenda by continuing some topics as structural policies. These include the promotion of open science, research infrastructures, research careers and a reform of the assessment system for researchers. This is supplemented by new ERA actions with a 3-year term, such as the promotion of the "Science for Policy ecosystem", responsible use of AI in science, or research security.

2.5 RTI evaluation culture and practice

For over 25 years, research policy in Austria has been characterized by an evaluation culture focused on quality and transparency. Research funding programmes, and increasingly institutions and instruments as well, are regularly assessed for goal achievement, impact and efficiency. Most evaluation reports are available to the public in the repository of the Austrian Platform for Research and Technology Policy Evaluation (fteval). As of 1 January 2023, an amendment to §20 of the Federal Constitutional Act (B-VG) requires *"all bodies entrusted with federal, provincial and municipal administration tasks (...) to publish studies, expert opinions and surveys that they have commissioned, including their costs, in a manner accessible to everyone, as long as and insofar as their confidentiality is not required in accordance with Paragraph 3."*

2.5.1 Current developments at fteval

In December 2024, the international REvaluation Conference 2024[279] was held in Vienna again. Entitled "Navigating Times of Change", it was dedicated to the challenges and opportunities arising from the dynamic changes in research and innovation policy. The event brought together around 260 experts from 35 countries to discuss the impact of these changes on evaluation methods and practices. The conference was organised by fteval in collaboration with Fraunhofer ISI, IFRIS, Joanneum Research and the COST Action PROFEEDBACK.

The conference focused on five main topics: (i) Evaluation of transformation policies and dynamics in socio-technical systems, (ii) Redefining success and quality in basic and applied science, (iii) Examining instruments in European research and innovation policy,

278 https://european-research-area.ec.europa.eu/documents/proposal-council-recommendation-european-research-area-policy-agenda-2025-2027
279 https://www.revaluation2024.eu/

(iv) The emergence and consolidation of evaluation systems, and (v) New methods, tools and implications for evaluation in a digital era. These focus areas offered participants the opportunity to share the latest methodological developments and discuss the challenges of assessing the transformative relevance and impact of new RTI policies.

The "Evaluation Talent Award 2024", established for young evaluators, was once again presented during the conference. The prize is awarded by the Austrian Council for Sciences, Technology, and Innovation (FWIT) and the fteval platform on the basis of a review process with 14 jury members from as many organisations and particularly recognises achievements in the evaluation of the policy field and its further development.

After the fteval working group on "Sustainability Indicators" was already completed in 2023, the results of the "Artificial Intelligence in Evaluation" working group were presented at the REvaluation conference and in several contributions prepared for the fteval journal and were also discussed in an EvalEdge podcast. Another element of the activities in 2024 were the three training modules on evaluation in RTI policy, which took place in spring. Due to the high demand and positive feedback, a new edition has been organised for 2025.

The topic of sustainability was investigated in more depth by a study evaluating the FFG sustainability criteria:[280] Since 2021, a sustainability criterion has been integrated into the evaluation of applications in most funding programmes administered by the FFG. The study examines the use of these criteria in the funding instruments "individual R&D projects" and "cooperative R&D projects", provides insights into the specifics of related procedures, e.g. the evaluation by external or internal reviewers, and the effects of these differences. The study concludes by discussing three central functions that the sustainability criterion can fulfil, namely a signalling function, a selection function and a reporting function. The recommendations of the study go beyond the sphere of influence of the FFG and can provide helpful information in different contexts.

2.5.2 Selected evaluations

Twelve evaluations that have recently been completed are briefly summarised below, focusing on the subject of the evaluation, the methodology, conclusions and recommendations.[281] There is a lively evaluation activity and a broad range of evaluation formats and subjects. Almost all evaluations relate to programmes, albeit with different focuses. The trend towards evaluations accompanying programmes is continuing (as shown by the examples of *Expedition Zukunft* and *INNOVATORINNEN* 2024–2026). For the new FWF Emerging Fields programme, an evaluation of the selection process was carried out. Another trend concerns the challenge of evaluating the contribution of funded research and development to societal goals, whether in the context of missions or with regard to the development of indicators to assess the contribution towards sustainability of funded projects. Finally, there are a number of evaluations addressing programmes promoting spin-offs, start-ups, and technology transfer.

FWF Emerging Fields – evaluation of the selection procedure

The Emerging Fields (EF) programme, which the FWF launched as part of the first call for proposals of the excellent=austria 2022 initiative, aims to promote highly innovative, original or high-risk ideas. A total of five projects from 45 applications were funded with a total of €31 million. Technopolis was commissioned to evaluate the selection process for the first call (2022/23) between February 2023 and March 2024.[282] The aim was to evaluate EF in the context of the excellent=austria initiative and other funding programmes, as well as the application guidelines and the selection process, to identify strengths and weaknesses in the process and to make recommendations for improvement for the next EF call.

280 https://repository.fteval.at/id/eprint/737/

281 At the time of writing, not all studies have been published; therefore, some references or links are not yet available.

282 https://repository.fteval.at/id/eprint/726/

The methods used included an analysis of the documents as well as the hearings, jury meetings and decision-making meetings of the FWF Board. Further, a content and bibliometric analysis of the applications was done. The structure of the applicants and the reviewers scrutinised, complimented by an online survey of these two groups. Lastly, semi-structured interviews with members of the jury, representatives of the applicant institutions, political decision-makers and FWF staff were conducted.

The evaluation shows that the Emerging Fields play an important role as a signalling and impulse generator by giving researchers in Austria the opportunity to develop novel research approaches that are often only developed concretely in the course of the EF call. An AI-supported analysis of the applications and reviews confirmed the high degree of innovative and high-risk approaches compared to the state of the art. However, it is clear that the outcomes are less diverse than the original applications. For example, there are no female-led coordinations and no successful applications from the arts and humanities. One of the recommendations for the FWF is therefore to pay greater attention to the topic of diversity, even though the evaluation did not identify any bias in various aspects of the process. Further recommendations for action concern adjustments to the process design and the more precise definition of key terms. The overlap with the special research areas (SFB) should also be better taken into account in the positioning of the programme in the future.[283]

Evaluation of the aws First Incubator programme

Building on the "*Jugend Innovativ*" (innovative youth) school competition, the First Incubator concept was developed to awaken young people's interest in entrepreneurship as a career option and improve their entrepreneurial expertise. First Incubator combines the transfer of essential expertise (on economic and legal start-up topics, for example) and the strengthening of soft skills with monetary support. The programme supports incubation measures to turn innovative ideas into new companies, particularly in the impact sector. Technopolis evaluated the programme from April to September 2024, which was timed to coincide with the programme's tenth anniversary. The main objective of the evaluation was to show results after 10 years of the programme, to explore further developments and specifications in the programme and to propose concrete recommendations for action for the next three years.

The empirical work included a document analysis, stakeholder interviews and several discussions with the aws programme management team, a standardised online survey and two focus groups with grantees from current or recently completed projects (from batch 2022).

During the period under review, the aws First Incubator supported 152 projects. At the time of the evaluation, around a third of the participants had already founded a company and another third were planning to do so. The evaluation shows significant increases in skills among the participants, and the female bonus introduced in 2022 led to an almost equal gender ratio in the most recent batches. Four out of five of the participants confirmed that they would have less start-up-relevant knowledge and contacts without the programme. Project management, communication and the start-up camp were also particularly positively emphasised. Points of criticism, on the other hand, related to scheduling, lack of follow-up after the camp and inflexible cost categories. Around a third of the companies founded became profitable after the project period. The evaluation's recommendations included an online programme for theory lessons, increased peer learning, more systematic digital monitoring, better lead times for face-to-face events and more flexible use of funding. In addition, alumni should be more closely involved, internationality should be expanded and more specific training on accounting and negotiating should be offered to further optimise the start-up process.

283 From May 2025: merger of the Research Groups and Special Research Areas programmes to form the new Special Research Groups programme; see: https://www.fwf.ac.at/aktuelles/detail/neues-foerderprogramm-fuer-kooperative-forschungsprojekte

Evaluation of Mission ERA 2019–2024

The BMFWF programme "Mission ERA" has been funding research as part of Joint Programming Initiatives (JPI) since 2019. The main objectives of the programme include strengthening the European Research Area, promoting transnational research on societal challenges and increasing scientific excellence in Austria. The programme owner is the BMFWF (formerly BMBWF), and the FFG is responsible for its implementation. The aim of the evaluation[284] was to analyse the programme design, implementation and impact and to develop evidence-based recommendations for the continuation and improvement of the programme. Designed as an interim evaluation at the end of the current programme period, the participation in five JPIs and the funding of research projects by Austrian universities and research institutions were examined.

The evaluation was carried out by Technopolis from January to April 2024 and covered the programme period from 2019–2024. An analysis of programme-relevant documents and websites, the evaluation of monitoring data, interviews with programme managers, a self-assessment by programme managers at the BMFWF, a focus group with project participants, and participant observation at meetings of the EU Missions Working Group and the Mission Management Group were used. The evaluation shows that the BMFWF has successfully established a new type of funding framework with the Mission ERA programme despite the complex international and national stakeholder constellations. 14 projects were funded with €3.12 million in eight joint calls. The innovative nature of the programme and the good cooperation between the BMFWF departments and the FFG were positively emphasised. Despite the successes, however, there are challenges in terms of budget flexibility, funding ceilings and the restriction to orientated basic research, which limit the application orientation and the possibilities for tackling social challenges. For the future, it is recommended that Mission ERA be continued and further developed, in particular through a clearer prioritisation of programme objectives, a greater variety of instruments and more flexible decision-making processes, better strategic embedding to strengthen collaborations and increased funding for previously underrepresented topics and application-oriented research without an industrial focus. In addition, a cross-ministerial approach is recommended to address societal challenges in partnership through flexible co-programming and co-funding.

Evaluation of the Climate Protection Initiative klimaaktiv 2020–2024

On behalf of BMK (now BMIMI), the Austrian Institute for SME Research conducted an evaluation of the *klimaaktiv* initiative, which was launched in 2004 and has already been extended until 2030.[285] The evaluation focused on assessing the impact pathways, the effectiveness of the overall initiative and its processes, the role of *klimaaktiv* in voluntary climate protection, and the effects on *klimaaktiv* partners. In light of the initiative's extension, the evaluation also provided recommendations for its strategic further development, with particular emphasis on strengthening target group orientation.

The core of the evaluation, which was conducted between March and September 2024, consisted of an analysis of programme documents and 19 interviews with stakeholders from the programme's governance, management, and wider environment. In addition, an online survey of 389 *klimaaktiv* partners provided insights into the initiative's impact and participant satisfaction. Two case studies focusing on the target groups businesses and local governments were also carried out, incorporating literature reviews, expert workshops, and four reflection workshops with the programme's steering group.

The evaluation found that *klimaaktiv* has successfully expanded and further developed its service portfolio. The initiative has maintained its established role as a key interface between public authorities and private stakeholders, and has delivered effective

284 https://www.bmbwf.gv.at/dam/jcr:35267a2b-c0aa-47ec-857a-63c6c0cd9398/Evaluierung%20Programm%20Mission%20ERA%202019-2024.pdf
285 https://www.klimaaktiv.at/fileadmin/Bibliothek/Downloads/Energie/Evaluierung_klimaaktiv_2020-2024_Web.pdf

work in the areas of awareness-raising, qualification, standard development, and implementation support.

A broad majority of partners rated the quality of *klimaaktiv*'s offerings positively, although the evaluation identified room for improvement in target group orientation and strategic steering. For the further development of the initiative through 2030, the evaluation recommends a comprehensive continuation of *klimaaktiv*. The focus should lie on (1) maintaining high quality standards, (2) strengthening integration with national climate strategies, (3) intensifying synergies with other programmes. (4) Particular importance is placed on improving goal orientation and impact focus, supported by a systematic monitoring framework to enhance strategic management. In addition, (5) *klimaaktiv* should further develop its governance functions and consider social and economic disparities to support a just transition.

Assessment of the Digital Pro Bootcamps

As part of the FFG funding format "Digital Pro Bootcamps", specialists from Austrian companies are trained to become digital professionals through short and intensive learning phases. The objective of the assessment was to evaluate all funded projects from the pilot call in 2018 under the Ministry of Economic Affairs' funding programme (now BMWET) "Research Competencies for the Economy", as well as a second call in 2020, which was financed by the Austrian National Foundation for Research, Technology and Development.[286] The evaluation focused on the design of the bootcamps, the challenges encountered, and their impact. The aim was also to derive conclusions relevant to the future design of qualification funding programmes.[287]

The assessment conducted by the Austrian Institute of SME Research between March and August 2024 was based on a document analysis, qualitative interviews with the consortium leaders of all seven projects, and an online survey of the 72 project partners.

The main impact of the Digital Pro Bootcamps was the implementation of company-related IT projects. Participating companies also benefited from the expansion of participants' digital skills and received impulses for further digitalisation initiatives. Universities and research institutions used the programme to transfer knowledge into business practice, gained insights into corporate environments, and developed new teaching formats, training concepts, and materials that can be reused in other educational contexts. The COVID-19 pandemic presented the most significant implementation challenge, necessitating a shift from in-person formats to online teaching methods. In addition, certain structural factors proved suboptimal, such as the duration of the bootcamps, varying skill levels, and participant turnover.

As a result, several recommendations were made for optimising the funding format: Better targeting of SMEs, shorter lead times from approval to project start, greater flexibility in the composition of project consortia, more creative leeway to address differing participant skill levels, increased flexibility in terms of timing, structure, and content of the qualification formats.

To enhance sustainability, the assessment also recommended follow-up funding to support the implementation of the practical projects, the possibility of extending funding across multiple training cycles with different companies to maximise use of the developed concepts and materials, and targeted support for universities and research institutions in recruiting SME partners, thereby contributing to the formation of new innovation networks

Evaluation of the FIW project

The Competence Centre "Research Focus International Economics" (FIW) was founded in 2006 by WIFO, wiiw and WSR on behalf of the former BMWA (now BMWET). The FIW is an established institution in the Austrian and international research landscape in the field of foreign trade/international economics and has

286 https://www.stiftung-fte.at/
287 https://repository.fteval.at/id/eprint/725/

built up a network connecting science, politics, business and the public. The project pursues the goals of raising awareness of international economics, economic policy advice and the development of a foreign trade database; its importance has increased even further due to the economic and geopolitical crises since its creation. The main objectives of the evaluation[288], which was commissioned by the then BMAW (now BMWET), are to analyse the impact chain of the FIW project and to assess the systemic added value that justifies state intervention in market mechanisms. The period under review covers the entire FIW project from its inception in 2006 to the year of the evaluation 2024.

The evaluation is divided into four main modules: a systematic inventory of available information, qualitative data collection from stakeholders, impact and efficiency analyses using a mix of methods and a final integration of the results with recommendations. Instruments such as online surveys, in-depth interviews, media and network analyses, data envelopment analysis, cross-disciplinary analysis, a matrix of measures and stakeholders, data analyses and an examination of publications and event formats were used.

The evaluation shows that the FIW successfully fulfils its role as a central institution for foreign trade research in Austria. Through events, publications and advisory services, the FIW strengthens the exchange between science, politics and business and makes a significant contribution to awareness-raising and political decision-making. The network function, the promotion of young talent and the efficiency of the use of funds were rated particularly positively. Consequently, the most important recommendations include the strengthening of the FIW brand and the associated increased use of the logo, the expansion of the supporting organisations to include further university and non-university institutes and the introduction of a fellowship programme. The promotion of junior researchers should also be expanded through additional pre-doctoral positions. With regard to international positioning, it is recommended that the development of the Centre into a hub for foreign trade research in Eastern Europe be continued, supported by increased cooperation with partners such as CESifo.

Evaluation of the Spin-off Fellowships

The number of spin-offs from universities and research institutions in Austria has historically lagged behind international benchmarks. For example, ETH Zurich alone generates between 25 and 35 spin-offs per year on average.[289] In response, the Spin-off Fellowship funding programme was launched in 2017, inspired by the ETH Pioneer Fellowship programme. It is an initiative of the BMFWF (formerly BMBWF), with the Austrian Research Promotion Agency (FFG) responsible for programme implementation.

With the RTI Strategy 2030 setting the goal of achieving "100 % more commercially successful academic spin-offs"[290] by 2030, the FFG Spin-off Fellowships have taken on increased strategic importance in the context of RTI policy and higher education development.

To date, a total of 24 projects have been funded as part of the Spin-off Fellowship I programme (2017–2021), from which 16 start-ups have emerged. As part of the Spin-off Fellowships II programme (2022–2026), 25 projects have been funded after three calls (2022, 2023 and 2024), resulting in three spin-off start-ups to date.

The evaluation[291] of the programme was commissioned by the BMFWF (formerly BMBWF) and carried out by WPZ Research to analyse the suitability of the programme design and thus in particular the positioning of the Spin-off Fellowships in the Austrian funding landscape in more detail, and to assess the quality and effectiveness of programme implementation and execution. To this end, an online survey of both fellows and non-fellows, numerous interviews with research services, a focus group with the programme

288 https://www.bmwet.gv.at/Services/Publikationen/aussenwirtschaft/Evaluierung-des-FIW-Projekts.html

289 ETH Zürich (2023).

290 Federal Government of the Republic of Austria (2020, p. 7).

291 https://www.wpz-research.com/wp-content/uploads/2025/01/Evaluierung_Spin-off_Fellowships_bf_30092024.pdf or https://www.bundeskanzleramt.gv.at/dam/jcr:2b02e3bf-a345-430b-aa8d-50748d9c00d3/oe_foinfrastruktur-aktionsplan_2030.pdf

management and an extensive benchmark analysis at programme level were carried out.

The evaluation shows that the Spin-off Fellowships are a unique and very successful funding programme that enables scientific findings, especially highly innovative ideas and technologies, to be further developed and transferred from research to company formation. The programme is open to all topics and gives the fellows the necessary creative freedom with an appropriate budget.

Overall, the Spin-off Fellowship Programme is a highly competitive and prestigious programme. The number of applications is always high, but only 24 projects and 40 fellows were funded in Spin-off Fellowships I (2017–2021) out of a total of 87 projects submitted. In addition, the Fellowship Programme has clearly positioned itself in the Austrian research funding portfolio. The challenges are primarily seen in supporting better permeability within the system – both in terms of the activities of the fellows and the interface between science and industry – and in better planning capability with regard to the funding of the programme and upcoming calls.

Evaluation of the programme Advantage through Knowledge Transfer in STEM/Life Sciences

The programme *Vorsprung durch Wissenstransfer in MINT*/Life Science, WTZ 3 (Advantage through Knowledge Transfer in STEM/Life Sciences) aimed to strengthen knowledge transfer through cooperation between universities and universities of applied sciences as well as knowledge transfer between universities, industry and society. The Knowledge Transfer Centres (WTZ) funding programme was administered by aws on behalf of the BMBWF (now BMFWF). Launched in 2013, it has a history of more than ten years' standing. WTZ 3 covered the years 2022–2023 and thus two modules, which were also the subject of the evaluation: Module 1 – funding for knowledge transfer centres, and Module 2 – prototype funding with a focus on "strengthening STEM disciplines".

The introduction and funding of the knowledge transfer centres in 2013 was designed from the outset only as initial funding, which means that it is now up to the universities to continue funding the WTZ via the performance agreements. The aim is to further strengthen the Technology Transfer Offices (TTOs) and thus professionalise support services in the field of knowledge and technology transfer into the future.

The evaluation, carried out by WPZ Research in 2024, comprised two parts in line with the modular structure. An online survey addressed funded and non-funded applicants of prototype funding, numerous interviews with TTOs and research service units at universities and universities of applied sciences as well as the WTZ project managers and a focus group with the programme management. In addition to the analysis of programme data, international and national desk research was carried out on similar funding programmes.

Overall, the results show that both the prototype funding module as well as the patent funding and the extensive inter-university tasks of the knowledge transfer centres have had far-reaching positive effects on Austrian RTI and higher education system.

With regard to prototype development in particular, all universities and universities of applied sciences included in the evaluation unanimously stated that the need for prototype funding at Austrian universities is enormous. This need cannot be met by other (alternative) research funding programmes currently offered at national, regional or European level. The aws prototype funding programme is therefore unique and of enormous importance for the further development of new technologies at Austria's universities. The prototype funding programme is low-threshold. The funding makes it possible to take research results to the next level and thus to be able to take an important step towards commercialisation. Developing prototypes is an essential step in approaching companies and preparing high-tech spin-offs. In view of this, it is recommended that funding for prototype promotion at Austrian universities be increased significantly.

Monitoring survey of the INNOVATORINNEN 2024–2026 funding programme

Following the positive evaluation of the *INNOVATORINNEN* (female innovators) programme of the FFG and the BMAW (now BMWET) in the period 2022–2023, WPZ Research was commissioned with a further accompanying evaluation[292] for the 2024–2026 call rounds. The evaluation covers the familiar programme components "Leadership Round" and "*INNOVATORINNEN* Club", and, for the first time, the 2024 pilot phase of the "*INNOVATORINNEN* Lab", a format aimed at the exploitation and dissemination of research results.

Initial results once again indicate a high level of participant satisfaction with the programme. Many participants reported gaining greater clarity, expertise, and motivation in relation to their individual research and innovation (R&I) missions. As in the previous evaluation round, it became evident that, beyond the formal programme formats, the composition of the peer group in the leadership round is a key success factor. While homogeneous in terms of gender, the group is diverse with respect to professional backgrounds, career stages, and organisational affiliations. This diversity plays a significant role in advancing participants' individual R&I missions. Furthermore, the programme has stimulated the development of follow-up activities, including joint projects and publications that emerge across institutional and system boundaries.

With the *INNOVATORINNEN* programme, the FFG is showing a willingness to experiment and is venturing into the terrain of transformative innovation policy. As a non-monetary funding programme that targets individuals and reacts strongly in its design to the results of its accompanying evaluations, *INNOVATORINNEN* is based on a broad understanding of R&I funding and also demonstrates an innovative variant of excellence funding that focuses on the R&I missions of non-male socialised individuals.

Evaluation of the Innovation Voucher

The *Innovationsscheck mit Selbstbehalt* (innovation voucher) is the responsibility of the BMIMI and BMWET and is an FFG funding instrument that is open to all technologies and topics. The FFG innovation voucher is explicitly intended to support SMEs in gaining access to scientific expertise and thus promote innovation projects. The innovation voucher enables SMEs to finance research and development services from external scientific partners, with part of the costs – the deductible – being borne by the companies themselves. Since 2018, eligible project costs of €12,500 can be applied for, with a maximum funding rate of 80%.

The aim of the evaluation was to record the design, implementation, achievement of objectives and the effects of the innovation voucher with deductible that have been identified to date. The evaluation covered the 2018–2023 funding period, during which a total of 1,837 innovation voucher projects were applied for, 993 of which were approved and implemented by 888 different companies. Various instruments were used in the course of the evaluation, including quantitative, statistical analyses as well as qualitative surveys such as interviews and focus groups. In addition, funding programmes and initiatives similar to the innovation voucher format in the regional governments as well as in other European countries were mapped and examined more closely.

The evaluation results show that the positioning of the FFG innovation voucher with deductible in the Austrian research funding portfolio is very clearly perceived. The benefits and added value lie above all in effectively supporting SMEs in application-orientated R&D activities and quickly providing scientific answers to open questions. In addition, the innovation voucher with deductible is a very good instrument for start-ups and spin-offs to take their first steps towards practical application. The research partners see the innovation voucher as a suitable, low-threshold instrument for making contact with SMEs, particularly with a view to establishing strategic research partnerships.

292 https://www.ffg.at/leadership-innovatorinnen

To better support the performance of SMEs in the future and thus further increase the attractiveness of the innovation voucher programme, it is recommended that the funding amount be increased to at least €20,000. In addition, the R&D focus should be further opened towards innovation. The opportunity to use the innovation voucher to carry out feasibility studies should be communicated more clearly. It is also suggested that attention be explicitly drawn to the possibility of shorter project durations. In view of this, good coordination with the science-business co-operation funding formats offered by the regional governments and greater permeability in the FFG's own funding portfolio are also recommended.

Evaluation of the ERA NAP 2022–2025

The National Action Plan (ERA-NAP) 2022–2025 is the central instrument of ERA governance in Austria for implementing the ERA Policy Agenda. Austria has committed to implementing 15 of the 20 ERA Actions in the priorities of the Pact for Research and Innovation. Under the leadership of the BMFWF and in coordination with the BMIMI, Austria has developed 12 national ERA initiatives in the ERA-NAP which form the main content of the ERA-NAP. In the period from June 2024 to the end of April 2025, Technopolis was commissioned to prepare a progress report and evaluate the ERA-NAP. To this end, an inventory of the available documentation and data on implementation was carried out. Moreover, interviews were conducted with all coordinators of the initiatives responsible for implementing the plan. Four ERA initiatives were analysed in greater depth, in particular through further surveys and interviews with relevant stakeholders. The focus was on the initiatives in the areas of open science, human resources, partnerships and knowledge valorisation.

Overall, the evaluation comes to a positive assessment of the ERA-NAP, both regarding the implementation status of the various initiatives and with respect to the plan at large as a tool for implementing the ERA Policy Agenda in Austria. The ERA-NAP translates the European Commission's proposals for action into relevant national initiatives and measures in a meaningful way. The plan is strategically and operationally appropriately embedded, namely strategically in the Austrian RTI Strategy and the RTI Pact, and operationally in an often historically grown portfolio of various measures and in a field of relevant stakeholder organisations and individuals responsible for implementation. The work carried out as part of the study has also shown that many of the national coordinators and stakeholders are actively involved in the ERA activities at European level in their respective fields and helped to shape them within the scope of their possibilities. In this way, impulses from the European level are also taken up and implemented nationally during the realisation of the ERA-NAP and, conversely, national perspectives are introduced into European processes. A particular strength of the ERA-NAP is that it is a document officially adopted by the Council of Ministers. This supports the people responsible in their day-to-day work. The plan creates transparency and clarity regarding content, objectives and responsibilities and has thus made the topic of ERA both more visible within the Austrian RTI system and more comprehensible in operational work. This particularly affects those people who have come into contact with the topic of ERA for the first time, often at the invitation of their coordinators to help shape or implement the various initiatives. Through their involvement, many of these people have developed a greater sense of responsibility for shaping the ERA in their area.

Evaluation of the Expedition Future initiative

With the *Expedition Zukunft* (Expedition Future) programme, the FFG is pursuing the goal of promoting disruptive and radical innovations that have the potential to bring about major changes in technologies, markets or society and contribute to solving social challenges. With the *Expedition Zukunft* pilot programme, which is structured into five different programme lines (START, *WISSENSCHAFT* (SCIENCE), INNOVATION, FFG-Challenge and IÖB-Challenges), the FFG is implementing a wide-ranging programme. To further support

the funded projects, which are also associated with a high implementation risk, the FFG has established a portfolio of various accompanying activities consisting of expedition guides from the programme environment, targeted consulting services on business models and other topics as well as networking activities.

Technopolis was commissioned with the accompanying evaluation of the programme between August 2023 and March 2025. The evaluation was carried out in close interaction with the programme team and considered communication, selection and accompanying activities and collected evidence on hypotheses formulated by the programme team in the design of the programme. Methodologically, the evaluation focused on feedback workshops with applicants, an analysis of programme documents and data, several participatory observations, a survey and a focus group with funded and supported individuals. There were also several thematic workshops.

Based on the overall work carried out, it is clear that the programme operationalises its ambition well and communicates it to the applicants. In the selection process, projects are chosen that have understood and intend to implement this ambition with regard to the high degree of innovation and are overall well positioned in the programme's coordination system. The combination of the high innovation ambition for early-stage innovation projects and the accompanying activities gives the programme added value compared to other FFG funding instruments and in Austria as a whole. From the perspective of the evaluation, the strengths of the initiative are particularly evident in the START and CHALLENGES programme lines. The support was rated positively, especially the support provided by the expedition guides, which are intended to provide the funding recipients with regular, structured and needs-based orientation in the Austrian RTI funding system. This also increases the FFG's knowledge of the development and dynamics of innovation projects within the innovation system.

3 Monitoring in accordance with the Research Financing Act (FoFinaG)

Central research and research funding institutions

The monitoring of the central research and research funding institutions in accordance with Section 8 of the Research Funding Act (FoFinaG) is covered in Chapter 3 of this report.

Monitoring of the central institutions in accordance with FoFinaG was introduced for the first time in 2021. It is based on three-year performance or funding agreements concluded between the central institutions and the responsible federal ministries.

In preparation for the monitoring, contributions are written by the central institutions[293] and then prepared for the FTB in consultation with the ministries and the authors. In the course of this, the information on the excellence programmes is also compared with the data from the FWF and the information on participation in the research framework programmes with the Austrian Research Promotion Agency's (FFG) EU Performance Monitor. The information on research infrastructures is also verified by the BMFWF.

The Austrian Research and Technology Report 2025 FoFinaG uses the latest available data, i.e. figures as they stood on 31 December 2024. Therefore, in the annual comparison, reference is made to the reporting years 2023 and 2024.

According to the FoFinaG, eleven research and research funding organisations are defined as central institutions and these institutions are therefore included in the monitoring.

The central research institutions are

- Austrian Institute of Technology GmbH (AIT)
- Institute of Science and Technology Austria (ISTA)
- Austrian Academy of Sciences (OeAW)
- Silicon Austria Labs GmbH (SAL)
- Ludwig Boltzmann Gesellschaft — Austrian Association for the Promotion of Scientific Research (LBG)
- GeoSphere Austria — Federal Institute for Geology, Geophysics, Climatology and Meteorology (GSA)

The central research funding institutions are

- Austria Wirtschaftsservice Gesellschaft mit beschränkter Haftung (aws)
- Christian Doppler Research Association (CDG)
- Austrian Science Fund (FWF)
- OeAD-GmbH (OeAD)
- Austrian Research Promotion Agency (FFG)

The aim of the FoFinaG monitoring is to map the current development of the central research and research funding institutions in the most important dimensions — in terms of input and output — using indicators. The indicators were coordinated with all ministries responsible for RTI and the BMF in autumn 2024. The main aim of compiling the indicators is to provide an overview of the system, while at the same time recognising the different tasks and roles of the individual institutions.

293 As the survey has a cut-off date of 31 December of the respective reporting year and data or information for the FTB is published in the period from February to March of the following year, in some cases only preliminary data is available from the institutions at this time and this still has to be checked (e.g. by tax consultants, auditors). There may be discrepancies between the annual research and technology reports. If there are indeed major discrepancies, the organisation in question will issue a response to explain them.

The indicators selected for monitoring in accordance with the FoFinaG are therefore as follows:

- Funding, including third-party funding
- Evaluation systems
- Human capital and qualification
- Output, innovation and excellence
- Internationalisation
- Knowledge and technology transfer
- Communication and interaction with society
- Gender and promotion of equality

The FoFinaG monitoring also includes the presentation of target values set out in the respective performance or funding agreements. The recently concluded 2025–2027 performance or funding agreements apply to this report and the target values – listed in the respective indicators – have therefore been taken from these. The following sections provide an overview of the profiles of the eleven central institutions as well as their performance and outlook.

3.1 Austrian Institute of Technology (AIT)

3.1.1. Profile and key figures

Profile of the organisation

With over 1,500 employees, the Austrian Institute of Technology (AIT) is Austria's largest research and development organisation and plays a leading role in innovation at European level – particularly in the areas of decarbonisation and digitalisation, in which innovative and forward-looking solutions are developed together with universities, companies and the public sector.

The AIT's strategic priorities include

- Development of a climate-neutral, digitalised and competitive, resilient economy
- Development and expansion of Austrian technological expertise
- Securing system-critical competences to strengthen European technological sovereignty

The seven AIT centres research and develop methods, algorithms and technologies for resilient and sustainable infrastructures (energy systems, industry, transport systems, selected healthcare topics) and for the digital transformation of industry and society (networking, cyber security, data protection, artificial intelligence, automation, human-centred design).

Key figures for 2023 and 2024

	2023	2024
Total income in € 1,000	208,865	218,005

Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	973	480	1,453	991	503	1,494
Full time equivalents (rounded)	878	403	1,281	904	420	1,324

Source: AIT.

3.1.2 Development of indicators

Indicator 1: Funding, including third-party funding

In contrast to the "central key figures", all indicators in section 3.1.2 relate to the AIT excluding Seibersdorf Labor GmbH and Nuclear Engineering Seibersdorf GmbH.

