

Sustainability Report

Sustainability is one of the core values that are firmly embedded in Sartorius Stedim Biotech's corporate culture. Ever since the company was established, the sustainable development of the company has been its major objective.

Our primary business responsibility is to offer attractive products and solutions to our customers. Innovations, as well as strategic and operational excellence, are key to meeting this objective. Our employees with their ideas, expertise and passion are also contributing to the success of Sartorius Stedim Biotech.

Our products help in many different ways to deliver benefits to society. For example, these products are used in the biopharmaceutical industry to produce medical drugs safely and efficiently, as well as to ensure their quality. Doing this sustainably, we believe, means taking a broad-based, long-term view of our business that includes social and ecological considerations and preserves the rights and interests of our stakeholders.

In line with this approach, we consider it essential to comply with legal and ethical standards, manufacture with ecological responsibility, and keep the environmental impacts in mind when developing product innovations. Likewise, our HR policy is aimed at preserving the rights and interests of employees and at actively using and developing the potential of our global workforce. At the company sites around the world, we as employers and contractors take an active part in developing the regional environments.

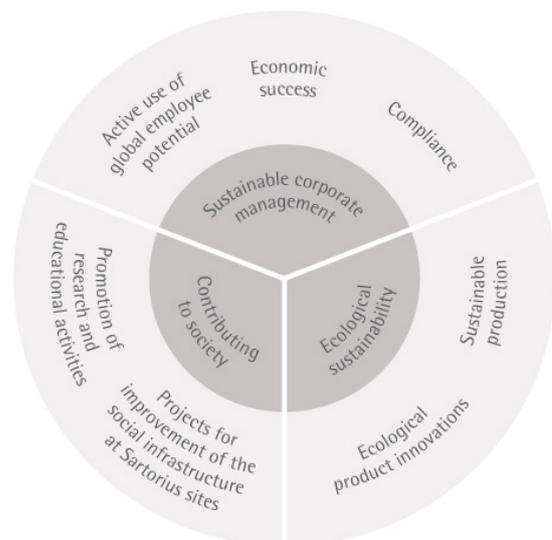
Sartorius Stedim Biotech has made sustainability a responsibility of the Chief Executive Officer in recognition of its overarching importance for the company.

Our indicators for social, health and safety, environmental and raw material data have been defined to cover most of the impacts of the Group's activities. Since 2012, Sartorius Stedim Biotech has been reporting social, environmental and societal information and metrics in compliance with the French Grenelle II environmental law. Internally, the figures provide the basis for defining, reviewing and monitoring environmental and HR targets.

Methodological Note

The Sustainability Report is published annually as part of the Group's Reference Document. The reporting period is the fiscal year. If not indicated otherwise, the indicators reported below for HR and health and safety refer to the entire Group, excluding the latest acquisition of kSep with 5 employees who are included only in the indicator "total headcount" and the subindicators "headcount by region" and "headcount by function". The environmental indicators cover all our production sites in Aubagne, Bangalore, Glasgow, Goettingen, Guxhagen, Laupheim, Lourdes, Mohamdia, New Oxford, Royston, Stonehouse, Tagelswangen and Yauco, representing 83.6% of the Group's total workforce.

Most data is collected using SAP for social information and EMC for environmental data. In some cases, our local sites transmit data via other software systems. Most of the required data is reported monthly or quarterly; it is monitored and consolidated by the HR and Facility Management units at the largest Group site in Goettingen. Sartorius Stedim Biotech set up a process of continuous improvement of Group-wide recording, reporting and controlling of environmental and social data.



Sustainable Corporate Management

Our activities are based on our corporate values: sustainability, openness and enjoyment. These values govern how we interact daily inside our company and connect us outside – with our customers, investors and society at large. In addition, they guide us in the definition of our strategies and their implementation.

Open Dialogue with Stakeholders

As a fair and responsibly acting company, Sartorius Stedim Biotech maintains an open and constructive dialogue with various stakeholders and considers sustainability aspects that are important to these groups, both now and in the future. With respect to sustainability, we view our customers, employees, investors and society as our most important stakeholders. Beyond these, suppliers and business partners have a stake in the sustainable and prosperous development of our company. We use the opportunity afforded by our close relationships with our stakeholder groups, some of which have been maintained for years, to also discuss the standards that apply to sustainable corporate management.

