

# Sustainability Report

supplementing the 2018 Annual Report



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We are shaping the future.  
With innovation and precision.

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**AIXTRON**

Our technology. Your future.

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A professional portrait of two men, Dr. Felix Grawert and Dr. Bernd Schulte, members of the Executive Board of AIXTRON SE. They are standing side-by-side against a blurred office background. Dr. Grawert is on the left, wearing a grey suit, light blue shirt, and maroon tie. Dr. Schulte is on the right, wearing a dark grey pinstriped suit, white shirt, and red and white striped tie. The image is framed with a white border.

Dr. Felix Grawert and Dr. Bernd Schulte · Executive Board of AIXTRON SE

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A white rectangular box with a light grey background, containing a quote. The box is centered horizontally and partially overlaps the lower bodies of the two men in the background. It is framed by a thin white border.

*“Working with our technologies,  
AIXTRON’s customers are able to reduce  
the energy consumed by their own products.”*

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## Foreword

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### Ladies and Gentlemen,

AIXTRON is now for the second time presenting a separate Sustainability Report based on the guidelines of the Global Reporting Initiative (GRI) to supplement its 2018 Annual Report. This report provides information about our sustainability activities at all AIXTRON Group sites and outlines the goals we have set for the future.

In the past financial year, we made further progress not only in achieving our financial targets but also in meeting our commitment to sustainability. As a supplier to a key forward-looking industry, we conduct our business with a great sense of responsibility and take due consideration of the interests of all of the company's stakeholders.

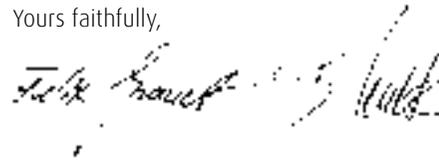
One area on which we can exert a particular influence is the design and development of our products. AIXTRON's innovative technologies, such as the AIX G5+C Planetary Reactor, also help significantly reduce the volume of energy consumed both in our customers' products and in turn at their own customers by making use of Industry 4.0 processes.

As manufactured on our systems, power devices (III-V semiconductors) made of gallium nitride (GaN) with a large band gap use considerably less energy while providing the same or higher power compared to conventional silicon-based power chips.

We are also continuously reducing the environmental impact of our manufacturing processes and building technologies by making conscious and responsible use of energy and other natural resources. Taken alone, these projects often only make minor contributions. Together, however, their numbers make the cumulative impact considerable. Optimizing water cooling circulation and continuing the conversion from conventional lighting to LED, along with further projects, will additionally save more than 200 tonnes of CO<sub>2</sub> a year.

Responsible action and social acceptance are essential prerequisites for the economic success of a company. As a major supplier of key technologies to the semiconductor industry for optoelectronic and power electronic devices, AIXTRON's mission is to contribute to sustainable economic, environmental and social development. It is therefore a central concern of ours to present our principles and measures for sustainability in this report.

Yours faithfully,



Dr. Felix Grawert and Dr. Bernd Schulte  
Executive Board of AIXTRON SE



01

General Disclosures  
2018

## About this report – general information

In this, its second separate Sustainability Report, AIXTRON aims to inform its stakeholders about the Group's environmental and social performance, its sustainability strategy and the progress made in achieving its sustainability goals in the 2018 year under report.

This report is published at the same time as the Annual Report. The reporting period corresponds to the 2018 financial year, i.e. the period from January 1, 2018 to December 31, 2018.

Unless otherwise indicated, all CO<sub>2</sub> figures have been calculated using the website [www.klimaneutral-handeln.de](http://www.klimaneutral-handeln.de).

## Framework used – GRI-based reporting

The Sustainability Report was prepared on the basis of the German CSR Directive Implementation Act (CSR-RUG) and, for specific disclosures, is based on the guidelines of the Global Reporting Initiative (GRI).

In compiling the Sustainability Report, we were guided by the Sustainability Reporting Standard of the Global Reporting Initiative (GRI) and the principles set out in the "Core" option. The information and figures on our sustainability activities presented in this report were subject to an independent limited assurance audit by Deloitte GmbH Wirtschaftsprüfungsgesellschaft, Düsseldorf (Germany).

## Sustainability management

AIXTRON bases its sustainability management on the precautionary principle. This involves acting early to identify and eliminate or reduce any potential adverse effects on people and the environment resulting from AIXTRON's business activities. This applies both to the production of our equipment and to our supply chain. AIXTRON has an effective organizational structure and management systems in place to manage issues such as resource conservation, occupational safety, respect for human rights, and climate protection. Internal compliance management ensures permanent adherence to applicable laws and our own guidelines.

Furthermore, AIXTRON established an internal CSR Workgroup in 2018. The group, which was initiated and is led by the Executive Board, comprises managers with relevant responsibilities in a wide variety of specialist departments. Its aim is to report regularly on progress, to develop sustainability issues, and to promote awareness of sustainable business practices within the company and to communicate this across all areas of the company.

## Editorial note

We refer throughout this report to employees. This naturally refers to our employees of all sexes.

## Organizational profile

The AIXTRON Group ("AIXTRON" or "the Company") is a leading provider of deposition equipment to the semiconductor industry. The Company was founded in 1983 and is headquartered in Herzogenrath, Germany, with subsidiaries and representative offices in Asia, the United States and Europe. The company's products are used worldwide by a wide range of customers to manufacture high-performance components for electronic and optoelectronic applications based on compound or organic semiconductor materials. These components are used in a variety of innovative applications, technologies and industries. These include, for example, LED and display technology, data transmission, sensor technology, energy management and conversion, communication, signal and lighting technology, and many other sophisticated high-tech applications.

AIXTRON markets and sells its products worldwide, primarily via its own sales organization, but also via sales representatives and authorized distributors.

AIXTRON's business activities include the development, production and installation of equipment for the deposition of complex semiconductor materials, the development of process technologies, consulting and training, as well as customer support and service.

Demand for our products is significantly influenced by a further increase in processing speed, rising energy efficiency requirements, and the need to reduce the cost of existing and future power and optoelectronic devices. With

our unique material coating technologies, we enable our customers to improve the performance and quality of advanced power and optoelectronic devices and raise production yields.

As of December 31, 2018, AIXTRON had production and R&D facilities in Herzogenrath, Germany, and Cambridge, UK, as well as sales and service offices in Asia and the United States. The majority of the Group's employees work at the two sites in Germany and the UK. Reporting therefore focuses on these two sites.

Further information about the company's business activities can be found in the Group Management Report of the AIXTRON Group, which is available under "Publications (Annual and Quarterly Reports)" in the Investors section of our [website](#). We refer in particular to the more detailed information on the structure and management of the company provided in the first two chapters of the current Annual Report of the AIXTRON Group.

Site	Country	Utilization (2018)	Size (approx.)	Share of employees
Herzogenrath	Germany	Company headquarters, production, R&D	12,457 m <sup>2</sup>	Europe 78 %
Herzogenrath		Production, construction, R&D	16,000 m <sup>2</sup>	
Cambridge	UK	Production, construction, R&D	2,180 m <sup>2</sup>	
Cambridge		Customer service, construction	696 m <sup>2</sup>	
Santa Clara	USA	Sales and service	491 m <sup>2</sup>	USA 6 %
Hwasung	South Korea	Sales and service	1,151 m <sup>2</sup>	Asia 16%
Shanghai	China	Sales and service	594 m <sup>2</sup>	
Hsinchu	Taiwan	Sales and service	568 m <sup>2</sup>	
Tainan		Customer service	109 m <sup>2</sup>	
Tokyo	Japan	Sales and service	364 m <sup>2</sup>	

Overview of sites per country, including utilization, size and regional distribution of employees

### Hidden Champion

leading supplier of deposition equipment for the semiconductor industry.

647 employees worldwide  
126 women · 521 men

AIXTRON worldwide  
7 countries  
7 sites

2 manufacturing facilities  
Herzogenrath (Germany)  
Cambridge (UK)

50 nationalities  
in our teams

Revenues by region  
71 % Asia · 17 % Europe  
12 % America

EUR 52.2 million  
Investments  
in research and development

EUR 268.8 million  
Revenues in 2018

112,927,320  
shares outstanding

80 % equity ratio



02

Sustainable  
Corporate Management

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### Sustainability strategy

Corporate Social Responsibility (CSR), or sustainability, is becoming an ever more important principle of corporate management. In our view, sustainability means voluntarily assuming responsibility for social, economic and ecological issues. We are committed to sustainable and responsible value creation.

The Executive Board determines the company's strategic alignment in consultation with the Supervisory Board, sees to its implementation and ensures that appropriate risk management and controlling systems are in place at the company. The interests of major stakeholder groups are accounted for. Furthermore, the Executive Board is responsible for compliance with legal requirements and internal company guidelines. The Supervisory Board monitors and advises the Executive Board in its management of the business. A mandatory, Group-wide Code of Conduct provides an important basis for ensuring compliance with legal and ethical rules and principles by all employees and managers. This is based on strict compliance with applicable legal regulations and the principle of sustainability, i.e. balancing and combining economic, ecological and social considerations. Our aim is to integrate an awareness of and a commitment to sustainability across all areas and processes at the company.

### Key stakeholders

AIXTRON accords the utmost priority to its relationships with its customers and employees. As AIXTRON is a publicly listed company, the capital market and its players also constitute material stakeholder groups.

Identifying the most important stakeholders and their interests is crucial for any successful stakeholder dialog. Stakeholders are categorized and prioritized by reference to the following criteria:

- ▶ Stakeholder interests
- ▶ Stakeholder influence
- ▶ Stakeholder expectations in AIXTRON
- ▶ Stakeholder dependence on AIXTRON
- ▶ Value for AIXTRON of entering into contact with these stakeholders.

Key stakeholder identification and categorization is regularly reviewed and updated in line with the changes resulting from new technologies, markets, customers, regulations, developments within society.

## Stakeholder engagement

As a company with international operations, AIXTRON forms part of an interactive relationship between the environment and the wide-ranging interests of its various stakeholders as a result of its research and development activities, and the production and sale of its products. To familiarize itself with these interests and enable these to be taken into account, we maintain a regular dialog with the most important stakeholders: customers, employees, shareholders, suppliers, government bodies and political players, the media, and science and research. In dialog with our stakeholders, we attempt to understand their viewpoints, build trust, and reinforce existing partnerships. This helps us to recognize what steps are possible and necessary and what stakeholders expect of us. At the same time, the company uses this dialog to communicate the scope it sees to address social concerns and environmental issues and to present the underlying requirements and conditions that are important to us.