	2023 in € 1,000	2024 in € 1,000	Target value 2026 in %**
Total operating income	159,446	174,523	
of which shareholder contributions	56,081	58,703	
of which third-party funding	103,364	115,820	
of which non-EU countries and global organisations	2,444	2,691	
of which public	393	340	
of which private	2,051	2,351	
of which EU and European countries or organisations	36,335	43,642	
of which public	29,144	35,708	
of which private	7,191	7,934	
of which national and regional organisations	64,585	69,487	
of which public	37,477	41,002	
of which private	27,108	28,484	
Third-party funding ratio* in %	64.8%	66.4%	60%

* Share of third-party funding in total income in %. ** Due to fluctuations in the disbursement of third-party funding between the individual years, average values over three years are given here. Source: AIT.

Indicator 2: Evaluation systems

Evaluations of the thematic and strategic orientation

In addition to compliance with legal and normative requirements, AIT's regulations are based on both economic and social aspects as well as safety and environmental factors. The management bears ultimate responsibility for this and formulates the company's quality policy and objectives. All employees' compliance with the QM regulations is monitored through internal and external audits.

The AIT has a Strategic Research Advisory Board made up of internationally recognised personalities from science and research. Its main tasks include commenting and making recommendations on the strategic direction and research programme as well as making recommendations on the programme to the Supervisory Board. The AIT's new vision with its strategic research focus and its role as an international network hub were perceived very positively in 2024.

An evaluation for the current strategy period is also carried out every three years: after the AIT was recognised as having excellent research with an application orientation and an outstanding research infrastructure in 2023, planning for the 2026 evaluation has already begun.

Indicator 3: Human capital and qualification

Number of employees (including LKR Leichtmetallkompetenzzentrum Ranshofen GmbH)	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	813	390	1,203	829	409	1,238
of which at management level (management, management of a centre, of a competence unit, administrative area or administrative unit)	35	10	45	31	11	42
Full time equivalents (rounded)	726	327	1,053	749	341	1,090
of which at management level	34	10	44	30	11	41

Source: AIT.

PhD students	2023	2024	Target value 2026
Completed theses*	87.5%	100%	75%
Employees (= headcount)	161	159	
of which employed at AIT	123	124	
of which in structured education (doctoral schools or similar)	38	35	

* Proportion of theses completed in the PhD programme within 5 years. The number of completed theses for 2023 was changed in accordance with the new indicator to the proportion of completed theses in the PhD programme within five years, which was redefined as of 2024.

Early career researchers	2023	2024
Employees (= headcount)	204	213
Share of (scientific) employees**	25.3%	25.2%

* AIT definition: all juniors in the Science and Research Engineer/Expert Advice career models and all PhD students with an AIT contract/permanent position. ** Number of all PhD students with an AIT contract and all in the Science and Research Engineer/Expert Advice career model as of 31 December for 2023 and 2024. Source: AIT.

The following staff development measures were implemented in 2023 and 2024:

In addition to the AIT career model, employees have access to a comprehensive qualification programme. New employees benefit from a structured onboarding programme with a mentoring system, i.e. international colleagues receive targeted support as early as the pre-onboarding phase. The second round of the AIT Female Leadership Programme started in 2024. Measures from the

2022 Work Environment Survey, such as workshops on critical topics and unit- and centre-specific improvements (e.g. communication measures, team building) were systematically continued. In addition, the AIT offers all employees a free, anonymous support programme for counselling and coaching in professional and private matters.

Indicator 4: Output, innovation and excellence

Scientific publications	2023	2024	Target value 2026
Monographs and editions	5	2	
Articles/contributions in scientific journals, edited volumes and proceedings*	655	579	
of which number of peer-reviewed publications and publications in conference proceedings with peer review		560	420

* Only publications with peer review are mentioned — the corresponding criteria were significantly tightened in the course of 2023 (only papers with full peer review by at least two reviewers are counted), which is why the number has fallen accordingly. Source: AIT.

Grants in FWF excellence programmes		2023	2024
FWF	Number	1	0
	Total funding approved in € 1,000	324	0

At EU level, an ERC Proof of Concept (PoC) grant totalling €150,000 was acquired in 2024.

Investments in research infrastructure in 2023 and 2024:

The AIT operates a research infrastructure that is competitive throughout Europe, providing excellent working conditions for AIT researchers and enabling cooperation with first-class partners from industry and science. This includes a DC Lab, a City Intelligence Lab, a User Experience Lab, a Battery Lab, a Large-Scale Robotics Lab and a Quantum Lab. The laboratory infrastructure is constantly being expanded — currently with an investment volume of more than €30 million. Among other things, a new heat pump lab for multi-family house applications and the H2Lab are currently under construction. A high-performance and highly secure IT infrastructure is also being continuously expanded in order to fulfil the latest regulations.

Three important core facilities* 2023 and 2024		
Designation	**Research focus**	**Weblink to the research infrastructure database**
Solid-state battery laboratory	Development of the next generation of batteries with higher safety, energy density and service life; construction of "Smart Cells"	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/zellproduktion_4122 https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/batteriematerialiabor_4119
Climate chambers/growth boxes for microbiome research	Simulation of a wide range of environmental conditions to analyse the effects of climate change on agricultural production under real conditions; development of microbiome-based solutions	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/ait-klimakammernphanotypisierung-von-%20pflanzen_6100

Three important core facilities* 2023 and 2024		
Designation	**Research focus**	**Weblink to the research infrastructure database**
Infrastructure AI task force, incl. expansion of CPU/GPU cluster	Development of a comprehensive AI software and hardware infrastructure; establishment of a company-wide knowledge exchange platform	

* AIT Research Infrastructure Portfolio — Research Infrastructure Database (Open for Collaboration): https://forschungsinfrastruktur.bmfwf.gv.at/en/institution/ait-austrian-institute-of-technology-gmbh_96. An explanation of investments and acquisition costs for research infrastructures can be found in the definitions.

Source: AIT.

Utilisation rate of the research infrastructure in externally funded projects: 60%.

Indicator 5: Internationalisation

	2023	2024
Share of international co-publications in all publications*	66%	68%
Number of newly approved participations in Horizon Europe programmes and initiatives	43	33
Total funding approved** in €1,000	26,892	18,368

* The values for 2024 are only provisional values as of 28 January 2025, as not all publications have yet been recorded in WoS at this time. The value for 2023 has been adjusted accordingly.
** Only EU funds are shown, no own contributions or national co-financing are included. The year of contract conclusion applies.

Source: AIT, FFG EU-Performance Monitor.

Indicator 6: Knowledge and technology transfer

	2023	2024
Share of co-publications with industry and practice partners in all publications listed in WoS*	56%	61%

* The values for 2024 are only provisional values as of 28 January 2025, as not all publications had been recorded in WoS at this time. The value for 2023 was adjusted accordingly.

Source: AIT.

Patents & exploitation activities	2023	2024
Patent applications	26	15
of which national	6	9
of which EU/EPC	9	3
of which non-EU countries	11	3

Patents & commercialisation activities	2023	2024
Issued patents *	43	20
of which national	4	5
of which EU/EPC/UP**	34	7
of which non-EU countries	5	8
Spin-offs***	2	1

* * The reasons for the downward trend in the number of patents applied for and granted compared to the previous year are changes in patent regulations and the handling of patents (e.g. in microbial strains or biomarkers) as well as an increased focus on the development of software. Software is often difficult to patent and is instead protected by trade secrets or open-source strategies, and innovation cycles in software development are significantly shorter. ** UP stands for Unitary Patent, the European patent with unitary effect, which has been in force since 2023. A patent grant under UP enables protection in 17 countries at the same time. *** Number of spin-off projects and successful spin-offs. Note: All patents applied for or granted in the reporting period and all new investments made within the reporting period. Source: AIT.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

In 2023 and 2024, numerous activities and formats for communication and knowledge transfer as well as for involving and addressing civil society actors were carried out, including

- New edition and implementation of the Technology Talks Austria — Austria's leading technology conference — with 850 participants on the topic of "The role of research, technology and innovation and Innovation for the Triple Transition", in collaboration with over 30 partners
- Participation in the Long Night of Research
- Creation of the Austrian Startup Monitor — together with the startup scene
- AIT Blog: News from AIT research, prepared for the general public
- Active use of digital and social media channels
- Regular press releases
- Partnership with APA-Science
- Presence at leading international trade fairs
- Lectures at research institutions
- Appearances by AIT experts in print media, podcasts, radio and TV
- Selected media cooperations on research topics
- Numerous research projects in cooperation with stakeholders such as rescue organisations and civil society communities
- Activities for International Women's Day and Daughters' Day
- Participation in keynotes and panel discussions by the Managing Directors at events such as the Austrian Innovation Forum, the Applied Artificial Intelligence Conference, or the Futurezone SPEAK OUT Festival

Indicator 8: Gender and promotion of equality

Proportion of women in management positions by management level	2023	2024	Target value 2026
Line managers, incl. deputies/co-managers*		28.8%	27%
Senior-Scientists, -Research Engineers and -Expert Advisors	14%	16.7%	16%
Glass Ceiling Index based on management levels**	1.46	1.26	
Project Manager Index***	1.09	1.17	

* Conversion to line managers from 2024 ** Calculated as the proportion of women in all employees/ proportion of women in management positions. The explanation of the Glass Ceiling Index can be found in the definitions. Management positions are defined as: Managing Directors, Head of Centre, Head of Administrative Area
*** Female Project Manager Index: Calculated as the proportion of female project managers among academic project managers in relation to the proportion of women among academic staff. This key figure corresponds to the key figures of the AIT monitoring report in accordance with the AIT performance agreement. A value of 1 means that the proportion of women in project management positions corresponds to the proportion of women among academic staff. A value above 1 indicates an underrepresentation, a value below 1 indicates an overrepresentation of women in management positions. Source: AIT.

The following activities to promote equality were implemented in 2023 and 2024

In the area of recruiting and employer branding, the AIT strengthens the external visibility of female experts through targeted collaborations (Daughter Day, SHEtech, GirlsTechUp, SHEgoes-digital) as well as internal gender information formats and events organised by the AIT Women's Network. Qualification programmes are open to all employees, regardless of gender or level of employment. There are mandatory training courses for various target groups as well as specific training programmes for women. Flexible working hours, teleworking and holiday care support the compatibility of work and family life.

Structural measures such as the gender information area on the intranet, discussion forums for women and managers and the AIT Gender Monitor promote continuous dialogue. AIT contributes expertise to external exchange formats, such as the BMIMI's participation management, with practical input for BMFWF equality plan training courses. Winning the SPEKTRUM diversity award from the Federation of Austrian Industries is also worthy of mention. In 2024, the Gender & Diversity Concept was revised to promote a work culture in which diversity is lived. New gender bodies such as the AIT Gender Office, gender mentors and a gender liaison officer are responsible for implementation.

3.1.3. Special events in 2024 and outlook

In recent years, the AIT has significantly increased its external revenue from co-funded research projects and industry contracts. Its positioning in the EU research framework programme Horizon Europe has been particularly successful, especially in the areas of decarbonisation, automation, battery research and quantum communication. The AIT's excellence is also reflected in numerous awards: photonics researcher Bernhard Schrenk received an ERC award, and battery researcher Katja Fröhlich was nominated as "Austrian of the Year" in the research category by the daily newspaper *Die Presse*. AIT is also continuing its successful strategy of founding start-ups, most recently with

infrared.city and NOSI. Investments in research infrastructure have been further expanded and will also be intensified in the coming years.

The current AIT Strategy 2024–2026 focuses on decarbonisation and digitalisation. Two key priorities are "Sustainable and resilient infrastructures" and the "Digital transformation of industry and society". Strategic planning for the next period is already underway, with a particular focus on cross-centre key topics and initiatives such as the newly established AI Task Force. With its high level of technological competence and systems expertise, the AIT will continue to drive innovation together with its partners and contribute to the sustainable transformation of socio-technical systems.

For further information, see the AIT annual financial statements.[294]

3.2 Institute of Science and Technology Austria (ISTA)

3.2.1 Profile and key figures

Profile of the organisation

The Institute of Science and Technology Austria (ISTA) was established in 2006 by the federal government and the government of Lower Austria. The campus in Klosterneuburg was opened in 2009. It serves cutting-edge research in the field of basic research in the natural sciences. ISTA aims to open up new fields of research and to ensure high-quality postgraduate education in the form of interdisciplinary PhD and postdoctoral programmes. Research, training and staff selection are internationally orientated, and the working and teaching language is English. By 2036, there will be around 150 research groups and a total of more than 2,000 employees on campus.

Key figures for 2023 and 2024

	2023	2024
Total income in € 1,000	102,500	155,943

Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	624	482	1,106	663	525	1,188
Full time equivalents (rounded)	610	442	1,052	649	486	1,135

Source: ISTA.

294 https://www.ait.ac.at/en/media/annual-financial-statement

3.2.2 Development of indicators[295]

Indicator 1: Funding, including third-party funding

	2023 in € 1,000	2024 in € 1,000	Target value 2024–2026 in € 1,000*
Total income	102,500	155,943	
of which public basic funding from the federal government	56,349	73,185	
of which cash-obtained from eligible third-party funds	28,145	32,421	> 25,000
of which funding from the federal state of Lower Austria	4,046	6,371	
of which other sales and other operating income	14,336	18,672	
of which from the reversal of investment grants	11,950	15,737	
of which third-party funding **	27,275	57,714	
of which non-EU countries and global organisations	4,634	5,019	
of which EU and European countries or organisations	16,056	18,547	
of which national and regional organisations **	6,585	34,148	

* Due to the fluctuations in third-party funding disbursement between individual years, average values over three years are given here. ** One-off effect (donation/bequest) of approx. €26 million included in 2024. Source: ISTA.

Indicator 2: Evaluation systems

Evaluations of the thematic and strategic orientation

ISTA is subject to the governance of a number of bodies that take on precisely defined tasks. The Board of Trustees and the Executive Committee monitor the development and strategic orientation of the Institute, while the Scientific Council draws up proposals for its scientific orientation and for ensuring high scientific performance. As stipulated in the Federal Act on the Establishment of the Institute of Science and Technology Austria §5 (2), the development of the Institute is regularly evaluated. To date, an economic evaluation (2014–2015) and three scientific evaluations (2011, 2015, 2019) have taken place, in which the institute's excellent development was noted. The next scientific evaluation will take place in December 2026.

295 The target values stated for 2024-2026, as well as those for 2026, correspond to the target values defined during the ex-ante impact assessment for the current performance agreement.

Indicator 3: Human capital and qualification

Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	624	482	1,106	663	525	1,188
of which at management level (faculty professors and assistant professors, management, division heads, unit heads)	70	28	98	75	35	110
Full time equivalents (rounded)	610	442	1,052	649	486	1,135
of which at management level	69	27	96	74	34	108

Source: ISTA.

Number of PhD students	2023	2024	Target value 2026
Number of theses completed*	32	38	> 31
Employees (= headcount)	345	365	
of which employed at ISTA	345	365	
of which women	137	144	
of which in structured education (doctoral schools or similar)	345	365	
Early career researchers**	345	365	> 259

* PhDs in the calendar year. ** Number of trained early career researchers according to the performance agreement 2024–2026 (from 2023 excl. scientific interns). Source: ISTA.

The following staff development measures were implemented in 2023 and 2024:

The Career Development Office offers a range of target group-specific training programmes for academics: These include training in the areas of academic skills, technical skills, career development (relating to both academic and intersectoral career planning), grant application training and training on standards of good scientific practice.

- Employees in administration and the Scientific Service Units have access to a comprehensive further education and training programme as well as specific leadership training.
- The Employee Assistance Programme (EAP) — a professional psychological counselling service — is available to all employees free of charge.

Indicator 4: Output, innovation and excellence

Number of scientific publications	2023	2024	Target value 2026
Monographs and editions	38	44	
Articles/contributions in scientific journals, edited volumes and proceedings	474	476	
Proportion of publications with at least one co-author with another affiliation	86%	87.27%	≥ 75%

Source: ISTA.

Eingeworbene Projekte in Exzellenz-Programmen des ERC und FWF		2023	2024
ERC	Number	10	4
	Total funding approved in € 1,000	18,613	7,286
FWF-Wittgenstein Prize	Number	-	1
	Total funding approved in € 1,000	-	1,700
FWF-COE	Number	3	2
	Total funding approved in € 1,000	4,588	12,797
FWF-EF	Number	-	2
	Total funding approved in € 1,000	-	2,474

The ERC Starting Grants, Consolidator Grants and Advanced Grants are counted. The year of contract conclusion applies. Source: FWF, FFG EU Performance Monitor.

In addition to the projects listed in the table, ISTA received two ERC Proof of Concept (PoC) grants of €150,000 each.

Project components in the Cluster of Excellence Programme of the FWF 2024	Share in %	Authorisation amount* in € 1,000
Cluster: Neuronal Circuits in Health and Disease	44%	9,240
Cluster: Bilateral Artificial Intelligence	18%	3,557

* Only FWF funds excluding own contributions. Source: FWF.

Investments in research infrastructure 2023 and 2024

- High Performance Computing Cluster Extension (CPU, GPU and memory) — Scientific Computing Facility
- Lattice Light Sheet Microscope — Imaging and Optics Facility
- Zeiss LSM880 upgrades (2) — Imaging and Optics Facility
- Atomic Probe Tomography System — Nanofabrication Facility
- Fish Facility Exchange and Extension — Lab Support Facility

From a strategic perspective, the Core Facilities (organised at ISTA in the Scientific Service Units) are a key success factor for the Institute, both in terms of faculty recruitment and the cost-efficient operation of high-end equipment with the broadest possible user base. The organisation of the Core Facilities allows all ISTA research groups access to the equipment under the same conditions.

Regular needs assessments ensure that the centrally provided equipment and services are utilised optimally. Experts in the Core Facilities support the research groups and thus ensure sustainable knowledge of methods and applications.

Three important core facilities* 2023 and 2024

Designation	Research focus	Weblink to the research infrastructure database
Scientific Computing Facility	High performance computing and specialised storage for distributed computing for computer science, artificial intelligence research and simulations in the fields of biology, physics and chemistry.	https://forschungsinfrastruktur. bmfwf.gv.at/en/fi/high-performance-computing-cluster_2402
Imaging and Optics Facility	Light/laser microscopy and flow cytometry to support researchers in cell biology, neuroscience, physics, chemistry and biochemistry.	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/imaging-facility_2421
Nanofabrication Facility	Micro- and nanofabrication processes for the development of new processes or the development of new nanostructures. Research into quantum phenomena.	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/nanofabrication-facility_3644

* Large research infrastructures in particular require a certain amount of preparation time after acquisition to be set up and fully commissioned. It is therefore possible that not all of the new research infrastructures mentioned will already appear in the database at the time of reporting. Source: ISTA.

Indicator 5: Internationalisation

	2023	2024
Share of international co-publications in all publications in the reporting year	79.6 %	78.28 %
Number of newly approved participations in Horizon Europe programmes and initiatives	19	14
Total amount of EU funding approved* in € 1,000	25,604	10,050

* Only EU funds are shown, no own contributions or national co-funding are included. The year of contract conclusion applies. Source: ISTA, FFG EU Performance Monitor.

Indicator 6: Knowledge and technology transfer

Patents & exploitation activities	2023	2024
Number of patent applications	4	6
Issued patents	1	2
Exploitation spin-offs	1	0

Note: All patents registered or granted in the reporting period and all new investments made within the reporting period. Source: ISTA.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

- Open Campus on 9 June 2024 with 2,000 visitors
- ISTA Lectures: Internationally recognised top researchers present their work in an easily understandable way
- bigX 24: Lecture series to promote dialogue between industry, start-ups and the research community
- Long Night of Research
- Over 100 workshops were held in the VISTA Science Experience Lab in 2024, aimed at school classes and interested children and young people
- Neuroscience Academy: Three-semester course on neuroscience for pupils aged 15 to 17
- Vifzack Academy: Research week for 75 highly gifted children from all over Austria
- VISTA Christmas Science Shows: Three Christmas science shows for primary school, secondary school and families
- Summer campus for 220 pupils in August
- Further training for teachers both on campus and at teacher training colleges, with a total of around 950 teachers reached
- In addition, outreach formats for science education in parks or at local festivals in the neighbourhood were expanded in order to specifically reach target groups that are not interested in science.
- In 2024, a total of just under 15,000 people were reached through direct interactions.

Indicator 8: Gender and promotion of equality

Proportion of women in management positions by management level	2023	2024	Target value 2026
Management	0%	0%	
Division Heads/Unit Heads	47.8%	46.4%	
Faculty (Professors and Assistant Professors)	23.0%	27.2%	
Glass Ceiling Index*	1.53	1.39	1.74

* Calculated as the proportion of women in all employees/proportion of women in management positions. Management positions include faculty (professors and assistant professors), management, division heads, and unit heads. The explanation of the Glass Ceiling Index can be found in the definitions. Source: ISTA.

The following activities to promote equality were implemented in 2023 and 2024

- Continuation of Women Scouting — continuation of a dedicated recruiting committee in search of suitable female professors (outside the life sciences)
- Continuation of WoMen in Science series — in February 2024 the theme was "Gender-based violence in research organisations: prevalence, consequences, and conceptual dilemmas"
- Continuation of the Equity, Diversity & Inclusion (EDI) Group: Participants in this group are faculty members, Head of Human Resources, employees of the Equity, Diversity & Inclusion Office.
- Ongoing implementation of the Gender Equality Plan

3.2.3 Special events in 2024 and outlook

- Seven new members were admitted to the faculty.
- Prof Jiří Friml was awarded the Wittgenstein Prize in 2024.
- The construction of Laboratory 7 has begun. This complex of three buildings comprises state-of-the-art laboratories, offices, a learning centre and a cafeteria and offers space for around 30 new research groups.
- Intensive planning work for Lab 8, the next complex of three buildings, which will serve the long-term goal of accommodating a total of 150 research groups by 2036.
- Construction work on the new VISTA Science Experience Centre is well underway in 2024. The opening with a multi-day science festival is planned for autumn 2025. The centre's concept aims to make science tangible for visitors of all ages and get them excited about basic research.
- Preparations for the further expansion of the Xista Science Park (start of construction in early 2025) to promote the Xista innovation ecosystem.
- The ground-breaking ceremony for the new kindergarten on the ISTA campus took place in May 2024. It will offer more indoor and outdoor space from autumn 2025 and has been planned to be particularly sustainable.

- On 7 June 2024, the President of the European Commission, Dr. Ursula von der Leyen, visited ISTA and learned about the institute's work during a tour of the campus lasting several hours and in discussions with the institute's management, faculty, PhD students and postdocs.

For more information, see the ISTA Annual Report.[296]

3.3 Austrian Academy of Sciences (OeAW)

3.3.1 Profile and key data

Profile of the organisation

"To promote science in every respect" is the statutory mission of the Austrian Academy of Sciences (OeAW), Austria's largest and most diverse non-university institution for basic research.

As a research organisation with 27 institutes in the natural, life and technical sciences as well as the humanities, social sciences and cultural studies, the Austrian Academy of Sciences addresses forward-looking research topics, often interdisciplinary, acting in an open-minded manner and preserving cultural heritage.

As a research funding institution, the Austrian Academy of Sciences supports promising scientific talent, both intramurally through an attractive career model and throughout the Austrian research area by awarding scholarships and prizes.

As a national academy of sciences, the Austrian Academy of Sciences is both a learned society and a disseminator of knowledge, contributing the latest scientific findings to the public discourse from a multidisciplinary perspective.

The interaction of these areas under one roof creates synergies, dynamism and innovation potential for the benefit of science and society.

Key figures for 2023 and 2024

OeAW total	2023	2024
Total income in € 1,000	222,491	257,881

Number of salaried employees of the Austrian Academy of Sciences (incl. wholly owned subsidiaries); as of 31 December in each case	2023				2024			
	m	f	diverse	total	m	f	diverse	total
Employees (= headcount)	970	834	1	1,805	986	876	1	1,863
Full time equivalents (rounded)	833	662	1	1,496	835	697	1	1,533

* Total income corresponds to sales and other operating income in accordance with the Austrian Commercial Code UGB). The figures for 2024 are preliminary values. Source: OeAW.

296 https://ist.ac.at/en/institute/documents/#Annual-Reports

3.3.2 Development of indicators

In contrast to the "key figures" listed above, all the following indicators, with the exception of indicator 7, relate exclusively to the OeAW research organisation, excluding the learned society, fellowships and the commissioned area.

Indicator 1: Funding, including third-party funding

OeAW research organisations	2023 in € 1,000	2024 in € 1,000	Target value 2024–2026 in %
Total income*	191,265	229,111	
of which federal funding due to OeAW-BMBWF performance agreement	116,091	150,156	
of which other income	22,452	23,187	
of which third-party funding**	52,722	55,768	
of which global organisations and non-European countries and organisations	102	24	
of which EU and European countries or organisations	21,097	14,241	
of which public	21,029	14,236	
of which private	68	5	
of which national and regional organisations	31,523	41,503	
of which public	30,192	41,242	
of which NFTE, Ö-Fonds and FZÖ	4,792	8,150	
of which private	1,331	261	
Third-party funding ratio*** in %	31.2 %	27.1 %	> 25 %

* Total income excludes extraordinary income from the reversal of provisions, accrued expenses and deferred income and also excludes income from the disposal of fixed assets. ** Third-party funds are shown after the allocation of funds, i.e. receipt of payment, and do not include accruals and deferrals. *** The third-party funding ratio is calculated as: Third-party funds/(funds from the performance agreement + third-party funding), excluding other income. The figures for 2024 are provisional values. Due to fluctuations in the disbursement of third-party funding between the individual years, the target value is given as an average value over three years. Source: OeAW.

Indicator 2: Evaluation systems

Evaluations of the thematic and strategic orientation

Regular or ad hoc evaluations by international teams of high-ranking researchers, whose independence and expertise are the responsibility of the OeAW Research Board, including Nobel Prize winner Ferenc Krausz, provide important impulses for the further development of the OeAW institutes and initiatives. The results of these procedures, which are carried out according to international standards, are incorporated into the three-year target agreements with the institutes and are the starting point for decisions on the organisation of the OeAW as a research institution.

A Scientific Advisory Board, consisting of national and international experts, supports the institutes of the Austrian Academy of Sciences. The advisory boards are reappointed every five years and continuously contribute to achieving and ensuring the highest possible level of research at the institutes.

Other measures that are designed according to international standards continuously and transparently ensure scientific quality, e.g. when filling scientific (management) positions, in ex-ante/ex-post project and programme controlling and in the evaluation of employees. All quality assurance processes take into account the special features of the respective research field as well as any special institute missions, such as the preservation of cultural heritage.

Indicator 3: Human capital and qualification

Number of employees of the OeAW research organisation (incl. wholly owned subsidiaries)	2023				2024			
	m	f	diverse	total	m	f	diverse	total
Employees (= headcount)	916	783	1	1,700	939	817	1	1,757
of which at management level	124	58	0	182	125	62	0	187
Full time equivalents (rounded)	788	618	1	1,407	795	649	1	1,445
of which at management level	114	53	0	167	116	58	0	174

Quelle: ÖAW.

Early career researchers*	2023	2024	Target value 2026
Employees (= headcount)	691	727	
Share of scientific employees	63%	65%	> 60%

* In defining early career researchers, the OeAW is guided by the European Commission's document "Towards a European Framework for Research Careers" (https://era.gv.at/object/document/1509), which is one of the key foundations for the OeAW's career model and is therefore also reflected in the OeAW's collective agreement. It proposes a four-stage model: R1 — First stage Researcher (up to the point of PhD); R2 — Recognized Researchers (PhD holders or equivalent who are not fully independent); R3 — Established Researchers (researchers who have developed a level of independence); R4 — Leading Researchers (researchers leading their research area or field). In accordance with this model, the career levels R1 and R2 refer to early career researchers. Source: OeAW.

The following staff development measures were implemented in 2023 and 2024:

The OeAW career model for scientific staff has been adapted to promote scientific careers in the best possible way.

Online "Power Hours" provide a targeted exchange of knowledge between administrative departments and academic managers, including on personnel management topics. The revised mentoring programme enables early career researchers to reflect on career developments and acquire key qualifications, including project management and personnel management.

In order to support the acquisition of competitive third-party funded projects, customised training measures were again held for OeAW researchers.

The Seal of Excellence-Post Doctoral Fellowship is an alternative funding programme for researchers whose excellent MSCA application could not be considered for funding. The OeAW fellowship programmes were continued extramurally; in 2024 with additional FZÖ funds raised for the APART-GSK programme, among others.

Indicator 4: Output, innovation and excellence

Number of scientific publications from projects of the OeAW research performing organisation	2023	2024
Monographs and editions	49	51
Articles/contributions in scientific journals, edited volumes and proceedings*	1,722	1,674

* Provisional values for 2024 (query date 15 February 2025) due to lag times for the previous year in the indexing of the publication databases. Source: OeAW.

Grants funded at OeAW research institutions in ERC and FWF excellence programmes		2023	2024
ERC	Number	6	5
	Total funding approved in € 1,000	10,626	7,796
FWF COE	Number	3	1
	Total funding approved in € 1,000	7,474	1,680
FWF Emerging Fields	Number	0	3
	Total funding approved in € 1,000		3,829
FWF START Prize	Number	0	2
	Total funding approved in € 1,000		2,400

Note: For the ERC, Starting Grants, Consolidator Grants and Advanced Grants are counted. The year of contract conclusion applies. Source: FWF, FFG EU Performance Monitor.

In addition to the projects listed in the table, the Austrian Academy of Sciences acquired an ERC Proof of Concept Grant in 2024. Moreover, an already approved ERC Synergy Grant 2024 was transferred to the Austrian Academy of Sciences. The contracts for a further three ERC Consolidator Grants acquired in 2024 and one ERC Starting Grant acquired in 2024 had not yet been signed at the end of the year.

Project components acquired at OeAW research performing institutions in the FWF 2024 Clusters of Excellence Programme	Share in %	Authorisation amount in € 1,000
Cluster: Neuronal Circuits in Health and Disease	8%	1,680

Source: FWF.

Investments in research infrastructure in 2023 and 2024:

The Erich Schmid Institute for Materials Science (ESI) has acquired a PFIB scanning electron microscope — the first infrastructure of its kind in Austria. This enables research into multi-material hybrid systems and structural materials down to the nano and micro scale. A wire-cutting machine was installed at the Institute for Quantum Optics and Quantum Information (IQOQI) in Innsbruck that enables the production of precision parts with complex internal/external shapes without deformation or microcracks. This is essential for all experiments carried out at the institute. In the life sciences, the Biooptics Facility at IMBA/GMI is expanding in the area of light sheet microscopes that enable high-resolution three-dimensional imaging of thicker tissues.

The Austrian Academy of Sciences represents Austria in numerous European and international (large-scale) research infrastructures, including those that are part of the ESFRI Roadmap.

Designation	Research focus	Weblink to the research infrastructure database
2024		
Wire EDM machine at the Institute for Quantum Optics and Quantum Information (IQOQI Innsbruck)	Experimental quantum physics	The device is recorded in the infrastructure database but is not available for co-operations and is therefore not publicly visible.
Scanning electron microscope (PFIB) at the Erich Schmidt Institute for Materials Science (ESI)	Research into functional multi-material hybrid systems (batteries, flexible electronics, fuel cells) and structural materials on the nano and micro scale	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/rasterelektronen-microscope-with-analytical-additions_1645
Light-sheet microscope at IMBA — Institute for Molecular Biotechnology GmbH and GMI — Institute for Molecular Plant Biology GmbH	Innovative three-dimensional imaging	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/mikroskop-axl-cleared-tissue-lightsheet_5988
2023		
Chemical Screening at CeMM — Research Centre for Molecular Medicine GmbH	Automated high-throughput screening of active ingredients	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/_5601
Extension concerning EOS Storage to HPDA/CLIP at the Institute for High Energy Physics (HEPHY) and Stefan Meyer Institute for Subatomic Physics (SMI)	High performance computing infrastructure	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/_5602
Laboratory equipment including gas chromatograph at the Austrian Archaeological Institute (ÖAI)	Expansion of scientific archaeology and its methods	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/_5600

All OeAW research infrastructures can be found at: https://forschungsinfrastruktur.bmfwf.gv.at/en/institution/osterreichische-akademie-der-wissenschaften-oaw_24. An explanation of investments and acquisition costs for research infrastructures can be found in the definitions. Source: OeAW.