Customers

Our objective is to offer our customers attractive products and solutions. As we market our portfolio directly through our own field sales representatives, we are in very close contact with our customers. Also, we are continuously informed about their current requirements and priorities through audits, product demonstrations and tests that we perform in our application laboratories. Beyond such requirements, our sustainable products help our customers reach their own sustainability goals.

Employees

Capable, motivated and efficient staff members are indispensable in ensuring our business success. Regional and Group-wide employee surveys, annual performance reviews and an open working atmosphere help us discover what our employees find satisfying about the company, and where they see potential for improvement. The results of these surveys suggest relevant topics that we implement as specific plans of action at our local sites.

Investors

Sartorius Stedim Biotech creates transparency and continuity for its shareholders. We engage in a dialogue with our investors also about our environmental and social responsibility as well as corporate governance topics at roadshows, investor conferences and as part of capital market days. In addition, we participate in sustainability analyses and ratings to gauge our performance concerning environmental, social and governance-related business practices (ESG). In 2016, Sartorius Stedim Biotech became a constituent of the FTSE4Good Index.

Society

We maintain good neighborly relationships with local residents and public authorities, and consider their interests and expectations on our business activities. Such interests and expectations relate, in particular, to paying our fair share of taxes, maintaining job security, complying with legal requirements, conserving and protecting environmental resources and promoting infrastructure.

To us, potential employees are a special social group. Precisely young and qualified staff is appreciated by companies that take social responsibility. A value-oriented corporate culture and sustained employee engagement help to convey a positive image of Sartorius Stedim Biotech to social communities, thus increasing our attractiveness as an employer.

Compliance with Legal and Ethical Standards

Sartorius Stedim Biotech conducts its business in compliance with globally accepted ethical standards and applicable national legal requirements. Our actions are in line with good corporate governance and control, focusing on sustainable value added. These principles include protection of our stakeholders' interests, transparent communications, appropriate risk management and proper accounting and auditing. Sartorius Stedim Biotech follows the rules and recommendations of the AFEP-MEDEF Corporate Governance Code.

Global Compliance System Established

With our global compliance system we ensure that members of the executive bodies, managers and employees comply with all legal regulations and codes and act in accordance with our internal guidelines. By systematically providing information, we prevent misconduct and avoid financial loss and damage to the company's image. Key principles of this system are our Code of Conduct and Anticorruption Code that are binding on all employees.

Our Code of Conduct and our Anticorruption Code serve as specific guides to our requirements regarding responsible actions on the part of our employees. These codes help them on the job each day to work in a legally correct, morally appropriate manner. In a training course that all employees worldwide attend, employees are schooled in the way to deal with morally or legally questionable situations. A whistleblower portal and a telephone hotline enable employees, suppliers, customers and partners to anonymously report any dubious conduct. Compliance is also a regular topic of our corporate audit program, which we conduct regularly with our international subsidiaries.

In following its Code of Conduct, Sartorius Stedim Biotech supports and respects the principles defined in the United Nations Universal Declaration of Human Rights, the conventions of the International Labor Organization (ILO) and the United Nations Global Compact, the world's largest initiative for human rights, work standards, environmental protection and anticorruption. Furthermore, we reject all forms of compulsory and/or child labor and respect the special need to protect young employees. All Sartorius Stedim Biotech employees are committed to a task-oriented, open, friendly and fair approach for interacting with colleagues, other employees and third parties, helping to create an atmosphere of respectful cooperation. We do not tolerate employees being discriminated against, disadvantaged, harassed or excluded based on their gender, ethnic origin, race, religion, age, disability, appearance, sexual preferences and identity, origin or political position and we expect our suppliers to apply the same standards. We respect the freedom of association and the right of any individual to be fairly represented by a labor organization of their choosing, pursuant to local laws.

Code of Conduct for Suppliers

Sartorius Stedim Biotech expects all suppliers and service providers to comply with internationally recognized social and environmental standards, to respect the law and to uphold the tenets of fair competition. The company excludes existing or new suppliers who are determined to be the source of considerable risks regarding compulsory, forced or child labor, other violations of human rights or negative effects on society. We have set out our requirements in our Code of Conduct for Suppliers and Service Providers. Our major suppliers are required to sign a written confirmation acknowledging their commitment to comply with the Code of Conduct for Suppliers. Moreover, compliance topics are part of annual supplier performance reviews and are additionally monitored in part by regular quality audits. Sartorius Stedim Biotech has globally standardized its procurement channels. Contracts are awarded in a fair and transparent process that meets generally recognized standards.

