



FIZ Karlsruhe

Leibniz Institute for Information Infrastructure

ADVANCING SCIENCE



SUSTAINABILITY REPORT 2025



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**»For us, sustainability is not a trend,
but a central component of our
institute's culture.«**

Micaela Münter, Sustainability Officer

Dear readers,

For us at FIZ Karlsruhe, sustainable action is a central component of our corporate responsibility. In our mission statement, we have outlined the values that guide our actions. Here, we commit ourselves to treating the environment and its resources with care, as well as to social engagement. With this third sustainability report, we aim to transparently demonstrate how we fulfill this commitment in practice and what progress we have made on the path to becoming a sustainably operating institute.

The report provides an overview of the current status of the “Sustainability 2025” initiative and highlights measures already implemented by FIZ Karlsruhe as well as new developments. Particularly noteworthy are the commissioning of two photovoltaic systems with a total capacity of 126 kWp, the planning of a comprehensive energy-efficient facade renovation for two buildings, the installation of an energy-efficient heat transfer station, and the new disposal concept for electronic (end-of-life) devices.

We also began this year with a comprehensive analysis to systematically document all existing sustainability-related activities—ranging from social engagement to occupational health and safety to environmental protection. The latter includes, among other things, energy and paper consumption, business travel, and CO₂ emissions. Furthermore, we reviewed compliance with regulations such as data protection and other compliance issues.

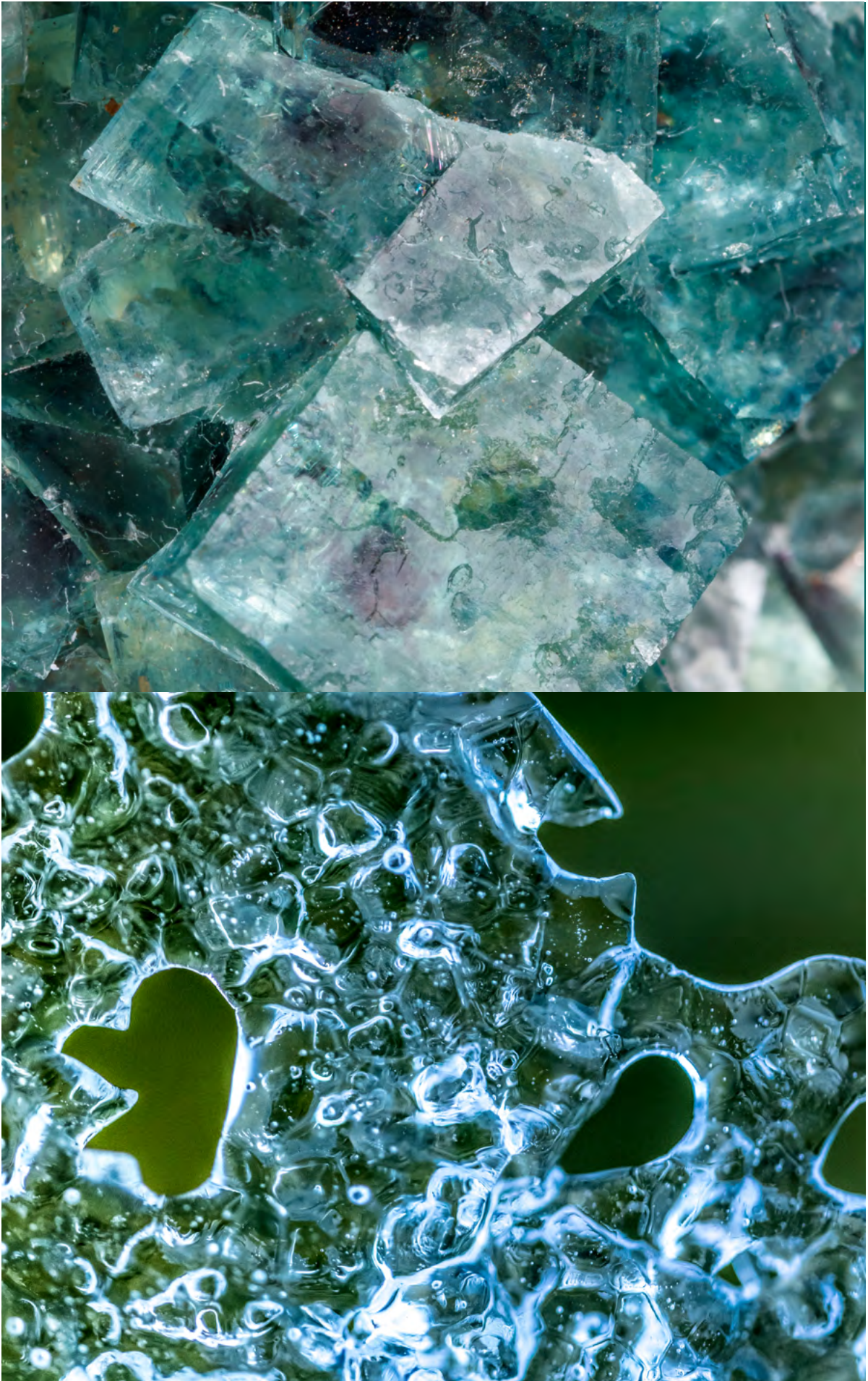
We have been continuously working to improve the data base. Important information for future greenhouse gas accounting—such as the number and type of business trips, building-related metrics like heating demand and insulation thickness of the building envelope, or ecological and social aspects of procurement—is being recorded with increasing precision. This has already allowed us to analyze business trips for 2025 in greater detail. In addition, we have developed a sub-metering concept for electricity and installed additional electricity meters to enable a differentiated analysis of electricity consumption by energy-intensive consumers.

We still see ourselves at the beginning of a long-term process. We need to continue improving our data base and its documentation, particularly in the areas of purchased goods and services, upstream emissions, and waste. At the same time, we are continuously working to establish structures that enable the reliable collection and analysis of all relevant information.

We will continue to report annually on our sustainability activities, the goals we have set, and the milestones we have achieved. We do this to provide a robust and understandable picture of our commitment to social, environmental, and economic sustainability.

Wishing you an inspiring read

Micaela Münter, Sustainability Officer



THE CONCEPT OF SUSTAINABILITY

The fundamental principle of sustainable management is the careful and economical use of resources. In addition to energy, climate, and other environmental issues, this also addresses social issues such as equal opportunity and human rights, as well as economic issues such as good governance, anti-corruption, and good scientific practice. This makes it clear that sustainability is an important cross-cutting issue that permeates all areas of our institute.

The term “sustainability” dates back to Hans Carl von Carlowitz (1645–1714), the Chief Mining Commissioner of Freiberg. He was the first to coin the term “sustainability” in relation to forestry: only as many trees should be harvested—that is, felled—from a forest as can regrow within a certain period of time. More than 250 years later, in 1987, a UN commission convened in New York that, for the first time, focused exclusively on the topic of sustainable development. The principle formulated at that time is still considered the guiding principle of sustainability today: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Since 2016, Germany has been guided by the UN’s 17 Sustainable Development Goals (SDGs)¹.

STRUCTURE OF OUR SUSTAINABILITY REPORT

This sustainability report documents the Institute’s activities related to sustainability and covers the period from January 1, 2025, to December 31, 2025. We have comprehensively updated and expanded the report. We report on the key aspects of our sustainable practices in accordance with the Guidelines for Sustainability Management in Non-University Research Institutions² (LeNa). These guidelines were developed as part of a collaborative project funded by the Federal Ministry of Research, Technology, and Space (BMFTR, formerly BMBF). Various institutes from the Fraunhofer Society, the Helmholtz Association, and the Leibniz Association participated in the project.

By aligning with LeNa, we have also adopted the structure and topics of the guidelines and organized our sustainability report into the following areas of action: sustainability management, sustainable organizational leadership, research, human resources, buildings and infrastructure, and supporting processes

We view this report as an assessment of our institute’s current status regarding sustainability. As part of our status quo analyses, we identify areas of potential, which we use as a basis for planning and implementing targeted initiatives, such as the commissioning of two photovoltaic systems. In this way, each report establishes a new starting point from which we transparently document FIZ Karlsruhe’s progress toward becoming a sustainable and, in the long term, climate-neutral institute.

¹ <https://sdgs.un.org/goals> accessed on May 19, 2026.

² LeNa Guide to Sustainability Management in Non-University Research Institutions; <https://www.nachhaltig-forschen.de/en/lena/fields-of-action-for-sustainability-management>, accessed on May 19, 2026.



1 ABOUT US

FIZ Karlsruhe – Leibniz-Institut für Informationsinfrastruktur GmbH is one of the major non-university infrastructure institutions for scientific information. Our overall strategy aims to support the entire scientific value chain. We research, develop, and operate methods, processes, and services for a sustainable information infrastructure and provide data, information, and knowledge, software, and services via open and legally compliant platforms.

FIZ Karlsruhe – Leibniz-Institut für Informationsinfrastruktur GmbH, hereinafter FIZ Karlsruhe, is a limited liability company (GmbH) recognized as a non-profit organization and a large corporation. Our public mission is as follows: “To provide science and research with scientific information, to develop corresponding products and services in the field of scientific information infrastructure, and to make them publicly accessible.³ “To this end, we also carry out research and development projects of our own choosing.

Our overall strategy aims to support the entire scientific value chain—from the initial idea through data and analysis to the dissemination and enrichment of scientific information. It is complemented by six sub-strategies:

- Portfolio Strategy
- Research Strategy
- Agility Strategy
- Openness Strategy
- Cooperation Strategy
- Sustainability Strategy

In our mission statement, we have identified values that guide our actions. Here, we commit to treating the environment and its resources with care (value: “Responsibility”) as well as to adhering to the Federal Public Corporate Governance Code (value: “Integrity”). As a Leibniz Institute, we are guided not only by LeNa but also by the Leibniz Association’s Sustainability Mission Statement⁴. Caring for the environment and its resources is important to us. Accordingly, we have anchored sustainability in our overall strategy.

³ Excerpt from the Articles of Association, § 2 (1), as of July 28, 2017. We are a company in the legal form of a GmbH with recognized non-profit status.

⁴ Leibniz Association’s “Sustainability” Mission Statement https://www.leibniz-gemeinschaft.de/fileadmin/user_upload/Bilder_und_Downloads/%C3%9Cber_uns/Nachhaltigkeit/Leitbild_Nachhaltigkeit.pdf, accessed on May 19, 2026.

For us, corporate responsibility means incorporating sustainability into all business processes –from program planning and human resources management to operational processes and research activities.

1.1 FIZ KARLSRUHE IN NUMBERS

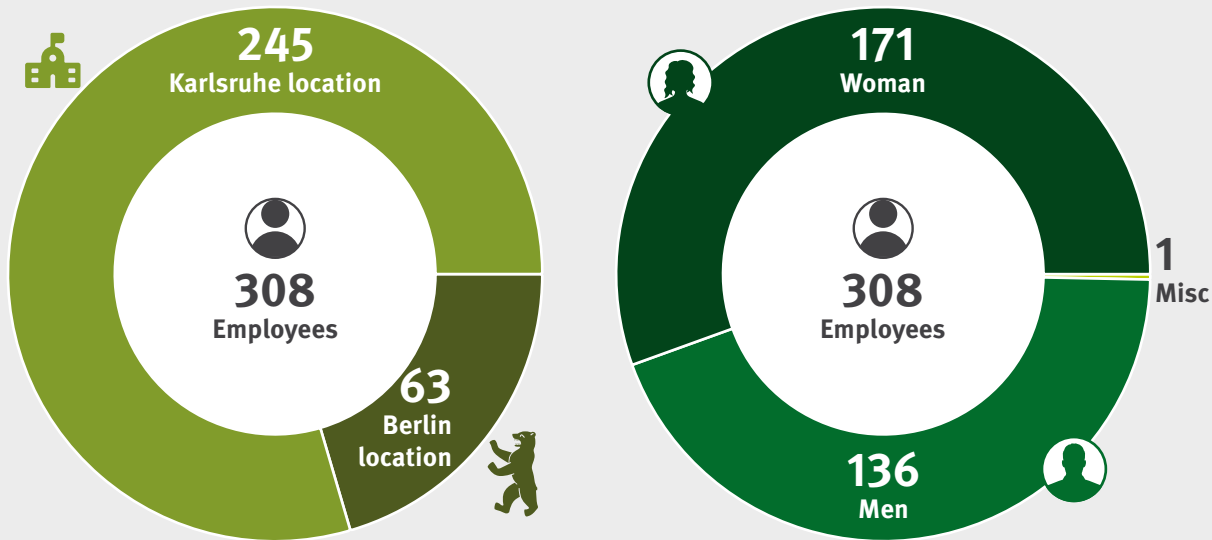


Figure 1: Number of employees as of December 31, 2025, total and broken down by male, female, and diverse s

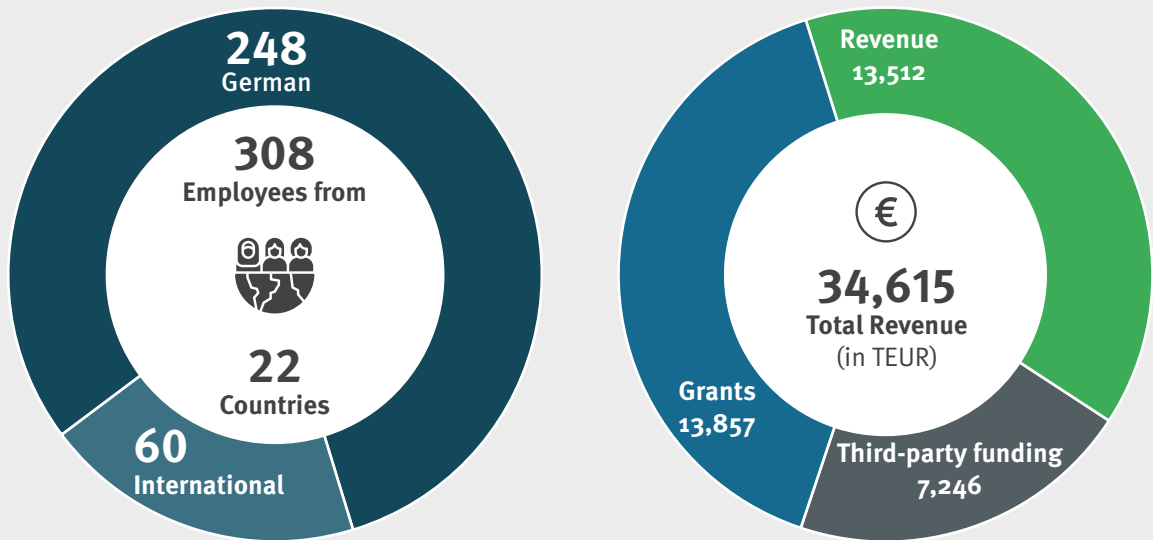


Figure 2. As of December 31, 2025, FIZ Karlsruhe employed staff from 22 countries.

Figure 3: Total revenue in 2025, broken down by grants, revenue, and third-party funding (in TEUR)

Electricity and heat consumption

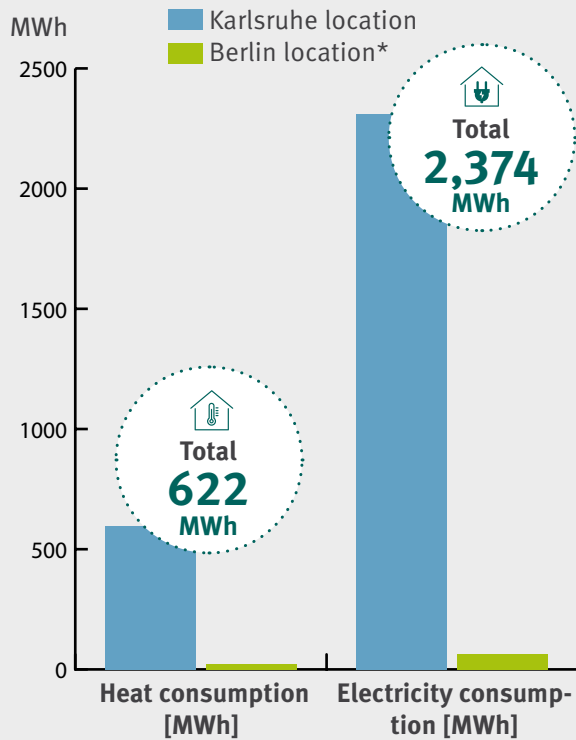


Figure 4: Electricity and heat consumption at FIZ Karlsruhe in 2025; electricity includes self-consumed PV electricity

* based on the average for the years 2020–2022, as no operating cost statements are yet available for the years 2023–2025.