Indicator 5: Internationalisation

	2023	2024	Target value 2024–2026*
Share of international co-publications in all publications listed in WoS** in the reporting year	81.9 %	81.4 %	
Number of newly approved participations of OeAW research institutions in Horizon Europe programmes and initiatives	21	24	
Total amount of EU funding approved in € 1,000***	13,999	15,502	
Number of Horizon Europe applications	82	82	> 180

* * Number of cumulative applications in three years. ** The following "citable publication types" are taken into account: articles, proceedings papers, review articles, and letters. *** Only EU funds are shown, no own contributions or national co-financing are included. The year of contract conclusion applies.

Source: OeAW, FFG EU-Performance Monitor.

Indicator 6: Knowledge and technology transfer

Patents & commercialisation activities	2023	2024
Patent applications	41	18
of which national	0	3
of which EU/EPC	13	10
of which non-EU countries	28	5
Issued patents	12	14
of which national	0	0
of which EU/EPC	7	4
of which non-EU countries	5	10
Exploitation spin-offs	0	1
Licence agreements	3	1
Option contracts	0	0
Sales contracts	1	2
Utilisation partners (companies, non-university research institutions)	4	4

Note: All patents that were registered or granted in the reporting period and all new contracts and new participations concluded in the reporting period. Source: OeAW.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

The Austrian Academy of Sciences has launched important new initiatives for the future of science communication: At the first Vienna Lecture on Science Communication in the run-up to the Science Ball, Ignoble Prize initiator Marc Abrahams discussed the question "Why communicate science?". The OeAW launched FÄKT, an innovative educational programme for young people on social media channels. Austria's largest science communication centre will also be built in Vienna by 2027.

The Long Night of Research with around 3,000 guests at hands-on stations and science shows, the neighbourhood festival to mark the Anton Bruckner Year and the *Museumsquartier* organised "Science Week: Meet the Universe".

On derstandard.at, OeAW blogs communicate science in a low-threshold and journalistic way, e.g. in the "*Junge Akademie-, Geschichte Österreichs-* or *Weltraumblog*".

In order to arouse interest in science, OeAW researchers held lectures and workshops at schools throughout Austria as part of the Young Science Initiative "Academy in the Classroom", e.g. on "The building blocks of our universe" or "Europe's energy transition".

The Austrian Study Foundation introduced the online format Lunch Science Talk, in which renowned researchers present their latest findings.

Indicator 8: Gender and promotion of equality

Proportion of women in management positions by management level	2023	2024	Target value 2026
Institute directors	30 %	34 %	
Scientific Directors	33 %	23 %	
Group leaders	26 %	25 %	
Junior group leaders	28 %	28 %	
Administrative and technical management staff	41 %	43 %	
Glass Ceiling Index*	1.45	1.40	< 1.57

* Calculated as the proportion of women in all employees/share of women in management positions. The explanation of the Glass Ceiling Index can be found in the definitions. Management positions are defined as follows: Institute directors, scientific directors, group leaders, junior group leaders, administrative or technical management staff.

Source: OeAW.

The following activities to promote equality were implemented in 2023 and 2024

The implementation of a gender pay gap analysis was included in the OeAW performance agreement and is carried out annually, including derivation for the further development of measures in line with the EU directive on pay transparency.

The Equal Opportunities Working Group developed new rules of procedure and a concept for Equal Opportunities Officers, supported recruitment procedures and organised Gender & Diversity Lectures.

The anti-discrimination clearing centre offers employees information, advice and training and helps to resolve conflicts.

The opportunity to receive subsidies for caring responsibilities as part of the "Academy and Family" programme is used.

Since 2024, the Austrian Academy of Sciences has awarded the Berta Karlik Fellowships, funding for women in STEM fields with the aim of international networking.

The new *"Atom*Innen"* platform strengthens mentoring, networking and training for women in quantum physics.

As part of the "*8ung auf Frauen*" programme, annual events are held on International Women's Day and women's research achievements are made more visible (e.g. exhibition "*Forscherinnen entdecken*: Women at the Academy of Sciences").

3.3.3 Special events in 2024 and outlook

Special events and exemplary research findings in 2024

The academy is expanding its life sciences focus: AITHYRA, an institute for artificial intelligence in biomedicine, was founded with funding of €150 million from the non-profit Boehringer Ingelheim Foundation.

An OeAW archaeological team made a sensational discovery: they identified bones of mammoths in Lower Austria that are up to 40,000 years old.

Entanglement of quantum particles on Earth has been proven to be possible, and now quantum physicists from the Austrian Academy of Sciences and ESA have been able to show that this also works stably in zero gravity.

OeAW space researchers have developed a formula that can be used to estimate the number of potentially life-friendly worlds in our galaxy.

In the Church of the Holy Sepulchre in Jerusalem, a team including OeAW researchers discovered the largest known medieval altar, which was thought to be lost. Furthermore, OeAW medieval researchers have shed light on the origins of the Avars, a nomadic people who migrated to Europe from the steppes.

Outlook

The Austrian Academy of Sciences is involved in several international space missions. The new launches are focusing on the interactions between the Sun and the Earth's magnetic system.

Physics Nobel Laureate Didier Queloz is speaking at the OeAW Institute for Space Research in Graz in 2025. Chemistry- Nobel laureate Jennifer Doudna is visiting the Academy in Vienna – the occasion: GMI - Gregor Mendel Institute of Molecular Plant Biology GmbH, one of the world's leading plant biology research institutions, is celebrating its 25th anniversary.

The OeAW's expertise on one of the country's best-known authors is bundled in a dedicated "Thomas Bernhard Research Centre".

The Academy's annual report provides information and research highlights from the previous year.[297]

297 https://www.oeaw.ac.at/en/oeaw/academy/performance-reports-strategy

3.4 Silicon Austria Labs GmbH (SAL)

3.4.1 Profile and key data

Profile of the organisation

Silicon Austria Labs GmbH is an Austrian non-university research centre for electronics and software-based systems (ESBS). The company is based in Graz. At its three locations in Graz, Villach and Linz, SAL conducts research along the entire ESBS value chain in the areas of Microsystems, Sensor Systems, Intelligent Wireless Systems, Power Electronics and Embedded Systems. Research is conducted at both model and hardware level (components, assemblies and devices with micro- and nanoelectronics) as well as the associated embedded software level, combined with the holistic knowledge of comprehensive system integration. In contract and in-house research, as well as in cooperative projects, work is carried out on topics such as Industry 4.0, Internet of Things (IoT), autonomous driving, cyber-physical systems, AI, Smart City, Smart Energy or Smart Health.

Key figures for 2023 and 2024

	2023	2024
Total income in € 1,000	51,944	62,025

Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	236	87	323	265	85	350
Full time equivalents (rounded)	217	79	296	250	76	326

Source: SAL.

3.4.2 Development of indicators

Indicator 1: Funding, including third-party funding

	2023 in € 1,000	2024 provisional in € 1,000	Target value 2026 in %*
Total income	51,944	62,025	
of which payments by shareholders	35,975	37,789	
of which third-party funding	15,969	24,236	
of which non-EU countries and global organisations	457	880	
of which public	0	0	
of which private	457	880	
of which EU and European countries or organisations	5,363	9,803	
of which public	2,859	4,898	

	2023 in € 1,000	2024 provisional in € 1,000	Target value 2026 in %*
of which private	2,504	4,905	
of which national and regional organisations	10,149	13,553	
of which public	1,919	2,939	
of which private	8,230	10,614	
Funding mix: ratio of public funds to third-party funds	69.3 : 30.7	61.9 : 39.1	54.0 : 46.0

* Due to fluctuations in the disbursement of third-party funds between the individual years, average values over three years are given here.

Source: SAL.

Indicator 2: Evaluation systems

Evaluations of the thematic and strategic orientation

The strategic direction of the company was regularly assessed by the FFG until 2023. This monitoring was terminated with the 2024–2026 performance agreement and an evaluation panel with international experts from industry and science was set up instead. This panel will evaluate SAL every three years, starting from 2025. The research programme and strategy are regularly discussed with the Scientific Board, which then forwards its recommendations to the SAL Supervisory Board.

Indicator 3: Human capital and qualification

Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	236	87	323	265	85	350
of which at management level	22	4	26	25	6	31
Full time equivalents (rounded)	217	79	296	250	76	326
of which at management level	21	4	25	24	6	30

Source: SAL.

Number of PhD students	2023	2024	Target value 2026
Number of theses completed	4	7	
Employees (= headcount)	57	62	50
of which employed at SAL	39	48	
of which in structured education (doctoral schools or similar)	18	14	

Source: SAL.

Early career researchers*	2023	2024	Target value 2026
Employees (= headcount)	116	143	196
Share of (scientific) employees	50 %	54 %	58 %

* The report's definition of early career researchers is based on the European Commission's document "Towards a European Framework for Research Careers" (https://era.gv.at/object/document/1509). It proposes a four-stage model: R1 — First stage Researcher (up to the point of PhD); R2 — Recognized Researchers (PhD holders or equivalent who are not fully independent); R3 — Established Researchers (researchers who have developed a level of independence); R4 — Leading Researchers (researchers leading their research area or field). In accordance with this model, the career levels R1 and R2 refer to early career researchers. Source: SAL.

The following staff development measures were implemented in 2023 and 2024:

The various stages of the Employee Life Cycle were further developed, and HR processes were optimised in order to adapt them to the needs of the organisation. The health of employees is influenced by the conditions and stresses of their working environment. With this in mind, SAL has implemented various measures as part of the workplace health promotion project, such as training to improve mental health.

In 2023, SAL was recertified with the "Work and Family" certificate, which is valid until 2026. Over the next three years, SAL will implement ten defined measures approved by the "Work and Family" committee to improve working conditions for employees.

Indicator 4: Output, innovation and excellence

Scientific publications	2023	2024	Target value 2026
Monographs and editions	1	0	0
Peer reviewed publications*	183	174	200

* Includes peer reviewed journals + peer reviewed conference contributions. Source: SAL.

No projects were acquired in the ERC programmes or in the FWF programmes COE, EF, Start and Wittgenstein Prize in the 2023–2024 reporting period.

Investments in research infrastructure 2023 and 2024

Three important core facilities 2023 and 2024*		
Designation	**Research focus**	**Weblink to the research infrastructure database***
Cleanroom 2 with 1,100 m² for EBS prototype series	Micro-nanoelectronics for all areas of SAL for the production of corresponding hardware	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/cleanroom-ii_5649
Industrial 5G/6G radio systems for sensing and communication with reconfigurable radio channels for real-time communication.	Intelligent wireless systems	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/5g-test-bed_5517

Three important core facilities 2023 and 2024*		
Designation	**Research focus**	**Weblink to the research infrastructure database***
Validation Lab	Test & validation infrastructure can be used for all areas of the SAL EBS value chain	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/validation-lab_5648

* https://forschungsinfrastruktur.bmfwf.gv.at/en/institution/silicon-austria-labs-gmbh-sal_87; For an overview, see also the SAL website: https://silicon-austria-labs.com/en/research/equipment. An explanation of investments and acquisition costs for research infrastructures can be found in the definitions. Source: SAL.

As part of the new 2024–2026 performance agreement, the capacity utilisation of the new cleanroom was also defined as a separate KPI. Due to delivery delays, the construction of the new cleanroom 2 in Villach is only just beginning and consequently the utilisation rate of cleanroom 2 in Villach is only 6.2 %. The aim is to significantly increase the utilisation rate over the next few years.

Indicator 5: Internationalisation

	2023	2024
Share of international co-publications in all publications	51 %	48 %
Number of newly approved participations in Horizon Europe programmes and initiatives	10	8
Total funding approved in € 1,000*	6,026	5,534

* Only EU funds are shown, no own contributions or national co-financing are included. The year of contract conclusion applies. In addition to the Horizon Europe projects listed in the table, the ERC project CITRES was transferred to SAL in 2023 with a funding contract totalling €76,000. Source: SAL, FFG EU-Performance Monitor.

Indicator 6: Knowledge and technology transfer

Publications	**2023**	**2024**
Share of co-publications with industry or practice partners in all publications	15 %	17 %

Source: SAL.

Patents & commercialisation activities	**2023**	**2024**	**Target value 2026**
Patent applications	8	9	15
of which national	0	0	
of which EU/EPC	7	7	
of which non-EU countries	0	2	
of which international (PCT)	1	0	
Issued patents	2	0	
of which national	0	0	
of which EU/EPC	0	0	

Patents & commercialisation activities	2023	2024	Target value 2026
of which non-EU countries	2	0	
Exploitation spin-offs	0	0	

All patents registered or granted in the reporting period and all new investments made within the reporting period.
Source: SAL.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

SAL's main communication channels are the SAL website (including information on research activities, opportunities for collaboration, news and downloads), the SAL LinkedIn account (with over 17,000 followers as of 31 December 2024) and the monthly SAL Science & Stories newsletter with over 500 subscribers. SAL's research findings are also communicated to the public via press releases and media collaborations (e.g. *Der Standard*, APA-Science). The SAL Instagram account, which aims to draw the attention of young people in particular to SAL topics, now has over 300 followers. On YouTube, the SAL channel has achieved almost 10,000 views, with a playback time of around 180 hours and has gained around 100 new subscribers.

SAL participates in various programmes for pupils, e.g. the "*Berufsspionage*" organised by B*erufs- und Bildungsorientierung Kärnten* (BBO Carinthia), where young people are introduced to technical professions. Pupils can also complete individual taster days at SAL and accompany the researchers. During the Long Night of Research, SAL presented a wide variety of research areas at three stations.

Indicator 8: Gender and promotion of equality

Proportion of women in management positions by management level	2023	2024	Target value 2026
Management (CEO/CTO/CFO)	1	1	2
All management levels	15.38	19.35	23
Glass Ceiling Index on the basis of management levels*	1.75	1,25	1.1
Proportion of female students			
PhD students	16.4%	21%	16%

* Calculated as the proportion of women in all employees/proportion of women in management positions. The explanation of the Glass Ceiling Index can be found in the definitions. Source: SAL.

The following table shows the number of women and men at the various management levels in 2024.

Proportion of women and men in management positions by management level	Level 1	Level 2	Level 3	Complete management
Women	1	1	4	6
Men	2	5	18	25
Total	3	6	22	31

Management positions are defined as: Management level 1 — CEO and CTO, management level 2 — Division Heads, management level 3 — Unit Heads and Enterprise Heads. Source: SAL.

The following activities to promote equality were implemented in 2023 and 2024

SAL recognises that diversity enhances creativity, innovation and overall performance and is therefore committed to creating an environment in which all people have equal opportunities to flourish. To promote an inclusive and diverse work environment, SAL is committed to conducting measurements to assess and promote gender equality within its organisational framework.

The following measures and priorities were set:

- Ongoing (internal) monitoring of the gender-specific composition of the workforce and salary structure, including reviewing the distribution of training, mentoring and management development opportunities
- Flexible working arrangements (including part-time all-in for people returning to work)
- Redefinition of the term "family" as part of the "Work & Family" re-audit

This commitment to diversity and inclusion is in line with SAL's mission to be a leader in research and development and to promote a family-friendly culture.

3.4.3 Special events in 2024 and outlook

Outstanding research successes in 2024 included the Best Paper Award for Alexander Kemptner at the IEEE World Forum on IoT in Canada, the Research and Innovation Prize of the State of Carinthia for the SOLES project, a nomination at the Energy Globe Awards for the DIGINEURON project and the Carinthiacus International for junior researcher Nastaran Behravan. SAL also organised the Chip2Sys Symposium in Villach, the Interact Cost Meeting in Linz, three SAL roadshows and took part in the Long Night of Research in Klagenfurt, Graz and Linz. Over 1,000 young international researchers applied for the funded SAL doctoral programme CRYSTALLINE. In 2025, SAL will once again take part in major international conferences, including Photonics West. Furthermore, SAL will organise the Power Electronics Symposium in Graz together with AIT and co-host the IEEE International Symposium on Applications of Ferroelectrics. To address the young population, SAL is planning workshops for schools, e.g. in co-operation with BBO Carinthia. These initiatives aim to inspire and encourage the next generation of researchers.

Further information can be found in the SAL annual report.[298]

298 https://silicon-austria-labs.com/presse-downloads

3.5 Ludwig Boltzmann Gesellschaft — Austrian Association for the Promotion of Scientific Research (LBG)

3.5.1 Profile and key data

Profile of the organisation

The Ludwig Boltzmann Gesellschaft (LBG) is dedicated to excellent, application-orientated research in Austria. It is a networker and trailblazer for cutting-edge international research in medicine, health, life and social sciences. Together with their partner organisations, the 14 Ludwig Boltzmann Institutes (LBI) are innovative scientific game changers. A central priority of the LBG is to connect science and society. Through close partnerships with universities, companies, other research organisations and civil society, the LBG strives to conduct research that has a direct impact on people's quality of life. A new call for proposals was launched in 2024 to further develop the LBG, and three temporary research units were terminated as planned. Through the Clinical Research Groups (KFG) funding programme, the LBG finances Austria's first funding programme in the field of non-commercial disease- and patient-oriented (translational), consortium-based clinical research.[299] This enables pioneering innovations to be driven forward in academic clinical research, ultimately strengthening Austria as a centre of medicine.

Key figures for 2023 and 2024

	2023	2024
Total income in € 1,000	37,002	38,370

Number of employees at LBG	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	250	317	567	223	292	515
Full time equivalents (rounded)	127	196	323	111	173	284

Source: LBG.

3.5.2 Development of indicators

Indicator 1: Funding, including third-party funding

	2023 in € 1,000	2024 provisional in € 1,000	Target value 2024–2026 in %
Total income	37,002	38,370	
of which global budget	11,956	13,555	

299 https://lbg.ac.at/kfg/

	2023 in € 1,000	2024 provisional in € 1,000	Target value 2024–2026 in %
of which federal funds in accordance with the performance agreement	9,956	11,861	
of which other income	2,000	1,694	
of which third-party funding	25,046	24,815	
of which partner contributions	5,629	6,129	
of which non-EU countries and global organisations	91	12	
of which EU and European countries or organisations	3,551	5,553	
of which national and regional organisations	15,775	13,121	
of which public	13,991	10,514	
of which NFTE, Ö-Fonds and FZÖ	9,401	4,192	
of which private	1,784	2,607	
Third-party funding ratio in %	68 %	65 %	65 %

Source: LBG

Indicator 2: Evaluation systems

The LBI's research activities are evaluated every three to six years as part of an international peer review process. Independent external committees with specialised scientific and quality assurance expertise are formed for this purpose. They evaluate the institutes on the basis of a multi-level scale. The evaluation results form the basis for the LBG management's decision to continue operating the institutes. The next evaluations of seven LBIs will take place in 2025 and 2026.

For ongoing accompanying quality assurance, each research unit has a scientific advisory board made up of international experts, supplemented by "Experts by Experience". In 2024, there were 15 advisory boards with 55 members.

Two external international selection juries were established in 2024 for the selection of clinical research groups and for the establishment of new LBIs, based on multiple independent expert reviews conducted through a peer review process.

Indicator 3: Human capital and qualification

Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	250	317	567	223	292	515
of which at management level (institute management, research group management, centre management, department management, executive management)	24	19	43	17	15	32
FTE	127	196	323	111	173	284
of which at management level	16	15	31	12	12	24

Source: LBG.

Number of PhD students	2023	2024	Target value 2026
Number of completed dissertations	20	12	20
Employees (= headcount)	133	103	110
of which financed by LBG	104	89	
of which in structured education (doctoral schools or similar)	124	86	

Source: LBG.

The following staff development measures were implemented in 2023 and 2024:

The Career Centre offers increased cross-sector career development for early career researchers. In cooperation with the University of Vienna, this will be available to all Austrian universities from 2025. The programme offers a wide range of individual advisory processes, courses, events and workshops on key topics such as career orientation, peer learning, digital skills, soft skills, mental health and leadership. EURAXESS funding also focused on "Careers beyond academia" beyond Austria's borders. The aim is to strengthen the research community and improve the permeability of research careers.

Indicator 4: Output, innovation and excellence

Scientific publications	2023	2024
Monographs and editions	18	13
Articles/contributions in scientific journals, edited volumes and proceedings	561	476

Source: LBG.

With a total endowment of €24 million, the first three clinical research groups, which were selected from 44 applications in a two-stage selection process, began their work in October 2023: The Austrian Digital Heart Programme at the Medical University of Innsbruck is developing innovative smartphone solutions for the early detection of atrial fibrillation. The KFG MOTION at the Medical University of Vienna is dedicated to the precise diagnosis and optimal treatment of portal hypertension. Also based at the Medical University of Vienna is KFG ATTRACT, which focuses on the neuroscientific development of personalised therapies for the treatment of glioblastomas. In May 2024, the Ludwig Boltzmann Gesellschaft also organised a stakeholder conference attended by around 160 experts from the clinical research landscape. The second round of the programme has been running since summer 2024, with 36 applicants applying for three grants of around €8 million each. The outcome of this selection process will be announced in summer 2025.

Indicator 5: Internationalisation

	2023	2024
Share of international co-publications in all publications	44.7 %	55.4 %
Number of newly approved participations in Horizon Europe programmes and initiatives*	3	2
Total amount of EU funding approved in € 1,000**	1,943	515

* Only those projects that are shown in the FFG EU Performance Monitor are included. ** Only EU funds are shown, no own contributions or national co-financing are included. The year of contract conclusion applies.

Source: LBG, FFG EU Performance Monitor.

Indicator 6: Knowledge and technology transfer

	2023	2024
Share of co-publications with industry or practice partners in all publications	9.8 %	27.0 %

Patents & commercialisation activities	2023	2024
Patent applications	0	3
of which national	0	1
of which EU/EPC	0	2
of which non-EU countries	0	0
Issued patents	0	0

All patents that were newly registered or granted in the reporting period. Source: LBG.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

LBG and its LBI organised numerous public events, including training courses, webinars, symposia and conferences. Among the most prominent were:

- The International Forum on Clinical Research as a networking platform for cutting-edge research in clinical research
- The Human Rights Talk on EU asylum and migration policy
- The AI Health Vienna Conference, co-organised by LBI Digital Health and Patient Safety, on artificial intelligence in healthcare
- The presentation of the LExA Leadership Excellence Award
- Four LBIs were represented at the Long Night of Research 2024.

The LBG Open Innovation in Science Centre (OIS) promotes the involvement of civil society in research and has carried out the following projects, among others:

- At the "*OIS zam Forum*" in co-operation with the Mozarteum University Salzburg, 43 Austrian integration projects were presented and the "*OIS zam: Prize*" was awarded.
- The "Cancer Mission Lab" launched a multi-stage participation process with an "Ideas Lab" in which experts from the life sciences, patient representatives and civil society stakeholders took part, accompanied by mentors and OIS Centre team members.

Indicator 8: Gender and promotion of equality

Proportion of women in management positions by management level in %	2023	2024	Target value 2026
All management levels	44.2 %	46.9 %	
Management	100 %	100 %	
Institute management and research group management	31.3 %	31.8 %	
Centre management and department management	77.8 %	75 %	
Glass Ceiling Index*	1.27	1.21	1.4

* Calculated as the percentage of women in all employees/percentage of women in management positions. Management positions are defined as: Management, institute management and research group management (2024 without deputies due to the introduction of the new salary scheme), centre management and department management. An explanation of the Glass Ceiling Index can be found in the definitions. Source: LBG

The following activities to promote equality were implemented in 2023 and 2024

Gender equality monitoring, which began in 2023, continued in 2024 and its electronic mapping in the management information system was largely completed. Updating the equality plan led to specific measures in the area of recruitment, such as the LBG-wide collection of recruitment data and the development of a diversity-sensitive recruitment guide, amongst others.

3.5.3 Special events in 2024 and outlook

In 2024, the LBI for Network Medicine at the University of Vienna and the LBI for Nanovesicular Precision Medicine at the University of Salzburg were founded, followed by the launch of the LBI for Pandemic Preparedness at the Medical University of Vienna in mid-2025. These foundations will enable the LBG to provide new impetus and conduct research into future topics in Austria with critical mass. The call for proposals for a new LBI and three new clinical research groups was launched in 2024. Following international evaluation, including a jury meeting and hearing, these research units will be established by 1 January 2026 at the latest.

A total of more than 500 employees in 14 LBIs conduct research on various topics in medicine, health, life and social sciences.

Further information can be found in the LBG Annual Report.[300]

300 https://lbg.ac.at/download/?lang=en

3.6 GeoSphere Austria (GSA)

3.6.1 Profile and key data

Profile of the organisation

GeoSphere Austria is the Federal Institute for Geology, Geophysics, Climatology and Meteorology and as such is the central competence centre for data, information and knowledge about the Earth system (geosphere). As a research organisation committed to scientific integrity and as a federal institute anchored in law, with its more than 500 experts it pursues an approach that is almost unique in Europe and gives it its name: the holistic consideration and research of the Earth system including its subsystems (atmosphere, lithosphere, hydrosphere, cryosphere and pedosphere) and their interactions. Its range of activities includes analysing and assessing

- weather conditions,
- the climate and its changes,
- the geological subsurface as a basis for targeted 4D spatial planning,
- the availability of groundwater resources,
- the occurrence and dynamics of natural hazards and how they are influenced by climate change,
- the potential for alternative forms of energy (solar energy, geothermal energy), and
- nationally available raw materials to support the environmentally friendly production of products relevant to climate change.

With its services, GeoSphere Austria contributes to solving global challenges and increasing national resilience.

Key figures for 2023 and 2024

Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	327	187	514	328	182	510
Full time equivalents (rounded)	307	160	467	304	152	456

Source: GeoSphere Austria.

3.6.2 Development of indicators

Indicator 1: Funding, including third-party funding

GeoSphere Austria received a budget of €47,289,500 from the performance agreement in 2024.

Indicator 2: Evaluation systems

Evaluations of the thematic and strategic orientation

A large number of processes and committees have been established at GeoSphere Austria with the aim of continuous validation and improvement. In accordance with the GeoSphere Austria Establishment Act, the members of the Directorate General and the Board of Trustees are responsible for the organisational, strategic and financial management of GeoSphere Austria. The Scientific Advisory Board was appointed as an additional body with experts from science and research as well as European weather, climate, geological and geophysical services. The strategy process was successfully completed in 2024. This process was supported by an external agency.

The implementation of the performance agreement is evaluated in the course of accompanying discussions with the BMFWF. A portfolio team evaluates and approves externally funded activities. In the area of raw materials research, projects are evaluated by an external evaluation board (Mineral Resources Initiative).

Top risks for GeoSphere Austria were identified for the first time in 2022.

GeoSphere Austria has an integrated quality and information security system and is ISO 9001 and 27001 certified in this context.

Indicator 3: Human capital and qualification

GeoSphere Austria — Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	327	187	514	328	182	510
of which at management level	54	19	73	53	20	73
Full time equivalents (rounded)	307	160	467	304	152	456
of which at management level*	54	18	72	53	19	72

* Management positions are defined as: General management, divisional management, department management and competence unit management

Source: GeoSphere Austria.

PhD students and theses	2023	2024
Number of completed dissertations	1	2
Doctoral candidates (PhD students, heads)	18	17
of which financed by GeoSphere Austria	18	17

Source: GeoSphere Austria.

The following staff development measures were implemented in 2023 and 2024:

GeoSphere Austria's success is based on the expertise of its employees. As an expert organisation, GeoSphere Austria therefore strives to recruit the best possible employees, to anchor existing employees in the organisation in the best possible way based on their qualifications and to provide them with continuous further training. GeoSphere Austria is also committed to providing an attractive working environment, both in terms of content and familiarity. In this context, offers such as working from home, paternity leave and measures for consistent gender equality are implemented. GeoSphere Austria was certified as a family-friendly company in 2024. The strategic realignment and digitalisation of personnel development were initiated. The aim is to enable targeted and individualised support for employees. The focus is on the transparency of the measures and securing long-term commitment.

Indicator 4: Output, innovation and excellence

Number of scientific publications	2023	2024
Monographs and editions	1	3
Articles/contributions in scientific journals, edited volumes and proceedings	65*	89

* This figure is probably too low: due to the merger, many authors have named their department in the affiliation instead of just GeoSphere Austria; as a result, the number of publications could be even higher.

Source: GeoSphere Austria.

There were no approvals in the FWF START and Wittgenstein programmes in the 2023–2024 reporting period. In 2022, a scientific project manager at GeoSphere Austria received an ERC Consolidator Grant with an approval amount of €1,999 thousand to further expand research into the practicable prediction of solar storms. In 2024, GeoSphere Austria received the State Prize for Technology 2024 in the AI for Green category.

Investments in research infrastructure 2023 and 2024

Important core facilities* 2023 and 2024		
Designation	**Research focus**	**Weblink to the research infrastructure database**
Inclinometer	Inclinometer for the permanent observation of landslides: This device is installed in a borehole and is used for the permanent observation of slope movements with high precession in the 1/10-millimetre range. It expands the geomonitoring network of GeoSphere Austria with an additional station. The long-term monitoring of gravitational mass movements is essential in order to be able to identify any changes in the dynamics caused by climate change. It also permits better understanding of the underground processes that lead to the triggering of landslides.	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/_6111

Important core facilities* 2023 and 2024		
Designation	**Research focus**	**Weblink to the research infrastructure database**
HPC-Cray XD2000	GeoSphere Austria operates a high-performance computing cluster (HPC) for short-term weather and air chemistry forecasts as well as for dispersion calculations in the context of state crisis and disaster management (extreme weather events, industry accidents, etc.) at the Hohe Warte site in 1190 Vienna. The HPC is also used for relevant research projects for climate and environmental simulations by GeoSphere Austria. With 100 nodes and 19,200 CPU cores, the system has a theoretical computing power of around 860 TFLOPS. In order to meet the requirements of uninterrupted provision of weather and climate forecasts, the HPC system must be operated with high availability in 24/7 mode. The BMBWF (now BMFWF) has provided €2.5 million for the procurement of the system.	https://forschungsinfrastruktur.bmfwf.gv.at/en/fi/hpc-cluster-hpe-cray-xd2000_6105

* An explanation of investments and acquisition costs for research infrastructures can be found in the definitions.

Source: GeoSphere Austria.

GeoSphere Austria is legally obliged to ensure the operation of this research infrastructure, to keep it technologically and digitally up to date and to develop it further. In order to ensure the demand and attractiveness of the research infrastructures in the international research community, future collaborations and activities in current and potential research fields and research programmes are to be intensified.

Indicator 5: Internationalisation

GeoSphere Austria	2023	2024
Share of international co-publications in all publications in the reporting year	58 %	60 %
Number of newly approved participations in Horizon Europe programmes and initiatives	4	3
Total amount of EU funding approved in € 1,000*	870	1,607

* Only EU funds are shown, no own contributions or national co-financing are included. The year of contract conclusion applies.

Source: GeoSphere Austria, FFG EU-Performance Monitor.

In addition to the publication and project activities listed above, GeoSphere Austria makes a significant contribution to the internationalisation of research findings and the positioning of Austria as an international science and business location by participating in European and international networks and committees, operating internationally recognised and used observatories and measurement infrastructures and providing high-quality reference data in the fields of weather, climate, geology, geophysics and the environment. GeoSphere Austria is Austria's main international representative at the WMO, ECMWF, EUMETNET, EUMETSAT, GCOS, GEO, EGS, UNDRR and the CTBTO, among others. The main networks and programmes to which GeoSphere Austria contributes data include GSEU, EGDI, OneGeology, CGMW, GCOS, GAW, EPOS, ACTRIS, WDC and Intermagnet.

In addition, GeoSphere Austria pursues consulting activities in selected countries via international funding mechanisms such as the Systematic Observation Financing Facility (SOFF) of the World Meteorological Organisation (WMO). GeoSphere Austria is currently advising nine national weather services in Africa, America and Asia in order to establish sustainable weather observation in these countries.

Indicator 6: Knowledge and technology transfer

No patents were applied for or granted or exploitation spin-offs founded in the current reporting year.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

GeoSphere Austria engages in active press and media work: 55 press releases were sent out in 2024. In addition, experts regularly share their knowledge in interviews and in television and radio appearances. GeoSphere Austria was mentioned in around 14,000 media reports in 2024. The social media content was viewed around 9.9 million times in 2024. The website launched in 2024 offers customised information for citizens. Knowledge parks are operated and regular public events are organised to impart knowledge. In 2024, GeoSphere Austria was involved in the Long Night of Research at several locations. The in-house publishing house provides both experts and interested parties with high-quality publishing products. Special events such as the Avalanche Conference or the ASDR Natural Hazards Conference are aimed at decision-makers and enable the development of a community of practice. Citizen science offerings such as *wettermelden.at*, the nature calendar app or Quake Watch Austria allow citizens to participate in research and directly influence the work of GeoSphere Austria.