Stakeholder	Topic of dialog	Forms of dialog
Capital market	<ul style="list-style-type: none"> <li>▶ Business development</li> <li>▶ Product innovations</li> <li>▶ Application possibilities</li> </ul>	<ul style="list-style-type: none"> <li>▶ Strategy</li> <li>▶ Sustainability</li> </ul>
Customers	<ul style="list-style-type: none"> <li>▶ Product quality and safety</li> <li>▶ Sustainable technologies</li> <li>▶ Product energy efficiency</li> </ul>	<ul style="list-style-type: none"> <li>▶ Human rights</li> <li>▶ Compliance</li> </ul>
Suppliers and business partners	<ul style="list-style-type: none"> <li>▶ Product quality and safety</li> <li>▶ Environmental protection</li> </ul>	<ul style="list-style-type: none"> <li>▶ Responsible purchasing</li> <li>▶ Compliance with AIXTRON standards</li> </ul>
Employees	<ul style="list-style-type: none"> <li>▶ Health and safety</li> <li>▶ Career advancement</li> <li>▶ Co-determination</li> <li>▶ Training opportunities</li> </ul>	<ul style="list-style-type: none"> <li>▶ Compensation and benefits</li> <li>▶ Work-life balance / parental leave</li> <li>▶ Diversity &amp; equal opportunities</li> </ul>
Science and university	<ul style="list-style-type: none"> <li>▶ Development of new technologies</li> <li>▶ Promotion of research and teaching</li> </ul>	<ul style="list-style-type: none"> <li>▶ Networking of industry and research</li> <li>▶ Recruitment / PhD students</li> </ul>
Media representatives	<ul style="list-style-type: none"> <li>▶ Innovation and technologies</li> <li>▶ Semiconductor technology</li> </ul>	<ul style="list-style-type: none"> <li>▶ AIXTRON as employer</li> <li>▶ Financial position</li> </ul>
Associations and organizations	<ul style="list-style-type: none"> <li>▶ Eco-efficiency</li> <li>▶ Innovation and technology promotion</li> </ul>	<ul style="list-style-type: none"> <li>▶ Economic and labor policy</li> </ul>

Stakeholder engagement and forms of stakeholder dialog at AIXTRON

### Derived CSR action focuses

In 2018, AIXTRON once again analyzed the main economic, ecological, social, and ethical factors which materially influence the company from an internal and external perspective. Strategically relevant topics are determined in the form of a materiality matrix. Reference is made here to the guidelines of the Global Reporting Initiative (GRI) and the criteria set out in the German CSR Directive Implementation Act (CSR-RUG).

Aspects (based On CSR-Rug)	Issues / Material CSR Action Point at AIXTRON
Environmental concerns	Resource efficiency
Employee concerns	Employee health, personnel development, training and development
Social concerns	Promoting the common good
Respecting Human Rights	Supplier relationships, No purchase of conflict minerals
Combating Corruption and Bribery	Compliance codices and policies

The above diagram shows the aspects according to CSR-RUG as well as the key action focuses at AIXTRON SE. These focuses were identified on the basis of a materiality matrix and assigned to the relevant aspects

To this end, the potential factors influencing these topics were stated and assessed from the perspective of the company and its stakeholders. This iterative process led to the setting of several material action points on which the company has focused its sustainability approach and which it will present in greater detail in this Sustainability Report. Future dialogs with stakeholders will build on these results.

### Our values, standards, and guidelines

Our values provide the basis for all of the company's activities. They determine employees' behavior towards each other at the company and towards customers and partners. With target-driven actions, we aim to ensure that we always occupy a leading position, act with foresight, and actively provide momentum for the future. Open communications and approachability ensure a healthy corporate culture, one in which the AIXTRON Group lives up to its responsibility.

### Management principles

The management principles are important elements of our management culture and provide an important framework for all managers at the company. They require all managers to identify customers' needs and, on this basis, to derive clear, performance-oriented company targets. Decisions are taken on a sustainable basis in order to secure the company's future. Our managers strive to act as role models and to encourage employees to assume responsibility. This approach is accompanied by efforts to achieve continuous improvements by working with a culture of constructive feedback based on partnership.

### Precautionary principle

Our businesses are subject to a number of risks that may adversely affect our business performance, business model and business strategy. In order to minimize these risks, they are monitored, analyzed and documented as part of the company-wide strategic risk management system.

No significant risks have been identified with regard to CSR-relevant issues. Reporting on material risks arising from AIXTRON's business activities is only carried out if serious violations are reported.

We expect our business partners to consistently respect human rights along the entire value chain. For the AIXTRON Group, this is an important prerequisite for establishing and maintaining business relationships.

In order to efficiently manage risks, the associated opportunities and the measures taken to minimize risks, the AIXTRON Group has defined risk management as a task of the Compliance department and documented it in the Opportunity and Risk Report, which forms part of its Management Report.

### Involvement in associations and organizations

We are involved in a large number of organizations and associations with the aim of advancing sustainable developments in photonics and semiconductor technology. We were founding members of Photonics21, now a private public partnership (PPP) with the European Commission, and the International Solid State Lighting Alliance (ISA) in China, and have been actively promoting their further development for years.



Organizations / Associations	Function / Committee	Thematic focus	Headquarters of organization / association
ISA, International Solid State Lighting Alliance	Founding member	Promoting sustainable development and application of LED solid state lighting.	Shanghai, China
Responsible Minerals Initiative	Active member of the "Smelter Engagement Teams" for Europe and Africa	Identification of all worldwide melts aimed at ensuring responsible mineral procurement by the companies.	Alexandria, USA
DGKK, Deutsche Gesellschaft für Kristallwachstum und Kristallzüchtung e.V.	Member	Promoting research, teaching, and technology in crystal growth, crystal breeding, and epitaxy.	Erlangen, Germany
DPG, Deutsche Physikalische Gesellschaft	Supporting member in Industry and Business Workgroup (AIW) <sup>*)</sup>	Promoting contacts and dialogs in physics and industry with a focus on training physicists during their studies. Participation in the DPG's "Tag vor Ort" (Day on Site) visit and lecture program for young physics students.	Bad Honnef, Germany
IVAM e.V.; Internationaler Fachverband für Mikrotechnik	Member	Technology marketing for innovative technologies and products of high-tech industries.	Dortmund, Germany
EPIC, European Photonics Industry Consortium	Member	Promoting the sustainable development of photonics in Europe.	Paris, France
OE-A – Organic and Printed Electronics Association (VDMA)	Member	Promoting the development of a competitive production infrastructure for organic and printed electronics.	Frankfurt/Main, Germany
OLED Association (OLED-A)	Member	Promoting the faster development of OLED technology (Organic Light Emitting Diodes) and OLED products.	Houston (Texas), USA
Photonics-21 (European Private Public Partnership)	Founding member and member of Board of Stakeholders	PPP aimed at securing Europe's leading role in the development and introduction of photonics technologies in various fields of application.	Düsseldorf, Germany
SEMI/FlexTech, Semiconductor Equipment and Materials International	Member	Promoting access to regional markets and opening up diversified business opportunities, as well as promoting the growth and progress of emerging economies and adjacent technology markets.	Milpitas (California), USA

List of most important memberships in industry or other associations. <sup>\*)</sup> See [page 38](#) ("Social commitment") for an example of promoting cooperation

**Worldwide customers** use our products to **manufacture high-performance components** for electronic and optoelectronic applications based on compound and organic **semi-conductor materials**.

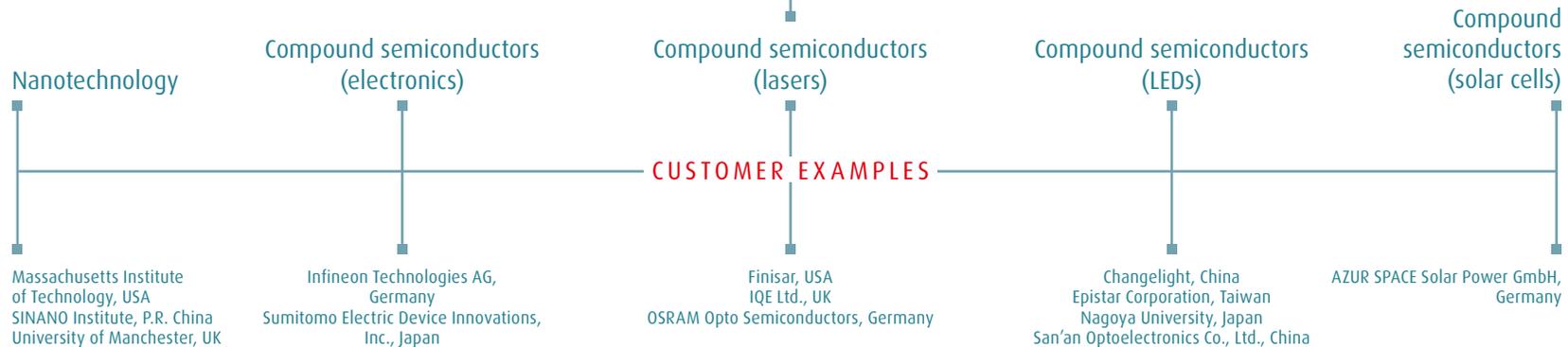
- Components manufactured on our systems are used here:
- ▶ Fiber optic communication networks
  - ▶ Wireless and mobile communication
  - ▶ Sensors
  - ▶ Signal and lighting technology
  - ▶ Displays
  - ▶ Numerous other high-tech applications

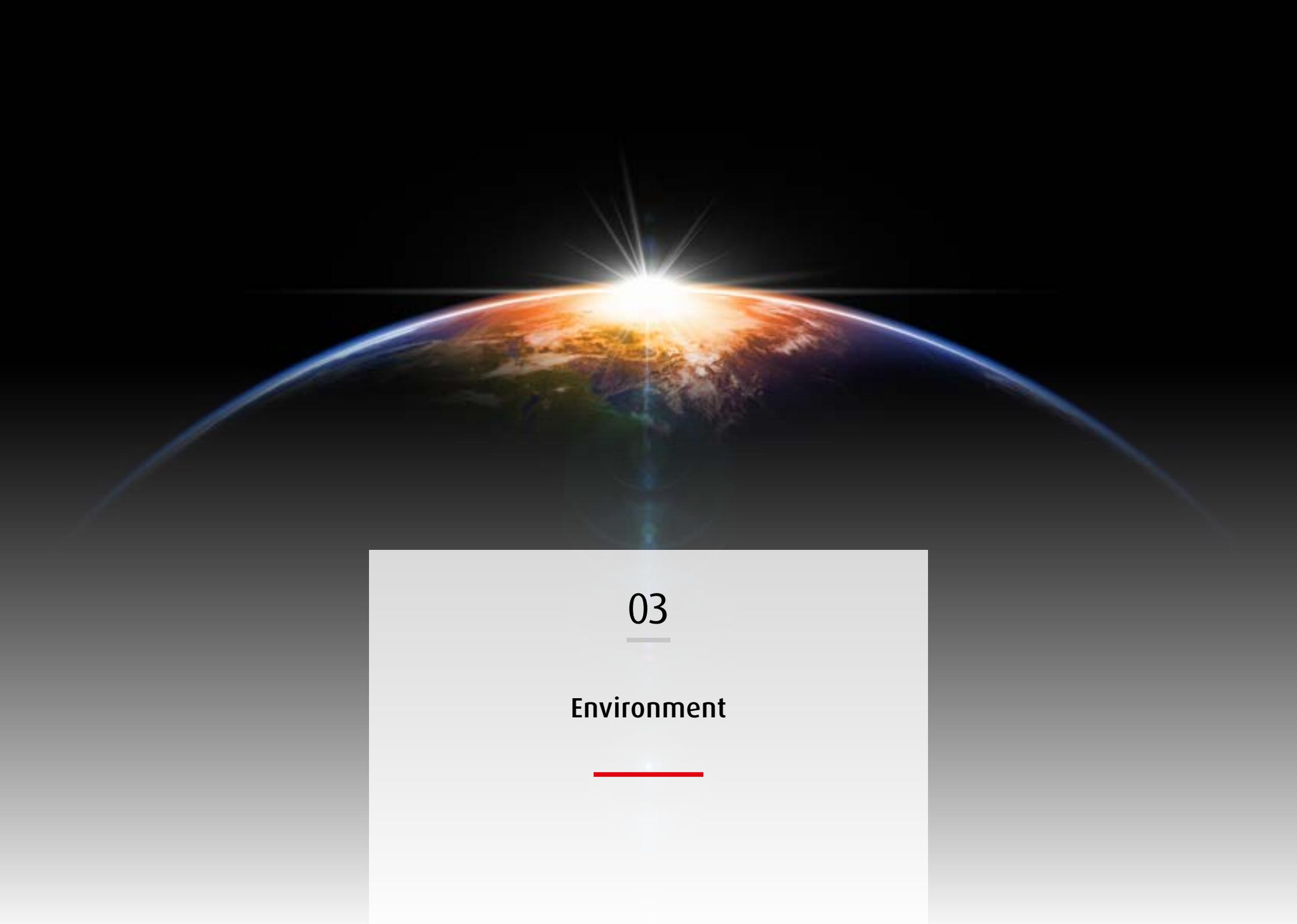
### 3 fields of technology

Compound semiconductors (MOCVD)  
Organic Light Emitting Diode (OLED)  
2D nanotechnology ((PE)CVD)