Due Diligence Processes

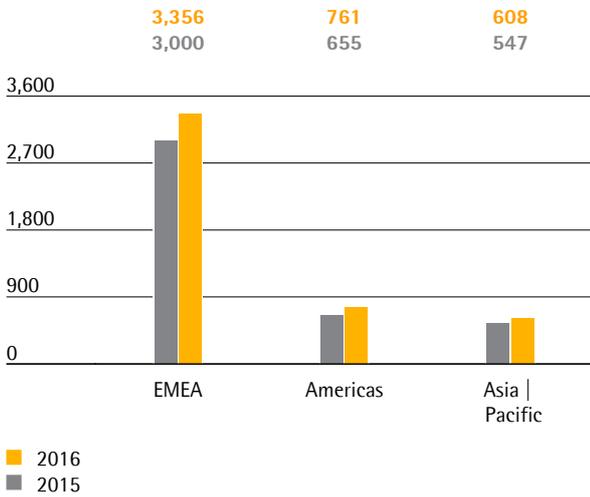
In contemplating acquisitions, we have a standard policy in place as part of our due diligence processes to assess non-financial aspects as well. These include, inter alia, compliance with legal standards and the effectiveness of compliance systems. Moreover, we include personnel and environmental aspects in our assessment of risks and opportunities of such potential takeover candidates. We seek to retain key top performers for our company by taking special measures.

Employment

The employment numbers reported in the following include all staff members, except for vocational trainees, interns, employees on extended leaves of absence and those participating in an early retirement plan. This number is recorded as headcount.

As of December 31, 2016, the Sartorius Stedim Biotech Group employed a total of 4,725 people, 523 more than in the previous year. Headcount increased by 12.5%. These figures include 5 employees from the most recent acquisition of kSep.

Employees by Region

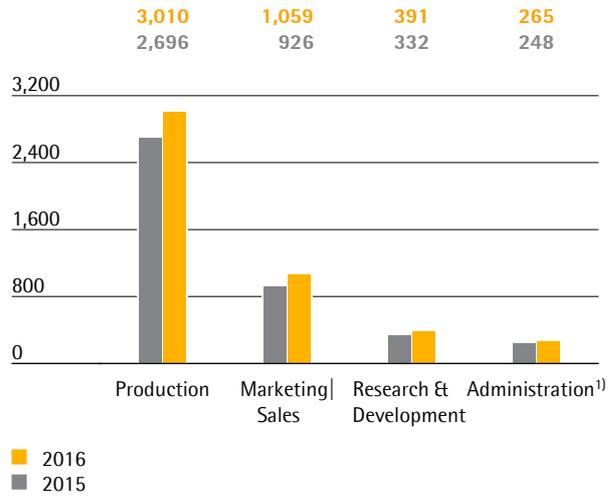


Regionally, EMEA that accounts for 71.0% of the total workforce added 11.9% new staff in 2016. A significant number of the 356 additional employees were hired to strongly expand Cellca and BioOutsource acquired in 2015.

The Americas region charted an increase of 16.2% or 106 new people. Close to half of the staff can be attributed to additional hires in Puerto Rico.

Staff numbers in Asia|Pacific rose by 11.2% or 61 people.

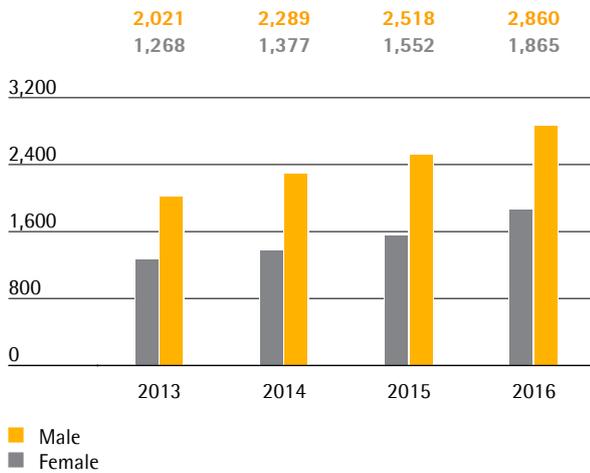
Employees by Function



¹⁾ Excluding administrative functions performed by Sartorius Corporate Administration GmbH, which is not part of the Sartorius Stedim Biotech Group