Electricity generation with photovoltaics

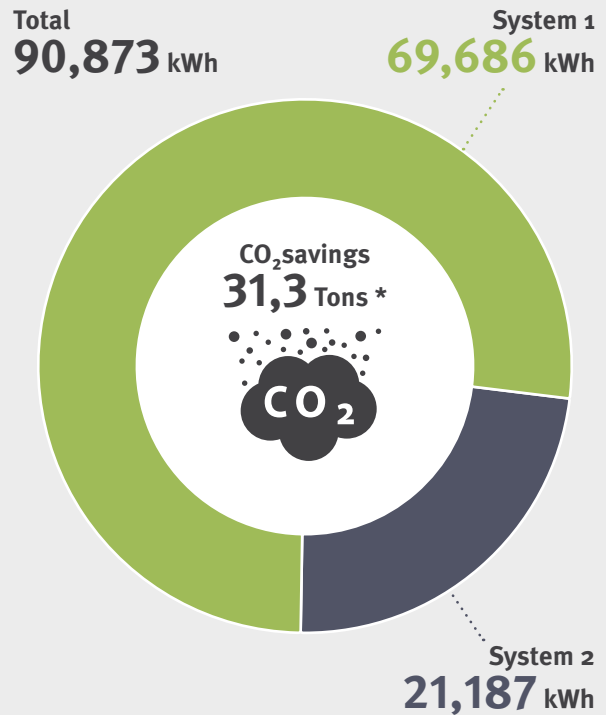


Figure 5: Generation data for PV systems, commissioned on April 24, 2025, *Source: Federal Environment Agency; Germany's electricity mix in 2024: Generating one kilowatt-hour of electricity resulted in an average of 344 g/kWh of CO₂ emissions.

CO₂ emissions: Electricity and heat consumption – Business trips – Paper

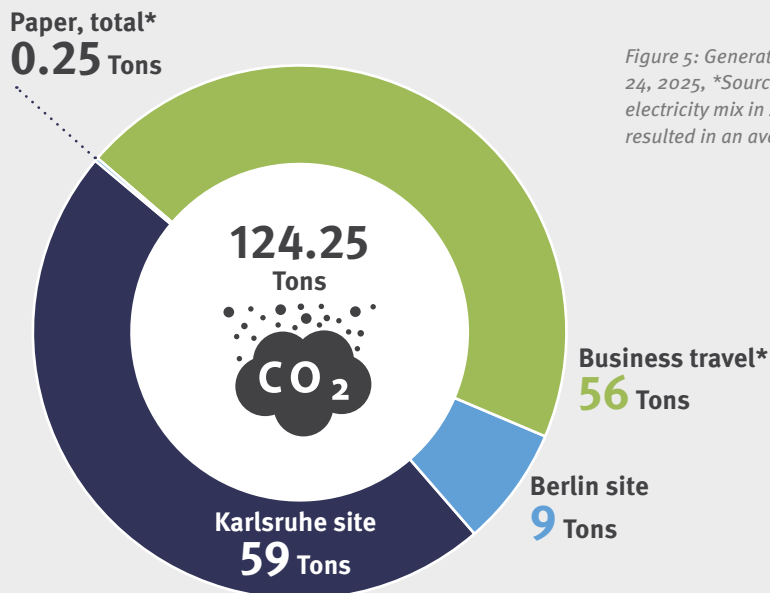


Figure 6: CO₂ emissions at FIZ Karlsruhe in 2025: Heating and electricity for the data center, business travel (airplane, train, car), and paper; * calculated using the BWIHK-ECOCOCKPIT tool⁵

⁵ State accounting tool "BWIHK-ECOCOCKPIT"; <https://ecocockpit-bw.de>, accessed on May 19, 2026.



»At FIZ Karlsruhe, we consistently embed sustainability into our institutional processes through efficient use of resources, targeted digitalization, and a responsible work environment.«

Andreas Schwartz, CEO of FIZ Karlsruhe

2 SUSTAINABILITY MANAGEMENT

Successful sustainability management depends on the consistent implementation of effective measures throughout the entire organization. This requires a clear and shared understanding of sustainable action—supported by all employees and at all levels. The starting point for any effective measure is a thorough analysis of the current situation. For only when we know where we stand can we decide which steps are sensible and necessary. In this chapter, we present the key findings of our analyses and highlight the resulting needs for action.

2.1 STRATEGIC ANALYSIS AND MANAGEMENT PROCESSES

As early as November 2023, FIZ Karlsruhe adopted a sub-strategy on sustainability to underscore the importance of sustainable corporate development both externally and internally. It states: “FIZ Karlsruhe is committed to the fundamental principles of sustainability. We manage material and non-material resources responsibly. We incorporate sustainability into our decision-making processes. We are evolving into a climate-neutral institute.”

Our strategic guidelines regarding sustainability are:

- Sustainability in organizational development: We establish sustainable—that is, long-term—developments in our structures, procedures, and management processes.
- Sustainability in research and development processes: We research, develop, and

implement methods, processes, and services for a sustainable information infrastructure.

- Sustainability in human resources management: We promote equal opportunity, value diversity, and support the balance between work and caregiving responsibilities, as well as our employees’ volunteer work.
- Sustainability in the operation of buildings and infrastructure, as well as procurement and mobility: We optimize energy consumption in buildings and infrastructure and pursue a sustainable procurement policy. We strive to replace business travel with virtual meetings whenever possible; otherwise, we prioritize climate-friendly mobility with a low carbon footprint.

Our full-time Sustainability Officer, Micaela Münter, coordinates sustainability initiatives from both a conceptual and communications perspective and integrates them into the structure of FIZ Karlsruhe. She is part of the Executive

Management Team and reports directly to the CEO. Among other things, she proposes appropriate measures and continuously monitors their implementation in day-to-day operations. Her responsibilities also include continuously monitoring and analyzing the numerous developments at the political level, assessing their relevance to FIZ Karlsruhe, and, where necessary, identifying the need for action and initiating appropriate measures. She is the central contact for sustainability for people within and outside the organization and is responsible for sustainability reporting at the institute level.

She is supported in this by the Sustainability Committee (see Chapter 3.1), which began its work in January 2024. The members represent all areas of the institute, thereby establishing sustainability as a cross-cutting issue that spans all organizational units. In 2025, for example, the Sustainability Committee addressed the draft of the Leibniz Association's new "Sustainability" mission statement. This new mission statement also includes binding elements, such as the obligation for the institutes of the Leibniz Association to develop a plan to reduce greenhouse gas emissions. Additional focal points of the committee's work included the analysis of the Energy Efficiency Act and its implications for FIZ Karlsruhe, further energy-saving measures, and the annual sustainability report.

success of the sustainability activities already implemented. However, they also highlight potential shortcomings. For example, when analyzing electricity consumption, we found that the existing five electricity meters do not allow for an accurate assessment of consumption by our major consumers (elevators, air conditioning systems, heating pumps, data center). Therefore, a sub-metering concept was developed and installed at the end of 2025. In the future, this will enable a detailed analysis of electricity consumption, based on which further measures can be developed.

The key finding of the initial status quo analysis was that we already have a wide range of measures in place in the areas of social issues and institutional management that ensure sustainable practices (see Chapter 5). These include, among other things, measures to support work-life balance and the fulfillment of caregiving responsibilities (see Chapter 5.4). In the environmental sphere—particularly regarding climate and environmental protection—the results indicated a clear need for action. Consequently, over the past three years, we prioritized and implemented various environmental measures, such as replacing old light bulbs with LEDs, a comprehensive roof renovation, and the installation of two photovoltaic systems.

The key areas for action we identified in 2023 have not changed as a result of the 2025 analysis and continue to fall under the following themes:

2.2 KEY AREAS OF ACTION AND GOALS

2.2.1 Status Quo Analysis at FIZ Karlsruhe

In 2023, we began an initial comprehensive analysis of the entire institute based on the LeNa guidelines. We have been updating this analysis annually ever since to determine the current status of our sustainable practices and to identify progress as well as areas requiring action. The analysis forms the basis for our activities. At the same time, we identify the key areas of action and topics for sustainability management. The results also provide us with an overview of the

1. Efficient and resource-conserving use of energy
2. Buildings and infrastructure
3. IT and data center
4. Procurement and waste management
5. Mobility – business travel

We see significant potential in these areas to contribute to the sustainable corporate development of FIZ Karlsruhe. For example, the use of renewable energy is a key priority for us in reducing our CO₂ emissions. Consequently, we began planning two photovoltaic systems in

2024, which went into operation in early 2025. We present an initial analysis of the generation data in Chapter 8.

We review the areas of action annually for materiality and adjust them as needed.

2.3 GREENHOUSE GAS BALANCING

Germany has set a goal of reducing greenhouse gas emissions by 65 percent by 2030 compared to 1990 levels and becoming climate-neutral by 2045. FIZ Karlsruhe also aims to make an active contribution to this effort. As part of our sustainability strategy, we are pursuing the long-term goal of becoming a climate-neutral institute.

Since 2023, we have been conducting an annual greenhouse gas inventory using the “BWI-HK-ECOCKPIT” climate accounting tool, based on the data available to us, in order to monitor our greenhouse gas emissions (see Figs. 6 and 20). We now have the necessary data for reporting under Scope 1 (direct emissions, such as fuel for our own boilers) and Scope 2 (indirect emissions from externally generated energy sources). Scope 3 (other emissions), comprising a total of 15 categories⁶, includes indirect emissions resulting from the procurement of goods and services from third parties, such as raw materials, consumables, and supplies, business travel, and services utilized. Additionally, other categories such as waste, water consumption, and employee commuting are included in the Scope 3 calculations. Data collection for Scope 3 is very complex, and significant data is still missing to produce a complete assessment, for example regarding purchased goods and services. We

are currently working to optimize processes to improve data quality in future assessments. At present, we have sufficient verified data on our business travel and paper consumption.

2.4 COMMUNICATION AND STAKEHOLDER PARTICIPATION

The most important internal stakeholders for sustainable action are our employees; external stakeholders include suppliers, contractors, customers, funding agencies, and governing bodies (Supervisory Board, Shareholders’ Meeting, and Scientific Advisory Board).

On the intranet, we inform our employees about FIZ Karlsruhe’s activities via the “Sustainability” topic page. In addition, colleagues can find in-depth information and resources on sustainability here, such as materials from the Leibniz Association and the State of Baden-Württemberg, the German Sustainability Code, as well as information on certifications and laws. We regularly publish blog posts on specific topics, such as energy conservation in the workplace, to continuously raise awareness of the issue. The internal magazine *fiz.forum* also features an article on sustainability in every issue.

FIZ Karlsruhe regularly submits planning and reporting documents to its governing bodies, i.e., the Supervisory Board, the Shareholders’ Meeting, and the Scientific Advisory Board. The topic of sustainability is embedded in all key governing body documents: the Annual Report, the Management Report, and the planning document “Program Budget”⁷ and its financial statement.

⁶ https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf, accessed on May 19, 2026.

⁷ See Chapter 3.1.



**»Sustainability in all its dimensions
—including data protection and the
responsible handling of information—
is a value-adding factor that ensures our
future viability.«**

Michael-Oliver Müller, Legal Counsel, Data Protection Officer

3 SUSTAINABILITY WITHIN THE ORGANIZATION

For us, sustainable corporate governance means that we manage, steer, and monitor FIZ Karlsruhe in a holistic and integrative manner. It serves people, respects the environment, and at the same time maintains our institute as a productive and effective institution in the long term. Important aspects include the organizational structure, business ethics, and corporate culture—both internally and externally.

3.1 PARTICIPATORY ORGANIZATIONAL DEVELOPMENT

The governing bodies of FIZ Karlsruhe are the Shareholders' Meeting and the Supervisory Board. The shareholders are the Federal Government, the state of Baden-Württemberg, and major scientific societies and associations. In addition, the Scientific Advisory Board advises the Executive Board and the Supervisory Board on all technical, scientific, and political matters. FIZ Karlsruhe has no influence over the composition of the Shareholders' Meeting or the Supervisory Board. The Scientific Advisory Board currently consists of four female and six male members. We aim for gender parity in the future.

FIZ Karlsruhe is organized into seven units: five program units and two service units (see organizational chart). FIZ Karlsruhe's management structure consists of the CEO and the Executive

Management Team, which includes, in addition to the CEO, all Vice Presidents, the head of the Human Resources/Infrastructure department, and the legal counsel as a permanent guest. The CEO determines the guidelines for corporate policy and sets the corporate goals in consultation with the members of the Executive Management Team. Responsibility for operational implementation lies with the Executive Management Team.

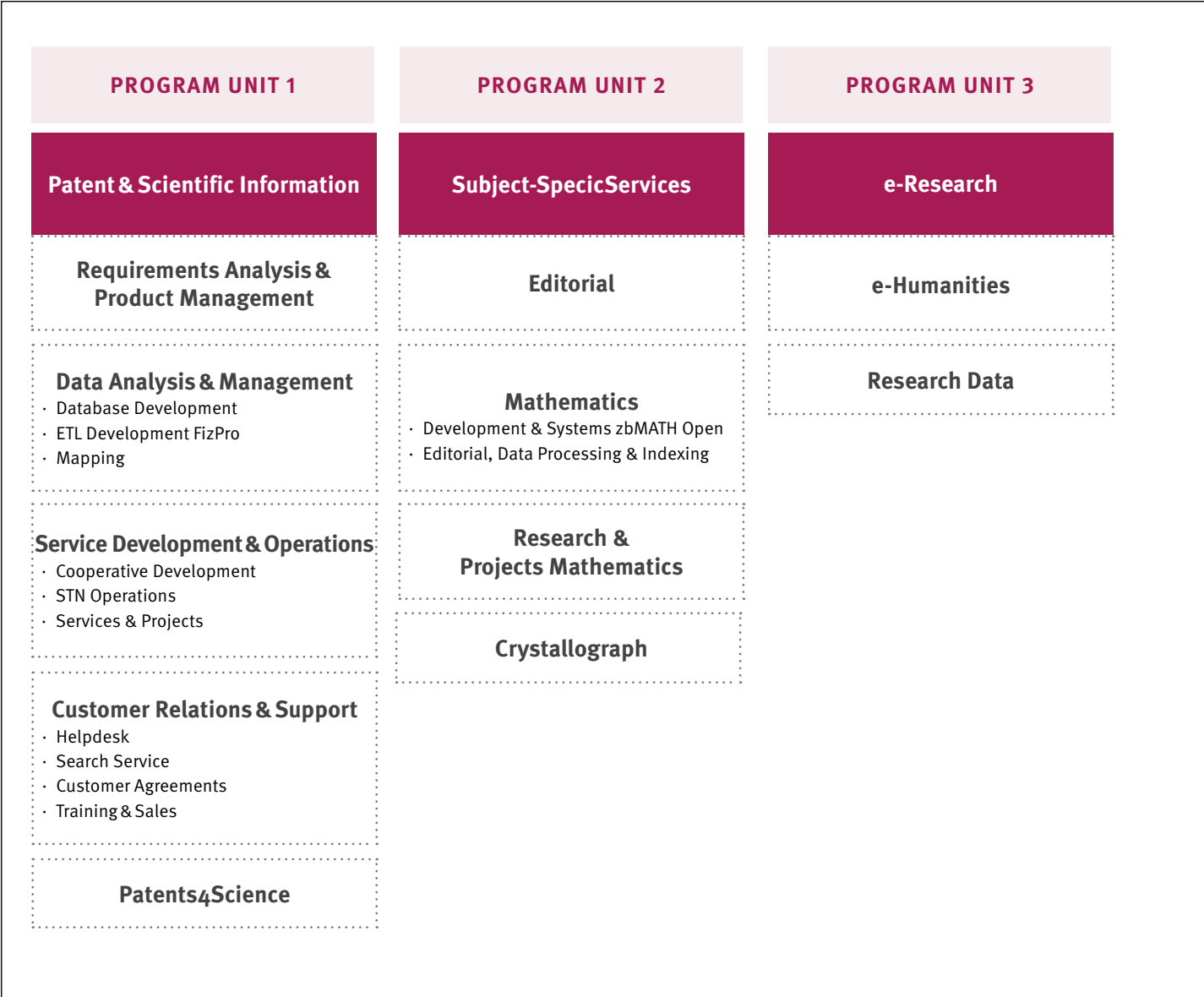
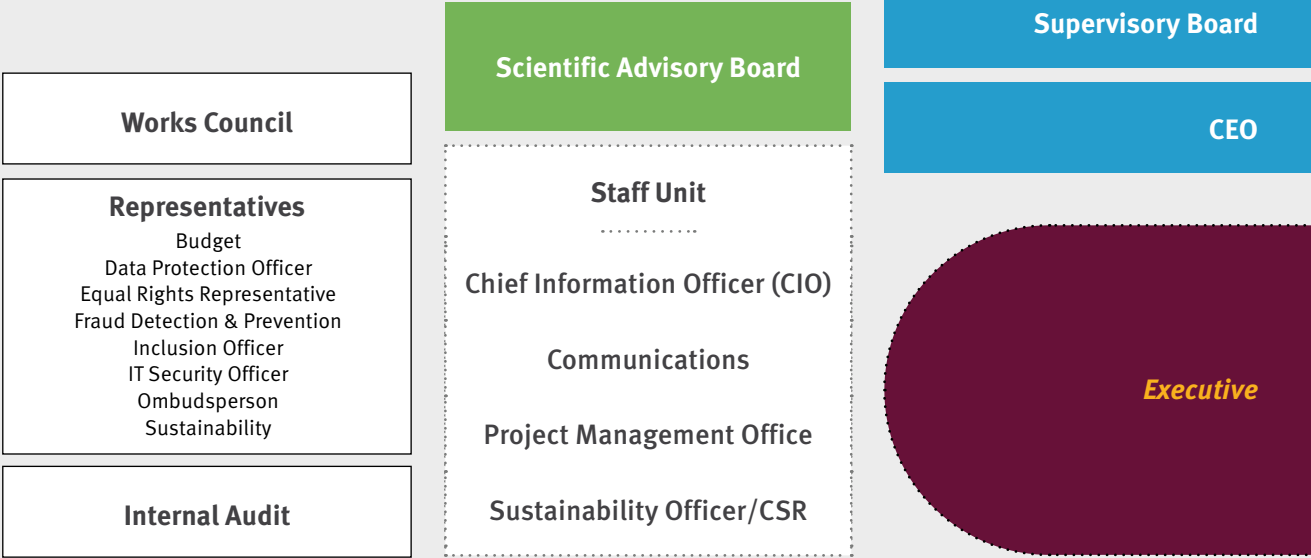
To strengthen our participatory leadership culture, we have two committees⁸ that support the management level in cross-departmental strategy, planning, and decision-making processes. The committees ensure transparency in these processes, enable adjustments to the respective tasks when necessary, and support agile management. The committees are composed of equal numbers of men and women; all departments and hierarchical levels are also represented there.