Increasing **processing speeds**, growing **energy efficiency** requirements and the need to **reduce costs** are driving demand for **AIXTRON's unique material coating technologies**

- AIXTRON:**
- ▶ Development, production, and installation of equipment for the deposition of complex semiconductor materials
  - ▶ Development of process technologies
    - ▶ Consulting and training
    - ▶ Customer care and service





03

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Environment

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### AIXTRON technologies help reduce CO<sub>2</sub> emissions

We are working closely on developing technologies to facilitate the cost-effective production of power electronics components based on compound semiconductors made of gallium nitride (GaN). The focus here is on reducing energy losses and costs by using innovative Industry 4.0 concepts. Although GaN technology is still at a comparatively early stage of development, we expect Industry 4.0 processes, i.e. networked and automated machine concepts, intelligent software, analyses at the edge of detection limits and precise process control, to produce significant advances both in wafer quality and in the manufacturing processes used to produce them. At the same time, the use of GaN-based power components in decentralized energy supply systems is expected to generate substantial energy savings. Today, the GaN-based components manufactured on our systems for use in highly efficient and compact applications already considerably reduce energy consumption, e.g. when used in power supply units for smartphones or in servers.

Plants to produce silicon carbide (SiC) components, which are used in inverters for photovoltaics and wind energy and to an ever greater extent in charging stations for electric vehicles and their drive trains as well, will also help to significantly enhance future energy efficiency.

Another example relates to optoelectronics, where customers use our systems to manufacture products such as special LEDs for display applications. Using these energy-saving LEDs in display production enables our customers to sustainably reduce the energy consumed by their products.

#### Example: plant development to reduce consumables, save energy, and cut waste

We are working closely on continuously improving plant efficiency. In a comprehensive project, we drew up a list of all electrical consumers for a new type of plant. We categorized the consumers according to their power requirements. The generator was identified as by far the largest consumer.

To develop a new type of plant, we replaced the generator with a component from a new supplier. By increasing efficiency (in this case by 8% with 50% generator output), we achieved an energy saving of 23 MWh a year per process module. This was based on the plant operating at full capacity for 3,840 hours per year (assuming plant availability of 320 days/year with average power requirement of 12 hours each day). For a cluster based on maximum configuration (with 3 process modules), savings therefore corresponded to nearly 70 MWh a year.

Looking at maximum load power consumption ("AC line power"), the new generator type can be seen to consume less energy compared with the standard generator, even when operating at full capacity. Further savings result from the lower volume of cooling capacity needed to dissipate the resultant heat.

### Systematic energy management at AIXTRON

The analysis of actual energy flows and consumption showed which efficiency potential had so far remained untapped. The German Energy Agency (dena) has calculated that, by consistently exploiting the technologies currently available, energy consumption and costs for industrial process and space heating in Germany could be reduced by an average of 15 percent across all sectors of industry. We have sustainably reduced our energy consumption by implementing various projects. We received impressive confirmation of this in 2017, when we won the international dena Energy Efficiency Award.

In 2014, the company was certified according to DIN EN ISO 50001 (an internationally valid standard that defines the requirements for the application of an energy management system). In 2018, the newly established subsidiary APEVA SE was also successfully certified by TÜV and AIXTRON SE was recertified. The energy management system will continue to be systematically and continuously expanded.

At AIXTRON, we are continuing to make consistent efforts to reduce CO2 emissions at our manufacturing and research and development sites in Germany and the UK. Some of the energy projects described are of a longer-term nature and will not take full effect until the second or third year, as the necessary measures will have to be adapted to current conditions. One example here is the conversion of lighting to LED in production. As early as 2017, we began to convert all remaining conventional light sources at our two research and development sites to LED lighting. This project was continued in 2018 and has already been

successfully completed for the main site in Herzogenrath. Implementation of this project at our Cambridge site and our second site in Herzogenrath is expected to be completed in 2019.

The projects referred to above have been based on the systematic energy management introduced in 2013. A calculation of proprietary energy consumption, broken down by energy type, forms the basis for sustainably reducing consumption and making more efficient use of energy. For this reason, we decided to extend and expand the consumption recording system. The underlying idea here is that energy consumption can only be controlled and reduced in a targeted manner if consumption meters actually record energy consumption at the neuralgic points. Only this way can targeted measures aimed at reducing CO2 consumption be introduced and the success of these measures directly evaluated.

### Projects to reduce CO<sub>2</sub> emissions

Building on this systematic approach to energy management, AIXTRON has initiated a number of projects and measures to sustainably reduce its energy consumption. Major projects initiated and implemented since 2015:

- ▶ Needs-based (rather than permanent) activation of system cooling pumps in laboratories and production. This reduced annual electricity consumption by 1,100,000 kWh (around 10%).
- ▶ Reducing the number of active cooling towers by meeting cooling demand with a more precisely controllable active refrigeration system.
- ▶ Due to changed requirements, the primary energy for heating and cooling was converted from electricity to gas. This chiefly had economic benefits, as gas is substantially cheaper than electricity
- ▶ To cover the growing need for cooling energy in an energy-efficient manner, the company invested more than EUR 700,000 in converting the energy center and launching operations with a turbo refrigeration system. Fluctuations in demand for cooling energy are partly covered with a buffer storage tank. An energy saving of more than 17% was calculated for the project.
- ▶ The conversion to LED lighting at the Herzogenrath site (including outdoor lighting) was completed in 2018. Conversion of the second site in Herzogenrath is currently under review and is expected to be implemented in 2019.
- ▶ In the UK, AIXTRON Ltd. also began work in 2017 on gradually replacing its 125 production light sources with LED light sources.
- ▶ Optimization of circulation water cooling.
- ▶ Introduction of a monitoring system to visualize consumption for all employees.
- ▶ Optimization of the extraction system in our canteen kitchen. This measure should save around 11 tons of CO<sub>2</sub>.
- ▶ Energy evaluation of the ventilation systems used in the clean room.
- ▶ Installation of heating meters in production department and laboratory.
- ▶ We performed a review and compiled a concept for introducing an electric vehicle charging infrastructure large enough to cover the needs of all employees at the Herzogenrath site.
- ▶ We introduced an electronic invoicing and processing system

Implementing these measures has enabled AIXTRON to generate significant energy savings and reduce its costs. The company has sustainably shrunk its environmental footprint, as the measures outlined above have cut CO<sub>2</sub> emissions by more than 1,800 tonnes. Wherever possible, the company will continue to initiate and implement projects to further reduce its energy consumption in future as well. The results confirm the approach we have taken, as is clearly apparent from the table and chart below. The slight rise in CO<sub>2</sub> emissions in the 2018 year under report was due to significant growth in production and sales volumes.

### Key figures for energy use (Herzogenrath site)

	2015	CO <sub>2</sub> in tonnes	2016	CO <sub>2</sub> in tonnes	2017	CO <sub>2</sub> in tonnes	2018	CO <sub>2</sub> in tonnes
Electricity (kWh)	11,143,100	5,872,4	9,112,560	4,802,3	9,595,253	5,056,7	10,033,811	5,288
Natural gas (kWh)	6,580,224	1,447,7	6,072,163	1,335,9	568,181	125	685,610	151
District heating (kWh)	756,610	90,8	688,120	82,6	1,821,360	218,6	2,406,370	289
<b>Total (kWh)/CO<sub>2</sub> in tonnes</b>	<b>18,479,610</b>	<b>7,411</b>	<b>15,207,294</b>	<b>6,221</b>	<b>11,984,794</b>	<b>5,400</b>	<b>13,125,791</b>	<b>5,728</b>
Nitrogen (N <sub>2</sub> ) in tonnes	2,362	0	1,816	0	2,050	0	2,290	0
Argon (tonnes)	33	0	-	0	375	0	23	0
Hydrogen (H <sub>2</sub> ) in m <sup>3</sup>	12,303	0	9,508	0	11,250	0	135	0
Water total (m <sup>3</sup> )	16,861	0	16,777	0	18,961	0	11,833	0
Fresh water	16,861	0	16,777	0	18,961	0	11,833	0
Wastewater	16,861	0	16,777	0	18,961	0	11,833	0
Wastewater at cooling towers	12,164	0	10,433	0	2,656	0	1,035	0
Umsatz (in Mio. EUR)	197,756		196,477		230,382		268,811	
CO <sub>2</sub> -Verbrauch [in t] (je 1 Mio. EUR Umsatz)	37.48		31.66		23.44		21.31	
Veränderung im Vergleich zum Vorjahr			-16 %		-26 %		-9 %	

Consumption of energy and other significant resources at AIXTRON in Herzogenrath.

Key figures for energy use (UK, Asia, USA)

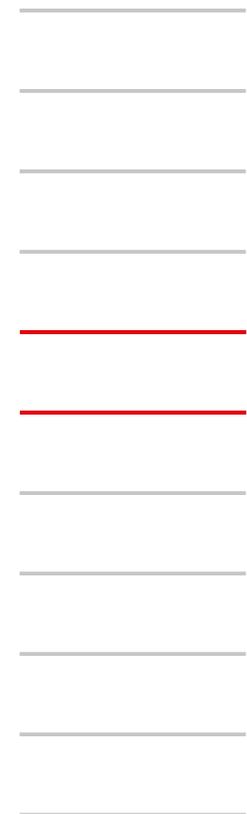
2017							
	UK	USA	China	Japan	South Korea	Taiwan	Total
Electricity (kWh)	786,513	4,605,023	n.i.	n.i.	n.i.	n.i.	5,391,536
CO <sub>2</sub> in tonnes <sup>1)</sup>	415	2,427	n.i.	n.i.	n.i.	n.i.	2,842

n.i. (no information): We did not yet have the figures for energy use in the 2017 reporting year.

2018							
	UK	USA**	China	Japan	South Korea	Taiwan	Total
Electricity (kWh)	887,727	42,414	26,937	50,942	70,267	73,800	1,152,087
CO <sub>2</sub> in tonnes <sup>1)</sup>	468	22	14	27	37	39	607

Energy consumption and CO<sub>2</sub> at the AIXTRON Group (excluding Germany). The data for our Asian sites was collected for the first time in the year under report.

\*\*\*) The significant reduction in energy consumption in the USA was due to the sale of the ALD business and the move to new premises.



The 2017 Sustainability Report only included CO<sub>2</sub> data for the production and development sites in Europe and the USA. In the past year, we also collected the data from our sites in Asia for the first time

### Practical example: paperless invoice receipt

We receive well over a hundred invoices every day. This flood of invoices motivated us to introduce paperless invoicing and invoice processing at the company. The aim here was to replace postal invoices with electronic bills in order to save resources, cut costs, and make the process more efficient.