Indicator 8: Gender and promotion of equality

The proportion of women in management positions increased from 26 % in 2023 to 27.4 % in 2024. The Glass Ceiling Index has fallen from 1.4 (2023) to 1.3.

Proportion of women in management positions by management level	2023	2024
Management	50 %	50 %
All management levels*	26 %	27.4 %
Glass Ceiling Index **	1.4	1.3

* Management positions are defined as: general management, divisional management, department management and competence unit management ** Calculated as the proportion of women in all employees/proportion of women in management positions. The explanation of the Glass Ceiling Index can be found in the definitions.

Source: GeoSphere Austria.

The following activities to promote equality were implemented in 2023 and 2024:

In 2024, activities relating to gender and the promotion of equality focused primarily on creating structures that enable the active promotion of equality for women. This included the nomination

of an Equal Opportunities Officer and her deputy, the establishment of the "Equal Opportunities Issues" working group and the development and publication of the "Women's Promotion and Gender Equality Plan 2024–2029". In addition to an analysis of the gender equality situation, this also contains a catalogue of various measures to promote gender equality.

Another focus was on information work. Numerous mailings were sent to employees on various topics (e.g. International Women's Day, Pride Month, unpaid care work), information was made available on the intranet and the first internal gender awareness training was held in the new format. GeoSphere Austria also organised two interactive workshops on the topics of "Glaciers in climate change" and "Volcanoes — from a geophysics perspective" as part of Girls' Day on 25 April 2024.

In December 2024, GeoSphere Austria was awarded the state quality mark as a family-friendly employer.

3.6.3 Special events in 2024 and outlook

GeoSphere Austria recorded several significant developments and events in 2024. After a year and a half of construction, the new building of the Salzburg and Upper Austria regional office was opened in September 2024. AMAS — the Austrian Multi-Hazard Impact-Based Advice Service — went into operation in Salzburg and Styria. An AMAS pilot phase was initiated at federal level. The weather forecast and crisis management are supported by the new high-performance computer from GeoSphere Austria. The need for accurate forecasts of extreme situations was demonstrated in September 2024 in the wake of extreme precipitation and flooding in parts of Austria. The forecasts and warnings provided by GeoSphere Austria provided an essential basis for decision-making for the task forces and emergency services on site, both in terms of preparation and management. In cooperation with World Weather Attribution, GeoSphere Austria was also able to show that man-made global warming is leading to an increase in large-scale heavy rainfall in Central Europe.

In the context of services of general interest, the Austrian Seismological Service celebrated its 120th anniversary in 2024. In the fields of renewable energies and resource security, the Geothermal Atlas for Vienna was presented in 2024, the exploration initiative (funded by the BMF) was launched and key databases were integrated into the GeoSphere Maps Service. As a high-light, GeoSphere Austria 2024 received the State Prize for Technology (AI for Green category) for the use of artificial intelligence for weather and electricity production forecasts, climate change forecasts and impact assessments.

Further information and the latest annual report can be found on the GeoSphere Austria website.[301]

301 www.geosphere.at. Older annual reports of the two predecessor organisations can be found at https://www.zamg.ac.at/cms/de/topmenu/ueber-uns/jahresberichte; https://www.geosphere.at/en/about-us/downloads

3.7 Austria Wirtschaftsservice Gesellschaft mit beschränkter Haftung (aws)

3.7.1 Profile and key figures

Profile of the organisation

As a contact point for growth- and innovation-orientated companies, aws supports companies through guarantees, loans, grants, equity investments and coaching services, both for established enterprises and, in particular, for the development of start-ups. Beyond its ongoing core programmes, aws has assumed responsibility for several special economic stabilisation programmes in response to COVID-19 or the war in Ukraine from 2020 onwards. These include, for example, bridging guarantees, the investment premium and the energy cost subsidy. While new applications for these can no longer be accepted, existing submissions continue to be processed and settled.

In light of the ongoing economic downturn and subdued willingness to invest in the business enterprise sector, some areas of aws' core business saw a decline in 2024. Total financing volume dropped from €3.2 billion to €893 million, primarily due to phasing out of the special programmes. Nevertheless, aws continues to make its mark with initiatives such as Building(s) Tomorrow, Sustainable Food Systems and TWIN Transition. At the same time, aws remains a reliable pillar of the start-up funding system by combining established and new programmes such as Start-up Fund (*Gründungsfonds*), Seedfinancing, and (Green) Frontrunner.

Key figures for 2023 and 2024

Unless otherwise stated, the information provided on key figures and indicators refers to aws' entire funding and financing portfolio.

aws total	**2023**	**2024**
Number of projects	48,830	9,790
Financing performance in € 1,000*	3,229,000	893,000
Present value in € 1,000	2,490,000	443,000
aws core business (without special programmes COVID-19/Ukraine war)	**2023**	**2024**
Number of projects	6,750	9,180
Financing performance in € 1,000*	917,000	880,000
Present value in € 1,000	178,000	430,000
Special programmes COVID-19**	**2023**	**2024**
Number of projects	1,330	90
Financing performance in € 1,000	66,000	4,000

Special programmes Ukraine war***	2023	2024
Number of projects	40,750	520
Financing performance in € 1,000	2,246,000	9,000

Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	175	229	404	170	214	384
Full time equivalents (rounded)	163	201	364	161	190	351

* The financing service is calculated as the guarantee obligation assumed, the volume of the loan granted, the amount of the subsidy granted, the amount of equity provided or as a coaching service. ** These include Investment Premium, NPO fund, comeback grant for film and TV productions. The decrease reflects the planned expiry of some COVID special programmes. *** These include: *Energiekostenzuschuss I + II, Gasdiversifizierung, Stromkosten Ausgleich, Überbrückungsgarantien für Energiekosten, Energiekostenzuschuss NPO* (energy cost subsidy I + II, gas diversification, electricity cost equalisation, bridging guarantees for energy costs, energy cost subsidy NPO). Source: aws.

3.7.2 Development of indicators

Indicator 1: Funding, including third-party funding

Source of funds aws total (public funds and third-party funding, excluding contributions from companies)	Financing service	
	2023 in € 1,000	2024 in € 1,000
ERP Fund	499,000	249,000
Owner resorts	2,538,000	480,000
BMK	215,000	80,000
BMAW	2,323,000	400,000
BMLRT	15,000	19,000
BMSGPK	9,000	11,000
BMKÖS	20,000	5,000
NFTE (from FZÖ)	12,000	12,000
EU	18,000	8,000
Other*	118,000	109,000
Total	3,229,000	893,000

* Entirely funded by the BMF (Guarantee Act). Source: aws.

Indicator 2: Evaluation systems

Evaluations are an essential part of the planning and implementation of aws funding programmes. Evaluation plans are already developed during the preparation of programme documents and guidelines. Typically, interim evaluations, or at least final evaluations, are carried out before or shortly after the end of a programme. These are usually conducted by external evaluation teams. In addition, internal evaluations are also planned in the multi-annual programmes. A systematic and

representative survey of monetary funding is carried out every three years (aws Impact Monitoring); internal evaluations are carried out on selected topics, issues and programmes.

Since 2013, aws has also carried out a systematic electronic customer survey. A few weeks after a funding decision (approval or rejection), customers are invited to provide feedback. Semi-annual analyses provide insights into the quality funding services in terms of information, advice and processes. The standardised questions are supplemented by written comments on experiences made during the funding process and provide valuable information on potential for improvement.

Indicator 3: Human capital and qualification

	Heads									
	Total		Female				Male			
	2023	2024	2023		2024		2023		2024	
	Number	Number	Number	%	Number	%	Number	%	Number	%
Processing and administration	122	82	85	70%	63	77%	38	31%	19	23%
Experts	251	272	131	52%	140	51%	119	47%	132	49%
Team management and business unit management	27	25	11	41%	10	40%	16	59%	15	60%
Management*	4	5	2	50%	1	20%	2	50%	4	80%
Total	404	384	229	57%	214	56%	175	43%	170	44%

Note: Data include aws, ERP fund, aws fund management. * of which 2 are aws management (in personal union with ERP fund management). Source: aws.

	FTE (rounded)									
	Total		Female				Male			
	2023	2024	2023		2024		2023		2024	
	Number	Number	Number	%	Number	%	Number	%	Number	%
Processing and administration	106	72	73	69%	55	76%	32	31%	17	24%
Experts	227	249	115	51%	124	50%	113	49%	126	50%
Team management and business unit management	27	25	11	40%	10	40%	16	60%	15	60%
Management*	4	5	2	50%	1	20%	2	50%	4	80%
Total	364	351	201	55%	190	54%	163	45%	161	46%

Note: Data includes aws, ERP fund, aws fund management. * of which 2 are aws management (in personal union with ERP fund management). Source: aws.

The following staff development measures were implemented in 2023 and 2024

Training and continuing education are of great importance in a service and support-oriented organisation such as aws. The internal training programme offers suitable development opportunities for all target groups. In addition to specialist topics, there is also a focus on personal development

content. In 2024, particular emphasis was placed on the area of artificial intelligence, including AI Open Info Days. In addition, numerous specialist training courses were also held in the area of operational funding management (overview of funding programmes, funding guidelines, customer advisory services, funding processes and the AIS funding application).

Indicator 4: Output, innovation and excellence

Projects and investments*	2023		2024		Target value 2026
	Number	%	Number	%	Number
Funded projects	6,750		9,178		
Supported companies	4,410		5,470		
of which SMEs	4,260	97%	5,390	98.5%	
of which start-ups	1,970	44%	2,220	40.6%	
of which young, innovative SMEs**	169	4.0%	110	2.0%	>87
of which equity investments***	81	1.8%	78	1.4%	

* Excluding special COVID-19 and Ukraine war programmes. ** Commitments to young, innovative SMEs in the programmes: Preseed I Seedfinancing — Innovative Solutions, Seedfinancing I Preseed — Deep Tech, GIN, Green.IP. *** Investments include: *Gründerfonds*, *Gründungsfonds II*, Business Angels Fonds, Venture-Capital Initiative and wings4innovation. Source: aws.

Time to contract and consultations	2023	2024	Target value 2026
aws core business (without special programmes COVID- 19/ Ukraine war)	29	12	
Business segment/area IP Management |Deep Technologies| Entrepreneurship	23	20	
Number of consultations for (potential) funding applicants*	~ 9,900	~ 7,300	

Patents and licences	2023	2024	Target value 2026
Support with IP consulting and financing	499	421	
of which projects with innovation protection advice*	n.a.	145	≥177
Property right applications **			≥63

* Refers to projects that were funded from FinV 2024–2026. ** Outcome-related indicator that is not available for a reporting year in the following year. Source: aws.

Indicator 5: Internationalisation

Programmes with a special focus on internationalisation	Approvals	
	Present value 2023 in € 1,000	Present value 2024 bin € 1,000
Global Incubator Network	672	413
(Green)-Frontrunner	7,757	5,985
Guarantees Internationalisation*	7,150	8,334

* Information on funding performance (= guarantee obligation). Source: aws.

Indicator 6: Knowledge and technology transfer

Funding programmes and awards in the field of knowledge and technology transfer	Projects	
	2023	2024
Stimulus programme for Austrian knowledge and technology transfer*	27	0
Jugend Innovativ **	590	571
aws First	35	26
Phönix Gründerpreis **	181	197
I2 Business Angels	823	809
Industry-Startup.net	229	268
KI-Marktplatz ***	302	365
Wings4innovation	9	2
AplusB****	87	83

* Decrease due to the expiry of the programme (remaining funds). ** Jugend Innovativ and Phönix Gründerpreis are competitions with bonus payments. *** *KI-Marktplatz* is a platform for artificial intelligence (AI) that supports networking activities. Services are offered, but no monetary funding is promised. **** Funding recipients are the incubators, here = number of start-up projects accepted by the incubators. Source: aws.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

Since 1987, aws has been promoting innovative school projects in Austria with *Jugend Innovativ*. Pupils and apprentices aged between 15 and 20 present creative ideas in categories such as Design, Engineering, Science, Entrepreneurship, Sustainability or ICT & Digital as well as the Special Award Vorarlberg. Attractive cash prizes and international participation opportunities are intended to motivate broad participation across Austria.

The *MINT Regionen Service Hub* of the aws supports regional networks that promote science, technology, engineering and mathematics (STEM). The aim is to make STEM opportunities accessible throughout the entire educational pathway and create synergies between different stakeholders.

The Service Hub acts as an advisory and support centre for existing and emerging STEM regions, awards them with a quality label and presents them on an Austria-wide portal.

Indicator 8: Gender and promotion of equality

aws core business*	2023		2024		Target value 2026
	Number	%	Number	%	Share
Women in funded projects	1,936	29%	2,712	30%	
Women project managers	1,701	31%	2,530	31%	
Projects with women in the management team**	235	20%	183	20%	≥20%
Women on committees and juries					
aws Supervisory Board***	9	60%	9	60%	
ERP (on average)***	2	26%	2	26%	
Assessment bodies (on average) ****	11	51%	8	45%	≥ 50%

** Excluding special programmes COVID-19 and Ukraine war. ** Target value for the proportion of women varies depending on the programme but is at least 20% and up to 60%. *** Composition of the bodies not within the area of responsibility of aws; women in ERP committees as an average value for the ERP Credit Commission and the expert commissions for transport, agriculture and forestry and tourism. **** Women on evaluation committees as an average value for the following programmes and agency activities: Preseed I Seedfinancing – Innovative Solutions, Seedfinancing I Preseed – Deep Tech, *Staatspreis Innovation, Jugend Innovativ,* First Incubator and Green.IP. Source: aws.

Programmes/initiatives with gender aspects or equality as a funding criterion:

The aws Gender Bonus is an important funding instrument for strengthening diversity in Austria's startup landscape. Within the programme lines aws First, aws Preseed and aws Seedfinancing, aws provides financial incentives for teams with a significant proportion of women. Specifically, start-ups with at least 25% female founding members or managing directors receive additional financial support.

This funding criterion was deliberately introduced specifically to reduce existing inequalities in the start-up and technology sector and to encourage more women to pursue entrepreneurship. By introducing this bonus, aws has created a targeted measure to systematically integrate gender aspects into the funding landscape.

In addition to the Gender Bonus, there are further programmes and initiatives within aws that include gender equality as a central funding criterion. These include dedicated coaching, networking opportunities and advisory services for female founders, aimed at facilitating access to funding and investors. In addition, the impact of these measures on the participation of women in the start-up sector is regularly evaluated to further improve and refine the services offered.

3.7.3 New initiatives and instruments 2024 and outlook

New initiatives and instruments 2024

In 2024, aws launched several new initiatives and instruments to strengthen the innovative capacity and competitiveness of Austrian companies. One significant innovation is the aws *Spin-off Initiative*, which aims to establish a robust ecosystem for academic spin-offs in Austria. It provides

both seed funding for private investors and support for professional spin-off structures at higher education institutions. With the expansion of the aws Sustainable Food Systems Initiative, a key future-oriented area is addressed that is socially, ecologically and economically important. Targeting transformative niche and pioneering innovations and supported by a mix of services (including open innovation) to create a cross-sector enabling environment and monetary funding, innovation potential in the context of sustainable food and nutrition systems are mobilised in a targeted manner. Another important initiative is the aws Building(s) Tomorrow initiative, which focuses on identifying and supporting disruptive innovation potential in the building sector. It concentrates on radical innovations for implementing the circular economy in construction industry with the aim of utilising resources more efficiently and establishing sustainable building practices.

Outlook 2025

In addition to the core business of aws, including its guarantee and loan instruments and participation in European initiatives (EU Chips Act, IPCEI), in 2025 aws will expand its funding offer into the areas of innovation and technology transfer. A key focus will be the support of certified STEM regions, which will receive a special grant in future to further develop their educational and networking initiatives. This will reinforce the integration of maths, IT, science and technology into the Austrian educational landscape.

Another new funding instrument is dedicated to the commercialisation of quantum technology for companies. This programme aims to translate groundbreaking innovations in this forward-looking technological field into practical economic applications and to support companies in their commercial deployment.

Further information can be found in the aws performance report[302].

3.8 Christian Doppler Research Association (CDG)

3.8.1 Profile and key figures

Profile of the organisation

The Christian Doppler Research Association (CDG) has been promoting excellent application-oriented basic research for 30 years, thereby strengthening cooperation between science and industry. The primary focus is on Christian Doppler Laboratories and Josef Ressel Centers, which drive forward innovative research and are co-funded by the public sector and CDG member companies (each contributing around 50 %). Due to this essential bridging function linking basic research to innovation, the CDG is regarded internationally as a best practice model. It places particular emphasis on scientific excellence, long-term collaborations (seven years for CD laboratories;

302 https://www.aws.at/berichte

five years for JR centers), high funding flexibility, the generation of competitive advantages for the participating companies and the promotion of young talent. In doing so, the CDG strengthens Austria as a location for business and science and creates added value for society.

Key figures for 2023 and 2024

	2023	2024
Number of CD laboratories	97	103
Number of JR centers	18	18
Funding budget in € 1,000 without company contributions	21,202	25,839

Personnel CDG Office	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	6	13	19	6	15	21
Full time equivalents (rounded)	5	11	16	5	12	17

Note: Budget figures for 2024 represent the maximum budget framework, as settlement data are not yet available.
Source: CDG.

3.8.2 Development of indicators

Indicator 1: Funding, including third-party funding

Source of funds (public funds and third-party funds, excluding company contributions)	2023 in €1,000	2024 in €1,000
Public funds at federal level	21,084	25,625
of which basic budget (BMWET)	14,837	18,586
of which NFTE, Ö-Fonds and FZÖ	6,247	7,039
Other funds (incl. acquired third-party funds)	118	214
Total	21,202	25,839

Note: Budget figures for 2024 represent the maximum budget framework, as settlement data are not yet available.
Source: CDG.

Indicator 2: Evaluation systems

Surveys of (potential) applicants and funded individuals

Every five years, a comprehensive dialogue is conducted with funding recipients, particularly universities and UAS, as well as CDG member companies and the Ministry of Economic Affairs (now BMWET), to review and adapt the framework conditions for operating CD laboratories and JR centers. The most recent dialogue took place in 2024 and is reflected in the CDG's General Funding Conditions (*Allgemeine Förderbedingungen*), which entered into force on 1 January 2025. In addition, needs-based exchange formats are offered to support organisational implementation.

Evaluations of funding programmes, impact analyses

A 2022 analysis (Elsevier SciVal based on Scopus (>50 million publications) and data from five of the world's largest patent offices) confirmed that publications from the CDG research units are scientifically excellent and achieve top international rankings in terms of patent relevance (more than 250 out of 1,000 publications are cited in patents) and the number of joint publications between science and industry.

The impact of the CDG's funding programmes is analysed as part of comprehensive programme evaluations in a multi-year cycle (a corresponding evaluation is planned for 2025). The results are incorporated into the programme design.

Indicator 3: Human capital and qualification

Office staff	Heads									
	total		Female				Male			
	2023	2024	2023		2024		2023		2024	
	Number	Number	Number	%	Number	%	Number	%	Number	%
Assistants	4	4	3	75%	4	100%	1	25%	0	0%
Experts	10	12	7	70%	9	75%	3	30%	3	25%
Management level	5	5	3	60%	3	60%	2	40%	2	40%
Total	19	21	13	68%	16	76%	6	32%	5	24%

Source: CDG.

	FTE (rounded)									
	Total		Female				Male			
	2023	2024	2023		2024		2023		2024	
	Number	Number	Number	%	Number	%	Number	%	Number	%
Assistants	3	3	2	67%	3	100%	1	33%	0	0%
Experts	8	10	6	75%	7	70%	2	25%	3	30%
Management level	5	5	3	60%	3	60%	2	40%	2	40%
Total	16	18	11	69%	13	72%	5	31%	5	28%

Source: CDG.

The following staff development measures were implemented in 2023 and 2024:

CDG places great value on its employees and demonstrates its appreciation e.g. through individual support and targeted staff development measures. Staff development at CDG follows a continuous process and includes training programmes that are important for the development of the organisation and its employees (e.g. digitalisation, GDPR, compliance training, IT security training). In addition, individual training opportunities and further education programmes are offered that align personal interests with requirements.

Indicator 4: Output, innovation and excellence

Participations and persons	2023		2024	
	Number	%	Number	%
Participating companies	197		210	
of which SMEs	46	23%	49	23%
Participating research institutions	28		28	
of which universities in Austria	14	50%	15	5%
of which non-university research institutions	1	4%	1	4%
of which universities of applied sciences	11	39%	10	36%
of which universities abroad	2	7%	2	7%
	Number	%	Number*	%*
Supported persons	1,271		1,368	
of which women	517	41%	506	37%
of which men	754	59%	862	63%

* Preliminary, not yet finalised data. Late registrations by funding recipients are still possible. Source: CDG.

Time to contract and consultations	2023	2024	Target value 2026
Time to contract for applications without revision in days	194	200	
Time to contract for applications with revision in days	366	363	
Number of consultations for (potential) funding applicants*	44	47	~45

* Includes only individual consultations. There were regular information events at universities and universities of applied sciences that are not included in the above statistics. Source: CDG.

Number of scientific publications from the funded projects	2023	2024*
Monographs and editions	2	14
Articles/contributions in scientific journals, edited volumes and proceedings	757	810

* Preliminary, not yet finalised data. Late registrations by funding recipients are still possible. Source: CDG.

Patents and invention disclosures	2023	2024*	Target value 2026
Patents applied for	n.a.	n.a.	n.a.
Issued patents	10	17	>10
Invention disclosures to the university/university of applied sciences/research institution	21	21	>15

* Preliminary, not yet finalised data. Late registrations by funding recipients are still possible. Source: CDG.

Indicator 5: Internationalisation

	2023		2024	
	Number	%	Number	%
Projects with international partners*	39	34 %	42	35 %
Participating companies located abroad	46	24 %	49	23 %

*Involvement of foreign corporate partners or CD laboratories based abroad. Source: CDG.

Indicator 6: Knowledge and technology transfer

	2023	2024*
Total funding volume in € 1,000 including company contributions	40,864	49,878
of which cooperation between science and industry	40,864	49,878
Share in %	100 %	100 %

* Budget data for 2024 corresponds to the maximum budget framework, as accounting data is not yet available.
Source: CDG.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

The openings of CD laboratories and JR centers were used in close cooperation with the PR departments of universities and UAS to strengthen public science communication and disseminate knowledge.

The annual CDG Award for Research and Innovation made scientific content accessible to the general public through print and online media. Success stories from CDG projects were developed and shared in collaboration with business and university researchers.

Researchers and their areas of work were regularly featured via LinkedIn and the CDG website increasing the visibility of their work.

With the CDG *Zukunftstalks*, current topics such as “scientific scepticism” or “future propulsion technologies” were highlighted from a scientific, entrepreneurial and political perspective in an interactive format and via streaming. The research funded by the CDG is included in around 1,000 media reports every year, which emphasises its high relevance for public science communication.

CDG is a member of the Open Science Association and Uni.PR.

Indicator 8: Gender and promotion of equality

	2023		2024*		Target value 2026
	Number	%	Number	%	%
Funded projects					
Women in CD Laboratories and JR Centers	517	41 %	506	37 %	
Heads of CD Laboratories and JR Centers	16	13 %	17	13 %	>13 %
Evaluation committees and reviews					
Women on permanent evaluation committees and advisory boards	12	25 %	12	25 %	>25 %
Reviews carried out by women	21	18 %	19	25 %	>20 %

* Preliminary, not yet finalised data. Late registrations by funding recipients are still possible. Source: CDG.

Programmes/initiatives with gender aspects or equality as a funding criterion:

To promote women in science, CDG foundation directors enable partial funding of staff costs for female scientists who do not have a current employment contract with the respective higher education institution.

3.8.3 New initiatives and instruments 2024 and outlook

The bottom-up funding programmes of the CD Laboratories and JR Centers provide ideal conditions for flexible and forward-looking research without thematic limitations. As a result, the research funded is ahead of the curve and often precedes mainstream research. Topics range from transformative approaches like solid-state batteries, energy-efficient building materials, and circular economy to innovative materials and life sciences. Many research projects utilise artificial intelligence as a key technology, and some CD labs are directly researching new AI methods.

In 2024, the Transfer Science to Spin-off (Transfer.S2S) programme was launched, financed by the Future Austria Fund (*Fonds Zukunft Österreich*). It supports researchers in translating basic research into innovative applications, supplemented by scientific and business mentoring (the latter provided by aws). The goal is to develop and evaluate commercialisation potential and support the RTI Strategy 2030 objective of doubling the number of successful academic spin-offs. With 100 submitted projects, the initial call was oversubscribed tenfold.

Additionally, a dissertation call was issued on energy transition and circular economy, fully funded by CDG member companies. This commitment emphasises the CDG's support of the national RTI policy.

Overall, the CDG model continues to enjoy strong popularity in both academia and industry. Further facts and figures can be found on the CDG website.[303]

303 https://www.cdg.ac.at/en/about-us/facts-and-figures-on-the-christian-doppler-model

3.9 The Austrian Science Fund (FWF)

3.9.1 Profile and key figures

Profile of the organisation

The Austrian Science Fund FWF is Austria's leading organisation for open-topic funding of basic research and artistic-scientific research. In a selective, international peer-review process, the FWF supports researchers and ideas that are groundbreaking in terms of scientific quality. The knowledge gained strengthens Austria as a research nation and provides a broad foundation for better addressing future societal challenges.

Investments in basic research through the FWF are efficient and have a strong leverage effect in the knowledge and innovation sector. A well-established basic research system attracts top talents and know-how. This strengthens the Austrian economy in the long term.

Key figures for 2023 and 2024

	2023	2024
Total funding budget in € 1,000	381,504	440,089
of which new or extended projects ("Total new grants")	348,944	407,815
Number of approved research projects	624	683
Number of persons funded via FWF-funds	4,890	5,006

Personnel FWF Head Office	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	40	108	148	46	106	154*
Full time equivalents (rounded)	36	91	127	41	91	133*

* Differences in numbers are accounted for by the diverse group, which is not listed here. Source: FWF.

3.9.2 Development of indicators

Indicator 1: Funding, including third-party funding

Source of funds	2023 in € 1,000	2024 in € 1,000
Public funds at federal level	377,234	436,486
of which basic budget (BMFWF)	372,534	396,158
of which NFTE, Ö-Fonds and FZÖ	4,700	40,328
Regional governments	3,110	2,284
EU	25	25

Source of funds	2023 in € 1,000	2024 in € 1,000
Other (incl. acquired third-party funding)	1,135	1,294
Total	381,504	440,089

Source: FWF.

Indicator 2: Evaluation systems

The following evaluations and studies have been tendered or published internationally:

The evaluation of the Emerging Fields programme was completed, the results informed the design of the second call and received positive attention at international conferences.[304]

The study "The Contribution of Basic Research Projects Funded by the Austrian Science Fund to Economic and Societal Impacts" was published and received broad media coverage.[305] A survey was conducted among the scientific community in Austria, as well as an evaluation of the doc.funds programme. Results are expected in autumn 2025.

Indicator 3: Human capital and qualification

Office staff	Heads									
	Total		Female				Male			
	2023	2024	2023		2024		2023		2024	
	Number	Number	Number	%	Number	%	Number	%	Number	%
Assistants	85	80	67	79%	58	72%	18	21%	20	25%
Experts	45	54	29	64%	34	63%	16	36%	20	37%
Management level	18	20	12	67%	14	70%	6	33%	6	30%
Total	148	154	108	73%	106	69%	40	27%	46	30%

Differences between totals and sub-totals are accounted for by the diverse group, which is not listed here. Source: FWF.

	FTE (rounded)									
	Total		Female				Male			
	2023	2024	2023		2024		2023		2024	
	Number	Number	Number	%	Number	%	Number	%	Number	%
Assistants	68	64**	54	80%	47	73%	14	20%	16	25%
Experts	41	49	25	62%	30	61%	16	38%	19	39%
Management level	18	20	12	66%	14	69%	6	34%	6	31%
Total	127	133**	91	72%	91	68%	36	28%	41	31%

Differences between totals and sub-totals are accounted for by the diverse group, which is not listed here. Source: FWF.

304 See Kolarz et al. (2024).

305 See Janger et al. (2024).

The following staff development measures were implemented in 2023 and 2024:

As an organisation of experts and through its role in research funding, the FWF is acutely aware of the importance of staff qualifications. To uphold and further develop the quality standards driven by its employees, the FWF invests in the training and continuing education of its personnel. Each department is allocated an annual budget for this purpose. Following reduced expenditure due to the pandemic in the years 2020–2022, investment in training and professional development increased significantly from 2023 onwards. Priorities for 2024 and 2025 include topics related to the FWF 4.0 project (process management, IT, change management), as well as leadership development.

Indicator 4: Output, innovation and excellence

Projects and people	2023		2024	
	Number	%	Number	%
Funded projects ("Total new grants")	624		683	
of which universities*	523	84%	574	84%
of which universities of applied sciences	5	1%	9	1%
of which non-university research institutes**	96	15%	100	15%
Persons supported (from approvals)	899		942	
of which women	320	36%	343	36%
of which men	572	64%	597	63%
of which diverse***	6	<1%	2	<1%

* Including private universities. ** Includes research centres abroad. *** Including "not specified". Source: FWF.

Time to contract* and consultations	2023	2024	Target value 2026
Processing time of programmes without deadline** in days	156	159	
Number of consultations for (potential) funding applicants			
Total	56	69	>50
of which coaching workshops	17	25	
of which information events	37	39	
of which Proposers' Days	2	5	

* Period between receipt of the application by the FWF and the funding decision. In the event of approval, it usually only takes a few days until the funding agreement is issued. ** Programmes without a deadline are individual projects, Clinical Research Programme, *ESPRIT Programme* and *Schrödinger Programme*. Source: FWF.

Scientific publications from the funded projects*	2023	2024
Monographs and editions	51	86
Articles/contributions in scientific journals, edited volumes and proceedings	5,245	6,468

* Data from project final reports received in the respective year. Source: FWF.

Patents and invention disclosures*	2023	2024
Patents applied for	10	5
Issued patents	1	14
Records of inventions submitted to the university/university of applied sciences/ research institution	n.a.	n.a.

* Data from project final reports received in the respective year. Source: FWF.

Indicator 5: Internationalisation

	2023		2024		Target value 2026
	Number	%	Number	%	%
Projects with international partners	1,929	75%	1,860	74%	> 70%
Participating persons located abroad	6,105	43%	5,647	41%	

Source: FWF.

Bilateral and multilateral agreements with foreign research funding organisations (these are existing agreements and does not mean that projects can be submitted or are funded every year):

		2023	2024
Within Europe	Multilateral	9 ERA-Net investments Weave* (Belgium, Germany, Luxembourg, Poland, Switzerland, Slovenia, Czech Republic) European Partnership Biodiversa+ European Partnership Water4All European Partnership ERA4Health European Partnership Personalised Medicine	7 ERA-Net participations Weave* (Belgium, Germany, Luxembourg, Poland, Switzerland, Slovenia, Czech Republic) European Partnership Biodiversa+ European Partnership Water4All European Partnership ERA4Health European Partnership Personalised Medicine
	Bilateral	France Italy/South Tyrol Russia (suspended) Hungary	France Italy/South Tyrol Russia (suspended) Hungary
Outside Europe	Multilateral	Belmont Forum	Belmont Forum
	Bilateral	China India Israel Japan South Korea Taiwan USA	China India Israel Japan South Korea Taiwan USA

* Weave is a network of European research funding organisations that aims to jointly fund international research projects. Source: FWF.

Indicator 6: Knowledge and technology transfer

The FWF promotes bottom-up, application-orientated basic research in all disciplines. In addition to an explicit transfer component in the Clusters of Excellence, knowledge and technology transfer through exchange and collaboration with social and/or economic partners is generally possible in all FWF programmes.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

The Austrian Science Fund FWF fosters communication and interaction with society on multiple levels. Firstly, through its programme portfolio with specific funding schemes that enable researchers to expand their dialogue with the public. These include the Science Communication and Top Citizen Science programmes as well as the transdisciplinary #ConnectingMinds programme. Within the Clusters of Excellence programme, communication and transfer measures are an integral part of the funding model. Additionally, the FWF as an institution carries out a wide range of communication and dialogue activities to convey the impact of basic research, such as the stakeholder conference "Think Beyond Summit", the event series "*Am Puls*" or "*Was die Welt zusammenhält*". With its online science magazine "scilog", the FWF provides continuous updates on new findings from basic research. Another key element is the online research radar, a freely accessible database of thousands of FWF-funded research projects and their output. In 2024, the FWF and other organisations based at the *Postsparkasse* site organised a stage programme as part of the Long Night of Research (*Lange Nacht der Forschung*).