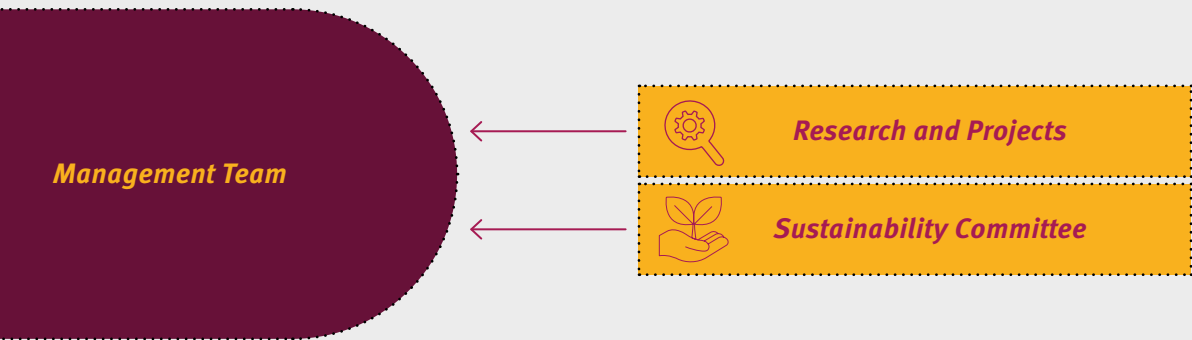
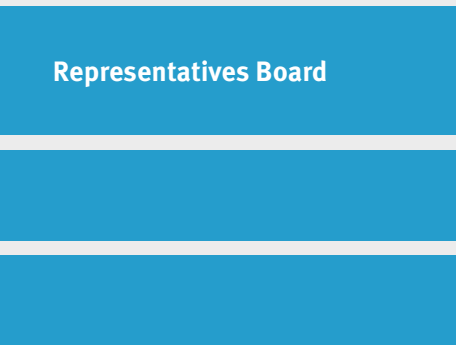
⁸ In addition to the Sustainability Committee, the Research and Projects Committee was established.

ORGANIZATIONAL CHART

with organizational units and fields of work/research

December 2025





PROGRAM UNIT 4
Information Service Engineering
Knowledge Graphs
Machine Learning

PROGRAM UNIT 5
Intellectual Property Rights
Data Protection
Copyright Law

SERVICE UNIT
IT Systems & Data Networks
• Server & Storage • Data Networks & • IT Security • Internal Services • Desktop Services

SERVICE UNIT
Administration
Finance • Customer Management • Financial Accountin
Controlling
Human Resources/ Facility Management
Legal Counsel

For cross-functional topics, particularly those subject to co-determination, we establish internal working groups as needed. Examples include employee surveys, mission statement development, Future Work, and time tracking. In the summer of 2025, an employee survey was conducted regarding the “Mobile Work” company-wide agreement. Over two-thirds participated and provided consistently positive feedback (see Chapter 5.4).

The planning of objectives and the definition of the measures required to achieve them take place within the framework of the annual program budget. It is ultimately directed at the funding agencies (for FIZ Karlsruhe: the Federal Government and the State of Baden-Württemberg) and has the character of a target agreement. The annual program budget settlement serves to review the target agreement. With the 2024 program budget (prepared in 2022), we included a section on our sustainability measures as an integral part of the planning document. One of our goals for 2025, for example, was the development of a data management system for relevant sustainability information. As a first step, we began in 2025 to systematically document all relevant data in Excel spreadsheets.

3.2 COMPLIANCE

FIZ Karlsruhe must comply with a wide range of legal regulations and organization-specific standards of conduct. Accordingly, our work is guided by a comprehensive compliance catalog focusing on data protection, corruption prevention, IT security, occupational health and safety, and risk management. These contribute significantly to sustainable corporate governance.

3.2.1 Public Corporate Governance Code

In the spirit of responsible corporate governance, FIZ Karlsruhe is committed to the Federal Government’s Public Corporate Governance Code (PCGK)⁹. The Code contains key provisions regarding the management and oversight of federal government-owned companies, as well as internationally and nationally recognized standards of good and responsible corporate governance. It aims to make corporate governance and monitoring more transparent and accountable, and to clarify the role of shareholders. Since 2010, we have published an annual Corporate Governance Report on our website¹⁰, which also includes a section on sustainable corporate governance.

3.2.2 Corruption Prevention

Corruption can cause significant financial and non-financial damage in both private companies and public institutions. The latter is difficult to measure but has far-reaching consequences. Preventing and combating corruption is therefore a top priority. Accordingly, the UN calls for “significantly reducing corruption and bribery in all their forms” (Goal 16.5) in its Sustainable Development Goals.^{11 12} The Federal Government’s Public Corporate Governance Code (PCGK) highlights corruption prevention as a central responsibility of management.

Since June 2013, FIZ Karlsruhe has had its own guideline on corruption prevention (updated in May 2023). It serves as the basis for protecting and raising awareness among all employees, while also providing guidance and support for combating corruption. We appointed an anti-corruption officer as the central point of contact as early as April 2012. Since 2024, the position has been held by a female employee for the first time. She supports management in implement-

⁹ https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Bundesvermoegen/Privatisierungs_und_Beteiligungspolitik/Beteiligungspolitik/grundsaeetze-guter-unternehmens-und-aktiver-beteiligungs-fuehrung.html, accessed on May 19, 2026.

¹⁰ <https://www.fiz-karlsruhe.de/en/ueber-uns/corporate-governance-bericht-2024>, accessed on May 19, 2026.

¹¹ <https://sdgs.un.org/goals>, accessed on May 19, 2026.

¹² <https://sdgs.un.org/goals/goal16>, accessed on May 19, 2026.

ing anti-corruption measures and regularly reports on ongoing activities as well as cases of suspected corruption.¹³ In addition, she reviews one functional area or organizational unit annually in consultation with the CEO and the Vice President Administration and conducts a risk analysis designed to identify potential risks and possible abuse.

3.2.3 Responsible Management of Risks

Every organization is exposed to risks that can result in material and immaterial damage to the company and its employees.

At FIZ Karlsruhe, responsible risk management is a central component of corporate governance and is closely linked to our structured risk management system. Regular risk assessments, as well as the systematic identification, evaluation, and management of risks, form the basis for the risk assessment in the management report. Through clear processes and responsibilities, we ensure transparency and traceability and take into account not only economic but also environmental and social factors to ensure the long-term sustainable development of our organization.

3.2.4 Cybersecurity and Data Protection

Almost all business processes at FIZ Karlsruhe are digital and thus heavily reliant on IT services. They significantly shape how our stakeholders perceive FIZ Karlsruhe, the quality of our results, and our reputation. Information technology is therefore fundamental to FIZ Karlsruhe, and the precise provision of the IT resources necessary for our employees, services, and projects is crucial to our success. At the same time, the threat posed by cyberattacks is continuously increasing and thus represents a significant risk. Consequently, not only the IT systems and data networks division but the entire organization must increasingly navigate the tension between cybersecurity and openness. Since 2024, FIZ Karlsruhe has appointed an external information security officer to prevent poten-

tial conflicts of interest. Thanks to their expertise and experience from other projects, we were able to quickly and effectively implement necessary measures to defend against cyberattacks. For example, at FIZ Karlsruhe we have been using two-factor authentication since 2025, including for access to the VPN (Virtual Private Network) when working remotely and to other systems such as SAP. This allows us to increase security and protection against unauthorized access. In addition, we have made significant investments in hardware and employee training to defend against cyberattacks in recent years and will continue to do so in the future.

An important goal of FIZ Karlsruhe regarding cybersecurity is the protection and security of data. This applies to both personal and confidential data that partners entrust to us as part of collaborative projects or that we generate ourselves. However, sustainable access to publicly available data also plays an important role for us as an information infrastructure institution, both in terms of data availability and integrity (see Chapter 4). This is also evident in the fact that our Intellectual Property Rights research unit, within the field of research data management, addresses issues related to data protection, data ethics, copyright, and AI law in this context.

With the entry into force of the European General Data Protection Regulation (GDPR) in May 2018, data protection has become significantly more important. Responsibility for data protection lies with both employees and management. Since 1995, we have had a Data Protection Officer who advises management and employees on data protection issues and monitors compliance with data protection regulations. To raise our employees' awareness of data protection issues, we organize annual, mandatory online training sessions. In these sessions, we cover the relevant legal regulations and recommended practices. In 2025, for example, a training session was held on the topic of artificial intelligence (AI) and data protection.

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¹³ <https://www.fiz-karlsruhe.de/en/ueber-uns/ueber-uns#anti-corruption+policy>, accessed on May 19, 2026.

3.2.5 Whistleblower Protection Act

Whistleblowers make an important contribution to uncovering misconduct within companies. The Whistleblower Protection Act (HinSchG)¹⁴, which came into effect in mid-2023, is intended to prevent discrimination against whistleblowers and provide them with legal certainty.

It is important to us that we are promptly informed of and can respond to potential legal violations that may originate from within our company. It is also part of our core values that a person who alerts us to such misconduct does not face any reprisals, regardless of the nature of the legal violation they bring to our attention. With the Whistleblower Protection Act (HinSchG), which transposes the EU Whistleblower Directive into German law, such protection is now also enshrined in law. FIZ Karlsruhe implements the obligations under the Whistleblower Protection Act through an external service provider. Employees can submit anonymous reports of potential violations via an independent and neutral¹⁵ platform. This platform is located outside our own IT infrastructure.

3.3 RELATIONSHIP WITH SUPPLIERS

Our values commit us to treating our partners fairly and with respect. This includes our suppliers. In addition to transparent purchasing terms and fair payment terms, we place great value on long-term, partnership-based relationships characterized by trust, reliability, and mutual respect.

3.4. POLITICAL CONSULTING

We view policy consulting as an important mission of our institute. Particularly in our research, we possess proven expertise that is frequently drawn upon at the state, federal, and EU levels. We also participate in studies and position papers that ultimately target the political sphere. For example, Matthias Razum represents the Leibniz Association on the steering committee of the “Digitality in Science” initiative of the Alliance of Science Organizations. This committee has produced papers on the dependence of German science and research on U.S. data, databases, and software systems, as well as on joint activities in the field of artificial intelligence (AI). Further focal points included data (protection) law and copyright law. Prof. Dr. Franziska Boehm is a member of the “Reference Panel of the Global Privacy Assembly” as well as a working group on reform proposals for the GDPR. Prof. Thomas Hartmann published an expert opinion on legal advisory services in research data management. He is also a member of the “Legal Commission of the German Library Association” (dbv).

We consider it part of our commitment to sustainable corporate governance to ensure transparency regarding our activities in policy consulting and public outreach, for example in our annual report¹⁶ and the institute news regularly published on our website. We regularly evaluate our activities in light of the Lobby Register Act (LobbyRG).¹⁷

¹⁴ <https://www.gesetze-im-internet.de/hinschg/BJNR08CoBoo23.html>, accessed on May 19, 2026.

¹⁵ <https://fizkarlsruhehinweisgeberschutz.roedl-whistleclue.de>, accessed on May 19, 2026.

¹⁶ <https://www.fiz-karlsruhe.de/en/ueber-uns/jahresberichte>, accessed on May 19, 2026.

¹⁷ <https://www.gesetze-im-internet.de/lobbyrg/index.html#BJNR081800021BJNE000802311>, accessed on May 19, 2026..



»Through green software architecture and software development, we aim to optimize the energy consumption of digital information services.«

Dr. Moritz Schubotz, Head of the Research and Projects Department, Mathematics

SUSTAINABILITY IN THE RESEARCH PROCESS

What does it mean to integrate sustainability into research processes?

As a non-university research institution, we examine and reflect on the entire research process to ensure that we handle research data, results, and processes in a sustainable manner. Awareness of the social responsibility that accompanies our research also plays a major role in this. We also ensure that a sustainable transfer of knowledge from our research is guaranteed and take into account the impact our research results have on the environment and society.

4.1. GOOD SCIENTIFIC PRACTICE

Sustainability in processes, in research data management, and in addressing the potential implications of research findings are key elements of scientific integrity. As a scientific institution, we view scientific integrity and good scientific practice as the responsibility of our institute as well as all our employees, and we commit to adhering to the corresponding standards: in our mission statement and in our “Good Scientific Practice” guideline,¹⁸ which is an institute-specific elaboration of the “Leibniz Code of Good Scientific Practice”¹⁹.

4.1.1 Ombudsperson

FIZ Karlsruhe follows the aforementioned “Good Scientific Practice” guideline and appoints an independent ombudsperson. All employees, as well as third parties if applicable, may contact

this person if they have questions regarding good scientific practice or suspect scientific misconduct. If the ombudsperson is biased or unable to perform their duties, FIZ Karlsruhe provides for a deputy who comes from a different organizational unit than the ombudsperson. To ensure that employees are aware of the ombudsperson and their deputy, we regularly provide information on this via our intranet and corresponding blog posts. In addition, in 2025, the ombudsperson and her deputy began offering targeted informational sessions for employees to raise awareness of the topics of “scientific integrity” and “good scientific practice.”

4.2 RESEARCH DATA POLICY²⁰

We consider research data to be data generated in the course of scientific projects, for example through observations, experiments, simula-

¹⁸ <https://www.fiz-karlsruhe.de/sites/default/files/FIZ/Dokumente/richtlinie-wiss-praxis-en.pdf>, accessed on May 19, 2026.