Overview of paper consumption reduction	2016		2018	
	Number of incoming invoices per year	60,480		74,088
Type of invoice received	Paper	Electronic	Paper	Electronic
Proportion of incoming invoices (%)	83 %	17 %	17 %	83 %

Based on an average of two pages per invoice, taking into account the incoming invoices for the 2018 year under report.

The project was successfully completed within two years. Only around 17 percent of invoices still come by post, while the great majority is sent electronically. As well as cutting CO<sub>2</sub> emissions, this project has also significantly enhanced efficiency. Less incoming mail has to be sorted and distributed, while invoice processing has been improved and accelerated. This led to 48,000 fewer invoices being printed in 2018, generating CO<sub>2</sub> savings (calculation of the [consumption value](#)) of more than 255 kg.



## Air travel, rental cars, train journeys, and company vehicles

### a) Air travel

CO<sub>2</sub> emissions resulting from air travel have been recorded and evaluated for the Germany site since 2015 and were communicated for the first time in the 2017 Sustainability Report. CO<sub>2</sub> emissions for employees' flights in Asian countries, UK, and the USA were recorded at the AIXTRON Group for the first time in 2018. It should be noted that higher demand for our products is usually accompanied by increased travel activity by our employees, as most of our customers are located outside Germany and some developments are performed out jointly with the customer.

Air travel	2017 <sup>*)</sup>	2018 <sup>*)</sup>	2018 <sup>**)</sup>
Number of flight tickets	1,344	1,518	3,208
Total air kilometers <sup>*)</sup> (based on GPS data)	10,419,302	11,648,809	17,077,361
CO <sub>2</sub> emissions [tonnes]	2,451	2,769	4,235
CO <sub>2</sub> emissions [kg/km]	0.24	0.24	0.25

The flight data collected for 2017 refers only to the Germany site.

<sup>\*)</sup> Only Germany

<sup>\*\*)</sup> AIXTRON Group

### b) Company vehicles

All company vehicles at the AIXTRON Group can be reported for the first time for the 2018 year under report. This was previously not possible. It was therefore possible to determine the CO<sub>2</sub> emissions attributable to company vehicles. Direct comparison with the figures for 2016 and 2017 is therefore not possible.

Company cars	2017 <sup>*)</sup>	2018 <sup>*)</sup>	2018 <sup>**)</sup>
Number of vehicles	4 [2]	4	12
Total kilometers driven <sup>*)</sup>	38,700 [9,000]	102,656	248,840
CO <sub>2</sub> emissions* [tonnes]	6.4 [1,1]	17.6	43.18
CO <sub>2</sub> emissions* [kg/km]	0.17 [0.12]	0.17	0.17

From October 1, 2017, two diesel vehicles at the Herzogenrath site were replaced by hybrid vehicles, reducing CO<sub>2</sub> emissions from 0.17 kg/km to 0.12 kg/km. The disclosures before the brackets relate to the four conventional vehicles, while the disclosures in the brackets relate to the new vehicles.

<sup>\*)</sup> Only Germany; <sup>\*\*)</sup> Aixtron-Group

### c) Rental cars and rail travel

The CO<sub>2</sub> emissions attributable to rental cars and rail travel were recorded for the Herzogenrath site for the first time. No data was collected for the other sites in the year under report. However, it is planned to record this data in the 2019 financial year.

Rental car / rail travel (Herzogenrath)	2017	2018
Number of bookings	---	440
Total kilometers traveled	---	349,860
CO <sub>2</sub> emissions* [tonnes]	---	38.6

### d) Revenue/emissions ratio

The CO<sub>2</sub> emissions attributable to rental cars and rail travel were recorded for the Herzogenrath site for the first time.

	2017*	2018*	2018**
AIXTRON Group revenues (EUR million)	230,382	268,811	268,811
Total CO <sub>2</sub> emissions (tonnes) (Scope 1+2, including business trips)	10.699 <sup>1)</sup>	9004,6 <sup>1)</sup>	10.613 <sup>1)</sup>
CO <sub>2</sub> emissions (tonnes) per revenues (EUR 1 million)	<b>46,44</b>	<b>33,49</b>	<b>39,48</b>

\* ) Total CO<sub>2</sub> emissions at buildings excluding Asian sites and including flights/company vehicles for Germany.

\*\* ) Disclosures for the AIXTRON Group

### Environmental initiatives



#### Energy Efficiency Network

We have been a member of the Energy Efficiency Network, an association of eight companies in the Aachen region, since 2016. In this group, which is organized by the Aachen Chamber of Industry and Commerce (IHK), energy experts from individual companies share their experiences, benefit from expert guidance, and work to further improve their companies' energy balance sheets.



#### Carbon Disclosure Project (CDP)

As part of our involvement in the Carbon Disclosure Project (CDP), we have been reporting once a year since 2010 on the ecological impact of our business activities and our corporate strategy to reduce CO<sub>2</sub> emissions. This way, AIXTRON is promoting transparency for investors, companies, political decision-makers and the media.

Key energy figures and successes at a glance

Reduction in CO<sub>2</sub> emissions

13 projects to reduce CO<sub>2</sub> emissions implemented since 2015

1,800 tonnes

More than 1,800 tonnes of CO<sub>2</sub> avoided since 2015

39,48 tonnes

CO<sub>2</sub> emissions per EUR 1 million revenues

ISO 50001

Certification of AIXTRON SE and of newly founded subsidiary APEVA SE

Carbon Disclosure Project

Since 2010, we have reported on the ecological impact of our business activities

Our **unique technology** enables AIXTRON customers to reduce the energy consumed by their products

Energy saving lighting

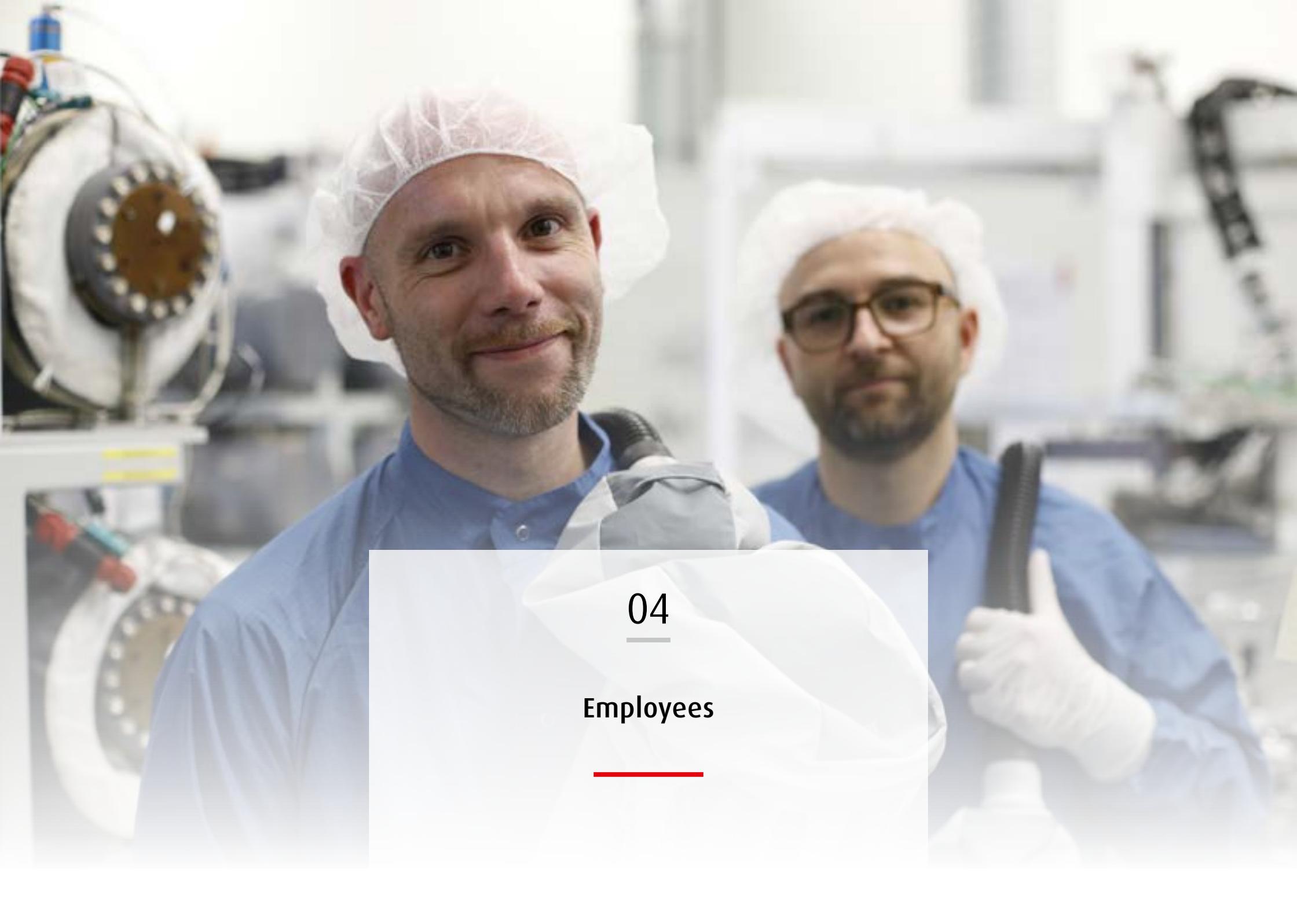
Conversion to energy and emission-saving LEDs in Germany and the UK

Paperless invoice receipt

Saving well over 255 kg of CO<sub>2</sub> a year

Industry 4.0 concepts

Significant improvement in wafer quality and their manufacturing processes



04

Employees

## Employees

Our employees, with their skills and expertise, are our most important resource and also the key guarantee of AIXTRON's economic success. By accompanying, challenging, and promoting our employees in their specific fields, we safeguard our product and process quality, our innovation potential, and thus also our ability to create long-term value. Well-structured HR activities and working conditions that reflect the responsibility we feel towards our employees – these are essential factors. After all, to achieve peak performance in the long term the company needs satisfied and dedicated employees.

AIXTRON's goal is to provide its employees with the qualifications and competencies they need, as well as to offer great flexibility and meaningful perspectives. We therefore offer our employees a variety of individual training measures and development opportunities relevant to their activities. The information presented here mainly relates to the AIXTRON site in Herzogenrath. Reporting for the other sites is currently still being developed.

The company has implemented several codes of conduct which provide definitions of fair and correct conduct for its employees, also in their dealings with each other. These codes of conduct are binding for all of the AIXTRON Group's employees worldwide.

## Employee interests

The world of work places many demands on employees and their families. We therefore make every effort to ensure that the company's economic interests are compatible with the private and family needs of our employees.

The introduction of flexible working hours was a key element here. Using individual time accounts, our employees can to a large extent individually design and largely determine their working hours in accordance with the respective requirements.

	Employees taking parental leave		Employees returning to work after parental leave	
	2017	2018	2017	2018
Europe	9*	16	100 %*	100 %
Asia / USA	N/A	8	N/A	100 %

\*) The 2017 figures only refer to Germany

At our sites around the world, we support parents by allowing them to take parental leave after the birth of their children. Eight employees most recently drew on this option in Asia and the USA, while a total of sixteen employees were on parental leave in Germany and the UK. All parents returned to their positions at the end of their leave.