When broken down by function, manufacture and areas directly related to production accounted for 63.7% of our workforce (2015: 64.2%). Service staff is also included in our production headcount. The 11.7% increase is attributable primarily to new employees that Sartorius Stedim Biotech hired at its production sites in Goettingen and Puerto Rico as well as at BioOutsource and Cellca. In 2016, marketing and sales, as well as research and development, reported an increase in staff of 14.4% and 17.8%, respectively. As a result, 22.4% of the Group's employees worked in marketing and sales (2015: 22.0%) and 8.3% in R&D (2015: 7.9%). Headcount in administration rose by 6.6% following growth at an above-average rate in 2015. During the reporting year, administrative employees had a 5.6% share in the total workforce (2015: 5.9%).

Employees by Gender



As of December 31, 2016, 2,860 men and 1,865 women were employed by the Sartorius Stedim Biotech Group. The percentage of women in the total workforce has been continuously increasing for years and, at year-end 2016, was 39.5% (2015: 38.1%).

Employees by Age

	2016		2015	
	number	in %	number	in %
16 –20 years	24	0.5	25	0.6
21 –30 years	1,202	25.4	1,012	24.9
31 –40 years	1,493	31.6	1,242	30.5
41 –50 years	1,113	23.6	996	24.5
51 –60 years	761	16.1	687	16.9
61 years and above	132	2.8	108	2.7

Regarding the age structure of our staff, the group in the 31- to 50-year age bracket accounts for over half of our workforce. The average employee age was 39.3, approximately at the previous year's level of 39.5.

Remuneration Policy

Our remuneration policy aims to attract, retain and motivate employees. It ensures internal and external competitiveness by conducting regular reviews of the local markets. Our two global incentive programs, in which many of our employees are eligible to participate, are linked to both the success of the company and the achievement of targets defined in annual performance reviews. Generally, Sartorius Stedim Biotech applies industry standards or complies with union agreements. In Germany, for instance, compensation is paid according to the pay rates set by

the trade unions, or even above, based on local performance-related components.

Employee benefits expense grew from €242.9 million in 2015 to €278.7 million in the reporting year. Of this figure, €224.1 million accounted for wages and salaries (2015: €196.8 million). The increase is partly due to the initial integration of employees from Cellca and BioOutsource acquired in 2015.

Further Developing and Promoting the Potential of Employees

Continuing professional development, assumption of responsibility, and opportunities to advance within the company are important for our employees' satisfaction. Such opportunities safeguard their employability and open up new professional prospects for them. Moreover, motivated, well-trained employees are a significant success factor for us as a company.

Training and Further Education

Sartorius Stedim Biotech retains its qualified employees by offering targeted continuing education courses. At its sites in France, Tunisia, Puerto Rico, India and Germany (excluding Cellca), Sartorius Stedim Biotech provided 62,321 hours of training in 2016. This corresponds to an average of 18.4 hours of training per employee. The scope of training hours currently reported corresponds to 72.1% of total headcount.

The professional development program of Sartorius Stedim Biotech covers a broad range of topics. To help improve language and methodological skills, we provide all employees with a large number of advanced training and professional development opportunities offered in several different languages. Specialist training programs and targeted on-the-job courses teach necessary skills and knowledge. To meet the evolving needs of our employees and company, we refine the programs and modify them, both at a Group level and at a regional site level.

Annual performance reviews conducted for employees at all Group subsidiaries encourage individual and collective performance. These appraisals cover performance, review of targets and identification of development opportunities. Sartorius Stedim Biotech conducts them worldwide in accordance with uniform criteria.

When possible, Sartorius Stedim Biotech fills management vacancies from within its own ranks, and accordingly develops and promotes employees with management potential at an international level. A special program helps junior managers develop and refine their management skills through specific projects directly related to the company's business. For experienced management staff, Sartorius Stedim Biotech provides a separate development program in line with our leadership guidelines to strengthen our common managerial culture.

As an alternative to the classic manager career, we enable scientists and engineers in R&D, in particular, to pursue an expert career path, which helps recognize the value of their expert knowledge for the success of the company and to offer experts and project managers adequate development prospects.

Temporary Assignments

The company benefits from employees who think and act beyond departments and locations. We therefore encourage employees to network within the company and to transfer temporarily to other departments or sites. Our internal job market also offers a variety of prospects to further develop and even change their jobs. The basic conditions for temporary assignments in foreign countries are transparently defined for all staff members.