Indicator 8: Gender and promotion of equality

	2023		2024		Target value 2026
	Number	%	Number	%	%
Women in funded projects					
Women project staff	2,282	47 %	2,363	47 %	
Women project managers	211	34 %	248	36 %	> 33 %
Women on committees and juries					
Presidium	3	60 %	2	40 %	
Supervisory Board	6	60 %	6	60 %	
Assembly of Delegates	30	50 %	31	52 %	
Board of Trustees	32	47 %	31	45 %	
Jury FWF-START Prize and Wittgenstein Prize	5	45 %	6	50 %	
Jury Clusters of Excellence	7	58 %	4	50 %	
Jury Programme for the Development and Development of the Arts (PEEK)	3	50 %	3	50 %	
Jury Emerging Fields	2	40 %	11	65 %	
Jury doc.funds	5	33 %	6	43 %	
Jury doc.funds.connect	3	43 %	3	43 %	
Jury 1000 ideas			9	47 %	
Jury #ConnectingMinds Workshops			5	50 %	
International appraisals by women	1,262	28 %	1,477	30 %	
Difference in approval rate for women vs. men*	+ 1.3 percentage points		- 1.1 percentage points		± 2.0 percentage points

** A positive value indicates a percentage point higher approval rate for women compared to men. A negative value means that the approval rate from women is lower than that for men.

Source: FWF.

Programmes/initiatives with gender aspects or gender equality as a funding criterion:

With only a few exceptions, all programmes require that project proposals explicitly address sex and gender-related aspects in the project description. A few exceptions include, for example, the Wittgenstein Award, as no project descriptions are submitted for this and nominations are made by third parties.

In addition to addressing these content-related aspects within the research proposal, cooperative programmes aim for a participation rate of 30 % of the underrepresented gender within the consortium. The composition of the consortium is defined as a decision-relevant criterion in the evaluation process. Under the ESPRIT Programme and the ASTRA Prize, the FWF reserves 50 % of the available funding for female researchers.

3.9.3 New initiatives and instruments 2024 and outlook

In 2024, the FWF completed the reform of its career programmes and launched the "FWF ASTRA Awards", a new offer for advanced postdocs. The award replaces the previous Elise Richter Programme and the START Awards. The current programmes "Special Research Areas" and "Research Groups" will be phased out in 2025 and replaced by the "Special Research Groups" programme, which is a flexible and scalable successor model open to all disciplines and is aimed at teams of between 3-12 researchers.

As part of the Excellence Initiative excellent=austria, the FWF approved four additional Clusters of Excellence and five Emerging Fields. These Emerging Fields will initiate cooperative research projects across 14 sites on topics with the highest innovation potential and will be funded with a total of €31 million over the next five years. These grants mark the conclusion of the first funding round of excellent=austria: In total, nine Clusters of Excellence and five Emerging Fields are set to deliver a boost to basic research on an unprecedented scale. The total investment to date amounts to €186 million over the next five years, with hundreds of researchers involved at 24 research centres across Austria. An additional €104 million will be contributed by the participating institutions as part of the Clusters of Excellence.

A particular highlight of the 2024 funding year was the awarding of the FWF Wittgenstein Prize to cell biologist Jiří Friml from the Institute of Science and Technology Austria (ISTA) and the granting of eight FWF START Awards to outstanding postdocs. In addition, the Zero Emissions Award – Austria's most highly endowed privately funded award for climate-relevant basic research – was awarded for the first time.

For further information see the FWF Annual Report.[306]

306 https://www.fwf.ac.at/en/about-us/annual-report

3.10 OeAD-GmbH (OeAD)

3.10.1 Profile and key figures

Profile of the organisation

The OeAD-GmbH, Agency for Education and Internationalisation, supports and connects individuals and institutions from education, science and research through forward-looking programmes. As an agency of the Republic of Austria, it contributes to inclusive, equal and high-quality education and initiates innovations in education, teaching and research. In addition to mobility and project funding aimed at supporting the internationalisation of educational institutions and tasks in the school sector, 2024 saw the transfer of responsibilities for the ENIC-NARIC Information Centre for Academic Recognition.

The OeAD headquarters is located in Vienna; there are five regional offices at Austrian university locations, one office in Bregenz focused on Holocaust Education, four cooperation offices in Eastern and South Eastern Europe with an educational office, and further cooperation offices in Lviv and Shanghai with a focus on science. The OeAD-*Wohnraumverwaltungs-GmbH* provides accommodation for 12,000 international students, researchers and teaching staff.

Key figures for 2023 and 2024

	2023	2024
Total funding budget, disbursements in € 1,000	105,970	112,580

Number of employees	2023			2024		
	m	f	total	m	f	total
Employees (= headcount)	112	248	360	113	256	369
Full time equivalents (rounded)	97	196	293	101	205	306

Source: OeAD.

The further increase in the key indicator of the funding budget in 2024 is due to the new Prevention of Extremism programme as well as increased numbers of study and research visits and projects carried out, particularly in Erasmus+. The new assignment with ENIC NARIC and an expansion of the Office for Digital Competences led to an increase in staff resources at the OeAD.

3.10.2 Indicators for 2023 and 2024

In contrast to the key performance indicators, the indicators only relate to the OeAD's research-relevant activities.

The BMFWF funds support research-related activities such as incoming and outgoing scholarship programmes, activities with neighbouring countries (Hungary, the Czech Republic and Slovakia), the lectureship programme, scientific and technical cooperation, international research cooperation and measures for internationalisation, support for the University networks with Southeast Asia and African countries as well as programmes such as the Children's and Youth Universities and

Sparkling Science. Third-party funding refers to the Austrian Development Agency programmes and other donors for research-related activities.

Indicator 1: Funding, including third-party funding

	2023 in € 1,000	2024 in € 1,000
Total research-related income	18,834	20,284
of which federal funds BMBWF — UG 31.03 (disbursements)	15,561	17,188
of which other federal funds — BMEIA (Austian Development Agency; disbursements)	2,487	2,242
of which other (third-party funding e.g. Indonesia, Pakistan; disbursements)	786	854

To ensure comparability with 2024, the figures for 2023 have been adjusted by excluding the disbursements for the Ukraine Scholarship Programme. Source: OeAD.

Indicator 2: Evaluation systems

Funding applications

The multi-stage selection procedures follow the specifications of the special guidelines and ensure that only scientifically excellent applications are funded.

Funding recipients

Grant holders are regularly surveyed regarding the implementation of their study or research project and the OeAD services. Among other things, these surveys provide insights into satisfaction with the programme implementation by the OeAD. On a four-point scale (1: very good; 4: unsatisfactory), overall satisfaction scores across individual programmes range between 1.1 and 1.6..

Evaluations of funding programmes, impact analyses

In 2022, the scholarship and research cooperation programmes funded by the science sector were externally evaluated by WPZ Research GmbH. The next evaluations, aligned with the duration of the special guidelines, are scheduled for 2025 and 2028, respectively. An additional evaluation for the APPEAR programme is planned for 2026.

Indicator 3: Human capital and qualification

Office staff	Heads									
	Total		Female				Male			
	2023	2024	2023		2024		2023		2024	
	Number	Number	Number	%	Number	%	Number	%	Number	%
Assistants*	5	5	5	100%	5	100%	0	0%	0	0%
Experts **	46	47	40	87%	39	83%	6	13%	8	17%
Management level***	3	4	2	67%	3	75%	1	33%	1	25%
Total	54	56	47	87%	47	84%	7	13%	9	16%

* Programme assistants, ** Programme management/processing, *** Heads of department. Source: OeAD.

	FTE (rounded)									
	Total		Female				Male			
	2023	2024	2023		2024		2023		2024	
	Number	Number	Number	%	Number	%	Number	%	Number	%
Assistants	5	5	5	100%	5	100%	0	0%	0	0%
Experts	37	39	32	86%	33	85%	5	14%	6	15%
Management level *	2.2	4	2	91%	3	75%	0.2	9%	1	25%
Total	44.2	48	39	88%	41	85%	5.2	12%	7	15%

* Managers of the divisions that handle the funding programmes UG 31.03 and research-related third-party funding.
Source: OeAD.

The following staff development measures were implemented in 2023 and 2024:

In 2024, the OeAD's extensive continuing education programme focused on disability awareness, conflict management, diversity and training in the areas of artificial intelligence and ChatGPT.

Indicator 4: Output, innovation and excellence

Projects and people	2023		2024	
	Number	%	Number	%
Funded projects*	621		735	
of which in universities	526	77%	616	74%
of which in universities of applied sciences	42	6%	47	6%
of which in other facilities	112	17%	171	20%
Persons supported	2,778		2,669	
of which men	1,282	46%	1,249	47%
of which women	1,496	54%	1,420	53%

* The number of funded projects does not correspond to the sum of projects across different institutions, as multi-partner projects are only counted once. For the same reason, the percentages given do not result from dividing the figures listed in the table. To allow comparison with 2024, the number of funded individuals in 2023 was adjusted to exclude recipients of the Ukraine scholarship programme. The multi-stage selection procedures follow the provisions of the special guidelines and ensure that only academically excellent applications are funded. Source: OeAD.

Time to contract and consultations	2023	2024	Target value 2026
Processing time in days*	90 to 280	90 to 338	90 to 300
Answering enquiries	7,493	7,449	> 5,500
of which consultations on immigration law	2,440	2,304	> 2,200

* Processing time is defined as the period from the end of the application deadline to the signing of the contract or the issuing of the grant confirmation. For scholarship programmes, this may take up to 180 days. In the Sparkling Science programme, processing times reached up to 338 days due to the complex evaluation process, jury meetings, funding offer submission, and final contract signing. Source: OeAD.

Indicator 5: Internationalisation

All of the programmes reported here are by definition internationalisation programmes in the field of science and research. This includes mobility programmes (2,669 mobile persons who studied or conducted research in another country in 2024) and 735 cooperation projects with a focus on international cooperation.

Indicator 6: Knowledge and technology transfer

In the OeAD's scholarship and cooperation programmes, knowledge and technology transfer take place at both individual and institutional levels, even when not explicitly stated as an objective of the funding programme.

Indicator 7: Communication and interaction with society

The following activities and formats for communication and transfer of knowledge as well as for the inclusion and addressing civil society actors were implemented in 2023 and 2024:

In the area of public science, various measures were carried out to promote science communication outside of schools and to build up expertise in the area of Citizen Science.

To build up expertise, the OeAD held lectures on the topic and provided networking and peer learning opportunities. The 27 newly funded projects in the second call of the Sparkling Science 2.0. research funding programme started in autumn 2024. 23 children's and youth university initiatives were funded in 2024 to promote science education outside schools.

In the field of school-based science communication, efforts focused on building trust in science. In 2024 alone, an additional 62 researchers volunteered to visit schools as science ambassadors (total: 483). In total, 367 school visits were conducted across Austria. 2,905 participants took part in the Citizen Science Award.

In 2024, the portfolio was expanded: the creative competition "Young Science Days at Schools" was launched in the 2024/25 school year and in July 2024 the content management of the information platform "*Entdecke.DNAustria*" was taken over (in 2024 this was still done in cooperation with TU Graz).

Participants in the following projects	2023	2024	Target value 2026
Children's and youth universities (subsidised initiatives)	21	23	n.a.
Sparkling Science (funded partnerships between institutions)	Call for tenders at the end of 2023, projects will be finalised in 2024	150	180
Citizen Science Awards presented	8	8	n.a.
Citizen Science Award (persons involved in all participating projects)	3,438	2,905	> 2,300

Source: OeAD.

Indicator 8: Gender and promotion of equality

Women on evaluation committees and reviews	2023		2024		Target value 2026
	Number	%	Number	%	
Juries, evaluation committees	9	30 %	49	42 %	50 %
Assessments	278	45 %	367	44 %	50 %
Supervisory Board	5	42 %	5	42 %	50 %
Strategy Advisory Board	3	43 %	5	56 %	50 %

Source: OeAD.

3.10.3 New initiatives and instruments 2024 and outlook

In 2024, a funding programme (Busek Scholarships) was announced, which for the first time explicitly aims to address the shortage of skilled workers by training Master's students specialising in STEM subjects. The OeAD's initiatives for the BMFWF focus on strengthening trust in science and democracy were also expanded.

The global crisis hotspots also had an impact on the OeAD's programmes in 2024. The scholarship programme for refugee students and researchers from Ukraine was continued on behalf of the BMFWF (formerly BMBWF). With the transfer of the ENIC-NARIC Information Centre for Academic Recognition – which handles a particularly high volume of enquiries regarding the assessment of Ukrainian qualifications – these areas of support for Ukraine were consolidated within the OeAD. The crisis in the Middle East led to a significant increase in demand for OeAD-organised workshops in schools on conflict management and violence prevention.

Further information can be found in the OeAD Annual Report.[307]

3.11 Austrian Research Promotion Agency (FFG)

3.11.1 Profile and key figures

Profile of the organisation

The Austrian Research Promotion Agency (FFG) sees itself as the central agency for the promotion of applied research, development and innovation. It serves as an implementation partner of the federal government for its strategies to strengthen Austria as a centre of research and innovation as well as in addressing current challenges. In addition, the FFG supports the majority of the regional governments in implementing their own funding initiatives.

307 https://oead.at/en/the-oead/communication-and-publications/publications-statistics-analyses#c44554

In this role, the FFG offers a differentiated portfolio of support measures. Specifically:

- Funding of research and innovation projects, both open-topic and within top-down defined thematic areas and priorities
- Funding of research and innovation structures: competence centres, research infrastructures, innovation platforms and innovation labs
- Funding of qualification measures and initiatives to mobilise young talent to enter the field of research, technology and innovation (RTI)
- Mobilising and supporting companies and research institutions to participate in European programmes and initiatives
- Assessment of applications for the research premium

In addition to activities in the RTI area, the FFG also implements investment funding programmes for the expansion of digital infrastructure (broadband) and e-mobility (EBIN, ENIN).

Key figures for 2023 and 2024

R&D funding	2023	2024
Projects	7,503	7,479
Participations	9,944	10,148
Stakeholders	5,227	5,572
Subsidies incl. liabilities in € 1,000	773,116	876,157
Present value in € 1,000	683,618	795,613
Payments in € 1,000	617,663	671,031

Infrastructure funding (broadband, EBIN, ENIN)*	2023	2024
Projects	233	413
Present value in € 1,000	991,591	335,407
Payments in € 1,000	301,756	192,80

Number of employees (R&D funding and infrastructure funding)[308]	2023				2024			
	m	f	d	total	m	f	d	total
Employees (= headcount)	175	265	1	441	186	293	0	479
Full time equivalents (rounded)	163	226	1	390	175	247	0	422

Source: FFG.

308 Reporting date values as of 31 December 2024. There are deviations from other reports that are based on average values.

3.11.2 Indicators for 2023 and 2024

Indicator 1: Funding, including third-party funding

Source of funds for R&D funding, excluding commissions (public funding and third-party funding, excluding contributions from companies)	Present values as part of contractual commitments in € 1,000	
	2023	2024
Owner resorts	523,508	583,174
BMK	369,689	390,477
BMAW	153,818	192,697
BMBWF	26,687	14,082
BML	9,215	28,000
BMF	21,331	18,718
BMSGPK	--	3,096
NFTE, Ö-Fonds, FZÖ	37,105	30,078
Climate and Energy Fund	46,952	57,579
Regional governments	16,288	19,718
EU	2,532	39,497
Other	1,328	1,671
Total	683,618	795,613

Source: FFG.

Indicator 2: Evaluation systems

FFG funding programmes are evaluated by external bodies. In areas under delegated responsibility, the evaluations are commissioned by the responsible ministries; in areas under its own remit, the FFG also commissions the evaluation itself.

Evaluation results are discussed in the FFG's internal evaluation meetings (*Evaluierungs-Jour-Fixe*). In 2024 the agenda included the evaluation of Impact Innovation, *Kleinprojekte* and *INNOVATORINNEN*. In addition, a new event format called the "Bistrotalk" was introduced, offering all employees broad insights into the benefits and processes of evaluations.

Four years after completion of the funded RTI projects, beneficiaries are surveyed as part of the impact monitoring to assess the exploitation of project results and the effectiveness of the funding.[309]

Feedback from applicants is collected on a regular basis:

- Annual telephone survey on satisfaction with FFG services and emerging needs
- Online surveys on satisfaction with project support, application or contract process, key questions on user-friendliness of the administration systems, workload, clarity of requirements
- Where necessary: focus groups conducted as part of specific improvement projects

309 https://www.ffg.at/content/evaluierung-der-foerderung

Indicator 3: Human capital and qualification

Employees	Headcount											
	Total		Female				Male				Diverse	
	2023	2024	2023		2024		2023		2024		2023	2024
	Number	Number	Number	%	Number	%	Number	%	Number	%	Number	Number
Assistants	73	76	59	81%	60	79%	14	19%	16	21%	0	0
Experts	314	343	179	57%	203	59%	134	43%	140	41%	1	0
Team management and division management	50	55	23	46%	25	45%	27	54%	30	55%	0	0
General management	2	2	2	100%	2	100%	0	0%	0	0%	0	0
Apprentices	2	3	2	100%	3	100%	0	0%	0	0%	0	0
Total	441	479	265	60%	293	61%	175	40%	186	39%	1	0

Source: FFG.

	FTE (rounded)											
	Total		Female				Male				Diverse	
	2023	2024	2023		2024		2023		2024		2023	2024
	Number	Number	Number	%	Number	%	Number	%	Number	%	Number	Number
Assistants	59	63	49	83%	50	79%	10	17%	13	21%	0	0
Experts	280	302	152	54%	169	56%	128	46%	133	44%	1	0
Team management and divisional management	47	52	21	45%	23	44%	26	55%	29	56%	0	0
General management	2	2	2	100%	2	100%	0	0%	0	0%	0	0
Apprentices	2	3	2	100%	3	100%	0	0%	0	0%	0	0
Total	390	422	226	58%	247	59%	163	42%	175	41%	1	0

Source: FFG.

The following staff development measures were implemented in 2023 and 2024:

The focus of HR development measures was shaped by the growth of the FFG. In order to improve its position on the labour market, employer branding activities were undertaken (enhancement of internal services, new job advertisements, careers page, etc.), and an audit on work–life balance was carried out. To support the integration and training of new employees, the range of internal training programmes was expanded, particularly in the area of e-learning. In parallel, leadership development was expanded (internal training sessions, peer exchange) and investments were made in apprentice training (training of instructors, peer exchange). A monthly sentiment barometer was introduced (growth, relocation, transition to desk sharing, etc.) to support organisational changes (online survey of all employees once a month to enable swift response to developments).

Indicator 4: Output, innovation and excellence

Projects, investments and organisations	2023		2024	
	Number	%	Number	%
Funded projects	7,503		7,479	
Total participation in projects	9,944		10,148	
Total organisations	5,227	100 %	5,572	100 %
of which company	4,427	85 %	4,771	86 %
of which SMEs	3,755	85 %	4,011	84 %
of which research institutions	167	3 %	165	3 %
of which universities (institutes)	443	8 %	452	8 %
of which intermediaries and others	190	4 %	184	3 %

Source: FFG.

	2023	2024	Target value 2028[310]
	Number	Number	Number
Companies that received funding to implement RTI projects in the field of digital technologies (development, new application)*		967	1,376
Funded young, innovative SMEs*		1,482	619

Target indicators according to the 2024–2026 funding agreement between BMWET and BMIMI (in relation to the budget of UG 33+ UG 34). Source: FFG.

Time to contract, median values in days	2023	2024
FFG total	5	6
of which as examples		
Bottom up programmes*	72	49
Small-scale programmes**	3	3
Research premium	40	41

* Includes all funding instruments implemented under the Basic Programmes: *Basisprogramm klassisch*, Early Stage, Impact Innovation. ** Mainly includes school and student internships, the *Ökoscheck*, the continuing education voucher, the patent voucher and the innovation voucher. Source: FFG.

Number of consultations for (potential) funding applicants	2023	2024	Target value 2026
Through the FFG National Funding Service	14,214	13,509	~ 10,000
Consultations as part of the EIP mandate	5,915	5,802	~ 6,000

Source: FFG.

310 For the evaluation of the funding agreements, the adjusted mean value of the funding committed based on the funding agreement for the period 2024-2028 is used. A comparison of the annual key figures with the target values of the funding agreement does not allow any direct conclusions to be drawn as to whether the targets have been achieved.

Patents and licences	2023	2024	Target value 2026
Patents applied for*	651	603	>500
Issued patents	n.a.	n.a.	
Licensing agreements	n.a.	n.a	

* Data basis: impact monitoring (suyrvey 4 years after the end of the projectsourc); patent voucher monitoring (cleared voucher). Source: FFG, Austrian Institute for SME Research (Wirkungsmonitoring).

Indicator 5: Internationalisation

	2023		2024	
	Number	%	Number	%
Projects with international partners*	203	16%	186	14%
Participating companies based abroad**	148	2%	165	2%

* When counting projects with international partners, all projects that either have foreign partners documented in the consortium or that are labelled as transnational collaborations are counted. ** Company participations are used to calculate the share. Source: FFG.

Funding in transnational tenders (commitments)	2023	2024
	Present value in € 1,000	Present value in € 1,000
Horizon Europe Partnerships	21,810	32,655
Digital Europe	9,206	3,723
ERANET (with and without co-funding)	4,827	2,644
EUREKA	4,101	7,576
Other transnational projects	9,588*	5,601
Total	49,532	52,199

* Others include collaborations with China, Germany and Switzerland, an Africa-focused activity, individual labelled projects in big data in production and Nano-EHS, a former JPI. Source: FFG.

Participation in Horizon Europe pillars and instruments	Instrument	Number of projects 2023	Number of projects 2024
Global Challenges and European Industrial Competitiveness	HORIZON-COFUND		1
	HORIZON-CSA	1	
	HORIZON-FPA	1	
	HORIZON-IA	1	
	HORIZON-RIA	3	
Innovative Europe	HORIZON-COFUND		
	HORIZON-CSA		
Widening Participation and Strengthening the European Research Area	HORIZON-CSA	2	1
Total		8	2

Source: FFG.

Indicator 6: Knowledge and technology transfer

Promotion of cooperative projects with partners from science and industry	2023*		2024	
Topics and programmes	**Projects**	**Present value in € 1,000**	**Projects**	**Present value in € 1,000**
Co-operation structures (FinV)	64	74,438	55	58,275
Digital and key technologies (FinV)	83	40,018	107	58,229
IWI (FinV)	173	48,757	145	40,724
Energy transition (FinV)	15	9,848	22	19,456
Mobility turnaround (FinV)	39	20,937	40	18,873
Space and aviation technologies (FinV)	32	16,161	29	15,449
Circular economy & production technologies (FinV)	35	26,994	21	15,395
Climate-neutral city (FinV)	29	10,029	35	10,835
Cross-thematic (FinV)		-	12	7,501
Life Sciences (FinV)	3	5,622	2	2,937
Human capital (FinV)	8	972	10	1,751
Energy research (e!MISSION) (KLIEN)	19	25,060	29	19,707
KIRAS (BMF)	28	14,783	27	11,117
eMobility lighthouses (KLIEN)	10	7,960	15	10,584
Smart Cities (KLIEN)	18	5,743	25	7,254
Provincial co-operation TP (Upper Austria)	11	6,357	10	7,026
15 further programmes	30	25,301	28	19,731

* The allocation listed follows the topics of the 2024–2026 funding agreement and also includes the programmes commissioned by other funding bodies not included in the funding agreement (e.g. BMF, KLIEN). The list shows topics/programmes with the highest amounts in projects involving cooperation between science and industry. Projects included in the project count have the additional restriction applied that they must have received more than €10,000 in funding. Topics of the funding agreement 2024–2026 are marked with (FinV). Source: FFG.

	2023		2024	
	Present value in € 1,000	**Share of total present value**	**Present value in € 1,000**	**Share of total present value**
All funding programmes of science/industry cooperation*	342,540	50 %	327,058**	41 %

* The majority of FFG funding programmes support cooperation at the interface between science and industry. ** The difference to the total in the previous table is due to the fact that funding of less than €10,000 is not included here.

	2023	2024	Target value 2028[311]
	Number	**Number**	**Number**
Number of funded projects with collaborations between partners from science and industry*		382	768

* Target indicators according to the 2024–2026 funding agreement between BMWET and BMIMI (in relation to the budget of UG 33+ UG 34). Source: FFG.

311 For the evaluation of the funding agreements, the adjusted mean value of the funding committed on the basis of the funding agreement for the period 2024–2028 is used. A comparison of the annual key figures with the target values of the funding agreement does not allow any direct conclusions to be drawn as to whether the targets have been achieved.

Indicator 7: Communication and interaction with society

To involve civil society actors, activities were initiated and supported at regional, national, and European levels. The following are of particular note:

- Pilot project *Ländliche Gestalterinnen* (BMLUK): Series of events aimed at networking peer groups, building expertise and developing ideas for shaping the local region
- Pilot project *INNOVATORINNEN:* Co-creation event focused on dissemination and exploitation. Goal: To bring research results to where they can have a meaningful impact on society
- Space sectpr: Initiatives to engage school pupils with space-related topics, including the Alpbach Summer School and the Climate Detectives initiative – organised by ESERO Austria. Interactive exhibition CORINNA on the application of Earth observation data
- Targeted incentives for the involvement of civil society actors via the funding design (objectives, funding criteria) within the programmes *Wirksam Werden,* Impact Innovation, *Expedition Zukunft*
- Exchange on ways to involve civil society actors in European initiatives. Among others: Workshop on "How to Engage Citizens in the EU Missions? " as part of the second European Mission Forum (TRAMI project); Stakeholder Engagement Workshop on the national implementation of the new European Code of Conduct for the Participation of Citizens in the Valorisation of Knowledge (NCP-IP); Panel discussion at the Horizon Europe Community Day: "The Benefits of Citizen Engagement in Times of Crisis"

Indicator 8: Gender and promotion of equality

	2023		2024		Target value 2026
	Number	%	Number	%	
Women in funded projects					
FTEs based on audited reports	1,357	19 %	1,555	19 %	
Project managers*	2,574	27 %	2,864	29 %	
Women on committees and juries					
FFG Supervisory Board	9	53 %	8	47 %	
Bridge Advisory Board	3	21 %	3	21 %	
Basic programmes Advisory Board	11	50 %	10	45 %	
Reviews by women**	1,415	35 %	2,580	38 %	
of which for projects under the BMWET and BMIMI funding agreements (UG 33+ UG 34)			1,729	43 %	>45 %
Project working time performed by women (UG 33 + 34)	---		---	18 %	

* Refers to the total number of participations with personal names. If no project management function is entered, the data is analysed according to the gender of the technical contact person. ** Excluding broadband, EBIN and ENIN, total FFG. Source: FFG.

Programmes/initiatives with gender aspects or equality as a funding criterion:

In almost all funding programmes implemented by the FFG, gender is embedded in the funding criteria – with regard to the composition of the project team and the thematic focus of the project. There are also specific funding programmes with a gender/diversity focus:[312]

- DIVERSITEC (BMIMI) supports organisational development measures for diversity, equality and inclusion in technology companies.
- The *Diversity Scheck* (Diversity Voucher) (BMIMI) strengthens the attractiveness of small and medium-sized companies in the tech sector as employers. The programme focuses on measures that foster a culture of innovation through diversity and participation.
- With programmes for "People in RTI" (*Menschen in FTI*), BMIMI supports young scientists, skills development and equal opportunities in applied research and technology development (instruments: internships, qualification networks, industry-related dissertations, gender dimension in research projects).
- *INNOVATORINNEN* (BMWET) supports women in shaping roles in RTI and strengthens their career skills. Concrete offers: Leadership programme, alumnae networking, and events[313]
- *Laura Bassi 4.0* (FZÖ) is aimed specifically at organisations (especially SMEs) that want to shape a fair and inclusive digital future

3.11.3 New initiatives and instruments 2024 and outlook

As part of the 2024 funding agreement and additional mandates, a number of new initiatives have been launched. Among other things:

- *Qualifizierung* (BMIMI): Topic calls for qualification networks in the areas of energy, aviation, digital solutions for health, and climate-neutral city.
- Artificial Intelligence (BMIMI). Two new funding priorities established under AI for Tech: Edge AI and hybrid AI.
- Chips Joint Undertaking (BMIMI/FZÖ). Calls for tenders for an Austrian Chips Competence Centre and for Austrian participation in four pilot lines.
- EIC plug-in. Implementation of a European Innovation Council (EIC) submission with a pre-selection selection mechanism based on national programmes — in this case, *FFG Basisprogramme* and aws. The first successful case is from Austria.
- *Expedition Zukunft* (FZÖ). Next stage of expansion launched: start of active project support by Expedition Guides; two new funding priorities — Spin-offs, *Challenge Wasser & Boden*.
- *Wirksam Werden* (BMSGPK). Funding of innovations to combat child and youth poverty.
- This expands the FFG's remit to include new policy areas and commissioned bodies.
- *Rohstoff-Initiative* (BMF). First call for R&D projects that contribute to securing a stable and sustainable supply of raw materials.
- Data stewards as a new instrument for strengthening data management skills in Austrian research organisations and companies.

312 https://www.ffg.at/Foerdermoeglichkeiten_Vielfalt

313 https://www.ffg.at/innovatorinnen

Outlook

In line with ongoing development, particular emphasis is being placed on the utilisation of research results. In this context, established formats (Markt.Start) are being revised and project-related support services expanded. Thematically, new impulses are being prepared in the fields of artificial intelligence and quantum research.

Further information can be found in the FFG annual report.[314]

Development of selected indicators over the years

Following on from the individual presentations of the central research and research funding institutions in terms of indicators and development over the past two years as part of the FoFinaG monitoring, the next section focuses on the development of selected performance indicators over a longer period, namely from 2018 to 2024. This also enables a comparison between the individual central institutions. However, it should be noted in advance that GeoSphere Austria cannot yet be included in this analysis, as the data required for the analysis is only available from 2024 onwards due to the recent establishment of GeoSphere Austria. SAL was also only founded in 2018 and data is therefore only available from 2019. The LBG is a special case in that it was still defined as a research funding organisation and not as a research institution in the 2020 RTS; this means that there is no complete data available over the years here either. Accordingly, individual data points may be missing from the analysis.

In general, all data referred to below is taken from the 2020—2025 Austrian Research and Technology Reports. If data was updated in subsequent years, the updated data, i.e. the most recent RTR, was always used as a reference for the following analysis.

Against this background, the following sections take a closer look at the performance of the central research and the research funding institutions.

Performance of the central research institutions

In order to examine the performance of the five central research institutions over the years, the development of income, the third-party funding ratios, the approval in the research framework programmes and the Glass Ceiling Index are presented.

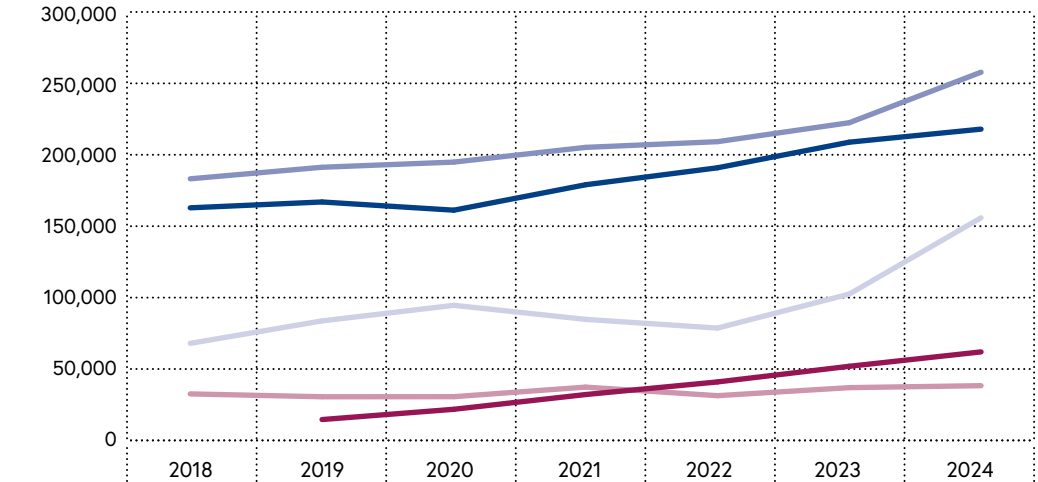
Development of income

The development of income shows that it has increased at all institutions over the years, in some cases noticeably. For example, SAL's income increased by an average of over 34 % annually in the period 2019—2024, while ISTA's income increased by an average of 17 % in the period 2018—2024. In contrast, the revenues of LBG, AIT and OeAW increased by an average of 4 %, 5 %

314 https://www.ffg.at/publikationen

and 6 % respectively. The steep increases at SAL and ISTA can be explained, among other things, by the fact that both are still undergoing institutional establishment or expansion.