### Employee health and safety

Health and safety are firmly anchored in AIXTRON's business processes. AIXTRON holds quarterly Health and Safety Committee (ASA) meetings in Germany at which a representative of AIXTRON's management, two members of the Works Council, the company physician, the safety specialists and (on a rotating basis) individual safety officers exchange information. The ASA meetings are supplemented by a representative of the severely disabled, as well as one representative from each of the Facility Management, Human Resources, and Compliance Departments.

Once a year, we instruct all our employees on topics relating to occupational safety and environmental protection, and also include factors of current relevance. Across the Group, three employees have been appointed as internal safety specialists. They are responsible for advising managers, the Works Council and employees, as well as for training the safety officers. The effectiveness of these activities is confirmed by the very low number of accidents at the company, none of which severe or fatal.

A total of 145 employees at our sites in Germany have been trained as first-aiders.

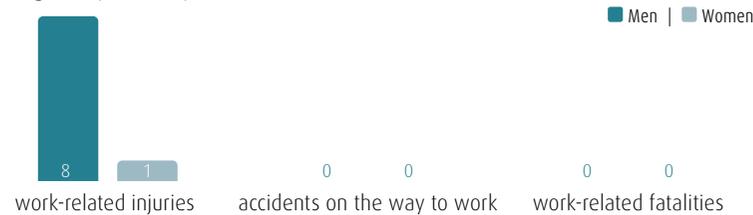
We support targeted ongoing measures to promote our employees' health. We offer our employees a wide range of preventive health measures. As well as regular and ongoing occupational medical examinations, these measures also include flu vaccinations, check-ups, and sports activities. At our site in Taiwan, for example, a qualified trainer came to the company twice a week for several months to offer all employees free fitness training.

For AIXTRON, maintaining a company integration management system to enable employees to return to work after extended periods of sickness or reintegrate them after accidents is not just a legal obligation. It is also a self-evident part of the company's efforts to uphold the working capacity and employability of its staff. Accident prevention is another important aspect of health promotion, and one to which AIXTRON attaches great importance in its organization.

	2017 <sup>*)</sup>		2018 <sup>*)</sup>	
	Man	Women	Man	Women
<b>Working days lost (work-related sickness and accidents)</b>	30	7	47	12
<b>Number of injuries</b>	48	8	97	8

Working days lost due to work-related sickness and accidents (excluding accidents on the way to work) and number of work-related injuries. <sup>\*)</sup> Only Germany and UK; <sup>\*\*)</sup> AIXTRON Group

In 2018, the AIXTRON Group recorded a total of 9 work-related accidents (2017: 5). No accidents on the way to work (2017: 2) or work-related fatalities (2017: 0) were reported for 2018. The accidents recorded led to a total of 58 working days being lost (2017: 37).



Overview of accidents at work (excluding accidents on the way to work) at the AIXTRON Group. No accidents on the way to work or work-related fatalities were reported for 2018

### Employee selection and culture

AIXTRON operates in a rapidly changing business climate and has to compete to attract highly qualified specialists and executives in areas such as natural sciences, engineering, and business administration. Our attractiveness as an employer is a key factor in the company's long-term success. One core element of our external presence as an employer is our careers website, where we provide interested parties with extensive information and motivate them to apply. Targeting graduates, trainees, and interns at career and training fairs is another major part of AIXTRON's efforts to present itself as an attractive employer. We attach great importance to equal opportunities for all applicants, as we recruit both from within the region and worldwide.

Based on a requirements profile, AIXTRON selects its employees in accordance with their specialist and personal qualifications and their previous experience. As a general rule, we offer permanent employment contracts to new colleagues. A structured on-boarding process is in place to facilitate the rapid integration of new employees at the company.

### Share of management staff hired in 2017 and 2018

Further information about how we select our staff can be found in the "Employees" section of the "Business Model" chapter of our Group Management Report.

	2017		2018	
	Non-local	Local	Non-local	Local
Germany	95,18 %	4,82 %	50 %	50 %
UK	0 %	100 %	0 %	100 %
Asia/USA	---	---	41 %	59 %

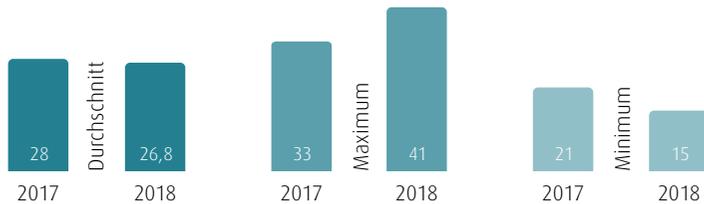
Share of local and non-local management staff hired at the AIXTRON Group

We strictly adhere to national legal requirements for the protection of employee rights. In structuring its employment contracts, the company is also bound by national legal regulations, internal company agreements and prescribed statutory notice periods.

### Temporary employment

We have to be able to react flexibly to fluctuations in demand for AIXTRON’s products, which can be significant at times. We therefore work together with established engineering service providers and temporary employment agencies. One key prerequisite here is the “equal pay” principle, i.e. temporary employees receive the same amount of pay for the period of temporary employment as an equivalent employee at the company.

As well as receiving equal pay, temporary employees also benefit from the principle of equal treatment with permanent employees in areas such as using the canteen (for which AIXTRON grants a subsidy) or participating in company events (employee and Works Council meetings, Christmas and summer parties). In 2018, AIXTRON had a Group-wide average total of 27 temporary employees. If, in individual cases, the period of temporary employment is required to last for more than 12 months, then the “temporary assignment status” is reviewed. In Germany, a legislative amendment introduced in 2018 reduced the maximum period of temporary employment to 18 months.



Average number of temporary employees at the AIXTRON Group in 2018

### Diversity

A modern and open society gives rise to a wide variety of lifestyles and expectations. As an international company, AIXTRON prizes equality of opportunity and diversity. For this reason, a workforce made up of different cultures, an appropriate gender balance and a balanced age structure are part of our corporate culture. In 2018, AIXTRON employed 647 people from 50 nations worldwide (2017: at Herzogenrath site just under 390 employees from 27 nations). AIXTRON sees this diversity as providing added value to the company, whether in terms of its innovative strength or of boosting its competitiveness, for example by understanding customers’ needs more closely or devising potential solutions based on a variety of perspectives. All our employees are granted the same appreciation, respect, and opportunities.

**Diversity Charter**

To further promote diversity at the company and as a visible sign of tolerance in action, we joined the "Diversity Charter" initiative last year (not least at the request of our workforce, which wished to send out a clear signal in this respect). For us, this underlines our commitment to tolerance, equal opportunities, and diversity.



## charta der vielfalt

UNTERZEICHNET

### Employment figures

Information about employees and other staff

Angestellte		2017		2018	
		Permanent	Temporary	Permanent	Temporary
GER	Men	311	5	330	12
	Women	69	4	75	7
UK	Men	64	0	68	0
	Women	11	0	10	0
Aisa / USA	Men	---	---	95	16
	Women	---	---	32	2
Σ	<b>Men</b>	<b>375</b>	<b>5</b>	<b>493</b>	<b>28</b>
	<b>Women</b>	<b>80</b>	<b>4</b>	<b>117</b>	<b>9</b>
<b>Total (headcount)</b>		---		<b>647</b>	
<b>Total (FTE)</b>		581		628	

Breakdown by gender and region of permanent and temporary employees at the AIXTRON Group. At the time, no figures could be recorded for Asia/USA for the 2017 reporting year.



Regional distribution by age group of the 647 employees at the AIXTRON Group.  
 ■ permanent (men) | ■ temporary (men) | ■ permanent (women) | ■ temporary (women)

### Employment figures

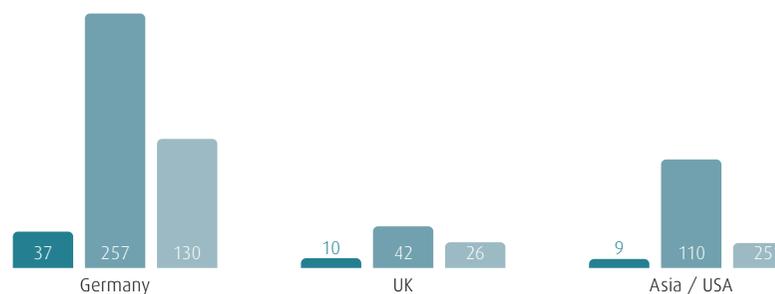
Newly hired employees and personnel turnover

2017	< 30 years	share in %	≥ 30 < 50 years	share in %	≥ 50 years	share in %
Herzogenrath (GER)	6	17,64	25	73,53	3	8,82
Cambridge (UK)	5	83,3	1	16,67	0	0

Data for the other sites was not yet available in 2017.

2018	< 30 years	share in %	≥ 30 < 50 years	share in %	≥ 50 years	share in %	Women Σ	Men Σ
Herzogenrath (GER)	17	36 %	29	62 %	1	2 %	14	33
Cambridge (UK)	4	50 %	4	50 %	0	0 %	1	7
Asia / USA	5	14 %	27	77 %	3	9 %	1	34

Regional breakdown of newly hired employees at the AIXTRON Group in 2018



Distribution by region of all permanent and temporary employees.  
 ■ < 30 years | ■ ≥ 30 < 50 years | ■ ≥ 50 years

## Leaving and personnel turnover

	< 30 years		≥ 30 < 50 years		≥ 50 years		Turnover rate	
	2017	2018	2017	2018	2017	2018	2017	2018
Herzogenrath (DEU)	3	4	20	17	2	8	6.43 %	6.8 %
Cambridge (UK)	0	2	2	1	0	2	3.75 %	6.4 %
Asia / USA	---	0	---	15	---	8	---	15.9 %

Breakdown of employees leaving the company by age group and personnel turnover rate as a proportion of employee totals. The high turnover rate for Asia/USA is chiefly due to the greater degree of willingness to change employer in China. Many employees in China do not have as strong a sense of company affiliation as employees in Germany, for example. As a result, they are more willing to change employer.

## Employee development

A continuous learning process is an essential prerequisite for our success. Competent employees ensure that AIXTRON remains innovative and competitive. By offering individual training and development programs, we motivate our employees and promote them in line with their potential and interests. As part of a company-wide personnel development concept, AIXTRON will continue to provide its employees with continuous training and expand this in line with their needs.

We support the development of specialists and executives in the company. One foundation for this process is the annual staff appraisal, at which the employee's training needs for their current and future roles are identified. In 2018, AIXTRON invested an average of EUR 428 (2017: EUR 814) per employee in personnel development and training.

## Training measures (Herzogenrath)

Year	(Hours) total	Number of employees	Average hours per employee	Number of hours for men	Average hours for men	Number of hours for women	Average hours for women
2016	7,864	420	19	6,216	18	1,648	23
2017	10,749	389	28	9,185	29	1,564	21

## Training measures (AIXTRON Group)

Year	(Hours) total	Number of employees	Average hours per employee	Number of hours for men	Average hours for men	Number of hours for women	Average hours for women
2018	9,954	647	15.5	8,387	17	1,567	14

### Career model

To facilitate structured and systematic career development alongside traditional management roles, a company-specific career model has been developed for AIXTRON within a companywide project. Based on our requirements, three career paths have been defined: the expert, project, and management paths. Each path comprises several career stages.

This model aims to reveal various options for developing employees and thus enhance employee motivation. Furthermore, it is intended to ensure that the right employees are available to the company in the right positions

For further development, we offer various focuses for the expert, project manager, and manager careers with personnel responsibility. Currently, 61 percent of our employees are in one of the three career paths (2017: 63 percent).