¹⁹ https://www.leibniz-gemeinschaft.de/fileadmin/user_upload/Bilder_und_Downloads/%C3%9Cber_uns/Gute_wissenschaftliche_Praxis/Leibniz-Kodex_gute_wissenschaftliche_Praxis.pdf

²⁰ <https://www.fiz-karlsruhe.de/en/forschung/forschung#research+data+policy>, accessed on May 19, 2026

tion calculations, surveys, interviews, source research, recordings, digitization, or analyses. We also include algorithms and (research) software. Research data management begins with the planning of a project and ends only after the data has been deleted following an appropriate retention period.

For the sake of transparency, traceability, and the interoperability of research, research data should be published in suitable repositories and made available for reuse. FIZ Karlsruhe supports the principles of FAIR²¹ and CARE²². In addition, FIZ Karlsruhe offers the RADAR repository²³, through which both we and other institutions can archive and publish digital research data in accordance with the FAIR principles. In this way, too, we contribute to the long-term availability and reusability of research data beyond the scope of our institute.

As part of our research data policy, a Research Data Management Team (FDM Team) has been established at FIZ Karlsruhe since July 2024. The FDM Team advises and supports individual projects on research data management, from the planning stage through to the transfer of data to archives and repositories. Additional responsibilities include developing guidelines and recommendations for handling research data throughout its entire data lifecycle, as well as providing tailored support regarding training and workshops on FDM (internal or external). To address these tasks effectively, the FDM Team conducted an anonymous survey among researchers in 2025 regarding current practices and potential training and support needs for

research data management at FIZ Karlsruhe. The results highlight information needs that are to be addressed in 2026.

4.3 OPEN ACCESS

Open Access stands for unrestricted and free digital access to quality-assured scientific information. By removing technical, financial, and legal barriers, Open Access helps accelerate scientific innovation processes, improve the visibility of research results, and thus promote the sustainable use of these results²⁴, as they are permanently freely available. FIZ Karlsruhe is therefore actively committed to Open Access. In doing so, we follow the “Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities”²⁵, the Open Access strategy of the Federal Ministry of Research, Technology and Space²⁶, and the “Guideline on Open Access in the Leibniz Association”²⁷.

We updated the Open Access Policy²⁸, first published in 2021, in 2025. In doing so, we emphasized more strongly that we publish predominantly in peer-reviewed journals and consistently strive to make our results available via Open Access. Accordingly, all employees are encouraged to publish via Open Access whenever possible. In September 2024, FIZ Karlsruhe signed the Barcelona Declaration²⁹, thereby committing itself, along with a growing number of research institutions, to the international promotion of open research information.

21 FAIR stands for “Findable, Accessible, Interoperable, Reusable.” <https://www.go-fair.org/fair-principles>, accessed on May 19, 2026.

22 CARE stands for “Collective Benefit, Authority to Control, Responsibility, Ethics,” <https://www.gida-global.org/careprinciples>, accessed on May 19, 2026.

23 <https://www.fiz-karlsruhe.de/en/produkte-und-dienstleistungen/radar?page=1>, accessed on May 19, 2026.

24 For example, zbMATH Open for mathematics, <https://zbmath.org>, accessed on May 19, 2026.

25 <https://openaccess.mpg.de/Berliner-Erklärung>, accessed on May 19, 2026.

26 https://www.bmfr.bund.de/SharedDocs/Publikationen/DE/FS/772970_Open_Access_in_Deutschland_en.html, accessed on May 19, 2026.

27 https://www.leibniz-gemeinschaft.de/fileadmin/user_upload/Bilder_und_Downloads/Forschung/Open_Science/Open_Access_Policy_web.pdf, accessed on May 19, 2026.

28 <https://www.fiz-karlsruhe.de/en/forschung/forschung#open+access+policy>, accessed on May 19, 2026.

29 <https://barcelona-declaration.org>, accessed on May 19, 2026.

To improve the visibility and clear attribution of research results to FIZ Karlsruhe, we have developed a publication guideline. This defines uniform standards for the citation of institute names and authors.

To promote Open Access, we support our research and publishing staff through a dedicated Open Access Officer. Relevant information and contact details are available in a centralized location on the intranet. In addition, we support open access publications through an internal budget.

4.4 RESEARCH WITH SOCIAL RESPONSIBILITY

In our research strategy, we define selection criteria for planned research activities regarding topics, collaboration partners, funding opportunities, and required research equipment. In doing so, we always take sustainability aspects into account by actively adhering to the principles of good scientific practice and, furthermore, by integrating the concept of “research with social responsibility” into our approach. Sustainability, based on the three dimensions of economy, ecology, and social responsibility, is a fundamental principle for FIZ Karlsruhe that is taken into account in all phases of the research process—from topic identification through implementation and documentation to subsequent transfer—in order to achieve long-term positive impacts.

The Department of Mathematics at FIZ Karlsruhe contributed to a two-part study³⁰ by the Joint Working Group of the International Mathematical

Union (IMU)³¹ and the International Council of Industrial and Applied Mathematics (ICIAM)³² on problematic publication practices in mathematics. In response to this publication, renowned professional societies such as the German Mathematical Society (DMV)³³ and the IMU are calling for a fundamental system change and providing concrete recommendations for quality-oriented publication practices.³⁴ These issues became particularly noticeable in mathematics because the community has a strong culture of quality and, among other things, possesses the necessary tools—such as zbMATH Open³⁵—to detect manipulation.

How can research output be evaluated fairly and transparently without reducing it to numbers that can be manipulated? By signing the CoARA Action Plan³⁶, we demonstrate the concrete steps we are taking ourselves: from open bibliometric data to discipline-specific quality standards to fair internal procedures.

4.5 KNOWLEDGE DISSEMINATION AND TRANSFER

Strengthening knowledge transfer between academia, civil society, politics, and business, as well as social actors, is a key priority for us. For example, in 2025 at the EFFEKTE Science Festival in Karlsruhe, we presented initial findings from the project “Thematic Portal on Compensation for National Socialist Injustice” in a way that resonated with the public by linking them to local commemorations.

Prof. Dr. Franziska Boehm and attorney Fabian Rack, together with other authors, provided

³⁰ <https://doi.org/10.1090/noti3217> and <https://doi.org/10.1090/noti3266>), accessed on May 19, 2026.

³¹ <https://www.mathunion.org>, accessed on May 19, 2026.

³² <https://iciam.org/>, accessed on May 19, 2026.

³³ <https://www.mathematik.de>, accessed on May 19, 2026.

³⁴ <https://www.mathematik.de/dmv-presse/5242-systematischer-betrug-bei-publikationen-in-der-mathematik-aufgedeckt>, accessed on May 19, 2026.

³⁵ <https://www.fiz-karlsruhe.de/de/produkte-und-dienstleistungen/zbmath-open>, accessed on May 19, 2026.

³⁶ <https://www.fiz-karlsruhe.de/de/nachricht/fiz-karlsruhe-veroeffentlicht-aktionsplan-zur-reform-der-forschungsbewertung-im-rahmen>, accessed on May 19, 2026.

the first commentary on the text of the Creative Commons Public License (CCPL)³⁷. The book thus makes an important contribution to legal practice with Creative Commons licenses and offers the first comprehensive legal analysis of the licensing model. The handbook section outlines the specific features for academia, public administration, and law enforcement, among others.

Stakeholders in the science and innovation system should have reliable access to all digital information and tools relevant to them anytime and anywhere. To this end, we offer data, information, and knowledge, as well as software and services, via open and legally compliant platforms. We are developing our products into open, networked platforms and strengthening our Open Policy (Open Access/Open Source/Open Science) (see Chapter 4.3).

FIZ Karlsruhe participates in working groups and committees at the national and international levels on issues related to scientific information infrastructures. For example, Dr. Felix Bach is involved in several working groups of the Research Data Alliance³⁸ (RDA). Prof. Dr. Franziska Boehm serves on the program committee of Europe's

largest data protection conference, "Computers, Privacy and Data Protection (CPDP)." Dr.-Ing. Genet Asefa Gesese (ISE-ML) is participating as Web Presence & Publicity Chair in the organization of the 24th International Semantic Web Conference (ISWC 2025) in Nara, Japan. Prof. Dr. Harald Sack is serving as Co-Chair for the organization of the 2nd International Workshop on Semantic Materials Science (SeMatS 2025) as part of the "24th International Semantic Web Conference (ISWC 2025)" in Nara, Japan. In addition, through the two professorships in Information Service Engineering (Prof. Dr. Harald Sack) and Intellectual Property Rights (Prof. Dr. Franziska Boehm), as well as several visiting professorships held by our researchers, we are actively involved in teaching and the promotion of early-career researchers. In total, we conducted 35 courses and published more than 80 scientific papers.

Science communication reports on the tasks, achievements, and research results of FIZ Karlsruhe. We also make relevant information available to a broad public through various internal and external communication channels, such as our website, press releases, and social media.

³⁷ <https://www.fiz-karlsruhe.de/de/nachricht/neuer-kommentar-zu-creative-commons-lizenzen>, accessed on May 19, 2026.

³⁸ <https://www.rd-alliance.org>, accessed on May 19, 2026.



»With the established GBV Mobile Working policy, we create a true work-life balance. It serves as a strong foundation for employee retention and our future.«

Nadine Lambert, Head of Human Resources and Infrastructure

5 SUSTAINABLE HUMAN RESOURCES MANAGEMENT

Our employees are our most important resource. Accordingly, as an employer, FIZ Karlsruhe is always mindful of its responsibilities and duty of care toward all employees. For us, sustainable human resources management encompasses, in particular, occupational safety, workplace health management, equal opportunity, the promotion of diversity, and work-life balance. For us, the sustainable development of our employees means enabling continuous professional development, actively supporting individual career growth, and embodying a culture of mutual respect as an integral part of our corporate culture.

In the spirit of sustainable human resources management, we set ourselves the medium-term goal in the reporting year of developing a comprehensive human resources and location development strategy. Key elements include leadership development, advancing women's careers, the professional development of research staff, and the further development of our work locations with a view to hybrid work. Another priority remains the further development of our comprehensive health management system.

With Personio, FIZ Karlsruhe has successfully implemented a modern, digital, and cloud-based human resources management system. The first step was the implementation of time tracking, including absences such as vacation and sick leave. Time tracking is available to all employees via various devices, thereby strengthening the self-service approach. Additional processes are being digitized step by step using Personio, including recruiting, onboarding and offboarding, and personnel files.

5.1 HUMAN RESOURCES DEVELOPMENT

As of December 31, 2025, FIZ Karlsruhe employed a total of 308 staff members, 245 of whom were based in Karlsruhe and 63 in Berlin (see Figure 7). In 2025, we hired a total of 35 employees, 11 of whom were in research positions. Recruitment, particularly of skilled workers from abroad, is successfully supported by the Future Work concept (see 5.4.1). Personnel development, appropriate training pathways, and further in-house training are important measures for building the necessary expertise and successfully integrating employees into the company. Our consistently low fluctuation rates over the years (see Table 3) confirm the success of our personnel development efforts. In line with FIZ Karlsruhe's mission and the required qualifications, we offer appropriate training programs: In cooperation with the Baden-Württemberg Cooperative State University (DHBW) in Karlsruhe, we offer apprenticeship positions for the "Computer Science" program. In

cooperation with the Media Department at Darmstadt University of Applied Sciences, we train postgraduate interns to become scientific docu-

mentarians or information specialists (two-year continuing education program).

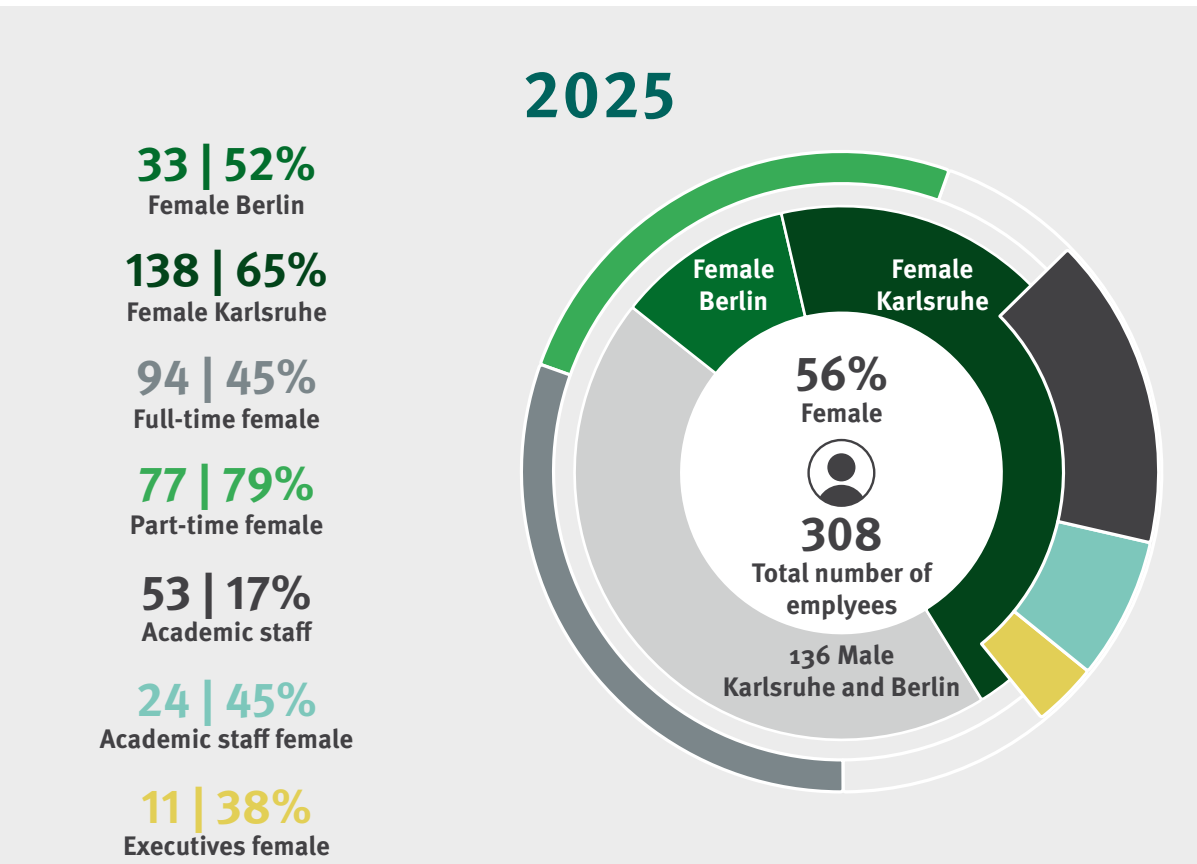


Figure 7: Number of female employees, their share of academic staff, and their share of all managers as of December 31, 2025.

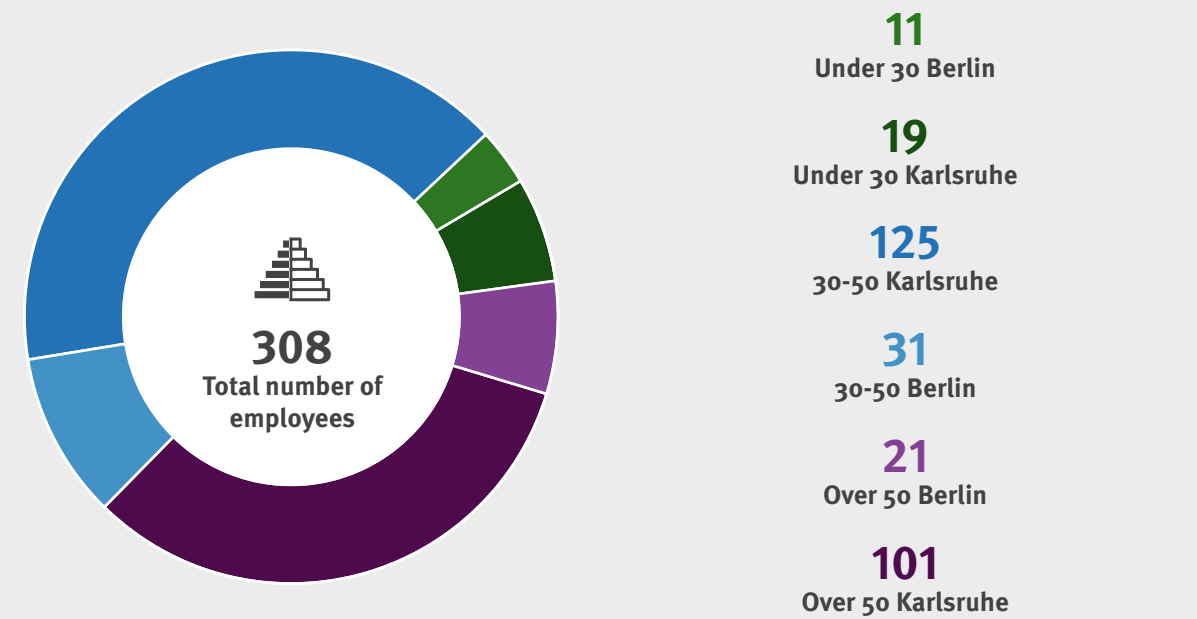


Figure 8: Age distribution of FIZ Karlsruhe employees as of December 31, 2025. 40% are 50 years of age or older.