Figure 3-1: Income of the research institutions 2018–2024 in € 1,000



	2018	2019	2020	2021	2022	2023	2024
AIT	162,900	167,000	161,252	179,059	190,926	208,865	218,005
OeAW	183,222	191,312	194,922	205,233	209,219	222,491	257,881
ISTA	68,013	83,720	94,648	84,802	78,701	102,500	155,943
SAL		14,655	21,840	32,163	40,992	51,944	62,025
LBG	32,610	30,610	30,660	37,368	31,371	37,002	36,370

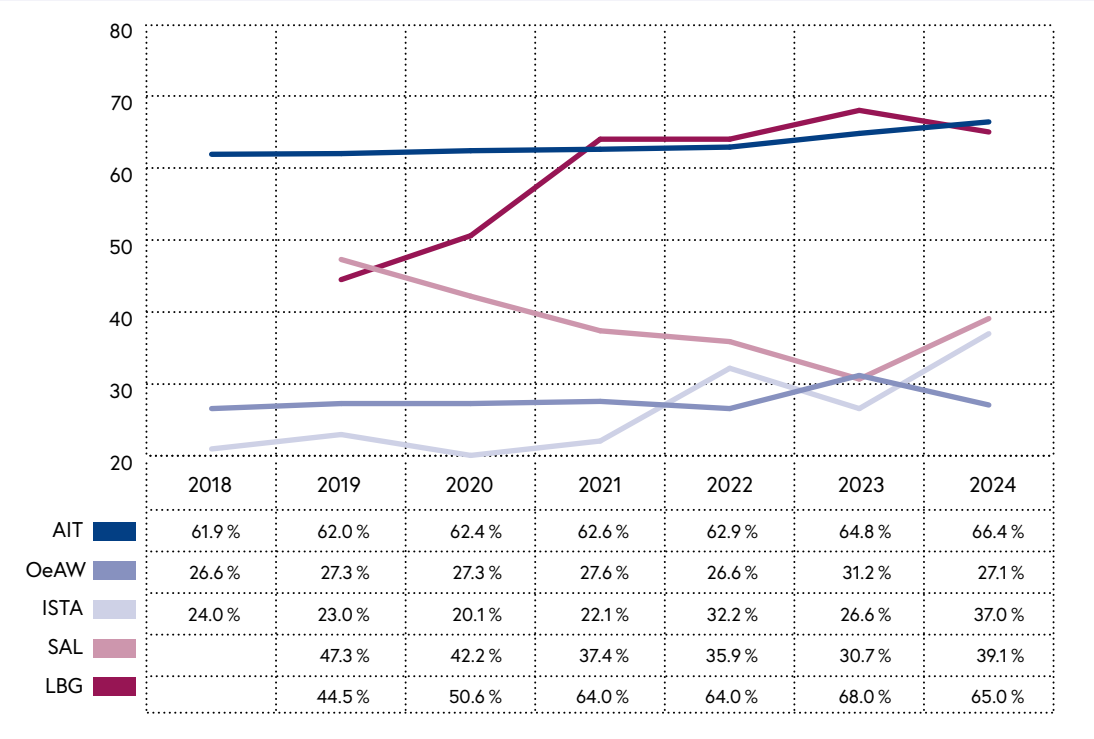
Source: FTB 2020, 2021, 2022, 2023, 2024, 2025.

Development of third-party funding ratios

The third-party funding ratio represents the share of third-party funding in total income. At OeAW, however, the calculation is slightly different, namely as a proportion of the total funds from the performance agreement plus the third-party funds raised (excluding other income).

As shown in Figure 3-2, the ratios of third-party funding vary considerably between the research institutions defined in the FoFinaG. The LBG and the AIT achieve very high third-party funding ratios; looking at the most recent year 2024, the LBG has around 65 % and the AIT 67 %. As far as the research institutions SAL and ISTA are concerned, a positive development trend can be seen, especially regarding the most recent years. In contrast, strongly basic research-orientated institutions such as the Austrian Academy of Sciences naturally have a lower third-party funding ratio.

Figure 3-2: Third-party funding ratios of research institutions 2018–2024 in %



	2018	2019	2020	2021	2022	2023	2024
AIT	61.9 %	62.0 %	62.4 %	62.6 %	62.9 %	64.8 %	66.4 %
OeAW	26.6 %	27.3 %	27.3 %	27.6 %	26.6 %	31.2 %	27.1 %
ISTA	24.0 %	23.0 %	20.1 %	22.1 %	32.2 %	26.6 %	37.0 %
SAL		47.3 %	42.2 %	37.4 %	35.9 %	30.7 %	39.1 %
LBG		44.5 %	50.6 %	64.0 %	64.0 %	68.0 %	65.0 %

* The third-party funding ratio at the Austrian Academy of Sciences is calculated as: Third-party funding/(funds from the performance agreement + third-party funding), excluding other income.

Source: FTB 2020, 2021, 2022, 2023, 2024, 2025.

Development of participations in the research framework programmes

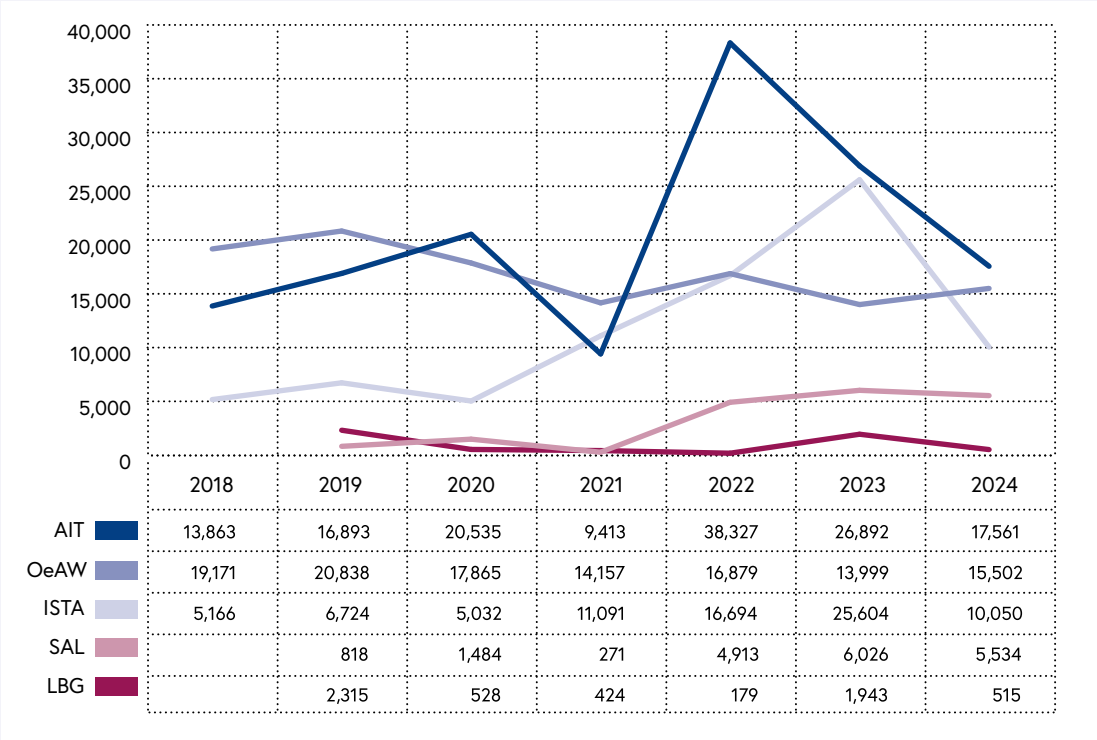
The success in securing European funding is presented below on the basis of two indicators, namely participation in Horizon 2020 (until 2021) and Horizon Europe (from 2021) as well as approvals in these two research framework programmes.

While the two strongly basic research-oriented institutions, OeAW and ISTA were successful in the ERC, the number of participations in 2022 and 2023 generally increased remarkably at all institutions. Over time, the three research institutions ISTA, SAL and LBG were particularly successful in 2023, while OeAW and AIT were very successful in 2022. For 2024, the number of participations at OeAW and SAL is stable, while a decline can be observed at AIT and ISTA.

Due to the transition from H2020 to Horizon Europe in 2020 and 2021, all the research institutions mentioned here show a decline in the number of participations in either 2020 (ISTA) or 2021 (all others).

Overall, however, the trend over time is positive. In 2024, the central research institutions defined according to FoFinaG generated an average of around 6 % of their total income from the Horizon Europe programme. As the projects in Horizon Europe are often very large, it should be noted that it makes a visible difference whether a project is won or not. For this reason, the recent decline in the AIT, starting from a record level in 2022, should also be put into perspective.

Figure 3-3: Participations/approvals by research institutions in the EU Framework Programmes 2018–2024 in €1,000



	2018	2019	2020	2021	2022	2023	2024
AIT	13,863	16,893	20,535	9,413	38,327	26,892	17,561
OeAW	19,171	20,838	17,865	14,157	16,879	13,999	15,502
ISTA	5,166	6,724	5,032	11,091	16,694	25,604	10,050
SAL		818	1,484	271	4,913	6,026	5,534
LBG		2,315	528	424	179	1,943	515

Source: FTB 2020, 2021, 2022, 2023, 2024, 2025, FFG.

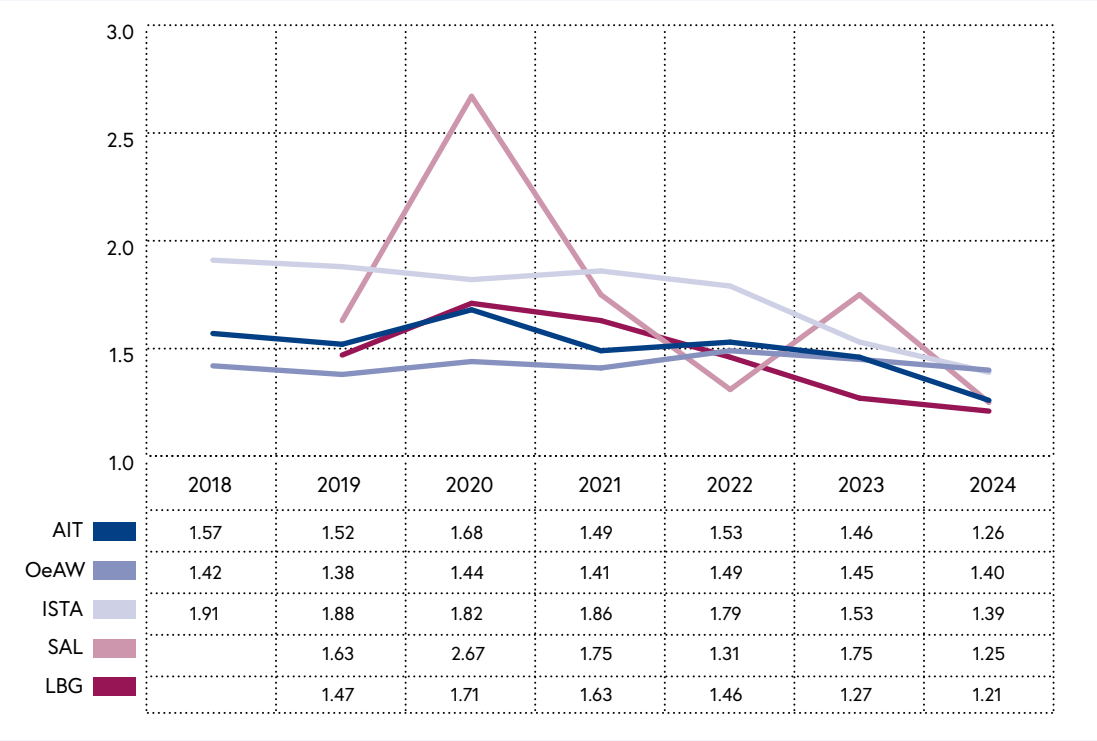
Development of the Glass Ceiling Index

The development of the Glass Ceiling Index is used as an indicator for gender and equal opportunities.

As Figure 3-4 illustrates, the values for the research institutions analysed here are above one. Accordingly, women are underrepresented in management positions in all the research institutions analysed. The differences in level and development can partly be explained by the size and the associated challenges regarding the staff composition of the institution: For example, the value at the OeAW, as the largest institution, has remained almost unchanged over the years. In contrast, the value for a small institution such as SAL fluctuates greatly. However, the disciplinary orientation also plays a role: AIT, ISTA and SAL, as research institutions with a scientific and technical orientation, consistently have higher index values than the OeAW and the LBG, where humanities disciplines are also represented.

Overall, the development of the Glass Ceiling Index over time shows that the research institutions are consistently endeavouring to achieve gender equality. At AIT, ISTA, SAL and LBG, the value is approaching 1, which indicates an increasing presence of women in management positions

Figure 3-4: Gender – Class-Ceiling Index of the research institutions 2018–2024



	2018	2019	2020	2021	2022	2023	2024
AIT	1.57	1.52	1.68	1.49	1.53	1.46	1.26
OeAW	1.42	1.38	1.44	1.41	1.49	1.45	1.40
ISTA	1.91	1.88	1.82	1.86	1.79	1.53	1.39
SAL		1.63	2.67	1.75	1.31	1.75	1.25
LBG		1.47	1.71	1.63	1.46	1.27	1.21

Source: FTB 2020, 2021, 2022, 2 023, 2024, 2025.

Development of the performance of research funding institutions

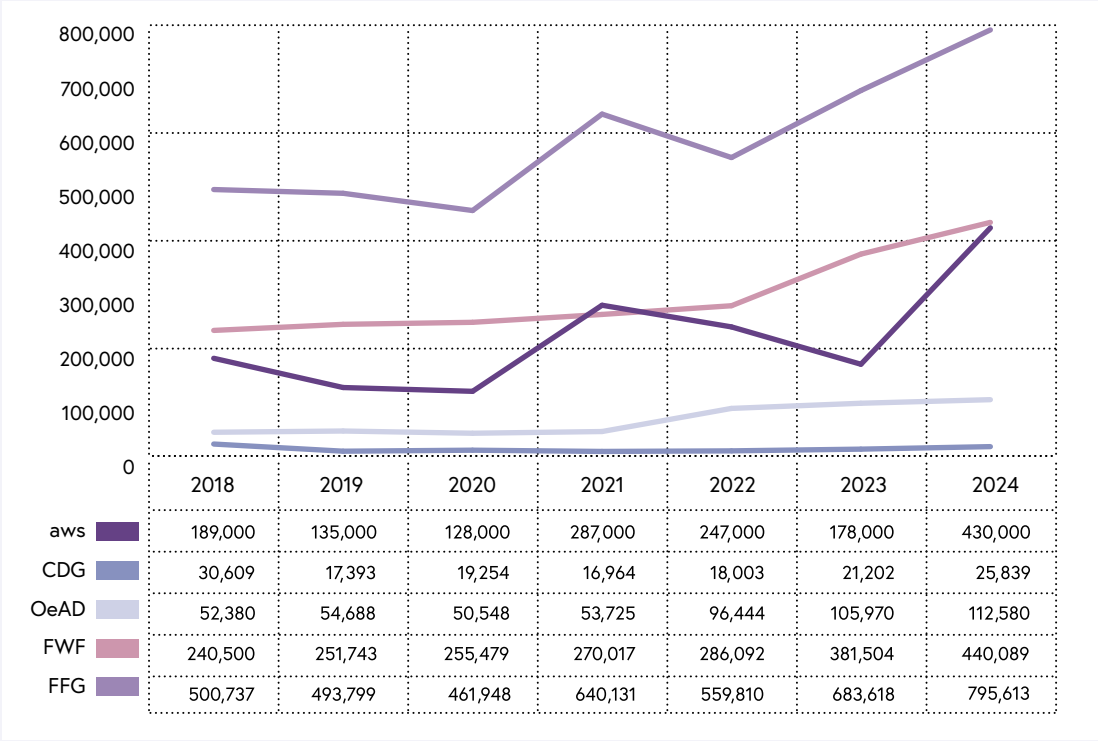
To present the performance of the central research funding institutions, it is essential to have access to valid, comparable data. For the performance comparison presented below, the development of present values and funding budgets in the years 2018–2024 is therefore discussed, and the proportion of female project leaders is illustrated regarding the presence of women.

Development of present values and funding budgets

The development of present values and funding budgets shows that these have risen sharply, particularly in the last two years at FFG and FWF. The increase continued in 2024. The OeAD also shows significant growth over the years, which is not least because the OeAD took on additional tasks from 2022. Looking at the CDG, it recorded a declining funding budget until 2021, but since then the CDG's funding budget has also risen again.

Overall, all research funding institutions defined in the FoFinaG have visibly benefited from the resources available from the Future Austria Fund since 2022.

Figure 3-5: Present value of funding from research funding organisations 2018–2024 in €1,000



	2018	2019	2020	2021	2022	2023	2024
aws	189,000	135,000	128,000	287,000	247,000	178,000	430,000
CDG	30,609	17,393	19,254	16,964	18,003	21,202	25,839
OeAD	52,380	54,688	50,548	53,725	96,444	105,970	112,580
FWF	240,500	251,743	255,479	270,017	286,092	381,504	440,089
FFG	500,737	493,799	461,948	640,131	559,810	683,618	795,613

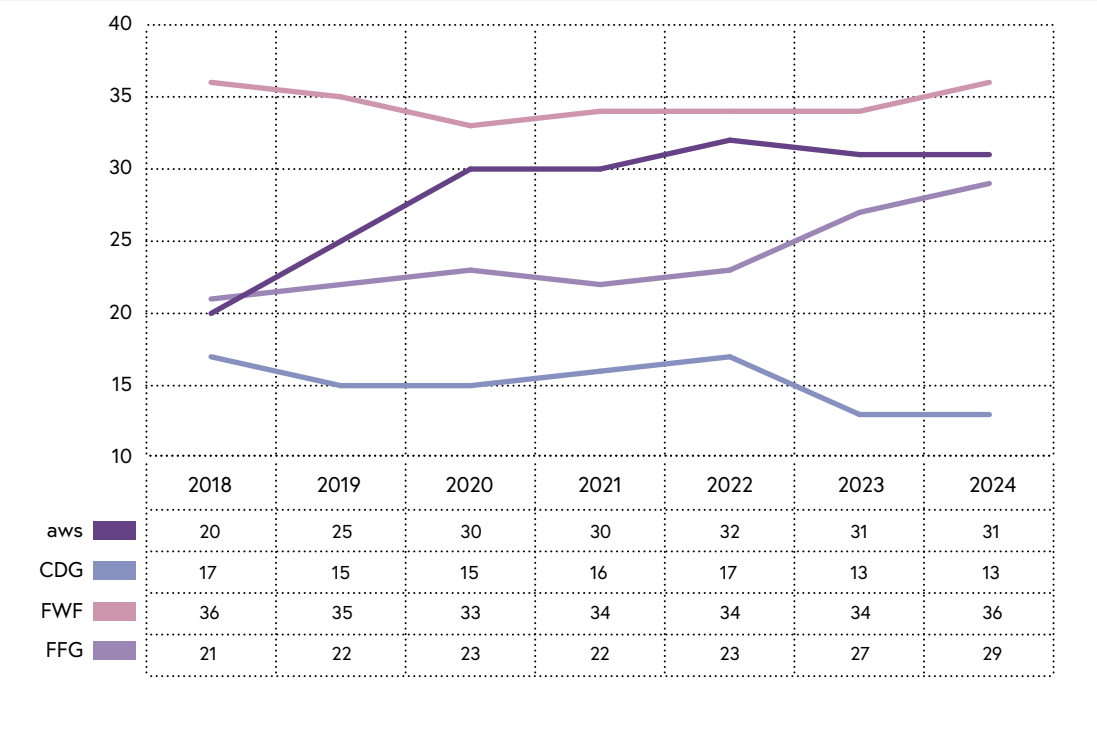
Total present value of funding or total volume of receivables in €1,000, aws excluding COVID-19 aid and the Ukraine war special programmes. Source: FTB 2020, 2021, 2022, 2023, 2024, 2025.

Development of the proportion of female project managers

The proportion of women among all project leaders is used as an indicator of gender and equal opportunities funding for research funding organisations. The OeAD is not included in this analysis as it mainly awards scholarships and lectureships and therefore project leaders cannot be defined.

Figure 3-6 illustrates the development of the proportion of female project managers, with the proportion at the FWF being the highest, as expected, given the disciplinary breadth of funding programmes. The FFG also shows significant growth in the period under review, whereas the aws shows hardly any change. In comparison, the CDG shows a slight decline and has a lower proportion of female project leaders, not least due to its focus on industry-related basic research. In addition, the slightly different survey unit must be considered; in this case, CD laboratories and JR centers are used as the reference value here.

Figure 3-6: Gender — proportion of women among all project managers 2018–2024 in %



	2018	2019	2020	2021	2022	2023	2024
aws	20	25	30	30	32	31	31
CDG	17	15	15	16	17	13	13
FWF	36	35	33	34	34	34	36
FFG	21	22	23	22	23	27	29

Proportion of women in project management positions at the CDG: heads of CD laboratories and JR centers.
Source: FTB 2020, 2021, 2022, 2023, 2024, 2025.

ANNEX

Annex I – Directories and data sources

List of Figures

List of Tables

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Country codes

Abbreviation	Country
AT	Austria
AU	Australia
BE	Belgium
BG	Bulgaria
BA	Brazil
CH	Switzerland
CN	China
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
GB	Great Britain
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	The Netherlands
PL	Poland
PT	Portugal
RO	Romania
RU	Russia
SI	Slovenia
SK	Slovakia
SE	Sweden
US	United States of America
ZA	South Africa

Glossary KPIs of the Digital Decade

Digital goals	KPI	Statistical value
Digital skills	At least basic digital skills	% of people (age 16–74)
	ICT specialists	Percentage of total employment
Digital infrastructure	Gigabit network connection	% of households
	Fibre optics to the end customer	% of households
	5G network coverage	% of households
Digitalisation of companies	Cloud computing	% of companies (with 10 or more employees; all manufacturing and service sectors, with the exception of the financial sector).
	Data analytics	% of companies (with 10 or more employees; all manufacturing and service sectors, with the exception of the financial sector).
	Artificial intelligence	% of companies (with 10 or more employees; all manufacturing and service sectors, with the exception of the financial sector).
	SMEs with at least basic digital intensity	% of companies (with 10 or more employees; all manufacturing and service sectors, with the exception of the financial sector).
	Unicorns	Number of unicorns
Digitalisation of public services	Online provision of important public services for citizens	Score (0 to 100)
	Online provision of important public services for companies	Score (0 to 100)
	Access to electronic patient records	Score (0 to 100)

Description	Data source
Individuals with “basic” or “more than basic” digital skills in each of the following five areas: Information and data literacy, Communication and collaboration, digital content creation, problem solving, and security skills	Eurostat - European Union survey on the use of ICT in Households and by Individuals (ISOC_SK_DSKL_I21 [I_DSK2_BAB])
Employed ICT specialists. Broad definition based on the ISCO-08 classification and includes occupations such as ICT service managers, ICT professionals, ICT technicians, ICT installers and ICT maintenance personnel.	Eurostat - Labour Force Survey (ISOC_SKS_ITSPT and ISOC_SKS_ITSPS)
% of households covered by a fixed Very High-Capacity Network (VHCN). The technologies considered are fibre to the home (FTTH) and fibre to the building (FTTB) for 2017–2018 and FTTH, FTTB and cable DOCSIS 3.1 for the years from 2019 onwards (source: EUROSTAT ISOC_CBT)	EUROSTAT ISOC_CBT; Broadband coverage in Europe studies for the European Commission by Omdia and Point Topic
% of households supplied with FTTH and FTTB	EUROSTAT ISOC_CBT; Broadband coverage in Europe studies for the European Commission by Omdia and Point Topic
% of households with coverage by at least one 5G mobile network	EUROSTAT ISOC_CBT; Broadband coverage in Europe studies for the European Commission by Omdia and Point Topic
% of companies using sophisticated or medium cloud computing services	Eurostat - European Union survey on ICT usage and
e-commerce in enterprises (ISOC_CICCE_USE [E_CC1_SI])	Eurostat - European Union survey on ICT usage and e-commerce in enterprises (ISOC_EB_DAS [E_DA])
% of companies that use AI technology	Eurostat - European Union survey on ICT usage and e-commerce in enterprises (ISOC_EB_AI [E_AI_TANY])
% of SMEs that use at least 4 out of 12 selected digital technologies	Eurostat - European Union survey on ICT usage and e-commerce in enterprises (ISOC_E_DII [E_DI4_LO+ E_DI4_HI + E_DI4_VHI]
Calculated as the sum of the unicorns referred to in Article 2(11)(a) of Decision (EU) 2022/2481 and the unicorns referred to in Article 2(11)(b) of this Decision.	Dealroom.co
The proportion of administrative steps that can be completed entirely online for important life events for citizens. 7 life events are taken into account: Family, career, studies, health, transport, relocation, and initiation of small claims procedure.	eGovernment Benchmark Report 2024
The proportion of public services required to start a business and conduct regular business activities that are available online for both domestic and foreign users. Services that are offered via a portal receive a higher score, services that only provide information (but must be completed offline) receive a lower score.	eGovernment Benchmark Report 2024
Measured as: (i) the nationwide availability of online access services for citizens to their electronic health data (via a patient portal or mobile patient app) with additional measures to allow certain groups of people (e.g., guardians of children, people with disabilities, older people) to also access their data, and (ii) the percentage of people who have the ability to obtain or use their own minimum set of health-related data currently stored in public and private electronic health record systems.	Digital decade e-Health indicators development report produced by empirica GmbH and PredictBy

Data sources

EUROSTAT Database: The Statistical Office of the European Union provides official data on a wide range of topics. The database includes data from EU Members States and, figures for some indicators are also available for major non-EU economies such as the USA.

Resilience Dashboard: Since 2021, the Resilience Dashboard of the Joint Research Centre of the European Commission has presented the relative resilience capacities and weaknesses of European and non-European countries. Various indicators from the four areas of "social and economic", "environment", "digitalisation", and "geopolitics" are collected and compiled in (sub-)indices.

Global Innovation Index 2024 (GII): The Global Innovation Index (GII) is published annually by the World Intellectual Property Organisation (WIPO) of the United Nations. From 2013–2020, the GII was published in collaboration with the French business school INSEAD and Cornell University. Since 2021, the GII has been compiled by WIPO in collaboration with the Portulans Institute, various businesses and academic network partners, and the GII Advisory Board. In 2024, 133 economies were compared both on the overall index and in terms of detailed indicators on the input and output of the innovation system.

DESI Dashboard for the Digital Decade: Since 2014, the European Commission has monitored the digital progress of the Member States using the Digital Economy and Society Index (DESI). The DESI has been integrated into the State of the Digital Decade report since 2023. The accompanying dashboard compares Europe's performance in the four areas of the Digital Decade policy programme: digital skills, digital infrastructure, digitalisation of businesses, and digitalisation of public services.

European Innovation Scoreboard 2024 (EIS): The European Innovation Scoreboard report provides a comparative analysis of the innovation performance of EU Member States and other European and non-European countries.

OECD – Main Science and Technology Indicators: The OECD publishes key indicators covering a broad range of topics, including the economy, education, energy, transport, and research and development.

Education at a Glance 2024: In the Education at a Glance report, the Organisation for Economic Co-operation and Development (OECD) publishes an annual collection of internationally comparable indicators on education. The focus is on educational participation, graduation rates, investment in education, and teaching and learning environments.

The Atlas of Economic Complexity: The Atlas of Economic Complexity, produced by Harvard University, includes an index of economic complexity. The index is derived from trade data and reflects the knowledge intensity of goods and the processes required to produce them.

Scimago Journal & Country Ranks: The Scimago Journal & Country Rank database is a publicly accessible portal that provides indicators on scientific publications.

Scopus: Scopus is a subscription-based literature database that also enables advanced searches and bibliometric analyses.

Annex II – Definitions and abbreviations

Definitions in monitoring in accordance with FoFinaG

Time to contract: The processing time refers to the period between the receipt of an application by the research funding organisation and the finalisation (dispatch) of the contract to the funding recipient. Further definitions are provided in the footnotes.

Participations in Framework Programmes (FP): Indicator 4 shows ERC grants awarded; Starting Grants, Consolidator Grants, and Advanced Grants where the institution acted as coordinator (i.e., no co-beneficiaries are included). Indicator 7 shows the number of newly approved participations by research institutions in programmes and initiatives under the current Framework Programmes, including ERC grants; Horizon 2020 projects are no longer included from the RTR 2024 onwards.

Projects under the FP that are tracked via the Horizon platform, e.g., IMI, IHI, DG Justice, CERV are not included. In contrast to indicator 4, all roles are counted (coordinator, partner, third party). Only EU funds are included in the approval totals; own contributions or national co-funding are excluded. Accordingly, third-party projects are not assigned any approved totals. For both indicators, the year in which the contract was signed is relevant.

Third-party funding: The third-party funding of the research institutions include both income from clients (private and public) and awarded funding. Funding from the National Foundation for Research, Technology and Development (NFTE), the Austrian Fund (Ö-Fonds), and the Future Austria Fund (FZÖ) are also counted as third-party funding. However, partner contributions, other income from internal cost allocation, AMS funding and research premiums are not included.

Grants: Grant volumes acquired by research institutions are also shown as "awarded", excluding own contributions. To avoid double-counting, only newly acquired and contractually secured projects within the reporting year are included; ongoing projects are not counted. The year in which the contract was concluded is decisive.

Research infrastructure: All research infrastructures newly acquired in the reporting period with a cumulative purchase value of over €100,000 (incl. VAT) as of 31 December and that are located at the institution are recorded. Research infrastructures support excellent research, research-led teaching, training of early-career researchers, institutional profile development, knowledge transfer, technological progress, and social innovation. They include facilities, equipment, instruments, or other resources that are located on a single site, distributed across several sites, or virtual in nature. See the Intellectual Capital Report Ordinance (WBV) 2016[315] , the Research Infrastructure Database[316], and the Austrian Research Infrastructure Action Plan 2030.[317]

Funding budget: The research funding organisations use various terms to describe their funding and financing performance. In the context of the JCC, approvals and commitments are shown as cash values.

Total income: Total income corresponds to turnover and other operating income in accordance with the Austrian Commercial Code (UGB).

315 Intellectual Capital Report Ordinance 2016 – WBV 2016), StF: Federal Law Gazette II No. 97/2016.

316 BMFWF Research Infrastructure Database: https://forschungsinfrastruktur.bmfwf.gv.at/en

317 Austrian Research Infrastructure Action Plan 2030: https://www.bmfwf.gv.at/dam/jcr:7684e7e0-1540-4084-aefb-643f90c56859/FI-Aktionsplan%202030_BF.pdf

Glass Ceiling Index: According to SHE figures[318], the index compares the proportion of women among all employees with their proportion at management level. The index can range from zero to infinity. A value below 1 indicates that women are relatively overrepresented in management positions, while a value above 1 means they are underrepresented. The higher the value, the greater the underrepresentation.

Global budget: The global budget or basic funding of research institutions refers to all non-earmarked grants from owners/shareholders/providers (often based on a performance agreement). The institution allocates the basic funding independently.

Employees: This includes employees, freelancers, temporary workers, marginal part-time employees, but excludes staff on leave or individuals with contracts for work and services.

Practice partners: Practice partners are cooperation partners with implementation relevance outside the industrial sector, such as service companies, hospitals, local authorities, and NGOs.