### Leadership and team development

Modern career management requires a continuous balance between the company's needs, the employee actively shaping his or her own development, and regular feedback from the manager to the employee with regard to his or her performance and strengths.

We promote the development of executives and employees with external, individual coaching programs, including techniques for management and team development, as well as with internal coaching programs.

### Employee appraisal meetings

One key management instrument which we have used for many years is the regular employee appraisal meeting. The company's aim here is for an official meeting based on uniform standards to be held with each employee each year. At this meeting, managers and employees can give each other feedback and discuss measures to enhance their cooperation and underline the employee's strengths. A further major component of the employee appraisal meeting is the agreement of development goals.

### Training young people

We offer young women and men a variety of opportunities in terms of vocational training and dual study programs – from IT specialist, to industrial clerk and the Bachelor of Science, or technical product designer to mathematical-technical software developer. AIXTRON trainees are repeatedly singled out by the Aachen Chamber of Industry and Commerce in recognition of their outstanding performance.

In the 2018 financial year, we employed a total of 14 trainees and dual study program students in Germany and the UK. In the course of developing its training program, since 2018 AIXTRON offered a further technical course training young people to become mechatronics engineers.

**Total of all trainees**

		2016	2017	2018
Herzogenrath (D)	System integration IT specialist	2	1	4
	Math-technical software developer (MATSE)	3	3	2
	Technical product designer	2	1	---
	Industrial clerk	2	2	2
	Bachelor of Science (business administration+)	3	2	1
	Mechatronics engineer	---	---	1
Cambridge (UK)	Design engineer	---	---	1
	Production trainee (technicians)	---	---	3
<b>Total</b>		<b>12</b>	<b>9</b>	<b>14</b>

Figures for trainees per training course. Data extended for the first time to include figures for our UK site, where a total of four trainees were in training in 2018.

It is important to us to offer young people a perspective upon the successful completion of their training. Consistent with this, most of the trainees and dual study program students wishing to remain at the company were offered positions in recent years.

**Innovation management**

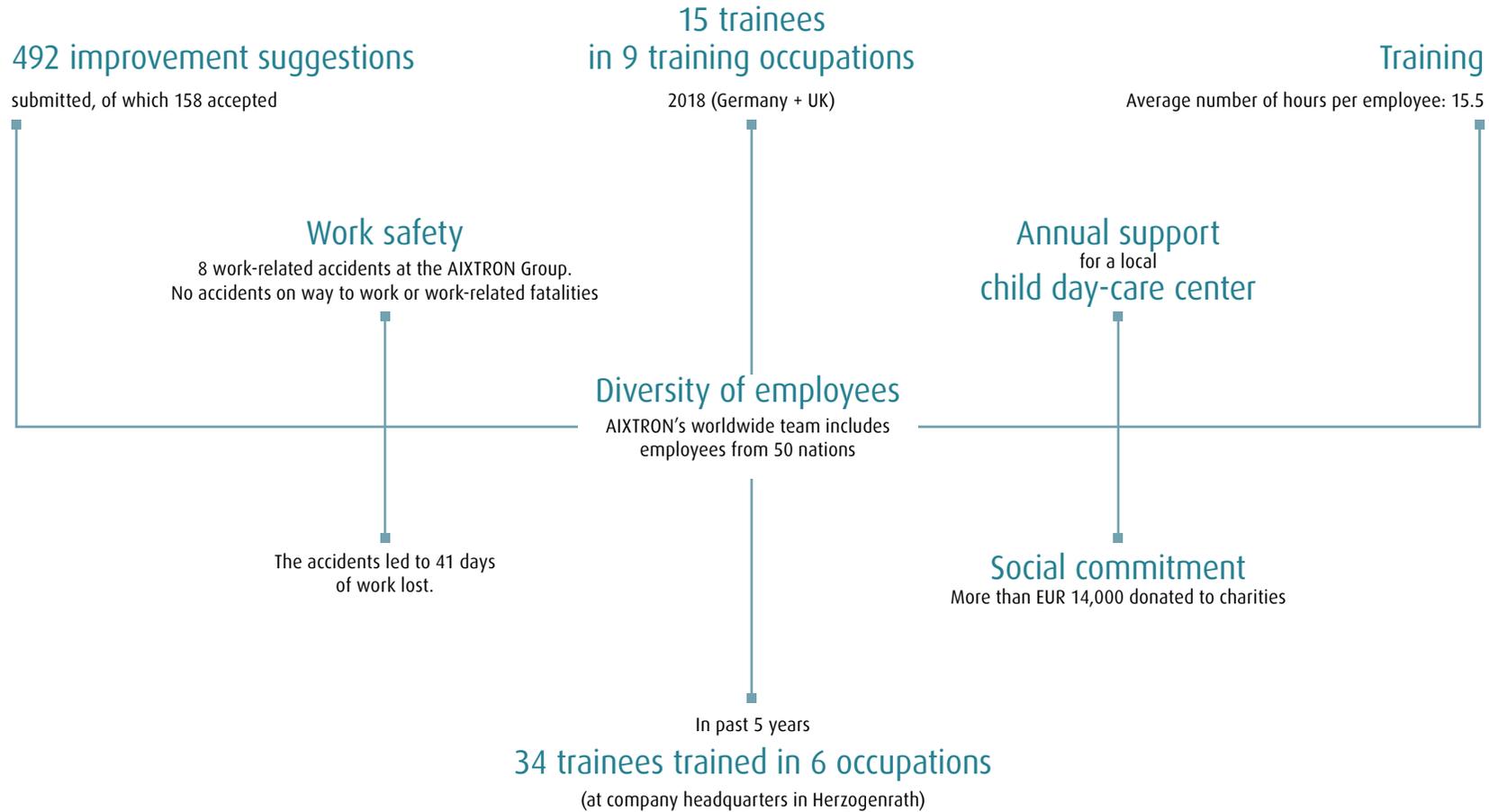
As part of its innovation management process, AIXTRON has a global company suggestion system. This is based on uniform principles worldwide and encourages and enables all employees to submit their ideas on how to improve processes,

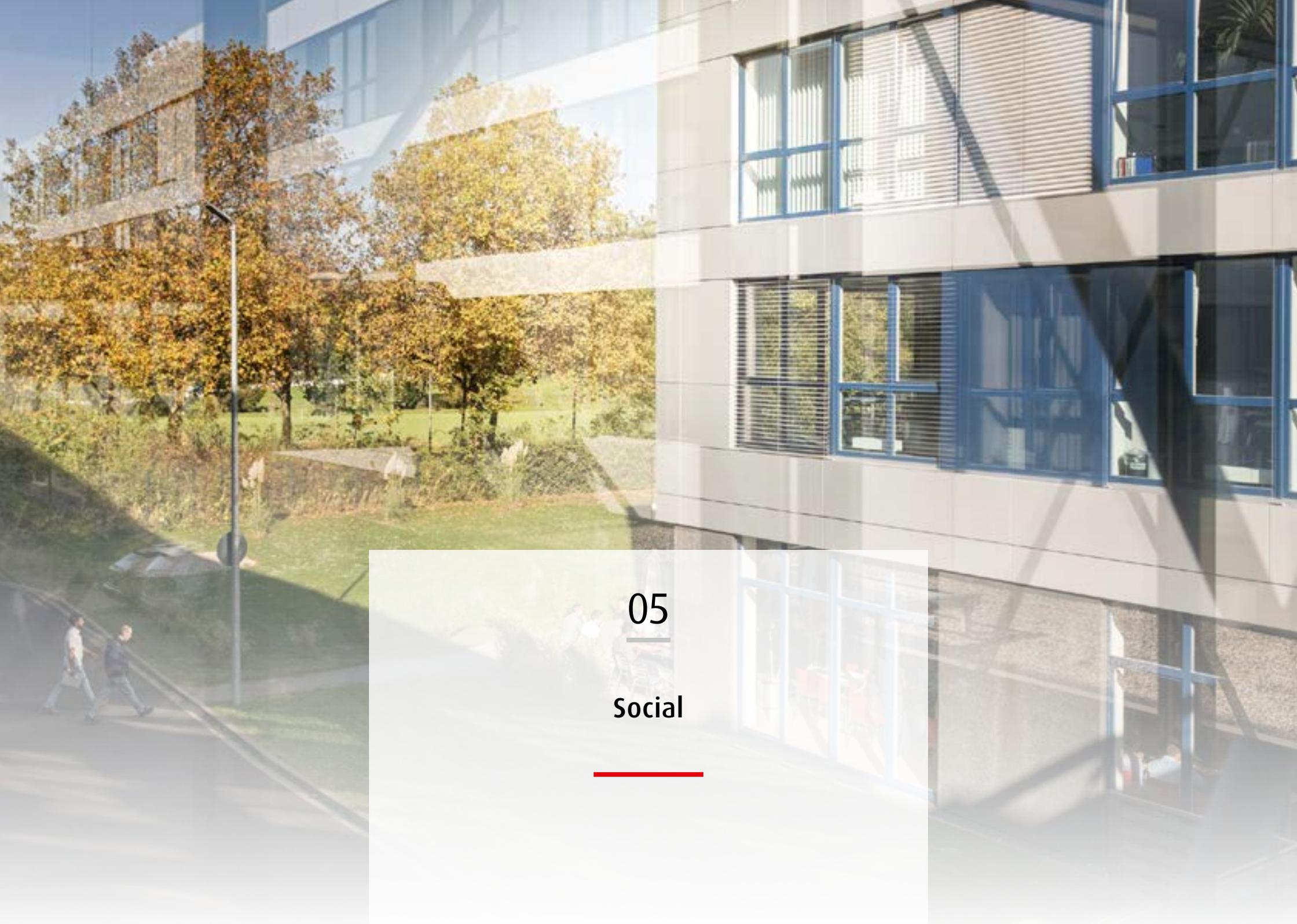
save costs, enhance products, etc. If the suggestions are accepted, then the company pays a reward to the employee. Since being introduced in the fall of 2014, large numbers of proposed improvements have been submitted and accepted, as is clear from the table and chart below:

Type of improvement suggestion submitted	2016		2017		2018	
	submitted	accepted	submitted	accepted	submitted	accepted
Business Process	35	7	38	9	25	4
Product	42	25	38	13	44	14
Application	8	5	10	2	6	3
Transformation	5	2	3	1	0	0
Other	39	12	49	10	35	9
<b>Total</b>	<b>129</b>	<b>51</b>	<b>138</b>	<b>35</b>	<b>110</b>	<b>30</b>

\*) Slight reduction in 2018 totals due to spin-off of APEVA SE (OLED technology). APEVA's improvement suggestion system is still in development.







05

Social

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As a company, AIXTRON assumes social responsibility and has for years now been promoting the common good by supporting individual projects. We will uphold this commitment and are currently developing a Group-wide concept.

### Financial support from public funds

AIXTRON's proximity to research and science is an important aspect of its business strategy of translating research solutions into marketable products. As a leading provider of deposition equipment for the photonics and semiconductor industries, AIXTRON is a partner to or participant in important national and international projects, such as the HEA2D project to develop 2D nanomaterials and the current MehrSi research project aimed at developing highly efficient III-V multiple solar cells on silicon.

R&D grants received	2016	2017	2018
<b>Total amount (EUR)</b>	2,126,000	3,165,000	4,728,000

Overview of research funds received

### Support for charitable organizations

Since 2012, we have made an annual donation to a local daycare center. This is intended to support AIXTRON employees and parents at the Herzogenrath site in their efforts to find a daycare center close to their workplace.