Employees with disabilities						
	2024			2025		
	Karlsruhe	Berlin	Total	Karlsruhe	Berlin	Total
Number of employees with disabilities	7	3	10	7	3	10
Percentage	3%	5%	3%	3%	5%	3%

Table 1: Number of employees with disabilities as of December 31, 2024 and 2025

Sick days						
	2024			2025		
	Karlsruhe	Berlin	Average	Karlsruhe	Berlin	Average
Sick days per employee	9	10	9	9	8	9
Percentage based on 230 working days (excluding Saturdays and minus 30 vacation days)	3.9%	4%	3.9%	3.9%	3.5%	3.9%

Table 2: With an average of approximately 9 sick days in 2024 and 2025 (counted from the first day of absence), FIZ Karlsruhe remains well below the national average of 14.8 days (2024) in 2025 as well. Source: Federal Statistical Office, The Federal Statistical Office only records sick days that are documented by a certificate of incapacity for work. Accordingly, the actual number of sick days is higher.

Staff Fluctuation						
	2024			2025		
	Karlsruhe	Berlin	Total	Karlsruhe	Berlin	Total
Employees who have left the company	20	6	26	15	7	22
Percentage of total employees	8.5%	10%	13%	6%	11%	7%

Table 3: Staff fluctuation at FIZ Karlsruhe in 2024 and 2025

5.2 INTEGRATION

We rely on a comprehensive onboarding program to help new employees start work and settle in. Our goal is to provide the best possible start in their new role at FIZ Karlsruhe and ensure they quickly become familiar with their work envi-

ronment. An integrated program with mentors provides particular support to international employees. We at FIZ Karlsruhe offer, among other things, language courses, information on working and living in Germany, and assistance with dealing with government agencies.

5.3 CONTRACTUAL SITUATION

In addition to many other factors, the contractual situation and compensation are crucial for the employees' sense of belonging to their employer. These factors also affect their overall psychosocial situation. FIZ Karlsruhe is a member of the Municipal Employers' Association (KAV) for Baden-Württemberg. As a result, employment contracts with employees are concluded in accordance with collective bargaining law for the public sector. Research staff are initially hired on a fixed-term basis. The same applies to employees whose work is time-limited and funded (for

example, in training programs and projects). Employment contracts may be converted to permanent status if funding for long-term employment is secured. With a share of 17 percent in 2024 and 20 percent in 2025, the number of fixed-term employment contracts relative to the total number of all employment contracts increased slightly last year compared to 2024. This is in line with the expansion of our externally funded research activities. Nevertheless, FIZ Karlsruhe has a comparatively low proportion of fixed-term contracts (see Table 4). Non-academic staff, particularly in the two service units of Administration and IT Systems and Data Networks, is generally employed on a permanent basis.

Fixed-term employment contracts	2024	2025	Permanent employment contracts	2024	2025
Total number	49	61	Total number	14	4
Percentage of all employment relationships	17%	20%	Percentage of all fixed-term employment contracts	29%	1%
Academic staff	26	30	Scientific staff	6	1
Ratio of academic staff	54%	57%	Percentage of academic staff	43%	25%

Table 4: Number of fixed-term contracts and conversions to permanent contracts in 2024 and 2025 relative to all employees, as well as the proportion of fixed-term contracts and conversions to permanent contracts relative to research staff. As of December 31, 2025

5.4 FAMILY-FRIENDLY WORKING CONDITIONS

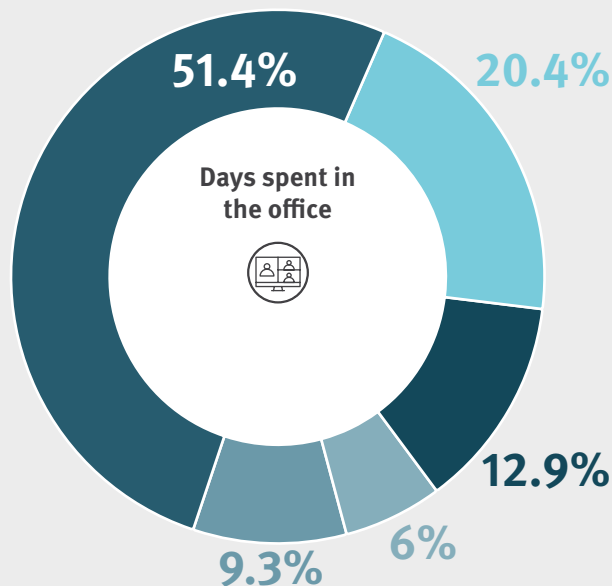
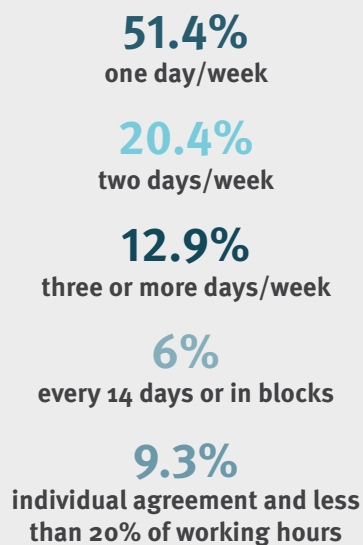
5.4.1 Future Work

The Future Work concept consists of three pillars: flexible workplace design through the "Mobile Work" company-wide agreement (GBV), spatial concepts for hybrid work at both locations, and the concept for designing home office workspaces. The "Mobile Work" company-wide agreement (GBV) allows employees to work remotely within Germany for up to 80 percent of their working hours. In individual cases, FIZ Karlsruhe also permits mobile work abroad. In this way, we promote and support the balance between work, family, and caregiving responsibilities while simultaneously helping to reduce environmentally harmful emissions from commuting.

A survey of employees on mobile working conducted in the summer of 2025, covering the topics of satisfaction, feasibility, and potential for improvement, shows a high level of overall satisfaction (see Figure 9).

As of September 1, 2025, FIZ Karlsruhe introduced the GBV "Working Hours and Time Tracking." This eliminates rigid core working hours. Employees can freely schedule their working hours between 6:00 a.m. and 9:00 p.m. Meetings should take place Monday through Thursday between 9:00 a.m. and 3:00 p.m.

How often do you usually come into the office?



Are you generally satisfied with the GBV “Mobile Work”?

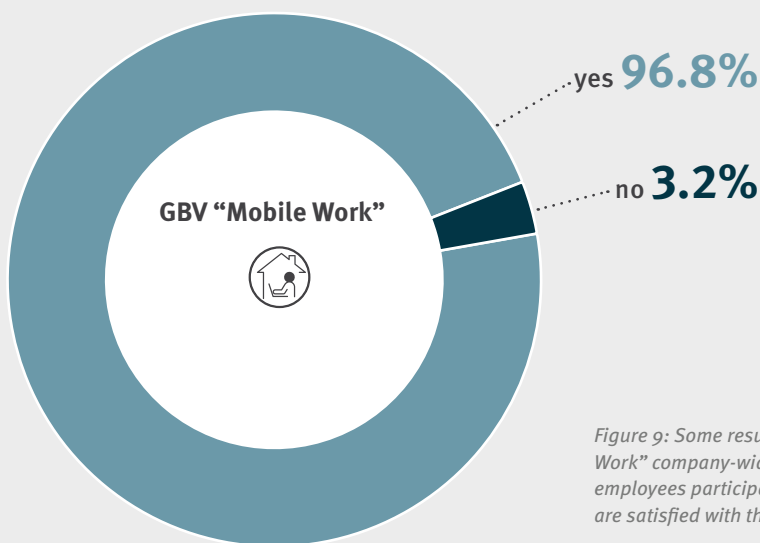


Figure 9: Some results from the employee survey on the “Mobile Work” company-wide agreement (GBV). Seventy percent of employees participated. The overwhelming majority of employees are satisfied with the GBV.

5.4.2 Work-Life Balance

We take our employees’ individual needs regarding work-life balance into account whenever possible; this applies not only to raising children but also to caring for elderly or ill relatives. Flexible work arrangements and the option of mo-

bile work are key components of this. Reduced working hours do not limit career opportunities. At FIZ Karlsruhe, part-time employees also hold management positions.

5.4.3 “berufundfamilie” audit

FIZ Karlsruhe has been certified by the “audit berufundfamilie” since October 2016. Prior to that, we received the TOTAL E-QUALITY award four times. In 2022, we were recertified as a partner of the “audit berufundfamilie”³⁹. As part of the three-year target agreement running through the end of 2025, we have implemented various measures. For example, we have introduced an emergency guide on the intranet that contains valuable tips and information for sudden emergencies, such as accidents or strokes, as well as for questions regarding preventive care and insurance.

At the end of 2025, as part of the berufundfamilie audit, the dialogue procedure was implemented, which allows the employer to independently manage and shape its family- and life-stage-conscious personnel policy. The dialogue process can be applied for the first time following nine years of collaboration. It began at FIZ Karlsruhe with a dialogue day attended by selected managers, the equal opportunity officers, and the works council to define new topics. These will be incorporated into the new action plan, valid for the next three years, which the management signed in December 2025.

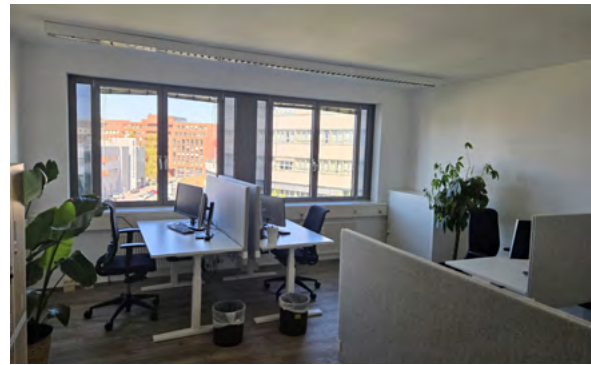


Figure 10: Desk sharing in Berlin



Figure 11: New break room at the Berlin location

5.5 SPACE CONCEPTS SUPPORT HYBRID WORK

To motivate our employees—many of whom work remotely—and to foster collaboration and cooperation when working on-site, we have modernized additional spaces and equipped them for hybrid and modern work. At the Berlin location, for example, a new break room was created with

a water dispenser and coffee machine, which can be used free of charge. In addition, new meeting spaces, desk-sharing workstations, and a soundproof room-within-a-room solution for video conferences were set up. We prioritize sustainability in our planning and material selection, for instance by using regional products and service providers.

³⁹ berufundfamilie Audit Certificate, <https://www.fiz-karlsruhe.de/sites/default/files/FIZ/Dokumente/berufundfamilie-zertifikat-und-kurzportrait.pdf>, accessed on May 19, 2026.

5.6 OCCUPATIONAL HEALTH MANAGEMENT

In the reporting year, FIZ Karlsruhe consistently expanded and further developed its occupational health management to sustainably promote the health, motivation, and work capacity of its employees.

Right at the start of the year, we conducted a comprehensive survey on health in the workplace (“Health at Work Questionnaire”) in cooperation with the Techniker Krankenkasse. The results provided valuable insights into current needs and challenges and formed the basis for targeted, long-term health management measures. For example, we adapted the themes of the Health Day to the needs of our employees.

Health Days at the Karlsruhe and Berlin locations were once again a regular feature in 2025. The focus was on sleep hygiene, relaxation, mobility,

and balancing caregiving with work. Participants were able, among other things, to assess their daytime sleepiness via pupillography, have their muscle tone in the shoulder and neck area measured, or learn about various relaxation techniques such as progressive muscle relaxation and breathing exercises in short introductory courses. Another key component was the information provided on caregiving and preventive health.

Team spirit in sports was also well represented in 2025: Numerous employees once again actively participated in the B2Run races in Karlsruhe and Berlin, as well as in the Berlin team relay.

One offering in the area of prevention was the temporary introduction of the digital health coach ISA40. The ISA ergonomics training raises awareness of healthy posture and supports employees in integrating ergonomic and dynamic movement routines into their daily work.



Figure 12: Highlights from the Health Day in Karlsruhe



Figure 13: Participants at the B2Run 2025 in Karlsruhe

5.6.1 Mental Health in the Workplace

Mental health in the workplace remains a central component of occupational health management and is steadily gaining importance in light of increasing demands in everyday work life. On the occasion of World Mental Health Day in 2025, FIZ Karlsruhe set an example for mindfulness and mutual support under the motto “We care for each other”: We launched the internal information portal “Mental Health,” which raises awareness and provides support for employees regarding mental health.

5.7 EQUAL OPPORTUNITIES & DIVERSITY

5.7.1 Equal Opportunities

Equal opportunity is enshrined as a value in FIZ Karlsruhe's mission statement⁴¹, and the implementation of the Equal Opportunity Implementation Agreement (AV-Glei) is an ongoing structural goal of our institute. As a member of the Leibniz Association, we have been successfully implementing the DFG's "Research-Oriented Gender Equality Standards"⁴² for years. Collaborative behavior is embedded in our values. The Equal Opportunity Officer and her deputy are involved in all relevant measures, such as the filling of positions.

The European Union has established a "Gender Equality Plan" (GEP) as an eligibility criterion for Horizon Europe funding. Since March 2022, we have defined the key points of "Gender Equality at FIZ Karlsruhe"⁴³ within a Gender Equality Plan (GEP)⁴⁴ and published them on our website. In 2025, FIZ Karlsruhe updated the Gender Equality Plan and published it in February 2026.

The proportion of female employees—counted by number of individuals—was 56 percent; the proportion of women in leadership roles⁴⁵ was 38 percent (division, department, and team leaders, as of December 31, 2025). Through measures such as training and coaching, women in particular are to be further supported in qualifying for and applying to leadership positions and other demanding roles.

FIZ Karlsruhe is actively committed to ensuring that people with disabilities are not disadvan-

taged. The representative body for employees with severe disabilities, elected in accordance with the Social Security Code, is involved in all measures affecting employees with severe disabilities. Workplace equipment and building infrastructure are accessible and barrier-free. If necessary, FIZ Karlsruhe provides employees with severe disabilities with a workspace in their home. Since December 2023, FIZ Karlsruhe has had an inclusion officer.

As part of the redesign of FIZ Karlsruhe's website in 2020, the requirements of BITV 2.0⁴⁶ were implemented in accordance with Section 10 of the State Disability Equality Act (L-BGG). Further information is available in our accessibility statement⁴⁷, as of January 2025. We also implement accessibility measures—to the extent possible—in the design of user interfaces for our electronic products and services as well as the FIZ homepage. The last review took place in January 2025.

5.7.2 Diversity

When we talk about diversity in the workplace, we don't just mean the presence of different people. It is about creating an inclusive and equitable work environment for these people, where everyone feels they belong—regardless of ethnic origin and nationality, gender and gender identity, physical and mental abilities, religion and worldview, sexual orientation, social background, and age. These topics constitute the core dimensions of diversity.

In January 2024, FIZ Karlsruhe signed the Diversity Charter⁴⁸ to send a clear signal in support of diversity and tolerance and to foster an appreciative and prejudice-free work environment.

⁴¹ <https://www.fiz-karlsruhe.de/en/ueber-uns/unser-leitbild>, accessed on May 23, 2025.

⁴² <https://www.dfg.de/en/news/facts-figures/evaluation-studies-monitoring/studies/study-research-standards>, accessed on May 19, 2026.