Doctoral and PhD students: With the exception of ISTA, the research institutions do not have the right to award doctorates under the Research Funding and Financing Act (FoFinaG). Therefore, all doctoral candidates who are primarily supervised at the research institution in cooperation with a university are counted.

Publications: Only scientific publications are included (no project reports, etc.) and only those that have undergone a quality assurance process (peer review). All publications have a persistent identifier such as DOI, ISSN, and have been published in scientific journals, edited volumes, proceedings, or monographs. Publications with multiple authors are counted in full for each author ("whole counts").

Foundation funds: At the end of 2020, the special endowment of the National Foundation (NFTE) and the Austrian Fund (Ö-Fonds), two key sources of research funding, expired. However, funds can continue to be drawn from the NFTE and the Ö-Fonds in subsequent years. From 2022, institutions (aws, CDG, FFG, FWF, LBG, and OeAW) also have access to funds from the Future Austria Fund (FZÖ). The three funding sources are summarised under Indicator 1 (third-party funding and financing).

Reporting dates: All figures are collected as of 31 December of the respective reporting year.

Technology Readiness Level (TRL): TRL is a scale used to assess the maturity of new technologies through a systematic analysis. It ranges from 1 to 9, indicating how far the technology has progressed. TRL 1 refers to basic research with minimal application readiness, while TRL 9 refers to technologies that have been proven successful in real-world use.

318 See European Commission (2021): https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/67d5a207-4da1-11ec-91ac-01aa75ed71a1

Abbreviations

ACR	Austrian Cooperative Research
ACTRIS	Aerosol, Clouds and Trace Gases Research Infrastructure
AI	Artificial Intelligence
AIM AT 2030	Artificial Intelligence Mission Austria 2030
AIT	Austrian Institute of Technology
ASA	Austrian Space Agency
ASCC	Austria Science Communication Center
ASCII	Supply Chain Intelligence Institute Austria
ASPI	Australian Strategic Policy Institute
ATI	Advanced Technologies for Industry
aws	Austria Wirtschaftsservice Gesellschaft
BAP	Biotechnology Action Programme
BBMRI-ERIC	European Research Infrastructure for biobanking and biomolecular resources
BDI	Bundesverband der Deutschen Industrie (The Voice of German Industry)
BEP	Biomolecular Engineering Programme
BIPs	Blended Intensive Programmes
BIT	Bureau for International Research and Technology Cooperation
BKA	Bundeskanzleramt (Federal Chancellery)
BMAW	Bundesministerium für Arbeit und Wirtschaft (Federal Ministry of Labour and Economy)
BMASGPK	Bundesministerium für Arbeit, Soziales, Gesundheit, Pflege und Konsumentenschutz (Federal Ministry of Labour, Social Affairs, Health, Care and Consumer Protection)
BMBWF	Bundesministerium für Bildung, Wissenschaft und Forschung (Federal Ministry of Education, Science and Research)
BMEIA	Bundesministerium für europäische und internationale Angelegenheiten (Federal Ministry for European and International Affairs)
BMF	Bundesministerium für Finanzen (Federal Ministry of Finance)
BMFWF	Bundesministerium für Frauen, Wissenschaft und Forschung (Federal Ministry of Women, Science and Research)
BMI	Bundesministerium für Inneres (Federal Ministry of the Interior)
BMIMI	Bundesministerium für Innovation, Mobilität und Infrastruktur (Federal Ministry of Innovation, Mobility and Infrastructure)
BMJ	Bundesministerium für Justiz (Federal Ministry of Justice)
BMK	Bundesministerium für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie (Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology)
BMKÖS	Bundesministerium für Kunst, Kultur, öffentlichen Dienst und Sport (Federal Ministry for Arts, Culture, Civil Service and Sport)
BML	Bundesministerium für Land- und Forstwirtschaft, Regionen und Wasserwirtschaft (Federal Ministry of Agriculture, Regions and Water Management)
BMLRT	Bundesministerium für Landwirtschaft, Regionen und Tourismus (Federal Ministry of Agriculture, Regions and Tourism)

BMLUK	Bundesministerium für Land- und Forstwirtschaft, Klima und Umweltschutz, Regionen und Wasserwirtschaft (Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management)
BMLV	Bundesministerium für Landesverteidigung (Federal Ministry of Defence)
BMSGPK	Bundesministerium für Soziales, Gesundheit, Pflege und Konsumentenschutz (Federal Ministry of Social Affairs, Health, Care and Consumer Protection)
BMVIT	Bundesministerium für Verkehr, Innovation und Technologie (Federal Ministry for Transport, Innovation and Technology)
BMWET	Bundesministerium für Wirtschaft, Energie und Tourismus (Federal Ministry of Economy, Energy and Tourism)
BOKU	Universtität für Bodenkultur Wien (University of Natural Resources and Life Sciences, Vienna)
BRITE	Basic Research in Industrial Technologies for Europe
CD Laboratory	Christian Doppler Laboratory
CDG	Christian Doppler Research Association
CEF	Connecting Europe Facility
CeMM	Research Center for Molecular Medicine
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CGMW	Commission for the Geological Map of the World
Chips-JU	Chips Joint Undertakings
COE	Clusters of Excellence
CPC-Codes	Cooperative Patent Classification Codes
CTBTO	Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization
CTO	Chief Technology Officer
DESI	Digital Economy and Society Index
EAP	Employee Assistance Program
EC	European Commission
EC	European Community
EC	European Commission
ECCCH	European Collaborative Cloud for Cultural Heritage
ECMWF	European Centre for Medium-Range Weather Forecasts
ECU	European Currency Unit
EDIH	European Digital Innovation Hubs
EF	Emerging Fields
EFI	Commission of Experts for Research and Innovation
EGDI	European Geological Data Infrastructure
EGS	Enhanced Geothermal System
EHEA	European Higher Education Area
EIC	European Innovation Council
EIE	European Innovation Ecosystems
EIP	European and International Programmes
EIS	European Innovation Scoreboard
EIT	European Institute of Innovation and Technology
EMBC	European Molecular Biology Conference
EMBL	European Molecular Biology Laboratory
EMI	European Monitor of Industrial Ecosystems
EPA	European Patent Office
EPC	European Patent Convention

EPOS	European Plate Observing System
EPSA	European Public Sector Award
ERA	European Research Area
ERA-NAP	National Action Plan for the European Research Area
ERC	European Research Council
ERP	European Recovery Programme
ESA	European Space Agency
ESBS	Electronics and Software-Based Systems
ESFRI	European Strategy Forum on Research Infrastructures
ESI	Erich Schmid Institute of Materials Science
EU	Europäische Union
Eurostat	Statistical Office of the European Union
FFF	Austrian Industrial Research Promotion Fund
FFG	Austrian Research Promotion Agency
FHK	Österreichische Fachhochschulkonferenz (Austrian University of Applied Sciences Conference)
FIW	Research Centre International Economics
FoFinaG	Forschungsfinanzierungsgesetz (Research Financing Act)
FOG	Forschungsorganisationsgesetz (Research Organisation Act)
FP	Framework Programme
FTB	Austrian Research and Technology Report
fteval	Austrian Platform for Research and Technology Policy Evaluation
FTE	Full Time Equivalent
FWF	Austrian Science Fund
FWIT	Austrian Council for Sciences, Technology, and Innovation
FZÖ	Fonds Zukunft Österreich (Future Austria Fund)
GAW	Global Atmosphere Watch
GB	Global budget
GCOS	Global Climate Observing System
GDP	gross domestic product
GDPR	General Data Protection Regulation
GII	Global Innovation Index
GMI	Gregor Mendel Institute for Molecular Plant Biology
GSA	GeoSphere Austria
GSEU	Geological Service for Europe
GUEP	Gesamtösterreichischer Universitätsentwicklungsplan (Austrian University Development Plan)
HEPHY	Institute of High Energy Physics
HMIS2030	Hochschulmobilitäts- und Internationalisierungsstrategie 2020–2030 (Higher Education Mobility and Internationalisation Strategy 2020–2030)
HPC	High-Performance-Computing Cluster
ICT	Information and communication technologies
iit	Institut für Innovation und Technik (Institute for Innovation and Technology)
IMBA	Institute of Molecular Biotechnology
IMD	International Institute for Management Development
IoT	Internet of Things
IPCEI	Important Projects of Common European Interest
IQOQI	Institute for Quantum Optics and Quantum Information
ISI	Ignaz Semmelweis Institute
ISTA	Institute of Science and Technology Austria

IT:U	Interdisciplinary Transformation University
JKU	Johannes Kepler University
JPI	Joint Programming Initiatives
JPO	Japan Patent Office
JRC	Joint Research Centre
JR centers	Josef-Ressel Centers
JU	Joint Undertaking
KETs	Key Enabling Technologies
KIC	Knowledge and Innovation Community
KPI	Key performance indicator
LBG	Ludwig Boltzmann Society – Austrian Association for the Promotion of Scientific Research
LBI	Ludwig Boltzmann Institute
MSCA	Marie Skłodowska-Curie Actions
NAP	National Action Plan
NECP	National Energy and Climate Plan
NFTE	Nationalstiftung für Forschung, Technologie und Entwicklung (National Foundation for Research, Technology and Development)
ÖAI	Austrian Archaeological Institute
OeAD	OeAD-GmbH-Agency for Education and Internationalisation
OeAW	Österreichische Akademie der Wissenschaften (Austrian Academy of Sciences)
OECD	Organisation for Economic Co-operation and Development
ÖFOS	Österreichische Systematik der Wissenschaftszweige Austrian classification of branches of science)
Ö-Fund	Österreich-Fonds (Austria Fund)
OIS Center	Open Innovation in Science Center
OMC	Open method of coordination
P2P	Public-Public-Partnerships
PA	Performance agreements
PCT	Patent Cooperation Treaty
PL	Pilot lines
PPP	Public-Private-Partnerships
QKD	Quantum Key Distribution
R&E	Research and Development
R&I	Research and Innovation
RACE	Research in Advanced Communications in Europe
RICAM	Johann Radon Institute for Computational and Applied Mathematics
RIS	Research Infrastructures
RRF	Recovery and Resilience Facility
RTD	Research, technology and development
RTI	Research, technology and Innovation
SAL	Silicon Austria Labs
SBIR	Small Business Innovation Research Programme
SDGs	Sustainable Development Goals
SFB	Special Research Program
SME	Small and medium-sized enterprise
SOFF	Systematic Observation Financing Facility
SSH	Social Sciences and Humanities
STEAM	Science, Technology, Engineering, Arts [& Humanities], Mathematics
STEM	Science, Technology, Engineering, Mathematics
STEP	Strategic Technologies for Europe Platform
THE Ranking	Times Higher Education World Ranking
TRL	Technology Readiness Levels
TSER	Targeted Socio-Economic Research
TTOs	Technology Transfer Offices

TU Wien	Technical University of Vienna
UAS	University of applied sciences
UGB	The Austrian Business Code
UNDRR	United Nations Office for Disaster Risk Reduction
UNESCO	United Nations Educational, Scientific, and Cultural Organization
uniko	Universitätenkonferenz (Austrian University Conference)
USPTO	United States Patent and Trademark Office
VC	Venture Capital
VHCN	Very High-Capacity Networks
VSC	Vienna Scientific Cluster
WIFO	Austrian Institute of Economic Research
wiiw	Vienna Institute for International Economic Studies
WIPO	World Intellectual Property Organization
WKO	Wirtschaftskammer Österreich (Austrian Economic Chambers)
WMO	World Meteorological Organization
WoS	Web of Science
WSR	Computing Center for Economics and Social Sciences
WTR	World Talent Ranking
WTZ	Knowledge Transfer Centres
WU	Vienna University of Economics and Business
ZSI	Centre for Social Innovation

Annex III – Federal research funding and contracts according to the Federal Research Database

The database for recording federal research funding and contracts (B_f.dat) has existed since 1975 and was initially established as a "documentation of facts of the federal government" by the then Federal Ministry of Science and Research. Today, the BMFWF (Federal Ministry of Women, Science and Research) is responsible for managing the database. The obligation of ministries to report to the respective science minister is set out in the Research Organisation Act (FOG), Federal Law Gazette No. 341/1981, as amended. In 2008, the system was converted into a database accessible to all ministries, allowing them to independently enter research-relevant funding and contracts. Each ministry is responsible for the validity and completeness of its own data within its respective area of activity. Since 1 June 2016, the Federal Research Database has been publicly accessible and provides an up-to-date overview of projects funded by the federal ministries.[319] As a documentation database, the B_f.dat also records brief content-related information on the registered research funding and contracts. For each reporting year, the database includes ongoing and newly approved R&D contracts and grants in addition to those completed, as well as their total funding volume and the actual disbursements made per reporting year. This results in an up-to-date overview of directly commissioned R&D studies, expert reports, evaluations, funding, etc., and their federal funding.

The Federal Research Database thus makes a significant contribution to transparency in the allocation of public funds and provides a comprehensive picture of research funding in Austria. Overall, however, the volume of research contracts and funding directly commissioned by the ministries is comparatively small – especially when compared with university budgets and the funding allocated to the research funding institutions (for details, see the respective overview on the use of federal funds for research in Annex IV). The amounts should therefore be seen as supplementary information in the interests of maximum transparency and completeness.

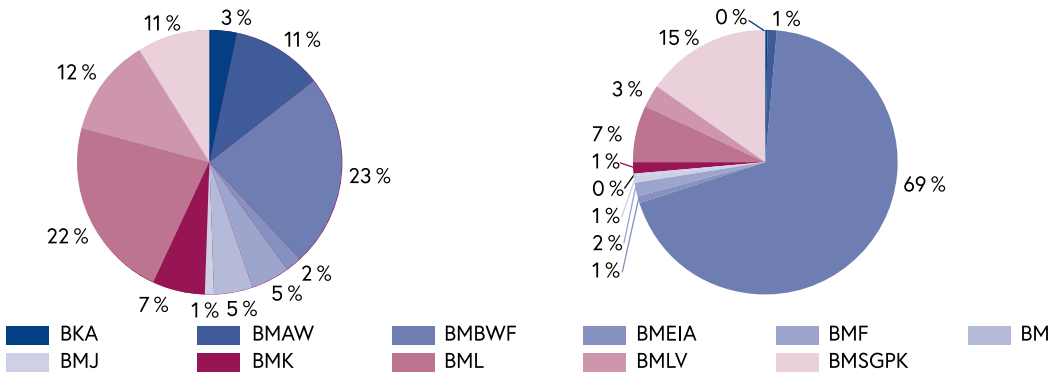
Figure A-1 provides an overview of the R&D projects entered in B_f.dat by the ministries. It shows the percentage share of R&D projects by ministry and the percentage share of total funding. The data in the B_f.dat shows that a total of 425 R&D projects received funding amounting to €789.96 million in 2024. This total also includes general institutional funding. Approximately 85.8 % of the funding in 2024 was paid out as funding to various research institutions. Excluding this, the remaining funding amounted to just under €112.49 million. This figure is €26.51 million or 19 % lower than in 2023. It should be noted that the funding amount per reporting year often includes partial payments for ongoing or completed projects and is therefore subject to annual fluctuations depending on project progress.

As in previous years, the BMBWF again accounted for the largest share of entries and funding amounts in 2024. As illustrated in Figure A III-1, 23.5 % of the R&D projects[320] and 68.7 % of the funding amounts (excluding general funding) are attributable to the BMBWF. The number of funding cases and the disbursed amounts for the BMBWF changed little compared to 2023: The share of funding cases fell by only 0.3 percentage points, while the share of disbursements rose by 1.5 percentage points. In terms of funding volume, the next largest contributors were the Federal Ministry of Social Affairs, Health, Care and Consumer Protection (BMSGPK) with a share of 15.1 % and the Federal Ministry of Agriculture, Forestry, Regions and Water Management (BML) with a share of 7.0 %. The comparatively low percentage of 1.5 % of the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) can be attributed to the fact that R&D funding in this area is largely handled via the funding institutions FFG and aws.

319 https://forschungsinfrastruktur.bmfwf.gv.at/en

320 Due to combined projects between the ministries, double-counting may occur in this form of presentation.

Figure A III-1: Share of ongoing and completed R&D projects and grants by funding amounts in 2024 (left-hand chart) and by funding cases (right-hand chart), in %



Source: BMFWF, Federal Research Database B-f.dat; illustration: WPZ Research.

Appendix IV – Statistics

Financing of gross domestic expenditure on R&D[321]

According to an estimate by Statistics Austria, approximately €16.1 billion was spent on research and development (R&D) in Austria in 2024. The research intensity, i.e., the proportion of R&D expenditure relative to nominal gross domestic product (GDP), stood at 3.35 %. The nominal increase in total Austrian R&D expenditure from 2023 to 2024 is estimated at 5.5 %, which exceeds the forecasted nominal GDP growth of 1.8 %. Over the past two decades, domestic R&D expenditure has risen significantly: the research intensity stood at 3.11 % in 2014 and at 2.18 % in 2004.

No estimate was made for gross domestic R&D expenditure or research intensity for 2025 as no federal budget draft was available when this report was made, and such an estimate would have involved excessive uncertainties.

In 2024, companies in Austria are expected to have funded around €7.9 billion in research, accounting for approximately half (49 %) of R&D funding. This figure includes the research premium, which was reported by the Federal Ministry of Finance to amount to over €1.1 billion in 2024. The public sector provided around €5.6 billion, or 34 %, of total R&D funding, with the federal government contributing around €4.6 billion (29 %) – making it the most significant funding source. Regional governments funded around €700 million, and other public institutions (e.g., local governments, chambers, social insurance institutions, higher education institutions) contributed approximately €230 million. Foreign sources, mainly foreign companies, are estimated to have funded over €2.6 billion of research conducted in Austria in 2024.

321 Based on the results of the R&D statistical surveys and other currently available documents and information (in particular the R&D-relevant budget and financial data provided by the federal government and the regional governments), Statistics Austria usually produces the "Global estimate of Austrian gross domestic expenditure on R&D" each year. This global estimate also includes retrospective revisions and updates based on the latest data. The funding of expenditure on research and experimental development conducted in Austria is presented in accordance with the definitions set out in the Frascati Manual, which is recognised internationally (OECD, EU) and thus ensures comparability across countries.

The estimate of Austria's gross domestic expenditure on R&D for 2024 incorporated budget forecasts and year-end accounts from the federal government and the regional governments, current economic forecasts, and preliminary trends from the most recent R&D survey for 2023.

Federal government R&D expenditure in 2024

The tables titled "Federal expenditure on research and research funding" present all research-related federal expenditure, including the research-related share of contributions to international organisations. The source is the "Detailed overview of research-relevant federal expenditure" (*Detailübersicht Forschungswirksame Mittelverwendungen des Bundes*) in the R&D annex to the BFG 2024 (part a and part b). The methodological approach is the internationally applied "GBARD" concept[322], which, unlike the domestic concept, also includes research-related contributions to international organisations. It is the basis used to classify R&D budget data by socio-economic objectives when reporting to the EU and OECD.

In 2024, the highest federal expenditure on research and research funding was allocated to the following socio-economic objectives (as shares of total funding)

- Promotion of the general advancement of knowledge: 27.3 %
- Promotion of trade, commerce and industry: 27.0 %
- Promotion of the healthcare system: 19.6 %
- Promotion of social and socio-economic development: 5.1 %
- Promotion of research on the earth, oceans, atmosphere and space: 4.3 %
- Promotion of energy production, storage and distribution: 4.0 %
- Promotion of transport, traffic and communications: 3.9 %

As no budget estimate for 2025 was available at the time of reporting, no detailed breakdown of federal research funding for 2025 is currently possible.

R&D expenditure by the regional governments

The research funding by the regional governments listed as sub-total in Table A IV-1 is based on the R&D expenditure estimates reported by the offices of the regional government. These estimates are derived from each government's draft or final budgets. The R&D expenditure of the regional hospitals is estimated annually by Statistics Austria using a methodology agreed with the regional government offices.

International comparison of R&D expenditure in 2022

The summary table presents key R&D-related indicators to show Austria's position compared with other EU Member States and selected non-EU countries (source: Eurostat). Detailed final data on R&D funding and performance by sector, as well as on R&D personnel, is only available for 2022 for purposes of international comparison.

322 GBARD: Government Budget Allocations for Research and Development.

Table overview of the statistical annex

Table A IV-1: Global estimate: Gross domestic expenditure on R&D, funding of research and experimental development conducted in Austria 2010–2024

Financing	2010	2011[1)]	2012	2013[1)]	2014	2015[1)]	2016	2017[1)]	2018	2019[1)]	2020	2021[1)]	2022	2023	2024
1. Gross domestic expenditure on R&D (in € million)	**8,066.4**	**8,276.3**	**9,287.8**	**9,571.3**	**10,275.2**	**10,499.2**	**11,145.0**	**11,289.8**	**11,912.0**	**12,441.2**	**12,199.0**	**13,225.5**	**14,236.6**	**15,288.0**	**16,131.7**
Funded by															
Federal government[2)]	2,257.6	2,232.6	2,410.2	2,383.7	2,592.8	2,528.2	2,825.3	2,681.9	2,954.6	2,848.4	3,321.1	3,217.2	3,642.1	4,110.9	4,619.9
Research premium[3)]	328.9	381.7	574.1	469.0	493.2	508.0	527.7	637.5	713.1	841.5	1,044.1	889.6	759.5	958.6	1,163.2
Regional governments[4)]	405.2	298.7	416.3	307.5	461.6	345.0	445.8	392.7	500.6	464.4	568.7	490.5	586.2	646.1	702.5
Business enterprise sector[5)]	3,639.4	3,820.9	4,243.3	4,665.8	4,901.3	5,222.2	5,377.5	5,532.8	5,610.6	5,982.3	5,030.7	6,114.6	6,596.9	6,785.5	6,754.4
Abroad[5)]	1,297.6	1,401.7	1,495.9	1,590.2	1,664.0	1,737.7	1,802.2	1,874.3	1,944.4	2,110.8	2,022.8	2,278.3	2,392.9	2,513.4	2,613.1
Other[6)]	137.9	140.8	148.0	155.2	162.3	158.1	166.6	170.7	188.8	193.9	211.7	235.2	259.0	273.6	278.6
2. Nominal GDP[7)] (in € billion)	**294.05**	**308.17**	**316.59**	**321.19**	**330.11**	**342.08**	**355.67**	**367.29**	**383.23**	**395.71**	**380.32**	**406.23**	**448.01**	**473.23**	**481.94**
3. Gross domestic expenditure on R&D as % of GDP	**2.74**	**2.69**	**2.93**	**2.98**	**3.11**	**3.07**	**3.13**	**3.07**	**3.11**	**3.14**	**3.21**	**3.26**	**3.18**	**3.23**	**3.35**

Date: 22 April 2025; source: Statistics Austria. Based on funding data for R&D carried out in Austria. Data as of April 2025.

1) Survey results

2) 2011, 2013, 2015, 2017, 2019, 2021: Survey results (federal government incl. FWF, FFG and National Foundation for Research, Technology and Development). 2010, 2012: Supplements T to the Federal Finance Acts (part b, performance in each case); 2014, 2016, 2018, 2020, 2022: Detailed overviews of the use of federal funds for research in the Federal Finance Acts (part b, performance in each case); 2023, 2024: Detailed overview of the use of federal funds for research in the Federal Finance Act 2024 (part b, estimate). 2010: Including €74.6 million National Foundation for Research, Technology and Development. 2012: Including €51.3 million National Foundation for Research, Technology and Development. 2014: Including €38.7 million National Foundation for Research, Technology and Development. 2016: Including €51.7 million National Foundation for Research, Technology and Development. 2018: Including €141.0 million National Foundation for Research, Technology and Development. 2020: Including €140.4 million National Foundation for Research, Technology and Development. 2022: Including €146.0 million National Foundation for Research, Technology and Development 2023: Including €140.0 million National Foundation for Research, Technology and Development. 2024: Including €140.0 million National Foundation for Research, Technology and Development.

3) 2011, 2013, 2015, 2017, 2019, 2021: survey results. 2023: Estimate by Statistics Austria. 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2024: BMF.

4) 2011, 2013, 2015, 2017, 2019, 2021: Survey results. 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2023, 2024: Based on the R&D expenditure reported by the offices of the state governments (state financial statements, funding estimates for 2023 and 2024).

5) 2011, 2013, 2015, 2017, 2019, 2021: survey results. 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2023, 2024: Statistics Austria estimate.

6) Funding from local governments (excluding Vienna), chambers, social insurance institutions, the higher education sector, other public funding and funding from the private non-profit sector. 2011, 2013, 2015, 2017, 2019, 2021: Survey results. 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2023, 2024: Statistics Austria estimate.

7) 2010–2024: Statistics Austria. As of March 2025.

Table A IV-2: Global estimate: Gross domestic expenditure on R&D, funding of research and experimental development carried out in Austria 2010–2024 as a percentage of GDP

Financing	2010	2011[1)]	2012	2013[1)]	2014	2015[1)]	2016	2017[1)]	2018	2019[1)]	2020	2021[1)]	2022	2023	2024
1. Gross domestic expenditure on R&D as % of GDP	**2.74**	**2.69**	**2.93**	**2.98**	**3.11**	**3.07**	**3.13**	**3.07**	**3.11**	**3.14**	**3.21**	**3.26**	**3.18**	**3.23**	**3.35**
Funded by:															
Federal government[2)]	0.77	0.72	0.76	0.74	0.79	0.74	0.79	0.73	0.77	0.72	0.87	0.79	0.81	0.87	0.96
Research premium[3)]	0.11	0.12	0.18	0.15	0.15	0.15	0.15	0.17	0.19	0.21	0.27	0.22	0.17	0.20	0.24
Regional governments[4)]	0.14	0.10	0.13	0.10	0.14	0.10	0.13	0.11	0.13	0.12	0.15	0.12	0.13	0.14	0.15
Business enterprise sector[5)]	1.24	1.24	1.34	1.45	1.48	1.53	1.51	1.51	1.46	1.51	1.32	1.51	1.47	1.43	1.40
Abroad[5)]	0.44	0.45	0.47	0.50	0.50	0.51	0.51	0.51	0.51	0.53	0.53	0.56	0.53	0.53	0.54
Other[6)]	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06
2. Nominal GDP[7)] (in € billion)	**294.05**	**308.17**	**316.59**	**321.19**	**330.11**	**342.08**	**355.67**	**367.29**	**383.23**	**395.71**	**380.32**	**406.23**	**448.01**	**473.23**	**481.94**

Date: 22 April 2025. Source: Statistics Austria. Footnotes see Table A IV-1.

Table A IV-3: Federal expenditure on research and research funding 2022–2024

Departments[1)]	Cash Flow Statement				Cash Flow Budget	
	2022[2)]		2023[3)]		2024[2)]	
	€ million	%	€ million	%	€ million	%
Federal Chancellery[4)]	2.523	0.1	2.308	0.1	1.916	0.0
Federal Ministry of Arts, Culture, the Civil Service and Sport	40.176	1.1	45.790	1.1	50.382	1.1
Federal Ministry for European and International Affairs	3.330	0.1	4.240	0.1	4.003	0.1
Federal Ministry of Labour and Economic Affairs	124.525	3.5	171.396	4.2	270.417	5.9
Federal Ministry of Education, Science and Research	2,700,269	74.7	3,125.883	76.3	3,337.625	72.4
Federal Ministry of Finance	30.953	0.9	36.312	0.9	52.250	1.1
Federal Ministry of the Interior	2.322	0.1	1.721	0.0	1.519	0.0
Federal Ministry of Justice	0.045	0.0	0.120	0.0	0.076	0.0
Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology	629.393	17.5	605.410	14.8	787.226	17.1
Federal Ministry of Defence	3.495	0.1	3.392	0.1	7.987	0.2
Federal Ministry of Agriculture, Forestry, Regions and Water Management	59.197	1.6	90.282	2.2	87.854	1.9
Federal Ministry of Social Affairs, Health, Care and Consumer Protection	9.572	0.3	8.638	0.2	9.941	0.2
Total	**3,605.800**	**100.0**	**4,095.492**	**100.0**	**4,611.196**	**100.0**

Date: April 2025 Source: Statistics Austria

1) In accordance with the version of the Federal Ministries Act 1986 valid in the respective year (2022, 2023: Federal Law Gazette I No. 98/2022; 2024: Federal Law Gazette I No. 44/2024).
2) Federal Financing Act 2024, detailed overview of the use of federal funds for research.
3) Breakdown of the preliminary version of the detailed overview of the use of federal funds for research on the basis of the 2023 performance.
4) Including the highest executive bodies.

Table A IV-4: Federal expenditure on research from 2023–2024

The detailed overview of research-relevant federal expenditure in the Federal Finance Act is structured as follows:

- Contributions from federal funds to international organisations whose objectives include research and research funding (part a) and
- Other federal disbursements for research and research funding (part b, Federal Research Budget)

The main criterion for compiling these expenditures is their relevance to research, based on the OECD's Frascati Manual definition of research, which is also used by Statistics Austria in its surveys on research and experimental development (R&D).

Detailed overview of the use of federal funds for research (amounts in € million)

Detailed overview of the use of federal funds for research	Budget estimate 2024[1]		Results 2023[2]	
	In total	Research	In total	Research
Part a	143.866	131.284	137.244	124.632
Part b	9,753.703	4,479.912	8,859.387	3,970.860
Total	9,897.569	4,611.196	8,996.631	4,095.492

Status: April 2025 Source: Federal Ministry of Finance

1) Federal Finance Act 2024, detailed overview of the use of federal funds for research.

2) Provisional version of the detailed overview of the use of federal funds for research based on the 2023 performance data.

Table A IV-5: Research-related higher education institutions expenditures by the federal government (General University Funds) 2000–2024[1)]

years	General expenditure	
	total	R&D
	€ million	
2000	1,956.167	842.494
2001	2,008.803	866.361
2002	2,104.550	918.817
2003	2,063.685	899.326
2004	2,091.159	980.984
2005	2,136.412	1,014.543
2006	2,157.147	1,027.270
2007	2,314.955	1,083.555
2008	2,396.291	1,133.472
2009	2,626.038	1,236.757
2010	2,777.698	1,310.745
2011	2,791.094	1,388.546
2012	2,871.833	1,395.130
2013	3,000.004	1,453.596
2014	3,059.949	1,481.744
2015	3,117.320	1,509.576
2016	3,262.376	1,610.742
2017	3,319.288	1,638.460
2018	3,294.879	1,658.500
2019	3,488.597	1,755.220
2020	3,698.739	1,859.785
2021	3,894.654	1,957.235
2022	4,040.988	2,069.802
2023	4,563.005	2,337.556
2024	4,676683	2,399.684

Date: April 2025 Source: Statistics Austria.

1) 2000–2022, 2024: Based on Annexes T of the working documents and detailed overviews Research-Relevant Federal Expenditure accompanying the Federal Finance Acts. 2023: Based on the 2023 outturn in the provisional version of the Detailed Overview of Research-Relevant Federal Expenditure.