Beneficiaries	2016	2017	2018
Förderkreis Hilfe für krebskranke Kinder e. V. Uniklinik RWTH Aachen University of Aachen			825,-
TP Hasen, Kindergarten Herzogenrath			1,800,-
Familienfeuerwehr (Caritasverband Aachen)			3,300,-
Feuervogel (Caritasverband Aachen)			3,400,-
Herzkrankes Kind Aachen e.V.			3,300,-
WABe e.V. (Diakonisches Netzwerk Aachen)			627,-
British Heart Foundation, Birmingham			1,112,- *)
<b>Total amount (EUR)</b>	<b>10,600</b>	<b>4,400,-</b>	<b>14,364,-</b>

Overview of beneficiaries for the year under report in Germany

\*) Amount donated in UK is equivalent to £1,000

### IT donation for social projects

AIXTRON works closely with social welfare institutions in the Aachen region and is glad to draw on the services offered by these organizations. Objects that can no longer be used at the company are often donated to these institutions for further use. Last year, for example, we passed on more than 200 discarded monitors to social welfare institutions. With measures of this kind, the company goes some way towards meeting its responsibility to society, while also helping and creating new perspectives for people who are dealing with social challenges.

### Social commitment

Promoting young people in the fields of science, education, and career development is important to us in our capacity as a socially responsible company. It forms a key component of our social commitment. In 2017, we agreed a long-term school cooperation program. We also support young people once they have left school, as well as students, by offering presentations and company visits.

One example is the "Day on Site" ("Tag-vor-Ort"), which we have offered for many years now in our role as a corporate member of the Industry and Business Workgroup (AIW) of the German Physical Society (DPG). Last year as well, a total of 16 students and members of the DPG came to visit us. During this open day, they received exciting insights into the application of our company's MOCVD technology and also familiarized themselves with other areas of work for physicists.

### Smart recycling

In the past, we had a special type of plant processed by an external service provider. Tarpaulins were needed to transport the plant to the external partners. Over the years, however, these tarpaulins were no longer required, as from a certain point in time the further processing of the plants only took place internally. For many years the tarpaulins were stored unused until it was decided to dispose of them. Things then turned out differently. In line with a suggestion made by an employee, the tarpaulins were sold to a Swiss company and processed into bags. Today, these bags give their owners much pleasure and AIXTRON in turn was able to donate the proceeds from the sale of the tarpaulins to several charitable organizations.



Two bags made from the recycled tarpaulins that were raffled internally. The proceeds of EUR 5,000.00 from the sale of the tarpaulins were donated to charitable organizations in the Aachen area.

### Practical example - cooperation with Einhard High School in Aachen

As part of the KURS initiative (Cooperation Network of Regional Companies and Schools), on July 7, 2017 AIXTRON signed a long-term learning partnership with Einhard High School (Einhard-Gymnasium) in Aachen, Germany. The KURS initiative aims to create mutually beneficial "learning partnerships" between companies and schools based on firm agreements. The initiative helps schools to provide their pupils with real insights into the business world by reference to the specific partner company. Not only that, the KURS program is intended to boost the local economy. Companies have the opportunity to present themselves as employers and as "good neighbors".

As well as offering small "robot workshops", during an on-site tour we provided pupils with initial insights into our company and the world of work. The pupils also spoke to our trainees, who reported on their own experiences. This way, we hope to make young people aware of the attractive range of training and subsequent career options on offer at AIXTRON. Not only that, the advantages of dual training and study programs can also be presented as an attractive alternative to university studies.

In addition, last year we provided assessment center training for school students at the company and took part in school projects, e.g. by participating in the "Berufsstraße" (job road) in which boys and girls are given an explanation of the training vocations on offer at AIXTRON.

- Within this long-term cooperation, joint projects are also envisaged for the 2019 reporting year.

### Company run in Aachen and Cambridge

We have taken part in Aachen's annual corporate running event (Aachener Firmenlauf) since 2011 and are once again participating in the "Chariots of Fire" relay race in Cambridge. This way, the company motivates its employees to exercise and help avoid health problems. Since the launch of the event, the company has covered the costs of the entry fees for those employees taking part. These funds then benefit several charitable organizations in the region. In 2018, the participants in Aachen raised a total of EUR 35,000. The organizers then forward the donations to various charitable organizations. Further information can be found here for Aachen: [www.aachener-firmenlauf.de](http://www.aachener-firmenlauf.de) and here for Cambridge [www.chariots-of-fire.co.uk](http://www.chariots-of-fire.co.uk)

### Blood donation

In a program carried out in cooperation with the Institute for Transfusion Medicine at RWTH Aachen University Hospital, AIXTRON employees at the Herzogenrath site donate blood each year and thus support the medical care system, e.g. by facilitating the production of blood preserves. In addition to blood donations, most of the allowances paid to blood donors also benefit charitable organizations. The amount donated by AIXTRON employees is then doubled by the company. The in-house blood donation has taken place since 2015 and is repeated each year.



06

Respecting  
Human Rights

All human beings are endowed with equal, inalienable rights. AIXTRON attaches very great value to respecting these human rights. That applies both to the company's own employees and to employees at its suppliers and service providers. AIXTRON aims to avoid any violation whatsoever of human rights both at the company itself and along the entire value chain. To help avoid any such violations, the company requires its suppliers to comply with environmental and social standards and to ensure the greatest possible transparency. AIXTRON expects its business partners to respect human rights as a basis for long-term cooperation. Purchasing is performed centrally by the AIXTRON Group; smaller volumes are purchased locally by the local subsidiaries.

### Selection of suppliers

Due to the high proportion of value added in the supply chain, the purchasing process is of great importance for AIXTRON's long-term success. AIXTRON does not manufacture mechanical and electrical systems and components itself, but focuses on configuration and final assembly as well as testing and qualifying the end products. This form of system engineering is based on a very complex, constantly evolving supply chain comprising more than 1,300 suppliers.

AIXTRON works closely with its extensive network of suppliers to mitigate any negative impact of its business activities. As a significant portion of the value added is sourced from upstream suppliers, the AIXTRON Group uses a risk-oriented approach to ensure that suppliers are systematically monitored for sustainability aspects.

Environmental and social aspects also play an important role in the selection of and cooperation with suppliers. In complex and widely ramified supply chains, environmental pollution, human rights violations, child or forced labor represent potential risks that we actively counter. The same is true of corruption and bribery. To meet our own requirements and the expectations of customers, employees and society, we actively work to ensure compliance with environmental and social standards and to avoid corruption and bribery in connection with suppliers.

The compliance of all suppliers with environmental and social standards is verified by self-disclosure in the form of a mandatory supplier data sheet and questionnaire. In these documents, suppliers are required to declare whether an established process is in place at their companies to ensure compliance with internationally recognized human rights and conventions (e.g. ILO basic principles and core labor standards). All information provided by the suppliers must be documented by the provision of suitable evidence. All relevant documents are made available to our existing and potential suppliers via our company website.

### Code of Conduct for Suppliers

AIXTRON places the same expectations and conditions in its suppliers as it does in itself. For suppliers, these are defined in a binding Code of Conduct, which sets out ethical and legal standards in connection with the sale and use of conflict minerals, i.e. commodities, mineral resources, and other natural resources that are mined or extracted in conflict areas and for which systematic violations of

human rights and international law are simply accepted. AIXTRON naturally cannot condone any such systematic violations of human rights and only purchases components and materials from companies that respect human rights.

### Conflict minerals

We are committed to doing business fairly and with decency and respect in all the countries in which we operate. AIXTRON therefore supports the objectives of the US Dodd-Frank Act, as well as the EU regulations on conflict minerals to disclose the origin of risk minerals used in our products. As part of our duty of care, we have implemented a management system based on the OECD Guideline for Responsible Supply Chains of Minerals from Conflict and Risk Regions. All direct suppliers who may supply materials with potential conflict minerals are contacted and asked to identify and report to us the countries of origin of the minerals. If there are any indications of the use of a raw material supplier in connection with human rights violations and environmental pollution, we react consistently and take action to ensure that this supplier critically examines the raw material supplier in question and removes it from the joint supply chain. We have established a complaints mechanism to allow internal and external individuals and stakeholders to anonymously raise concerns and complaints about conflict minerals.

AIXTRON only has a limited ability to work towards a completely conflict-free global smelt landscape in its supply chain. To maximize the influence and impact of our conflict-free procurement policy, we decided at an early stage to join the

Responsible Minerals Initiative (RMI). The RMI is one of the most widely used and recognized resources for companies dealing with issues relating to responsible mineral sourcing and has more than 360 members from various industries. We are actively involved in this organization and, among other aspects, support smelters in sustainably meeting their documentary evidence requirements with regard to the conflict-free purchase of minerals.

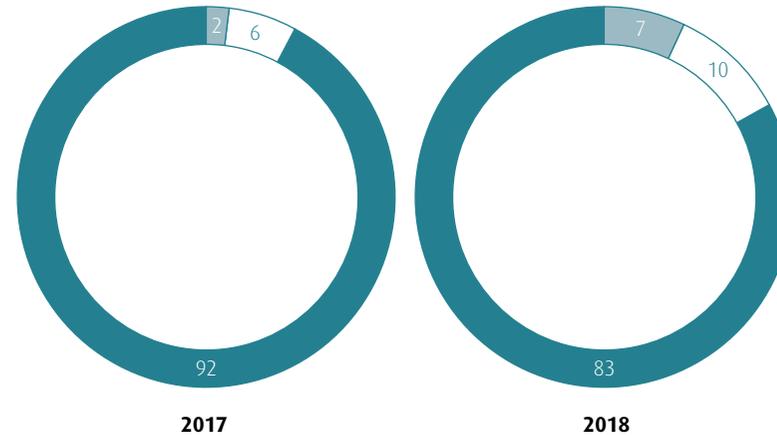
**Key figures for supplier relationships**

Today's supply chains are global and highly diversified. AIXTRON also has a very heterogeneous and, in some cases, highly specialized, global supply chain, but maintains a strong local focus. The key factors determining the company's cooperation with suppliers are quality, manufacturing competence, supply reliability, and price. The company attaches great importance to working in partnership with its suppliers. This approach is exemplified by development partnerships in which the company jointly develops components and modules with its suppliers.

	2017	2018
Number of suppliers (worldwide)	1,384	1,473
Purchasing volumes	EUR 146.6m	EUR 235.6m

Number of suppliers and purchasing volumes at the AIXTRON Group

The cooperation extends to suppliers, e.g. from the mechanical and plant engineering sector, the electrical engineering sector, as well as to engineering service providers, suppliers of technical gases, and energy suppliers. AIXTRON is an international company but nevertheless has local roots. Despite global procurement, local value creation plays a very important role due to the high technical requirements placed in suppliers. In Germany, more than 70 percent of procurement is local, while in the UK this share is as high as 85 percent. The precondition for cooperation is compliance the company's high quality standards and the supplier's ability to ensure the necessary production competence at a



Regional distribution of purchasing volumes (Angaben in Prozent)  
 ■ Europe | □ North-/Southamerica | ■ Asia

comparable price. AIXTRON procures its production and non-production materials predominantly in those regions in which it operates

- There were no substantial changes in the company's cooperation with suppliers in the year under report.

The image shows a red LED display with the word "AIXTRON" in a stylized, blocky font. The display is mounted on a wall in a modern, brightly lit interior space. In the background, there are large green plants and a person walking. The overall scene is a professional office or showroom environment.