Finding and Developing Talented People

We continuously expand our personnel-related programs as a way of attracting, retaining and developing qualified employees. By taking this approach, we ensure the company will remain successful in the future even when faced with today's shortage of skilled workers. Our company specifically attracts people who not only contribute their expertise, but also their openness, a sense of responsibility and a proactive willingness to further develop their own field of work. We use classic career fairs and digital professional networks to attract the attention of talented people, and collaborate with relevant universities, institutes and organizations.

Promoting Young Academics

The aim of our own international scholarship program is to gain qualified young academics, particularly from the global growth markets, for our company. For many years, we have been supporting talented students and graduates in scientific and technical disciplines. Students from sales and marketing can also apply for our scholarship. The company aids these recipients not just financially, but also helps them technically and personally. For example, each scholarship holder is assigned a mentor from within our own organization.

In order to enhance their professional knowledge, skills and experience, Sartorius Stedim Biotech offers young people the opportunity to work within the company. For many years, we have been using the corresponding European Union funding programs, such as the Marie Curie scheme for young scientists and the Leonardo da Vinci scheme for international vocational education. If possible, we give interns also the possibility to participate in trainings. Thanks to an alliance with the Kedge Business School in Marseille, France, the interns at our Aubagne site, for example, can attend the Master of Business Administration courses offered there.

Diversity as an Opportunity

As an international company, we do business in the widest range of regions and markets in the world. The diversity of our procurement and sales markets is reflected by our corporate culture and represents added value for us as the productive interaction with different perspectives and backgrounds helps us to better understand the needs of our customers, develop perfectly tailored solutions and to remain competitive in a globalized economy. Also, when filling management vacancies, we aim to achieve a mix of cultures, genders and age groups.

Employees from More than 55 Nations

Today, people from more than 55 countries work well as a team at our company. Managers from Germany, France, the USA and India, for example, are represented at the second management level, that of vice presidents. Throughout our sites, we also rely on local management, and continue to internationalize our management line-up over the medium term. In addition, we promote international opportunities for our employees' development, for instance, through temporary deployment at other sites or international teamwork.

Women in Managerial Positions

The number of posts held by women in the two levels of management immediately below the Executive Committee was 23.7% as of December 31, 2016 (2015: 24.6%). Sartorius Stedim Biotech aims to increase the proportion of women in managerial positions. The proportion of women in our total workforce has been steadily increasing for years and at the end of the reporting year was 39.5%, 1.4 percentage points more than in 2015.

In 2016, Sartorius Stedim Biotech employed 102 people (2015: 96 people) who are registered as disabled – of this number, 21 work in France and 77 in Germany.

Freedom and Flexibility at Work

Generally, we assign our employees demanding tasks, delegate responsibility at an early stage and give them the freedom to define their daily work schedule. An increasing number of sites respond to the wide range of employee needs and requirements of life situations by providing various options for structuring their employment flexibly. Flextime, part-time work and teleworking offer employees models that help them find the right balance between family, work and leisure. Increasing digitalization of workplaces opens up new options for staff to set their own work schedules self-reliantly. To our employees, this flexibility is critical for their satisfaction with Sartorius Stedim Biotech, and it increases our attractiveness as an employer.

The number of part-time employees is 270 (2015: 234), which equates to 5.7% of our total headcount (2015: 5.8%). Sartorius Stedim Biotech complies with statutory and contractual working time obligations at all its subsidiaries. Working time varies depending on local environments and business activities.

Attrition and Absenteeism Rates Further Decrease

The success of our measures to create a motivating work atmosphere is reflected by our low and attrition and absenteeism rate. Despite the large number of new hires as the result of the company's growth, seniority remains at a high level.