⁴³ <https://www.fiz-karlsruhe.de/sites/default/files/FIZ/Dokumente/Gleichstellung.pdf>, accessed on May 19, 2026.

⁴⁴ <https://www.fiz-karlsruhe.de/sites/default/files/FIZ/Dokumente/gender-equality-plan-fiz-karlsruhe-2026-en.pdf>, accessed on May 19, 2026.

⁴⁵ Including non-academic female staff.

⁴⁶ https://www.gesetze-im-internet.de/bitv_2_o/BITV_2.o.pdf, accessed on May 19, 2026.

⁴⁷ <https://www.fiz-karlsruhe.de/en/ueber-uns/erklaerung-zur-barrierefreiheit>, accessed on May 19, 2026.

⁴⁸ Diversity Charter: <https://www.charta-der-vielfalt.de>, accessed on May 19, 2026.

Diversity is also enshrined as a value in FIZ Karlsruhe's mission statement.

Our employees come from 22 different countries. The active integration of international employees is an integral part of our diversity management (see Chapter 5.2).

Our proportion of employees with severe disabilities stands at 3 percent. We aim to increase this proportion, for example by stating in job postings that we give preference to applicants with severe disabilities when qualifications are equal.

5.8 QUALIFICATION, TRAINING AND CONTINUING EDUCATION

Sustainable human resources development aims to increase employer attractiveness and thereby strengthen employee retention. A healthy turnover rate lies between 8 and 12 percent. In 2025, the turnover rate at FIZ Karlsruhe was just seven percent (see Table 8). In addition to regular feedback meetings between employees and supervisors, we place great emphasis on continuing education and professional development. In 2025, we funded 36 events with a total of 443 participants to develop and promote the professional, personal, and social skills of our employees. In addition, we offered all employees an online training session on occupational safety and two training courses on the topics of "Data Protection" and "Data Protection in Human Resources." Since 2025, in addition to our internal language training program, our employees have also had access to the comprehensive language learning platform "Babbel."



»We use renewable electricity and invest in photovoltaics—this is how we consistently advance our goal of becoming climate-neutral in the long term.«

Uwe Lumpp, Facility Management

6 SUSTAINABILITY MANAGEMENT OF BUILDINGS AND INFRASTRUCTURE

Sustainable building management has a significant impact on energy consumption and the resulting CO₂ emissions. Key factors include the energy efficiency of buildings, the building services systems used, and the choice of energy sources. FIZ Karlsruhe is committed to further reducing its CO₂ emissions. With the construction of two photovoltaic systems and the switch to renewable electricity, we have already taken important steps. In addition, we are focusing on systematically identifying potential savings, deriving targeted measures, and advancing further projects—such as the energy-efficient renovation of our buildings.

FIZ Karlsruhe has two locations in Germany: Eggenstein-Leopoldshafen (near Karlsruhe) and Berlin. The headquarters is located on the North Campus of the Karlsruhe Institute of Technology (KIT). At the Berlin location, we use leased office space in the immediate vicinity of the Technical University.

As part of our annual status quo analysis, we assess the condition of the buildings we use and their building systems, as well as our energy consumption. This information forms the basis for deriving concrete measures, such as energy-efficient renovations and the appropriate selection of materials for structural modifications.

The analysis conducted in 2023 laid an important foundation for the energy-efficiency improvements to our building stock. Since then, we have significantly improved the database on our buildings, their technical systems, and their energy needs. Despite the fact that some planning documents and performance metrics were missing due to the age of the buildings, we were able to identify appropriate and economically viable energy-efficiency retrofit measures. A key project is the comprehensive energy-efficiency and structural renovation of Buildings 238 and 241, which was planned in 2025 and will be carried out in 2026.

6.1 INITIAL SITUATION OF THE OFFICE BUILDINGS IN KARLSRUHE AND BERLIN

6.1.1 Karlsruhe location

At our main location, we have three buildings used for traditional office operations (Buildings 238, 240, 241), which were constructed in the 1950s, 1970s, and 1980s. The total net floor area (NFA) according to DIN is 10,182 m². No energy performance certificates are currently available for the buildings, and few meaningful metrics regarding their energy efficiency are available. Ventilation in the buildings is primarily provided through the windows, while meeting rooms are ventilated via a mechanical ventilation system. The windows in office and meeting rooms are equipped with interior glare protection and, for the most part, exterior sun protection.

Since summer 2025, the office spaces in Karlsruhe have been fully air-conditioned. The offices are equipped with air conditioning units that can be controlled individually; air conditioning is used only as needed. We regularly remind our employees to operate the systems in an energy-efficient manner.

On Campus North, KIT acts as the energy supplier. Therefore, our supply of electricity, heating, and drinking water is provided via KIT's utility network.

We receive heating via a heat transfer station from KIT's district heating network. Currently, the inlet temperatures in the district heating network range between 75° and 95° Celsius. KIT plans to renovate parts of its district heating network and gradually lower the inlet (VL) temperatures in the future.



Building 240/241

- Management
- Patent & Scientific Information
- Subject-Specific Services
- e-Research
- Information Service Engineering
- Intellectual Property Rights
- IT-Systems & Data Networks
- Administration (management, personnel/infrastructure, legal department)

Building 238

- Patent & Scientific Information
- Administration (finance and controlling)

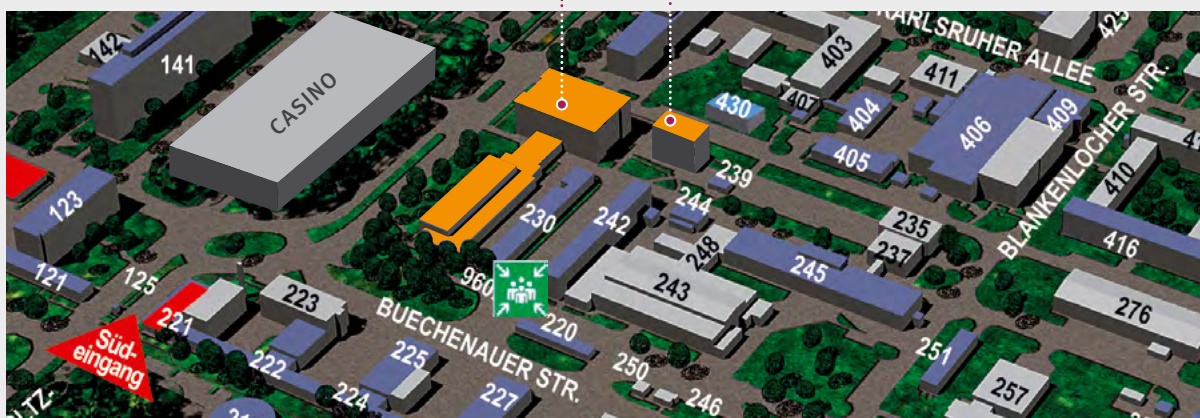


Figure 14: Site map of FIZ Karlsruhe at the North Campus

LEASED OFFICE SPACE IN BERLIN

Description of rented office space in Berlin, as at Dec 31, 2025

Year of construction: 1865-1910
Year of construction of heat generator: 1992–2014
Construction method: Solid construction
Net floor area (NFA) according to DIN 277: 842 m²
Barrier-free: Yes
Energy performance certificate: Yes
Air conditioning for server rooms 1 and 2, Electrical power 5 kW
Connected load, server room 1: 30 kW
Connected load, server room 2: 21 kW

Energy supply
Electricity
Energy provider: Vattenfall
Renewable energy (since June 4, 2025): 100 %
CO₂ emission factor: 0 g/kWh
Heat supply (heating): District heating
Energy source: Gas
CO₂ emission factor: 119 g/kWh
Hot water supply: Decentralized, electric

FIZ Karlsruhe receives electrical power from KIT's 20 kV grid via a KIT-owned substation. Since January 1, 2025, KIT—and therefore we as well—have been sourcing electricity from renewable energy sources in accordance with the requirements of the current Renewable Energy Act (EEG) and the provisions of EU Directive 2023/2413

6.1.2 Location: Berlin

The leased office space is located in a mixed-use building (office, warehouse, production) constructed between 1865 and 1910. The net floor area of the office space we occupy is 842 m². The building is heated via district heating; hot water is provided locally using electric water heaters. Two server rooms for the locally operated IT infrastructure are cooled by split-system air conditioners. In the office spaces at the Berlin location, ventilation is provided exclusively through

the windows. Since June 4, we have been sourcing all electricity for our leased office space from renewable energy sources, of which 50.9 percent is subsidized under the Renewable Energy Act (EEG)⁴⁹ and 49.1 percent comes with a certificate of origin and is not subsidized under the EEG.



Figure 15: Exterior view of the office building in Berlin. FIZ Karlsruhe has leased the fifth floor here.

⁴⁹ <https://www.umweltbundesamt.de/themen/klima-energie/erneuerbare-energien/erneuerbare-energien-gesetz>, accessed on May 19, 2026.

KARLSRUHE LOCATION

Description of existing buildings in Karlsruhe, as at Dec 31, 2025

Building 238

Year of construction: 1985
Construction method: Solid construction
Net floor area according to DIN 277:
1.330 m²

Building 240

Year of construction: 1976-1978
Construction method: Solid construction
Net floor area according to DIN 277:
6.509 m²

All Buildings

Barrier-free: Yes
Energy performance certificate: No
Power supplied by KIT
Electricity: KIT (enercity AG)
Share of renewable energy: 100%
CO₂ emission factor: 0 g/kWh
Heat supply (heating/hot water): District heating
Energy source: Gas
CO₂ emission factor: 99 g/kWh

Data center in Building 240

Emergency power supply: Batteries and Emergency diesel power, 820 kVA
Data center air conditioning: 3 coolers
Total cooling capacity: 810 kW
Electrical power: 270 kW

Building 241

Year of construction: before 1960
Construction method:
Lightweight construction
Net floor area according to 277:
2.343 m²



6.2 RENOVATION AND ENERGY SAVINGS

In recent years, we have already taken steps to improve the energy efficiency of our buildings, to reduce energy consumption, and to provide our employees with comfortable working conditions. These measures are documented in detail in the 2023 and 2024 sustainability reports. Therefore, in this report, we focus on FIZ Karlsruhe's activities during the 2025 reporting year.

- **LED Lighting**

As early as 2023, we began gradually replacing conventional light bulbs with energy-efficient LED lights. Since then, we have consistently replaced defective bulbs with LED versions. The replacement in Building 241 is now fully complete—a process that was particularly complex due to necessary technical adjustments and large meeting rooms. In Building 240, all offices and hallways were converted to LED lighting by the end of 2025. Building 238 will follow as soon as the energy-efficient facade renovation, including the installation of new windows, is completed.

- **Energy-Efficient Renovation of Building 238/241 – Planning Work to Be Completed in 2025**

For the office building, constructed in 1985, FIZ Karlsruhe is planning a comprehensive energy-efficient renovation of the entire facade, including windows and a ventilation system. Neither the facade (U-value approximately $2.5 \text{ W/m}^2\cdot\text{K}$), nor the old windows meet current technical standards. The uninsulated facade is no longer energy-

efficient. Therefore, a comprehensive renovation is planned, which, in addition to the facade and windows, also includes the replacement of the outdated radiators. We completed the planning in 2025, and the construction project is scheduled for 2026.

- **Charging Station for Electric Cars**

Our PV system supplies FIZ Karlsruhe with emission-free electricity, which we also intend to use for our operational mobility. To this end, we have purchased an electric vehicle for business trips and installed a charging station with two charging points at Building 238. In addition, since December 2025, all FIZ Karlsruhe employees have had the option to charge their personal electric vehicles for free at the charging stations. This option is frequently used.

- **FIZ Karlsruhe's power supply has been converted to renewable energy**

Since January 1, 2025, the Karlsruhe site has been sourcing electricity from renewable energy sources, and since June 4, 2025, the Berlin site has been doing the same.

- **Radiator Replacement**

Replacing old radiators ensures the heating system remains functional while also increasing its efficiency, as radiator technology has improved significantly in recent years. Modern radiators have a faster response time due to their lower water content and thus operate more efficiently. In our offices in Karlsruhe, the radiators are outdated and mostly date back to when the buildings were constructed. Therefore, we began installing new radiators in Building 240 in 2024 and completed the replacement in 2025.

6.3 COST-SAVING MEASURES DERIVED FROM THE ENERGY AUDIT

6.3.1 Metering systems for electricity and cooling

As part of the energy audit in accordance with DIN EN 16247-1 (2024), we conducted a comprehensive analysis of electricity and heat consumption. Currently, FIZ Karlsruhe has five electricity meters at its Karlsruhe site (low-voltage main distribution boards (LVDB))—one each for Buildings 238 and 241, as well as Building 240 “General Power,” the “EDV” data center, and the “Cooling” data center. Heat consumption is recorded separately for each building. In the past, there were no measurement systems in place to record the data center’s cooling consumption.

No additional sub-meters are installed to determine the specific electricity consumption of major consumers such as the heating system, office air conditioning, or elevators. In particular, the analysis revealed that the electricity consumption of the “Cooling” and “IT” main distribution boards cannot be completely distinguished from one another. Therefore, it is not possible to clearly assign consumption to a specific source. The existing wiring diagrams show that additional consumers are connected to both the “IT” and “Cooling” circuits.

Therefore, we developed a measurement concept in 2025 and installed 20 sub-meters in December 2025. The goal is to present all major consumers separately and transparently in the future. All sub-meters will be integrated into KIT’s “efficio” energy management system, which we have been using since 2024 to monitor and document our energy consumption. Based on the results, we will develop a targeted energy-saving plan.

In addition to the electricity submeters, we installed five cooling flow meters in early February 2025. This allows us to separately measure and analyze both the total cooling output and the data center’s specific cooling demand.

6.3.2 Energy Management System in accordance with ISO 50005

The Energy Efficiency Act requires public entities to implement measures to reduce energy consumption. The law is currently being revised. The draft version continues to stipulate that public institutions must reduce their energy consumption by 1.9 % annually compared to the previous year by 2045. This process must be documented and supported by specific measures. Here, an Energy Management System (EMS) according to ISO 50005 offers an efficient approach to creating the necessary structures, achieving the required savings target, and tracking progress. Therefore, we have decided to implement an EMS according to ISO 50005 at FIZ Karlsruhe. The Leibniz Association’s administrative office is supporting the project. As part of a series of workshops, the institutes will receive the necessary tools for implementing ISO 50005. Work at our institute will begin in January 2026.

6.4 ENERGY CONSUMPTION

To protect the climate, it is essential to significantly reduce the consumption of non-renewable resources such as fossil fuels in order to make a positive contribution toward climate neutrality while simultaneously saving costs. Therefore, we first analyzed our electricity consumption over the past few years. Since November 2025, billing-relevant electricity meters have also been measuring the electricity generated by our photovoltaic systems.

6.4.1 Heat consumption

Heat consumption is calculated separately for each building as well as for the leased office space. Figure 16 shows the total consumption for the Karlsruhe and Berlin locations. At the time of this report, the operating cost statements for the Berlin location for the years 2023, 2024, and 2025 were not yet available. Therefore, we have applied the average heat con-

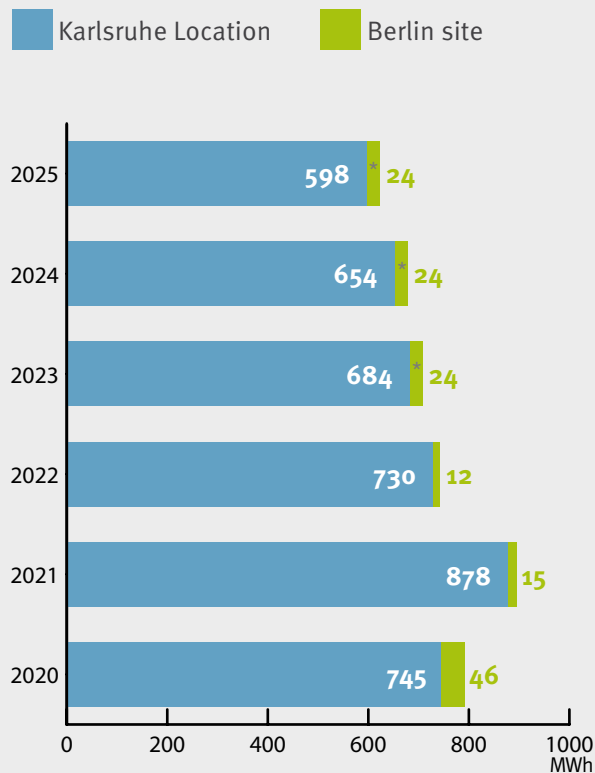


Figure 16: Heat consumption in megawatt-hours (MWh) at the Karlsruhe and Berlin sites, *based on average consumption from 2020 to 2022

sumption from 2020 to 2022 for the years 2023 to 2025.