AIXTRON

07

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**Combating Corruption  
and Bribery**

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## Combating Corruption and Bribery

AIXTRON's compliance codes and policies define the Group-wide standards of conduct expected of our employees and business partners. Compliance with legal requirements, regulatory standards and internal company requirements plays a very important role. The company does not tolerate and consistently investigates any violations of these requirements.

These principles of conduct are laid down in the Code of Ethics and in the Compliance Code of Conduct, which applies to all employees throughout the company. The Compliance Manual, which is binding for the members of the Executive and Supervisory Boards as well as for the members of the senior management team, takes up these principles of conduct in detail. Separate chapters are devoted to the topics "Acceptance and granting of benefits, money laundering, and product diversion".

AIXTRON does not tolerate corrupt and criminal behavior. Consistent with this approach, we compiled a comprehensive Anti-Corruption Policy years ago and published this throughout the company. The policy lays down specific rules and principles of conduct to combat corruption and bribery with the aim of protecting the excellent reputation of AIXTRON and its employees as trustworthy business partners. All members of the Executive and Supervisory Boards, senior management team members, all other company employees and all third parties representing the company must strictly follow the rules and conduct set out in the Anti-Corruption Policy, as well as all applicable laws and regulations relating to corruption and bribery.

The contents of the Anti-Corruption Policy are a basic component of company-wide compliance training. Key training objectives include raising awareness for the early detection of potential corruption and bribery risks in day-to-day work and promoting preventive anti-corruption measures. Compliance training is mandatory for members of the senior management team, as well as for all other company employees. Compliance with this requirement is monitored by our Compliance Office.

- ▶ In the 2018 financial year, no events requiring external reporting in this respect occurred at the AIXTRON Group.



08

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**Independent Auditor's Report**

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## Independent Auditor's Report

The Supervisory Board of AIXTRON SE commissions an independent audit service provider to review the legally relevant information in the separate non-financial report. The external audit conducted by Deloitte assists the Supervisory Board in fulfilling its audit duty pursuant to the CSR-RUG legislation. The details and key figures of our sustainability activities as stated in this report were subject to an independent limited assurance audit by Deloitte GmbH Wirtschaftsprüfungsgesellschaft, Düsseldorf (Germany).

### Contact partner for questions about this report

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CSR Manager

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### IMPRINT

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**Design:** Eric Zimmermann Mediendesign in Aachen · [www.eric-zimmermann.com](http://www.eric-zimmermann.com)

**Reporting period:** The reporting period is the 2018 calendar year, which corresponds to the reporting period for the Annual Report.

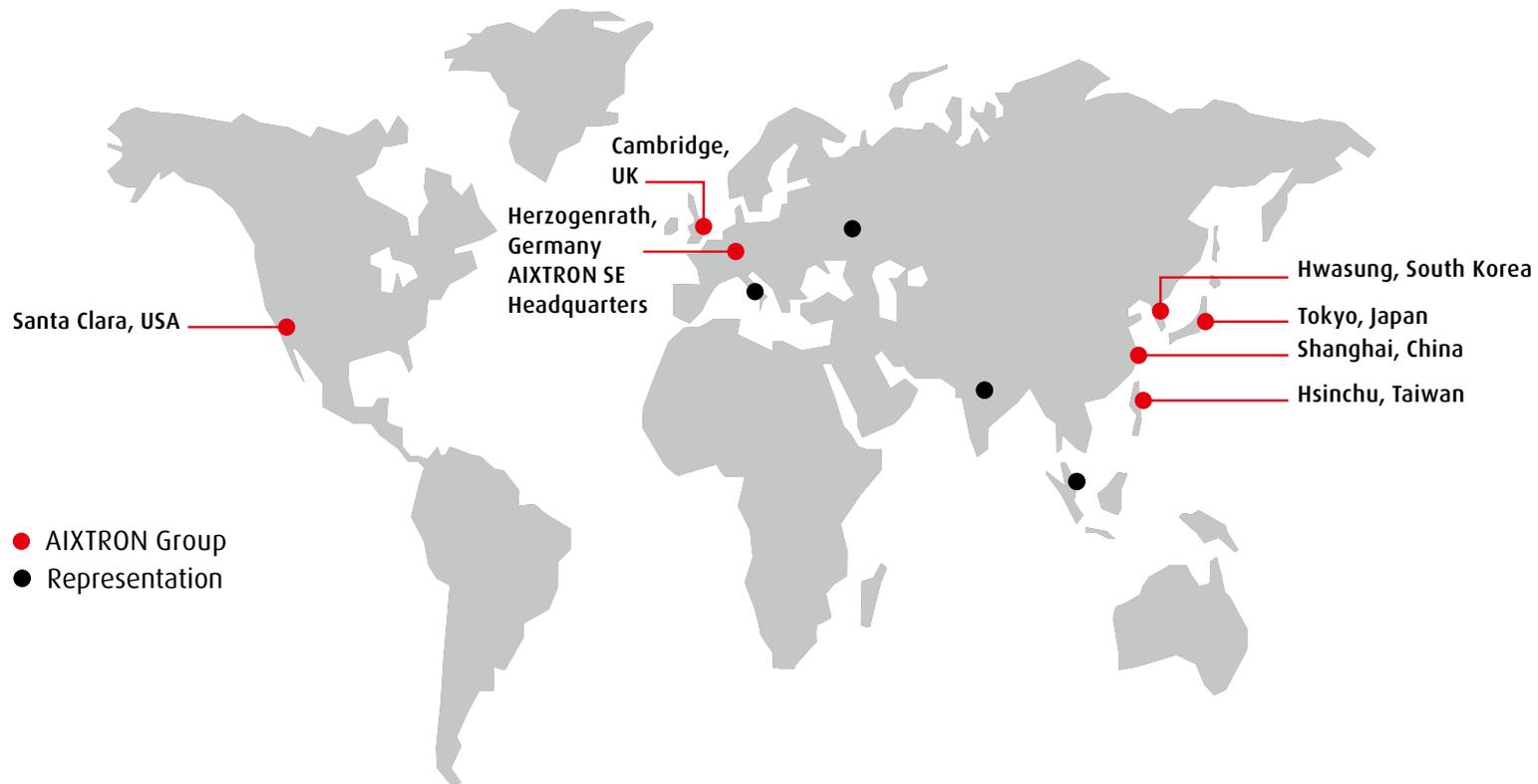
**Date of latest report:** AIXTRON published its second standalone Sustainability Report on February 26, 2019.

**Reporting cycle:** The Sustainability Report is compiled and published annually together with the company's Annual Report.

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**INDEPENDENT AUDITOR'S REPORT ON A LIMITED ASSURANCE ENGAGEMENT**

To AIXTRON SE, Herzogenrath/Germany

**Our engagement**

We have performed a limited assurance engagement on the separate Non-Financial Group Report of AIXTRON SE, Herzogenrath/Germany, (hereinafter: "the Company") in accordance with Section 315b German Commercial Code (HGB), for the period from January 1 to December 31, 2018 (hereinafter: "Non-Financial Group Report").

Our engagement has not covered the references on websites.

**Responsibility of the executive directors**

The executive directors of AIXTRON SE are responsible for the preparation of the Non-Financial Group Report in accordance with Sections 315b, 315c German Commercial Code (HGB) in connection with Sections 289c to 289e German Commercial Code (HGB).

In preparing the Non-Financial Group Report, the executive directors used the Sustainability Reporting Standards of the Global Reporting Initiative (GRI) stated under the "Core" option and have indicated these within the Non-Financial Group Report.

This responsibility of the Company's executive directors includes the selection and application of appropriate methods for the Non-Financial reporting as well as making assumptions and estimates related to individual disclosures, which are reasonable in the circumstances. In addition, the executive directors are responsible for such internal control they have determined necessary to enable the preparation of the Non-Financial Group Report that is free from material misstatements, whether intentional or unintentional.

**Practitioner's responsibility**

Our responsibility is to express a limited assurance conclusion on the disclosures within the Non-Financial Group Report, based on the assurance engagement we have performed.

We are independent of the Company in accordance with the provisions under German commercial law and professional requirements, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

Our audit company applies the German national legal requirements and the German profession's pronouncements for quality control, in particular the by-laws governing the rights and duties of public auditors and chartered accountants (Berufssatzung für Wirtschaftsprüfer und vereidigte Buchprüfer) as well as the IDW Standard on Quality Control 1: Requirements for Quality Control in Audit Firms [IDW Qualitätssicherungsstandard 1: Anforderungen an die Qualitätssicherung in der Wirtschaftsprüferpraxis (IDW QS 1)], which comply with the International Standard on Quality Control 1 (ISQC 1) issued by the International Auditing and Assurance Standards Board (IAASB).

We conducted our assurance engagement in compliance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): "Assurance Engagements other than Audits or Reviews of Historical Financial Information" issued by the IAASB. This standard requires that we plan and perform the assurance engagement in a form that enables us to conclude with limited assurance that nothing has come to our attention that causes us to believe that the information disclosed in the Non-Financial Group Report has not complied, in all material respects, with Sections 315b, 315c in connection with Sections 289c to 289e German Commercial Code (HGB). In a limited assurance engagement the assurance procedures are less in extent than for a reasonable assurance engagement and, therefore, a substantially lower level of assurance is obtained. The assurance procedures selected depend on the practitioner's professional judgment.

Within the scope of our limited assurance engagement, which was performed from January to February 2019, we conducted, amongst others, the following audit procedures and other activities:

- Obtaining an understanding of the structure of the sustainability organization and of the stakeholder engagement
- Interview of the executive directors and relevant employees that participated in the preparation of the Non-Financial Group Report about the process of preparation, the measures on hand and precautionary measures (system) for the preparation of the Non-Financial Group Report as well as about the information within the Non-Financial Group Report
- Identification of the risks of material misstatement within the Non-Financial Group Report
- Analytical evaluation of selected disclosures within the Non-Financial Group Report
- Comparison of disclosures within the Non-Financial Group Report with the respective data within the consolidated financial statements as well as the group management report
- Evaluation of the presentation of the disclosures

**Practitioner's conclusion**

Based on the assurance work performed and evidence obtained, nothing has come to our attention that causes us to believe that the information disclosed in the Non-Financial Group Report of the Company, for the period from January 1 to December 31, 2018 has not complied, in all material aspects, with Sections 315b, 315c German Commercial Code (HGB) in connection with Sections 289c to 289e German Commercial Code (HGB).

Our audit opinion does not refer to the references on websites.

**Purpose of the assurance statement**

We issue this report on the basis of the engagement agreed with AIXTRON SE. The limited assurance engagement has been performed for purposes of AIXTRON SE and the report is solely intended to inform AIXTRON SE on the results of the assurance engagement.

**Liability**

The report is not intended to provide third parties with support in making (financial) decisions. Our responsibility exclusively refers to AIXTRON SE and is also restricted under the engagement agreed with AIXTRON SE on December 7, 2018/January 15, 2019 as well as in accordance with the "General engagement terms for Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften (German public auditors and German public audit firms)" from January 1, 2017 of the Institut der Wirtschaftsprüfer in Deutschland e.V. We do not assume any responsibility to third parties.

Düsseldorf/Germany, February 25, 2019

**Deloitte GmbH**

Wirtschaftsprüfungsgesellschaft

Signed: Prof. Dr. Holger Reichmann  
[German Public Auditor]

Signed: p.p. Martin Mißmahl  
[German Public Auditor]