Table A IV-6: Federal expenditure 2006–2024 on research and research funding by socio-economic objectives

Analyses of Supplements T of the working aids and detailed overviews of the effective use of federal research funds (Part a and Part b)

Reporting years		Total federal expenditure on R&D	Funding the exploration of the earth, oceans, atmosphere and space	Funding of agriculture and forestry	Funding of trade, commerce and industry	Funding the generation, storage and distribution of energy	Funding of transport, traffic and communications	Funding of teaching and education	Funding of the healthcare system	Funding of social and socio-economic development	Funding of environmental protection	Funding of urban and spatial planning	Funding of national defence	Funding of other objectives	Funding of the general expansion of knowledge
2006[1)]	in 1,000 €	1,697,550	76,887	57,698	411,462	20,951	42,795	18,997	379,776	81,812	53,279	9,602	126	-	544,165
	in %	100.0	4.5	3.4	24.2	1.2	2.5	1.1	22.4	4.8	3.1	0.6	0.0	-	32.2
2007[2)]	in 1,000 €	1,770,144	80,962	64,637	435,799	28,001	40,013	19,990	373,431	90,639	56,075	9,673	27	894	570,003
	in %	100.0	4.6	3.7	24.6	1.6	2.3	1.1	21.1	5.1	3.2	0.5	0.0	0.1	32.1
2008[3)]	in 1,000 €	1,986,775	87,751	66,273	525,573	24,655	39,990	37,636	422,617	90,879	57,535	12,279	142	-	621,445
	in %	100.0	4.4	3.3	26.5	1.2	2.0	1.9	21.3	4.6	2.9	0.6	0.0	-	31.3
2009[4)]	in 1,000 €	2,149,787	104,775	66,647	538,539	32,964	47,300	42,581	456,544	97,076	67,985	14,522	133	-	680,721
	in %	100.0	4.9	3.1	25.1	1.5	2.2	2.0	21.2	4.5	3.2	0.7	0.0	-	31.6
2010[5)]	in 1,000 €	2,269,986	103,791	67,621	587,124	39,977	56,969	50,648	472,455	99,798	67,114	12,792	123	-	711,574
	in %	100.0	4.6	3.0	25.9	1.8	2.5	2.2	20.8	4.4	3.0	0.6	0.0	-	31.2
2011[6)]	in 1,000 €	2,428,143	107,277	63,063	613,692	41,294	54,043	59,479	510,359	115,792	77,578	20,170	99	-	765,297
	in %	100.0	4.4	2.6	25.3	1.7	2.2	2.4	21.0	4.8	3.2	0.8	0.0	-	31.6
2012[7)]	in 1,000 €	2,452,955	103,432	60,609	607,920	55,396	47,934	65,537	499,833	121,570	86,776	20,338	120	-	783,490
	in %	100.0	4.2	2.5	24.8	2.3	2.0	2.7	20.4	5.0	3.5	0.8	0.0	-	31.8
2013[8)]	in 1,000 €	2,587,586	108,966	70,897	641,851	76,014	53,713	83,087	542,560	117,714	83,556	21,985	280	-	786,963
	in %	100.0	4.2	2.7	24.9	2.9	2.1	3.2	21.0	4.5	3.2	0.8	0.0	-	30.5
2014[9)]	in 1,000 €	2,647,489	113,173	60,714	689,214	64,582	64,675	81,354	566,058	119,780	48,381	22,639	961	-	815,958
	in %	100.0	4.3	2.3	26.0	2.4	2.4	3.1	21.4	4.5	1.8	0.9	0.0	-	30.9
2015[10)]	in 1,000 €	2,744,844	124,648	58,414	678,572	122,624	51,785	78,241	584,254	128,733	49,176	26,817	1,949	-	839,631
	in %	100.0	4.5	2.1	24.7	4.5	1.9	2.9	21.3	4.7	1.8	1.0	0.1	-	30.5
2016[11)]	in 1,000 €	2,875,706	131,240	60,828	747,264	122,903	46,654	82,610	592,407	135,709	49,586	28,435	2,610	-	875,460
	in %	100.0	4.6	2.1	26.0	4.3	1.6	2.9	20.6	4.7	1.7	1.0	0.1	-	30.4
2017[12)]	in 1000 €	2,889,779	144,552	70,329	728,136	106,887	68,214	74,493	609,919	159,300	45,228	35,171	4,899	9,730	832,921
	in %	100.0	5.0	2.4	25.2	3.7	2.4	2.6	21.1	5.5	1.6	1.2	0.2	0.3	28.8

Reporting years		Total federal expenditure on R&D	Funding the exploration of the earth, oceans, atmosphere and space	Funding of agriculture and forestry	Funding of trade, commerce and industry	Funding the generation, storage and distribution of energy	Funding of transport, traffic and communications	Funding of teaching and education	Funding of the healthcare system	Funding of social and socio-economic development	Funding of environmental protection	Funding of urban and spatial planning	Funding of national defence	Funding of other objectives	Funding of the general expansion of knowledge
2018[13]	in 1,000 €	2,913,369	147,535	69,753	752,214	107,966	69,823	75,212	615,795	158,546	45,196	35,534	5,245	8,955	821,595
	in %	100.0	5.1	2.4	25.8	3.7	2.4	2.6	21.1	5.4	1.6	1.2	0.2	0.3	28.2
2019[14]	in 1,000 €	3,009,644	160,949	70,930	780,351	92,750	82,573	75,403	609,233	172,216	48,224	30,273	5,466	-	881,276
	in %	100.0	5.3	2.4	25.9	3.1	2.7	2.5	20.2	5.7	1.6	1.0	0.2	-	29.4
2020[15]	in 1,000 €	3,287,074	157,168	76,088	838,117	147,692	86,093	66,989	644,298	187,622	124,921	31,374	4,817	-	921,895
	in %	100.0	4.8	2.3	25.5	4.5	2.6	2.0	19.6	5.7	3.8	1.0	0.1	-	28.1
2021[16]	in 1,000 €	3,269,575	158,085	85,861	853,128	125,493	89,392	65,745	709,763	190,817	70,974	45,476	4,275	-	870,566
	in %	100.0	4.8	2.6	26.2	3.8	2.7	2.0	21.7	5.8	2.2	1.4	0.1	-	26.7
2022[17]	in 1,000 €	3,605,800	168,401	98,776	982,777	159,175	84,316	73,935	756,930	201,330	71,819	48,242	6,771	-	953,328
	in %	100.0	4.7	2.7	27.3	4.4	2.3	2.1	21.0	5.6	2.0	1.3	0.2	-	26.4
2023[18]	in 1,000 €	4,095,492	187,419	136,171	1,066,952	142,597	97,283	80,812	861,469	224,246	86,546	54,059	6,966	-	1,150,972
	in %	100.0	4.6	3.3	26.1	3.5	2.4	2.0	21.0	5.5	2.1	1.3	0.2	-	28.0
2024[19]	in 1,000 €	4,611,196	197,564	135,172	1,245,329	182,697	181,949	91,386	903,710	235,856	108,843	55,693	11,823	-	1,261,174
	in %	100.0	4.3	2.9	27.0	4.0	3.9	2.0	19.6	5.1	2.4	1.2	0.3	-	27.3

Status: April 2025

Source: Statistics Austria.

Supplement T of the working aid to the BFG 2008, Cash Flow Statement. Revised data. – 2) Supplement T of the working aid to the BFG 2009, Cash Flow Statement. – 3) Supplement T of the labour remedy to the BFG 2010, Cash Flow Statement. – 4) Supplement T of the labour remedy to the BFG 2011, Cash Flow Statement. – 5) Supplement T of the labour remedy to the BFG 2012, Cash Flow Statement. – 6) Supplement T of the working aid to the BFG 2013 (funding estimate), Cash Flow Statement. Revised data. – 7) Annex T of the working aid to the BFG 2014 (funding estimate), Cash Flow Statement. – 8) Annex T of the working aid to the BFG 2015 (financing estimate), Cash Flow Statement. Revised data. – 9) Federal Finance Act 2016, detailed overview of the use of federal funds for research, Cash Flow Statement. – 10) Federal Finance Act 2017, detailed overview of federal funds used for research, Cash Flow Statement. Revised data. – 11) Federal Finance Act 2018, detailed overview of federal funds used for research, Cash Flow Statement. – 12) Federal Finance Act 2019, detailed overview of federal funds used for research, Cash Flow Statement. Revised data. – 13) Federal Finance Act 2020, detailed overview of federal funds used for research, Cash Flow Statement. – 14) Federal Finance Act 2021, detailed overview of federal funds used for research, Cash Flow Statement. Revised data. – 15) Federal Finance Act 2022, detailed overview of federal funds used for research, Cash Flow Statement. – 16) Federal Finance Act 2023, detailed overview of federal funds used for research, Cash Flow Statement. Revised data. – 17) Federal Finance Act 2024, detailed overview of federal funds used for research, result. – 18) Breakdown of the 2023 annual values of the provisional version of the detailed overview of federal funds used for research on the basis of the 2023 performance. 19) Federal Finance Act 2024, detailed overview of federal funds used for research, financing estimate.

Table A IV-7: Federal expenditure in 2024 for research and research funding by socio-economic objectives and ministry

Breakdown of the annual values for 2024[1] of the "Detailed overview of the use of federal funds for research" for the Federal Finance Act 2024 (Part a and Part b)

Ministries		Total federal expenditure on R&D	of which for												
			Funding the exploration of the earth, oceans, atmosphere and space	Funding of agriculture and forestry	Funding of trade, commerce and industry	Funding the generation, storage and distribution of energy	Funding of transport, traffic and communications	Funding of teaching and education	Funding of the healthcare system	Funding of social and socio-economic development	Funding of environmental protection	Funding of urban and spatial planning	Funding of national defence	Funding of other objectives	Funding the general expansion of knowledge
BKA[2]	in 1,000 €	1,916	-	-	-	-	2	-	-	1,649	-	265	-	-	-
	in %	100.0	-	-	-	-	0.1	-	-	86.1	-	13.8	-	-	-
BMKÖS	in 1,000 €	50,382	6,122	-	-	-	-	-	350	14,643	-	-	-	-	29,267
	in %	100.0	12.2	-	-	-	-	-	0.7	29.1	-	-	-	-	58.0
BMEIA	in 1,000 €	4,003	-	-	-	1,190	-	-	-	2,813	-	-	-	-	-
	in %	100.0	-	-	-	29.7	-	-	-	70.3	-	-	-	-	-
BMAW	in 1,000 €	270,417	721	222	227,052	15,667	998	-	2,662	6,596	12,063	-	166	-	4,270
	in %	100.0	0.3	0.1	83.8	5.8	0.4	-	1.0	2.4	4.5	-	0.1	-	1.6
BMBWF	in 1,000 €	3,337,625	153,966	46,482	662,071	37,521	56,843	90,302	852,944	188,915	45,414	52,134	3,967	-	1,147,066
	in %	100.0	4.6	1.4	19.8	1.1	1.7	2.7	25.6	5.7	1.4	1.6	0.1	-	34.3
BMF	in 1,000 €	52,250	1,349	1,360	17,927	2,879	857	706	6,582	11,460	1,667	448	61	-	6,954
	in %	100.0	2.6	2.6	34.3	5.5	1.6	1.4	12.6	21.9	3.2	0.9	0.1	-	13.3
BMI	in 1,000 €	1,519	-	-	-	-	-	-	-	1,519	-	-	-	-	-
	in %	100.0	-	-	-	-	-	-	-	100.0	-	-	-	-	-
BMJ	in 1,000 €	76	-	-	-	-	-	-	-	76	-	-	-	-	-
	in %	100.0	-	-	-	-	-	-	-	100.0	-	-	-	-	-
BMK	in 1,000 €	787,226	33,910	3,868	337,775	125,440	123,249	-	33,871	3,736	49,699	2,846	1,122	-	71,710
	in %	100.0	4.3	0.5	42.9	15.9	15.7	-	4.3	0.5	6.3	0.4	0.1	-	9.1
BMLV	in 1,000 €	7,987	-	-	-	-	-	-	-	-	-	-	6,507	-	1,480
	in %	100.0	-	-	-	-	-	-	-	-	-	-	81.5	-	18.5
BML	in 1,000 €	87,854	1,496	83,240	504	-	-	378	-	1,809	-	-	-	-	427
	in %	100.0	1.7	94.7	0.6	-	-	0.4	-	2.1	-	-	-	-	0.5
BMSGPK	in 1,000 €	9,941	-	-	-	-	-	-	7,301	2,640	-	-	-	-	-
	in %	100,0	-	-	-	-	-	-	73,4	26,6	-	-	-	-	-
Total	in 1,000 €	4,611,196	197,564	135,172	1,245,329	182,697	181,949	91,386	903,710	235,856	108,843	55,693	11,823	-	1,261,174
	in %	100,0	4,3	2,9	27,0	4,0	3,9	2,0	19,6	5,1	2,4	1,2	0,3	-	27,3

Status: April 2025

1) Financing estimate.

2) Including supreme bodies.

Source: Statistics Austria.

Table A IV-8: Research promotion schemes and contracts awarded by the federal government in 2024 by sector/areas and awarding ministries
Analysis of the federal research database[1] without "major" global funding [2]

Ministries	Partial amounts 2024	of which awarded to																				
		Higher education sector					Federal sector							Private non-profit sector			Business enterprise sector					
		Universities (incl. teaching hospitals)	Universities of the Arts	Universities of applied sciences	Other higher education sect [3]	Combined	Federal institutions (outside the higher education sector)	Austrian Institute of Technology	Austrian Academy of Sciences	Private non-profit facilities mostly run on public financing	Ludwig Boltzmann Society	Other public sector[4]	Combined	Private non-profit organisations	Individual researchers	Together	Institutes' sub-sector "Kooperativer Bereich", incl. competence centres	Company R&D sub-sector "Firmeneigener Bereich"	Combined	Austrian Science Fund	Austrian Research Promotion Agency	Abroad
	in €	in per cent																				
BKA	524,443	51.6	-	-	-	51.6	12.4	-	-	1.3	-	12.9	26.6	8.7	3.8	12.5	-	3.6	3.6	-	-	5.7
BMAW	1,149,679	6.3	-	-	0.9	7.2	-	3.1	-	51.2	-	3.5	57.8	7.1	-	7.1	7.2	20.7	27.9	-	-	-
BMBWF	77,253,344	3.3	-	-	-	3.3	8.7	0.0	-	7.3	-	4.5	20.5	1.0	0.1	1.1	-	0.1	0.1	-	20.3	54.7
BMEIA	951,945	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-
BMF	1,757,223	-	-	-	-	-	54.8	-	-	35.6	-	-	90.4	0.9	-	0.9	-	2.5	2.5	-	-	6.2
BMI	1,144,133	12.4	-	-	-	12.4	-	-	-	60.2	-	-	60.2	-	-	-	-	6.3	6.3	-	-	21.1
BMJ	113,955	93.4	-	-	-	93.4	-	-	-	6.6	-	-	6.6	-	-	-	-	-	-	-	-	-
BMK	1,700,924	18.5	-	0.5	-	19.0	2.0	-	-	33.6	-	5.9	41.5	8.2	-	8.2	26.2	3.6	29.8	-	1.5	-
BML	7,890,653	68.6	-	-	-	68.6	14.4	0.7	-	6.7	-	2.2	24.0	1.8	-	1.8	1.5	4.1	5.6	-	-	-
BMLV	3,021,338	1.6	-	-	-	1.6	1.8	29.3	1.0	-	-	4.4	36.5	0.3	2.2	2.5	10.2	39.7	49.9	-	5.6	3.9
BMSGPK	16,985,336	2.6	-	-	0.8	3.4	92.4	-	-	2.7	-	-	95.1	0.1	0.0	0.1	0.2	1.2	1.4	-	-	-
Total	**112,492,973**	**8.3**	**-**	**0.0**	**0.1**	**8.4**	**22.7**	**0.9**	**0.0**	**8.1**	**-**	**3.6**	**35.3**	**1.1**	**0.1**	**1.2**	**0.9**	**2.0**	**2.9**	**-**	**14.1**	**38.1**

Status: April 2025ç

Source: Statistics Austria.

1) Date as of 17 March 2025.
2) i.e. excluding institutional funding with funding amounts exceeding €500,000.
3) Private universities, university colleges of teacher education, research institutes at federal institutes of technology and other institutions attributable to the higher education sector.
4) State, local and municipal and chamber institutions as well as social insurance organisations.

Table A IV-9: Research promotion schemes and contracts awarded by the federal government in 2024 by socio-economic objectives and awarding ministries

Evaluation of the federal research database[1] excluding "large" global funding programmes[2]

Ministries		Partial amounts 2024	of which for											
			Promoting of research covering the earth, seas, the atmosphere and space	Promotion of agriculture and forestry	Promotion of trade, commerce and industry	Promoting the generation, storage and distribution of energy	Promotion of the transport, traffic and communications sector	Promotion of teaching and education	Promotion of the healthcare system	Promotion of social and socio-economic development	Promotion of environmental protection	Promotion of urban and spatial planning	Promotion of national defence	Promotion of the general expansion of knowledge
BKA	in €	524,443	-	-	-	-	-	-	-	482,228	-	-	-	42,215
	in %	100.0	-	-	-	-	-	-	-	92.0	-	-	-	8.0
BMAW	in €	1,149,679	-	-	-	-	18,000	14,663	10,000	780,245	8,000	-	-	318,771
	in %	100.0	-	-	-	-	1.6	1.3	0.9	67.9	0.7	-	-	27.6
BMBWF	in €	77,253,344	6,804,362	-	-	-	-	8,200	9,902,814	2,756,580	378,313	-	-	57,403,075
	in %	100.0	8.8	-	-	-	-	0.0	12.8	3.6	0.5	-	-	74.3
BMEIA	in €	951,945	-	-	-	-	-	-	-	951,945	-	-	-	-
	in %	100.0	-	-	-	-	-	-	-	100.0	-	-	-	-
BMF	in €	1,757,223	-	-	-	-	-	-	50,985	1,701,238	-	-	-	5,000
	in %	100.0	-	-	-	-	-	-	2.9	96.8	-	-	-	0.3
BMI	in €	1,144,133	-	-	-	-	-	-	-	1,144,133	-	-	-	-
	in %	100.0	-	-	-	-	-	-	-	100.0	-	-	-	-
BMJ	in €	113,955	-	-	-	-	-	-	-	113,955	-	-	-	-
	in %	100.0	-	-	-	-	-	-	-	100.0	-	-	-	-
BMK	in €	1,700,924	-	-	396,311	-	-	-	130,663	10,414	230,008	100,000	-	833,528
	in %	100.0	-	-	23.3	-	-	-	7.7	0.6	13.5	5.9	-	49.0
BML	in €	7,890,653	2,146,394	4,810,858	-	88,000	-	-	190,197	175,179	260,639	122,846	-	96,540
	in %	100.0	27.2	61.0	-	1.1	-	-	2.4	2.2	3.3	1.6	-	1.2
BMLV	in €	3,021,338	79,800	-	140,045	-	-	-	53,400	55,500	-	-	2,428,983	263,610
	in %	100.0	2.6	-	4.6	-	-	-	1.8	1.8	-	-	80.5	8.7
BMSGPK	in €	16,985,336	43,494	109,110	-	-	-	-	15,388,589	1,290,621	59,650	-	-	93,872
	in %	100.0	0.3	0.6	-	-	-	-	90.5	7.6	0.4	-	-	0.6
Total	in €	112,492,973	9,074,050	4,919,968	536,356	88,000	18,000	22,863	25,726,648	9,462,038	936,610	222,846	2,428,983	59,056,611
	in %	100.0	8.1	4.4	0.5	0.1	0.0	0.0	22.9	8.4	0.8	0.2	2.2	52.4

Status: April 2025

Source: Statistics Austria.

1) Date as of 17 March 2025.

2) i.e. excluding institutional funding with funding amounts exceeding €500,000.

Table A IV-10: International comparison of research and experimental development (R&D) in 2022

Country	Gross domestic expenditure on R&D as % of GDP		Financing of gross domestic expenditure on R&D by				R&D employees in full-time equivalents		Gross domestic expenditure on R&D in the							
			state		economy				business enterprise sector		higher education sector		state sector		private non-profit sector	
	in %								in % of total gross domestic expenditure on R&D							
Austria	**3,18**	4)	**34,4**	4)	**49,1**	4)	**92,275**	e)	**68,9**	e)	**23,1**	e)	**7,5**	e)	**0,5**	e)
Belgium	3,29	e)	17,3	3)	64,4	3)	125,542	e)	73,7	e)	17,0	e)	8,8	e)	0,5	e)
Bulgaria	0,75		24,6		34,7		27,090		67,8		6,3		25,4		0,5	
Croatia	1,42		30,6		40,4		17,192		54,3		27,8		17,5		0,3	
Cyprus	0,70		36,7	3)	35,7	3)	2,262		41,8		37,4		5,8		15,0	
Czech Republic	1,89		30,3		37,2		86,125		64,2		19,4		16,0		0,3	
Denmark	2,87		28,7	p)	59,6	p)	70,694		61,4		35,3		3,1		0,3	
Estonia	1,76		37,2		49,5		8,065		56,2		33,0		10,2		0,7	
Finland	2,98		25,9		58,1		57,031	d)	68,0		24,0		7,3		0,7	
France	2,22		32,0		56,3		501,374		66,1		20,4		11,5		2,0	
Germany	3,07		30,0	3)	62,8	3)	785,420		67,4		18,1		12,1	b)	.	
Greece	1,48		42,8		37,9		69,307		49,0		29,5		20,9		0,6	
Hungary	1,39	d)	34,6	d)	44,9		62,688		71,9		15,3		12,2		.	
Ireland	1,07	3)	16,8	3)	55,5	3)	40,393	e)	80,5	3)	16,8	e)	3,7		.	
Italy	1,37		35,6		53,2		338,133		59,6		24,6	e)	14,0		1,8	
Latvia	0,81		31,9		37,3		6,904		36,1		46,4		17,5		.	
Lithuania	1,05		30,4		39,9		15,675		49,9		35,4		14,7		.	
Luxembourg	1,05		47,0	3)	44,2	3)	6,189		48,8		25,9		25,2		0,0	u)
Malta	0,58		30,5		58,3		2,161		61,9		36,2		1,9		.	
Netherlands	2,18	b)	29,0	b)	58,3	b)	183,533	b)	68,5	b)	26,7		4,8	b)d)	0,0	b)d)
Poland	1,44		33,5		54,8		195,096		65,9		32,0		1,9		0,2	
Portugal	1,69		33,2		56,6		74,103		62,2		31,1		4,3		2,4	
Romania	0,46		30,9		56,2		35,607		62,2		9,6		27,9		0,3	
Slovakia	0,98		33,6		47,1		23,344		57,2		25,6		17,2		0,0	
Slovenia	2,10		26,1		44,1		17,356		70,3		13,0		15,8		1,0	
Spain	1,41		37,7		49,3		263,407		56,4		26,0		17,2		0,3	
Sweden	3,47		23,3	3)	60,7	3)	121,615		73,6		22,0		4,2		0,2	e)

Country	Gross domestic expenditure on R&D as % of GDP		Financing of gross domestic expenditure on R&D by				R&D employees in full-time equivalents		Gross domestic expenditure on R&D in the							
			state		economy				business enterprise sector		higher education sector		state sector		private non-profit sector	
	in %								in % of total gross domestic expenditure on R&D							
EU-27 countries[e]	**2.21**		**30.3**	[3]	**57.7**	[3]	**3,228,578**		**66.3**		**21.6**		**10.6**		**1.4**	
Bosnia and Herzegovina[3]	0.19		43.1		38.7		1,928		37.4		57.7		4.9		0.0	
Iceland	2.59		25.8		52.5		4,549	[u]	72.3		24.9		2.8		.	
Montenegro[2]	0.36		73.5		11.8		685		13.8		36.5		49.7		0.1	
North Macedonia	0.37		46.0		25.9		1,618		26.4		64.9		8.4		0.2	
Norway	1.56		45.1		44.6		53,571		55.3		32.8	[e]	11.9		.	[e]
Serbia	0.92		39.3		1.3		22,523		43.7		30.0		26.3		0.0	
Switzerland	3.30	[3]	26.8	[3]	65.9	[3]	90,832	[3]	68.3	[3]	29.0	[d]	1.0		2.6	[3]
Turkey	1.32		32.8		50.2		272,638		61.4		33.8		4.8		.	
United Kingdom	1.76	[p][2]	25.9	[1]	54.8	[1]	486,088	[p][2]	68.0	[p][2]	23.1	[p][2]	6.6	[p][2]	2.3	[p][2]
Japan	3.41		15.1	[e]	78.5		940,069	[d]	79.4		11.5		7.9		1.2	
People's Republic of China (excl. Hong Kong)	2.56		17.8		79.0		6,353,570		77.6		7.8		14.6		.	
Russia[2]	1.04		66.3		30.2		753,796		60.7		10.6		28.3		0.4	
South Korea	4.85		22.6		76.3		602,196		79.4		9.1		9.4		2.1	
United States	3.59	[d][p]	18.1	[d][p]	70.0	[p]	2,646,498	[e][3]	79.0	[p]	9.9	[d][p]	8.2	[d][p]	3.0	[d][e]

b) Break in the time series. – d) Deviating definition. – e) Estimated values. – p) Preliminary values. – u) Low reliability.
1) 2018. – 2) 2019. – 3) 2021. – 4) Statistics Austria; according to R&D Global Estimate 2025.
Full-time equivalent = person-year.

Source: Eurostat (date: 10 December 2024), Statistics Austria.

Table A IV-11: FWF: Shares of new approvals by disciplines (Austrian Systematics of the Sciences 2012 3-digit), (2022–2024)

	2022		2023		2024	
	in %	in € million	in %	in € million	in %	in € million
101 Mathematics	6.76	18.45	9.20	32.11	8.27	33.73
102 Computer science	6.73	18.37	4.23	14.75	9.86	40.22
103 Physics, astronomy	14.81	40.43	14.35	50.09	9.63	39.29
104 Chemistry	4.94	13.50	5.83	20.33	4.24	17.28
105 Geosciences	3.06	8.35	1.87	6.53	2.68	10.93
106 Biology	22.25	60.73	22.57	78.75	20.99	85.62
107 Other natural sciences	0.26	0.70	0.42	1.47	0.70	2.85
201 Construction	0.81	2.21	1.16	4.06	0.31	1.25
202 Electrical engineering, electronics, information technology	1.18	3.22	0.78	2.71	0.82	3.35
203 Mechanical engineering	0.43	1.18	0.60	2.09	0.39	1.57
204 Chemical process engineering	0.00	0.00	0.17	0.59	0.13	0.55
205 Materials technology	0.61	1.67	0.78	2.73	0.65	2.65
206 Medical technology	0.29	0.80	0.43	1.50	0.60	2.44
207 Environmental engineering, applied geosciences	0.52	1.42	0.33	1.15	0.44	1.80
208 Environmental biotechnology	0.04	0.10	0.03	0.12	0.01	0.02
209 Industrial biotechnology	0.30	0.81	0.21	0.74	2.42	9.88
210 Nanotechnology	0.47	1.29	1.73	6.03	0.26	1.04
211 Other technical sciences	0.28	0.76	0.10	0.36	0.51	2.08
301 Medical-theoretical sciences, pharmacy	8.84	24.14	7.64	26.67	12.65	51.57
302 Clinical medicine	3.70	10.10	3.40	11.85	4.09	16.66
303 Health sciences	0.67	1.82	0.69	2.41	1.02	4.16
304 Medical biotechnology	0.54	1.47	0.34	1.18	0.22	0.90
305 Other human medicine, health sciences	0.15	0.41	0.25	0.86	0.10	0.39
401 Agriculture, forestry and fishing	0.42	1.14	0.08	0.27	0.14	0.59
402 Animal breeding, animal production	0.20	0.55	0.14	0.47	0.01	0.02
403 Veterinary medicine	0.52	1.43	0.25	0.87	0.18	0.72
404 Agricultural biotechnology, food biotechnology	0.00	0.00	0.00	0.00	0.02	0.10
405 Other agricultural sciences	0.09	0.24	0.04	0.15	0.13	0.53
501 Psychology	1.46	3.99	1.91	6.68	2.88	11.76
502 Economics	0.81	2.21	1.48	5.18	1.30	5.29
503 Educational sciences	0.28	0.75	0.26	0.92	0.26	1.05
504 Sociology	1.88	5.13	1.69	5.90	1.26	5.13
505 Law	0.44	1.20	0.14	0.48	0.49	1.99

	2022		2023		2024	
	in %	in € million	in %	in € million	in %	in € million
506 Political science	0.74	2.01	0.32	1.13	0.48	1.94
507 Human geography, regional geography, spatial planning	0.54	1.48	0.39	1.37	0.27	1.08
508 Media and communication sciences	0.72	1.98	0.22	0.77	0.43	1.76
509 Other social sciences	0.27	0.73	0.45	1.56	0.54	2.21
601 History, archaeology	2.15	5.87	3.78	13.19	2.23	9.10
602 Linguistics and literature	2.95	8.04	3.65	12.75	3.45	14.07
603 Philosophy, ethics, religion	3.66	10.00	4.40	15.34	1.87	7.63
604 Art sciences	3.62	9.87	1.81	6.32	2.24	9.13
605 Other humanities	1.63	4.44	1.87	6.52	0.86	3.49
Total	100.00	272.97	100.00	348.94	100.00	407.82

Source: FWF.

Table A IV-12: FFG: Total funding for research and development by funding area 2022–2024

	2022		2023		2024	
	in %	in € million	in %	in € million	in %	in € million
Energy/Environment	22.0	152.6	25.4	196.6	32.2	285.2
ICT	25.2	174.4	17.5	135.2	19.8	175.7
Life Sciences	7.6	52.9	12.2	93.9	9.3	82.7
Mobility	9.7	67.2	11.4	88.0	9.5	84.4
Production	21.3	147.8	19.4	149.6	16.7	147.8
Security	2.4	16.5	3.0	23.3	3.3	29.0
Other	10.2	70.6	10.1	78.1	7.5	66.2
Space	1.6	11.1	1.1	8.3	1.8	15.6
Total	100.0	693.2	100.0	773.1	100.0	886.5

Source: FFG.

Table A IV-13: aws: Shares of new approvals by funding topic (industry), 2022–2024*

Subject area, subject fields or industry	2022		2023		2024	
	in %	in € million	in %	in € million	in %	in € million
Services	30.2	415.3	14.7	476.1	26.5	236.8
Energy and water supply, wastewater	1.3	17.5	1.6	51.3	0.7	6.1
Trade, maintenance, repair	14.1	193.4	12.9	417.0	13.7	122.4
Food products, beverages, tobacco	7.4	102.0	7.0	225.6	7.8	69.4
Manufacturing	27.9	383.2	36.9	1,190.7	40.6	362.3
Other industries	4.1	56.2	5.0	162.7	2.8	25.3
Tourism	5.3	73.3	9.4	303.8	4.8	42.7
Transport and communication	2.1	29.1	10.9	352.8	1.1	10.3
Not classified	7.7	106.0	1.5	49.1	1.9	17.4
Total	100.0	1,376.0	100.0	3,229.1	100.0	892.6

* aws total incl. special programmes

Source: aws.

Table A IV-14: aws: Shares of new approvals by company size, 2022–2024*

Organisation type	Financing performance					
	2022		2023		2024	
	in %	in € million	in %	in € million	in %	in € million
Sole proprietorships	8.3	114.1	3.3	105.5	9.6	85.3
Micro-enterprises	15.0	206.7	8.7	282.2	14.6	130.1
Small enterprises	24.1	331.1	22.6	728.5	20.2	180.7
Medium-sized enterprises	27.5	378.4	27.4	883.9	21.1	188.7
Large enterprises	17.9	245.8	34.8	1,123.3	32.1	286.8
Not classified	7.2	99.7	3.3	105.5	2.3	20.9
Total	100.0	1,376.0	100.0	3,229.1	100.0	892.6

* aws total incl. special programmes.

Source: aws.

Table A IV-15: CDG: CD laboratories according to thematic clusters, 2022–2024

Thematic cluster	Number of CD laboratories in 2022	Budget 2022 in €	Number of CD laboratories in 2023	Budget 2023 in €	Number of CD laboratories in 2024	Budget 2024 in €
Chemistry	7	2,302,327.28	9	3,053,662.05	10	2,955,402.88
Life sciences and environment	13	6,179,510.23	15	6,519,038.98	16	6,007,339.67
Mechanical and instrument engineering	5	1,288,186.41	6	1,141,126.31	5	858,082.71
Materials and substances	18	6,006,053.04	20	7,729,995.09	23	9,098,155.38
Mathematics, computer science, electronics	30	10,611,669.51	30	11,325,966.85	30	12,106,355.87
Medicine	16	295,336.27	16	4,792,855.58	18	5,602,657.11
Economics, social sciences and law	1	309,693.47	1	301,037.48	1	301,784.91
Total	90	29,992,776.21	97	34,863,682.34	103	36,929,778.53

Note: Budget data 2024 are planned data as of 31 December 2024. Source: CDG.

Table A IV-16: CDG: JR centers according to thematic clusters, 2022–2024

Thematic cluster	Number of JR centers in 2022	Budget 2022 in €	Number of JR centers 2023	Budget 2023 in €	Number of JR centers 2024	Budget 2024 in €
Chemistry	-	-	1	36,643.28	1	302,157.20
Life sciences and environment	4	819,488.47	3	1,034,341.99	3	697,258.48
Mechanical and instrument engineering	1	241,534.30	1	175,652.79	1	209,500.00
Materials and substances	-	-	-	-	-	-
Mathematics, computer science, electronics	8	2,102,530.51	10	2,012,544.95	11	2,851,284.13
Medicine	1	14,078.49	-	-		-
Economics, social sciences and law	2	494,304.64	3	1,025,508.44	2	715,318.00
Total	16	3,671,936.41	18	4,284,691.45	18	4,775,517.81

Note: Budget data 2023 are planned data as of 31 December 2024. Source: CDG.