In 2025, heat consumption for our office buildings at the Karlsruhe site amounted to 59 kWh/m²a per square meter of net floor area and is below the reference value for non-residential buildings⁵⁰ of 110 kWh/m²a. However, the offices are not used daily. Following the end of the pandemic, FIZ Karlsruhe introduced a flexible work location concept that allows for remote work for up to 80 percent of monthly working hours (see Chapter 5.4). This arrangement is extensively used by our employees. In addition*, since the beginning of 2023, we have been using only three office buildings instead of four, reducing the area requiring heating by 938 m². Furthermore, it is important to us to raise awareness among our colleagues regarding the topic of “saving heating energy.” Compared to 2024, we have succeeded in significantly reducing heating energy consumption at the Karlsruhe site (see Figure 16).

Electricity consumption [kWh]						
	2020	2021	2022	2023	2024	2025
Karlsruhe location						
Buildings	118,797	149,530	131,420	123,922	120,461	92,546
PV electricity, self-consumed (Buildings 238 and 240)						26,163*
Data Center	2,073,089	2,688,710	2,130,299	2,327,171	2,148,436	2,191,611
Karlsruhe total	2,191,886	2,838,240	2,261,719	2,451,093	2,268,897	2,310,320*
Berlin location	85,827	21,478	48,332	50,230	52,648	63,514
of which renewable energy electricity						38,849
FIZ Karlsruhe total	2,277,713	2,859,718	2,310,051	2,501,323	2,321,545	2,373,834*

Table 5: Electricity consumption at FIZ Karlsruhe from 2020 to 2025 across all buildings at the Berlin and Karlsruhe sites as well as the data center, including self-generated PV electricity. Since the beginning of 2025 in Karlsruhe and since June 2025 at the Berlin site, we have been using electricity exclusively from renewable energy sources.

⁵⁰ Energy consumption indicator for the non-residential building stock from the Federal Gazette “BAnz AT 21.05.2015 B3” – Appendix 2, Table 2.1, Section 9.2: Office buildings with temperature control and ventilation.

6.4.2 Electricity consumption

Table 2 shows total energy consumption across all buildings plus the data center. At 17 kWh/m² of net floor area (Berlin and Karlsruhe, excluding the data center), our 2025 consumption is well below the reference value for non-residential buildings of 85 kWh/m²a. As with heat consumption, the high proportion of employees working remotely must be taken into account. Additionally, the office spaces do not have ventilation systems. Since 2021, the electricity consumption of our office buildings has been steadily decreasing.

In 2025, we commissioned a second server room in Berlin. As part of this, we equipped both server rooms with separate sub-meters for HVAC and IT power. The sub-meters have been in use since March 2025 and will enable us in the future to clearly separate the electricity consumption for the server rooms from the rest of the office consumption and to account for it separately. The in-

crease in electricity consumption in 2025 is primarily attributable to the commissioning of the additional, air-conditioned server room as well as the associated expansion of server capacities (see Table 5).

The energy consumption at our data center in Karlsruhe is still high. However, the current measurement system, which consists of five electricity meters, does not allow for the precise allocation of consumption to individual areas of use (see Section 6.3.1). In 2025, electricity consumption totaled 2.19 gigawatt-hours. This corresponds to 94.8 % of our total electricity demand. The largest share of this is attributable to the data center's air conditioning. For sustainability and economic reasons, as well as due to regulatory requirements (such as the Energy Efficiency Act), we want to and must identify potential areas for reducing energy consumption in the short term. To this end, we have been pursuing the IT Transformation project since mid-2024.

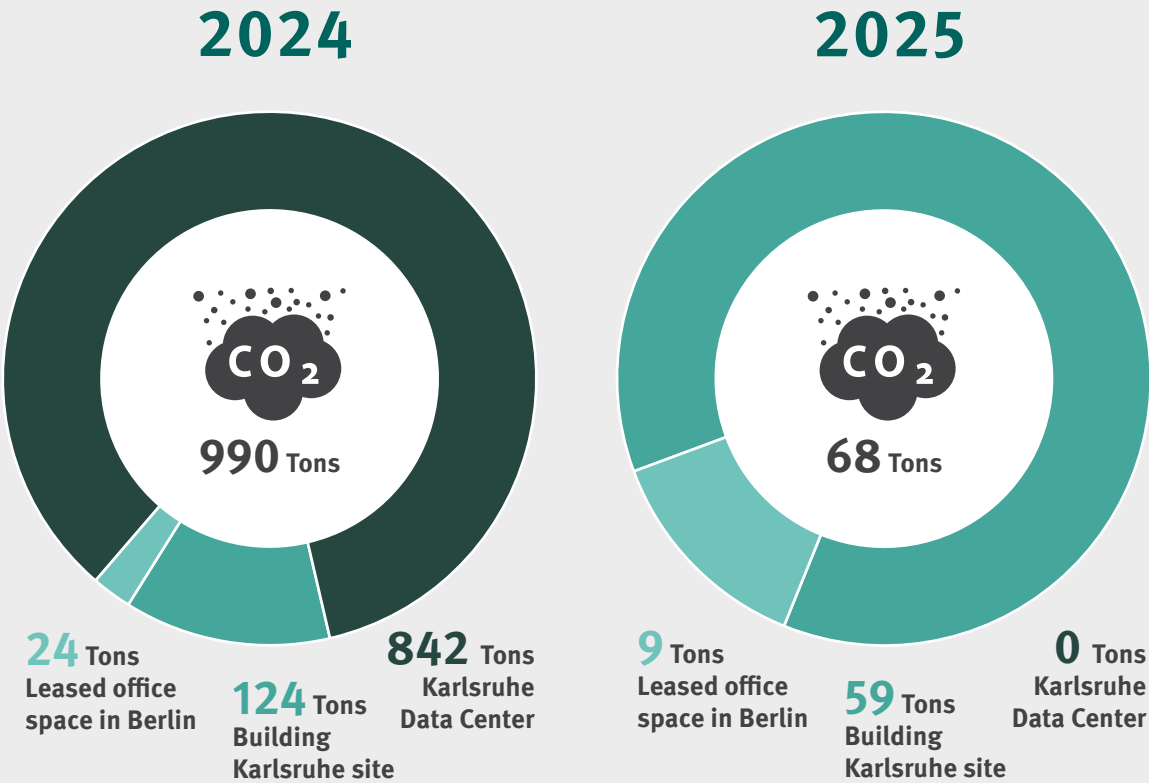


Figure 20: CO₂ balance in tons for the electricity and heat consumption of FIZ Karlsruhe, calculated using emission factors (provided by KIT and Vattenfall).

The goal is to consolidate our IT infrastructure and outsource large parts of it to external, energy-efficient data centers (co-location). In doing so, we aim to significantly reduce the area requiring air conditioning and introduce modern, demand-based cooling for it.

6.4.3 Energy Consumption and Greenhouse Gas Emissions

For greenhouse gas accounting (see Figure 17), only CO₂ emissions from final energy consumption are considered for the period from 2024 to 2025. The calculation is based on the CO₂ emission factors available at the time of publication of the Sustainability Report. By switching to electricity from renewable energy sources, we were able to reduce our CO₂ emissions by 93 percent, from 970 tons to 68 tons. This is an important step toward becoming a climate-neutral institute.

The calculations are based on the following emission factors:

- Karlsruhe District Heating
2023: 119.0 g/kWh
2024 to 2025: 99.21 g/kWh
- Electricity in Karlsruhe
2023: 269.0 g/kWh (as of October 2022)
2024: 392.0 g/kWh (as of March 2024)
2025: 0 g/kWh (electricity from renewable sources)
- District heating Berlin
2023–2025: 119.0 g/kWh
- Electricity Berlin
2023 through May 2025: 258.6 g/kWh
From June 2025: 0 g/kWh (electricity from renewable sources)

6.5 DRINKING WATER CONSUMPTION

Water consumption at the Karlsruhe site cannot be recorded separately for cold and hot water. There is only one water meter for total drinking water consumption (see Figure 18).

At the Berlin site, we cannot determine water consumption because there are no water meters.

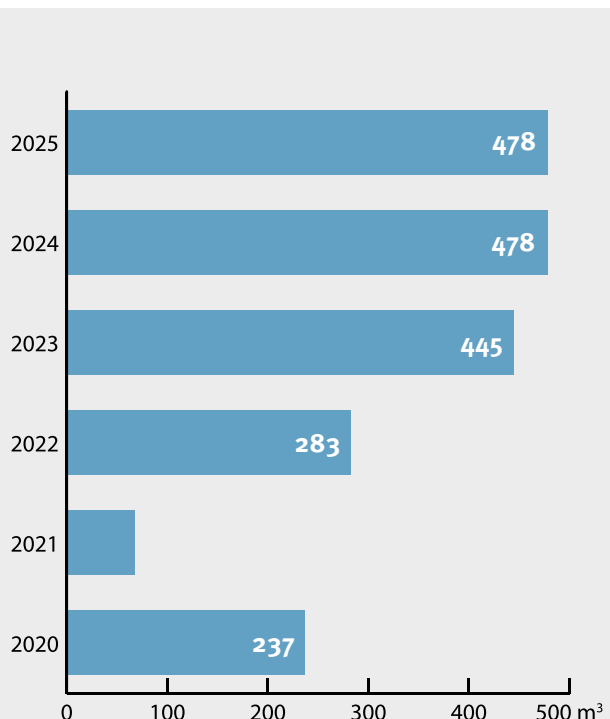


Figure 18: Water consumption at the Karlsruhe site from 2020 to 2025



»With our major IT transformation project, we are significantly improving energy efficiency and thus combining sustainability with cost-effectiveness.«

Matthias Razum, Chief Information Officer

7 SUPPORTING PROCESSES

Sustainable developments always consist of a network of many large and small processes that interlock as seamlessly as possible and complement one another. In addition to the major topics mentioned earlier, such as building infrastructure and electricity, sustainability also plays an important role in IT infrastructure and in our data center, as well as in smaller-scale processes such as the procurement and disposal of equipment or the organization and execution of business trips. In this chapter, we take a closer look at these areas and highlight which criteria are relevant in the realm of supporting processes, where we are already operating sustainably, and where there is still a need for action.

7.1 IT INFRASTRUCTURE AND DATA CENTER

FIZ Karlsruhe develops innovative information services and operates them within an IT infrastructure in its own data center at the Karlsruhe site in combination with cloud services. The IT systems and applications form the technical foundation of our digital offerings and services as well as for the implementation of collaborative projects. The service unit “IT Systems and Data Networks” provides the IT infrastructure necessary to fulfill FIZ Karlsruhe’s strategic goals. This includes the operation of workstation, server, storage, and network systems, as well as the applications running on them, in our own data center, as a cloud service, and via managed services.

The FIZ Karlsruhe data center is located on the ground floor and in the basement of Main Building 240. We currently operate 280 physical servers there, 40 of which are used for virtualization (see Table 6). In March 2024, we decommis-

sioned our mainframe technology. This was due to the new division of roles between our cooperation partner CAS and FIZ Karlsruhe regarding the operation of STN®. The IBM mainframe was the central IT component of the STN infrastructure, which is no longer needed. In July 2025, the IBM mainframe was dismantled and disposed of properly.

Reliable and continuous climate control is essential for the secure and uninterrupted operation of the data center. For this reason, we rely on redundant systems. A combination of ventilation and cooling systems, consisting of three chillers, regulates the temperature of the data center’s rooms. As early as 2007, we expanded the system to include free cooling. This system uses cool outside air for heat transfer between the ambient air and the chilled water used. As soon as the outside temperature is just a few degrees Celsius below the required supply water temperature, the energy-intensive compressors can be bypassed, and free cooling can be used instead. This allows us to reduce electricity con-

	2023	2024	2025
Number of physical servers ^r	361	327	280
of which for virtualization	46	40	40
Virtual machines	522	549	531
Other servers	–	–	4
Hard disk and flash storage	617 Terabyte	639 Terabyte	639 Terabyte
Drives for tape backups	46	30	30
Mainframe	1	–	–

Table 6: IT Systems and Data Networks in Numbers

sumption and increase the energy efficiency of our cooling processes.

We took the high electricity consumption for cooling the data center as an opportunity to analyze the actual cooling requirements. We have been collecting relevant measurement data since early 2025. In addition, we are using sub-meters and checking the “cooling” electricity meter to ensure that no other consumers are being recorded via this meter. As soon as reliable measurement results are available, we will be able to determine more precisely where and in what proportions electricity is being consumed and assess the actual cooling requirements. We expect the first meaningful results in the summer of 2026.

Legal requirements such as the Energy Efficiency Act for the operation of data centers necessitate further measures to reduce energy consumption. With our “IT Transformation” project, we are working to make the future operation of our IT infrastructure significantly more efficient through a hybrid approach combining colocation and managed services (see Section 6.4.2).

7.2. PROCUREMENT

As early as 2022, we fundamentally revised our procurement policy and expanded it to include key sustainability aspects. Sustainability criteria must now be included in the specifications for all products or services to be procured, and we review these criteria in every procurement process.

Our long-term goal is to make our procurement socially and environmentally sustainable by prioritizing environmentally friendly products, those manufactured according to social standards, or fair-trade products. Recognized seals and certifications are very helpful for certain product groups, such as the Blue Angel⁵¹ or the Fairtrade seal⁵². With these seals, independent third parties certify the products. Furthermore, the eligibility criteria are publicly available. In addition, the legally required EU energy labels and EU energy consumption labeling help in selecting energy-efficient products such as monitors.

⁵¹ <https://www.blauer-engel.de/de>, accessed on May 19, 2026.

⁵² <https://www.fairtrade-deutschland.de>, accessed on May 19, 2026.

We are currently developing criteria and establishing structures to assess and document the sustainability of our procurement. The goal is to analyze on a regular basis—annually or semi-annually—which procured products have a seal, certificate, or designated energy efficiency rating, and what percentage of products are uncertified. We are also interested in understanding why, in certain cases, no environmentally friendly alternative was procured. By revising our procurement process, we laid the groundwork in fiscal year 2025 to collect initial relevant sustainability data, such as seals and certificates, energy labels, and CO₂ emission factors. It is now crucial that this data be systematically recorded during the ordering process to enable a well-founded evaluation in the future and to promote sustainable procurement decisions. A systematic documentation system is currently being developed.

7.2.1 Paper

FIZ Karlsruhe participates in a Leibniz initiative for the joint procurement of paper. Since mid-2023, we have been procuring exclusively paper with the “Blue Angel” certification through this channel. However, in 2025 we still used up remaining stock (DIN A3) of FSC-certified (Forest Stewardship Council) paper⁵³ (see Figure 19 and Table 8). Over the past three years, we have been able to continuously reduce our paper consumption. This trend is particularly evident in 2025, when consumption dropped significantly.

For sustainability reasons, we have largely stopped printing reports, magazines, and other brochures since 2022. One exception is the annual report, which was also printed in 2025 in a small run of 80 copies. The paper used for this is Blue Angel certified. For smaller print jobs, such as business cards and flyers, we also use paper that is Blue Angel certified.

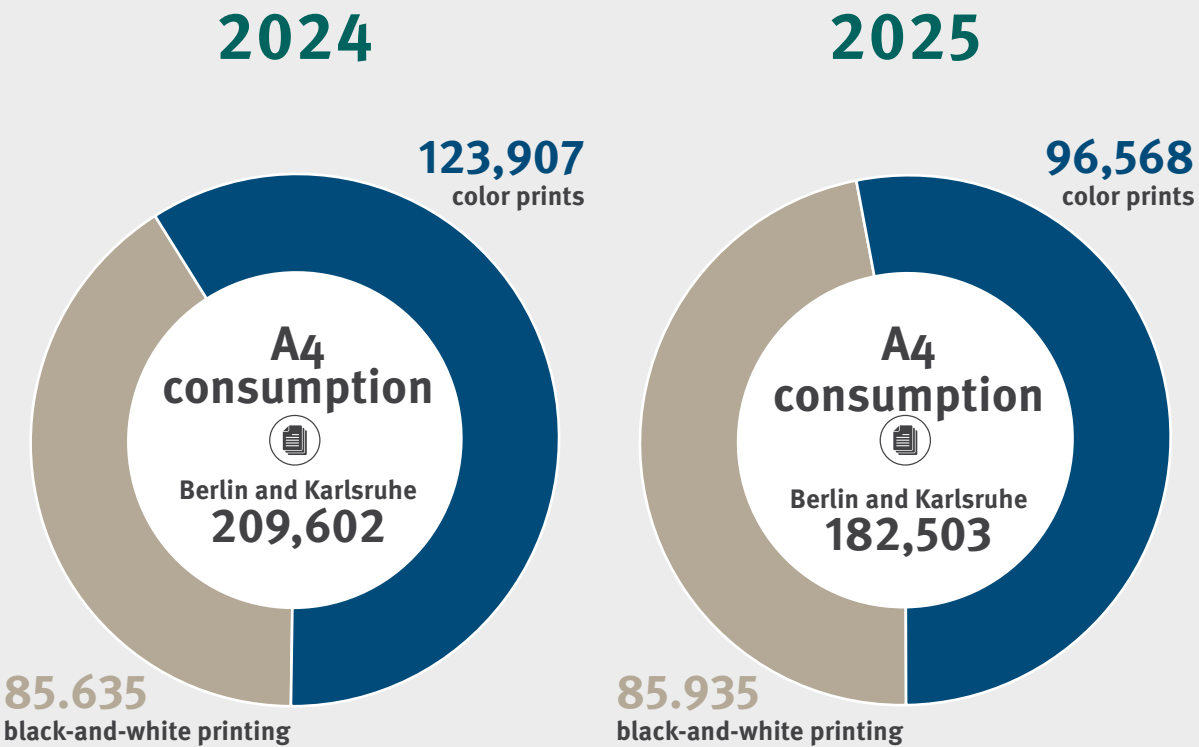


Figure 19: Paper consumption in Berlin and Karlsruhe in 2024 and 2025. The consumption of paper (printer paper), DIN A4, has decreased significantly in 2025 compared to 2024.

⁵³ International certification system for more sustainable forest management, <https://www.fsc-deutschland.de>, accessed on May 19, 2026.

	2023		2024		2025	
		of which color prints		of which color prints		of which color prints
Total paper consumption [sheets] A3 und A4	244,122	124,829	221,082	134,245	190,495	103,492
A4 consumption	227,213	110,179	209,602	123,907	182,503	96,568
A3 consumption	16,909	14,651	11,480	10,338	7,992	6,924
Plotter rolls	–		12 rolls		4 rolls	

Table 7: Detailed paper consumption at FIZ Karlsruhe 2023–2025. Since 2025, we have been using exclusively DIN A4 paper certified with the Blue Angel label. DIN A3 and plotter paper are FSC-certified. Plotter paper consumption in 2025 (5.1 kg per roll)

In addition, meeting materials for the Supervisory Board and the Scientific Advisory Board are distributed exclusively in electronic form. Since 2023, we have been tracking annual paper consumption to identify further savings potential. For example, we will introduce electronic personnel files in the future. Our employees are encouraged to use paper sparingly and to print documents only when absolutely necessary.

7.2.2 IT devices and accessories

Hardware such as laptops, smartphones, tablets, or desktop computers should be used for as long as possible, as the majority of climate-damaging emissions in the devices' life cycle occur during their manufacture.⁵⁴ Therefore, our goal is to maximize the service life of the devices. For example, we extend the battery life by charging them gently and, when necessary, replace only the batteries rather than the entire device.

Since 2023, the keyboards that come standard with our workstations have been Blue Angel certified. We are continuously evaluating additional

measures for the sustainable use of IT devices and accessories.

7.2.3 Sustainable Disposal of IT Equipment

Since mid-2025, FIZ Karlsruhe has been disposing of decommissioned IT equipment such as laptops, servers, cell phones, tablets, and monitors through afb social & green IT⁵⁵. afb stands for "Work for People with Disabilities" (see Table 8).

The devices are professionally inspected and, depending on their condition, refurbished and resold. FIZ Karlsruhe receives the proceeds from the sale. This significantly reduces our disposal costs; at the same time, we make an important contribution to the sustainable use of IT resources and the promotion of social employment.

In addition, employees have the opportunity to purchase refurbished devices—such as laptops, monitors, or smartphones—for personal use. Interested individuals can purchase their previous work device for personal use after it has been refurbished by afb. This requires a prior online reservation.

⁵⁴ <https://www.umweltbundesamt.de/umwelttipps-fuer-den-alltag/elektrogeraete/computer-pc-laptop#so-gehen-sie-nachhaltiger-mit-pc-und-laptop-um>, accessed on May 19, 2026.

⁵⁵ <https://www.afb-group.de/wirkung/>

Devices handed over to afb	2025	Devices purchased by afb	2025
Laptops	37	Laptops	24
Monitors	54	Monitors	27
Projectors	2	Tablets	1
Large screens	1		
Fax machines	1		
Smartphones	1		
Tablets	1		

Table 8: Sustainable Disposal of Electronic Devices, afb: Social & Green IT

Business trips	2022	2023	2024	2025
Total number of trips*	200	451	406	517
Air travel 	14	46	58	74
of all trips [%]	7 %	10 %	14 %	14 %
Intercontinental as a percentage of all flights [%]	4 29 %	16 35 %	14 24 %	29 39 %
Europe as a percentage of all air travel [%]	9 64 %	27 59 %	43 74 %	43 58 %
Domestic as a percentage of all air travel [%]	1 7 %	3 6 %	1 2 %	2 3 %
Train travel 	178	358	308	380
of all trips [%]	89 %	80 %	76 %	74 %
Germany Number of all rail trips [%]	156 88 %	336 94 %	287 93 %	363 95 %
Europe Number of all rail trips [%]	22 12 %	22 6 %	21 7 %	17 5 %
Traveling by car 	8	47	40	63
of all trips [%]	4 %	10 %	10 %	12 %

Table 9: Work-related travel by FIZ Karlsruhe (Berlin and Karlsruhe); *trips are return trips; in some cases, multiple modes of transportation were used for a single trip, so no specific figures are available. Trips to the airport by train are not included in this table.

7.3 MOBILITY MANAGEMENT

In the discussion regarding a research organization's CO₂ emissions, the focus is shifting to indirect environmental impacts, which are also influenced by employees' work-related mobility. During the COVID-19 pandemic, the number of business trips declined sharply. However, an increase in travel activity has since been observed (see Table 10).

8.3.1 Business Travel

We continue to make extensive use of the video conferencing systems introduced during the COVID-19 pandemic. In particular, virtual participation in meetings or conferences avoids long commutes. Even though video conferences are not emission-free, they reduce CO₂ emissions overall.

As a general rule, we encourage our employees to use public transportation and trains for business travel and to fly only in exceptional cases. Car and taxi trips are permitted only in justified exceptional cases. The number of business trips taken between 2022 and 2025 is shown in Table 6; taxi trips are not included. Table 13 shows an analysis of CO₂ emissions.

7.3.2 JobRad – Jobticket – Charging station for electric cars

We promote sustainable and health-conscious mobility among our employees through various initiatives. These include the option to lease a JobRad, as well as the discounted purchase of a Jobticket (Deutschlandticket).

We introduced the JobRad as early as 2022 to specifically support active mobility. Employees have the opportunity to lease bicycles and e-bikes at a low cost. Currently, 27 employees are taking advantage of this offer. We also pro-

vide a free charging station on the FIZ Karlsruhe campus. Additionally, our bicycle parking spaces are equipped with a roof and transparent side panels that protect the bikes from wind and rain.

Since November 2023, our employees have been able to purchase the Deutschlandticket as a so-called JobTicket. FIZ Karlsruhe currently covers 25 euros of the cost. As of December 31, 2025, 91 employees were using this offer.

Since the end of 2025, employees have also been able to charge their personal electric vehicles free of charge at our company-owned charging stations.

	2023	2024	2025
JobRad	16	28	27
Job Ticket	69	94	91

Table 10: Employees who use a JobRad and/or a Jobticket



Figure 20: The FIZ Karlsruhe charging station.

8 OUR HIGHLIGHTS 2025

OUR PHOTOVOLTAIC SYSTEMS GENERATE CLIMATE-NEUTRAL ELECTRICITY

One of our most important sustainability goals is to reduce CO₂ emissions and increase the share of renewable energy in our electricity and heat consumption. For this reason, our stated goal as early as 2023 was to install solar panels on suitable surfaces of our buildings. At the end of 2024, PV modules were installed on the roofs of Buildings 238 and 241 (see Table 11).

In the spring of 2025, the time had finally come: the grid connection of our photovoltaic systems (PV systems) was successfully completed. The entire process was not always straightforward, and we had to overcome a few obstacles along the way. Many stakeholders actively and passionately drove the entire process forward.

Since the end of April 2025, a total of 286 modules have been generating CO₂-neutral electricity that we can use directly in the buildings. Both systems are grid-connected. This means that we feed electricity not consumed on-site directly

into the public grid—in our case, the KIT power grid. The modules are mounted facing east and west at a slight angle of 10 degrees. This allows solar radiation to be optimally utilized throughout the day. We publish generation data for the PV systems monthly on our intranet.

A complete accounting for the year 2025 is not yet possible. Grid connection did not occur until April 24, 2025. Reliable feed-in data from KIT's billing-relevant electricity meters is available starting from this date. Table 12 shows data on electricity generation and avoided CO₂ emissions. In total, the PV systems generated 90,873 kWh of electricity last year. Our system on Building 241, with an installed capacity of 100 kWp, has generated approximately 70,000 kWh since the end of April. This figure is within the expected range and can be considered very good.

Global radiation values can be used to estimate whether a PV system is producing as expected. In Karlsruhe, the average global radiation in 2025 was approximately 1,220 kWh/m². This implies that, according to current standards, a PV system should generate about 800–1,000 kWh

	Building 241	Building 238
Weather data source: German Weather Service (DWD)	Karlsruhe, DEU (1995–2012)	Karlsruhe, DEU (1995 – 2012))
PV generator capacity	99.44 kWp	26.4 kWp
Specific annual yield	878 kWh/kWp	1,003 kWh/kWp
Yield reduction due to shading	14%	0.7%
PV generator area	441.3 m ²	117.2 m ²
Number of modules	226	60
Rated power	440 watts	440 watts
Commissioning	April 24, 2025	April 24, 2025

Table 11: Data for grid-connected photovoltaic systems. Yields and yield reductions due to shading are based on the weather data provided.

Month	PV yield kWh **	PV Feed-in kWh ***	PV self-consumption kWh ***	CO ₂ savings in tons [t]
April	3,186	546	*	1.1
May	18,280	14,235	4,045	6.3
June	18,617	14,040	4,577	6.4
July	16,175	11,242	4,933	5.6
August	16,084	12,155	3,929	5.6
September	8,443	5,560	2,899	2.9
October	5,638	2,924	2,713	1.9
November	2,468	731	1,737	0.8
December	1,982	652	1,330	0.7
Total	90,873	62,085	26,163	31.3

Table 12: Generation data since the PV systems went online on April 24, * no data available for April, **inverter data, *** KIT billing-relevant meters

per installed kWp per year. As a practical guideline, we use a factor of 0.90 (per 1,000 kWh) here to simplify the calculation. This means that a 100 kWp system would generate around 90,000 kWh per year.

We calculated the avoided CO₂ emissions (see Table 12) as follows: In 2025, an average of 344 grams of CO₂ was emitted during the generation of each kilowatt-hour of electricity consumed in Germany (German electricity mix) (source: Federal Environment Agency⁵⁶). The increased use of renewable energy sources leads to the displacement of fossil fuels, thereby enabling the avoid-

ance of increasingly climate-damaging greenhouse gases. Thus, between April and December 2025, FIZ Karlsruhe contributed to saving 31.3 tons of CO₂.

WE ARE REDUCING CO₂ EMISSIONS

Compared to 2023 and 2024, FIZ Karlsruhe was able to significantly reduce its CO₂ emissions. By switching our electricity supply to renewable energy sources, installing two photovoltaic systems (see Table 12), and using environmentally friendly printer paper, CO₂ emissions were reduced by approximately 1,000 tons.

The results show that the measures implemented are effective. They mark a significant milestone and underscore FIZ Karlsruhe's clear commitment to consistently evolving into a climate-neutral institute. In particular, the targeted focus on a low-carbon energy supply for our buildings and office spaces, as well as the use of sustainable paper solutions, contribute significantly to the savings achieved.



Figure 21: Photovoltaic systems FIZ Karlsruhe

⁵⁶ <https://www.umweltbundesamt.de/themen/klima-energie/energieversorgung/strom-waermeversorgung-in-zahlen?sprungmarke=Strommix#brennstoffe>, accessed on April 8, 2026.

We are aware that the institute’s total greenhouse gas emissions are significantly higher, for example due to the CO₂ footprint of procurement, upstream and downstream supply chains,

or employees’ commutes to and from the institute. However, we are not yet able to reliably measure these figures at this time.

Carbon dioxide [CO ₂] in tons [t]	[t] 2023	[t] 2024	[t] 2025
Karlsruhe location	742	954	59
Berlin location	23	24	9
Business trips*	48	48	56
Paper consumption*	-	0,7	0,17
Total	813	1026.7	124.25
CO₂ reduction through self-generated PV electricity			31.3 t

Table 13: CO₂ emissions at FIZ Karlsruhe since 2023: heating and electricity (including data center), business travel (airplane, train, car), and paper; *calculated using the BWIHK-ECOCOCKPIT tool⁵⁷, CO₂ reduction through two photovoltaic systems

DISTRICT HEATING TRANSFER STATION

At the start of the 2025/2026 heating season, the new energy-efficient district heating transfer station for Building 240 went into operation. A key feature of the new system is a special control mechanism for the return water temperature: If this exceeds 50° Celsius, no water is supplied from the supply line, which has a significantly higher temperature of at least 75° Celsius. Only after the return temperature drops below 50° Celsius is the supply from the flow line re-activated. This new technology, in combination with new pumps, helps to save heating energy through efficient utilization. The system is a prerequisite for KIT’s plan to continuously lower the flow temperatures of the heating systems across the entire campus.



Figure 22: The new district heating transfer station for Building 240

⁵⁷ Carbon footprint calculation tool “BWIHK-ECOCOCKPIT”; <https://ecocockpit-bw.de>, accessed on May 23, 2025



9 CONCLUSION OF OUR SUSTAINABILITY REPORT

We have had an eventful and successful year focused on sustainability. This sustainability report clearly shows that FIZ Karlsruhe made further significant progress in both environmental and social areas in 2025. In particular, the significant reduction in CO₂ emissions represents an important milestone on the path to becoming a climate-neutral institute.

We were also able to make positive strides in the areas of human resources development and employee health. For example, the Health Days held at the Berlin and Karlsruhe locations were very well received. We also specifically expanded our efforts in the area of “onboarding” and successfully filled a new position for this purpose in the fall of 2025.

In addition, we conducted a survey on mobile working in the summer of 2025. The focus was on satisfaction, feasibility, and opportunities for improvement. Overall, the results reflect a high level of satisfaction. With the now permanent “Mobile Working” company-wide agreement and the new company-wide agreement on working hours, we are creating the framework for greater flexibility and doing away with fixed core working hours.

At the same time, we recognize further potential for development—particularly in the areas of

work-life balance and workplace health management. We will continue to actively develop these areas in the future.

We also continued to focus intensively on climate and environmental protection, which remained a key priority in 2025. We closely monitored the output of the two new photovoltaic systems. The generation data for the period from May to December 2025 were within the expected range. In addition, we actively advanced the energy-efficient renovation of the exterior facades of Buildings 238 and 241 and successfully completed the planning phase.

Despite these efforts, many challenges still lie ahead as we work to develop FIZ Karlsruhe into a climate-neutral and environmentally friendly institute in the long term.

Working on this sustainability report has shown us that we are on the right track. Initial processes have been established, and awareness of sustainable practices is growing. Now we must continue on this path with determination—with clear goals and concrete measures for the coming years.

We will continue to publish our goals, measures, and results annually in a sustainability report.

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