	2016	2015
Number of redundancies ¹⁾	45	52
Attrition rate ²⁾ including expired fixed-term contracts in %	9.2	11.3
Attrition rate ²⁾ excluding expired fixed-term contracts in %	6.4	7.0

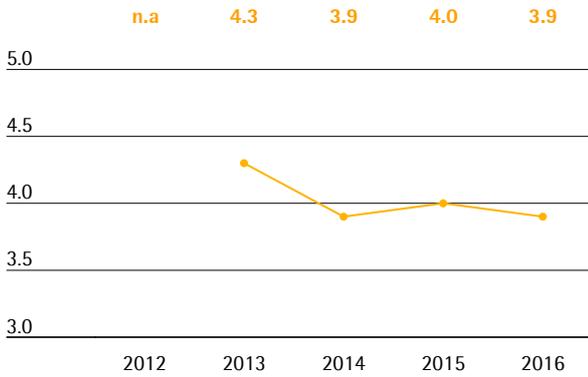
¹⁾ Redundancies are all company-driven dismissals or layoffs

²⁾ Expresses the number of people leaving the company as a percentage of the average headcount (2016: 4,562.5), including retirements and other reasons for employees leaving the company

The attrition rate expresses the number of people leaving the company as a percentage of the average headcount. Excluding expired fixed-term contracts, this figure at Sartorius Stedim Biotech was 6.4% in the reporting year, 0.6 percentage points under the low level a year ago. In general, fluctuation is subject to sizable regional differences. Europe typically has the lowest levels of staff turnover, whereas changing employers is more common in Asia and fluctuation there is usually higher. At Sartorius Stedim Biotech, too, staff turnover was the lowest at the Group's German sites, at 2.6%; in France, the attrition rate was 4.6, with both figures excluding expired fixed-term contracts. In India, we have decreased the attrition rate in recent years through a variety of measures aimed at increasing employee loyalty and motivation.

Absenteeism Rate¹⁾

in %

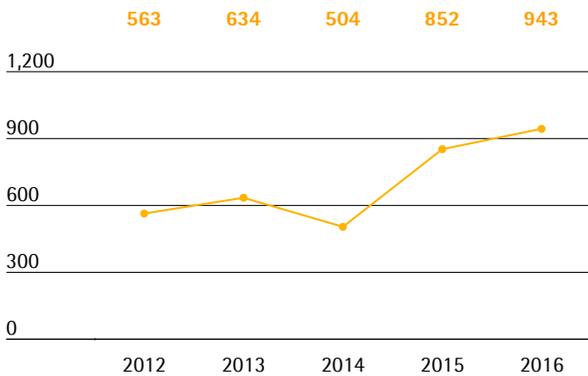


¹⁾ Excluding time lost due to maternity, parental and sabbatical leave; unpaid leave and extended sick leave of more than six weeks including weekends

The absenteeism rate, defined as the proportion of planned working time that is not worked due to general absences, is generally dependent on factors such as influenza waves. At Sartorius Stedim Biotech, absenteeism during the reporting year was 3.9%, approximately at the previous year's level of 4.0%. The average number of days missed per employee due to illness excluding work-related accidents, slightly decreased from 7.5 days in 2015 to 7.3 days in 2016.

New Hires

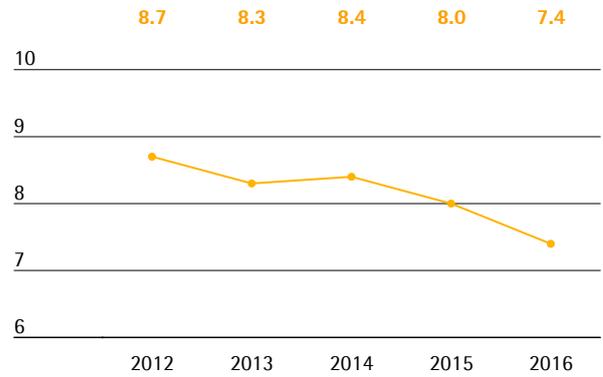
as headcount



As a result of the consistently high number of new hires, the average seniority decreased significantly in the reporting year. In 2016, about half of the employees had been with Sartorius Stedim Biotech for less than five years. One-fifth of the total staff had been working for 15 years or more at the company.

Average Seniority

in years



Occupational Health and Safety

The Group's corporate health management policy covers both the physical and the psycho-social elements of health to enhance employee performance, and motivation, ensure their employability and to reduce illness-related costs. We promote awareness of personal health among all employees, through special action days at individual sites for example. Also, we offer advisory and assistance services especially for employees traveling on business to a foreign country or staying abroad. In the event of any medical emergencies or safety risks, our employees can obtain assistance by phone or find help on-site at all times. In France and Germany, employees experiencing professional and personal problems can consult with an external support service at no charge. Vice presidents in Germany may take advantage of an annual medical checkup at a selected partner clinic.

High Safety Standards

Sartorius Stedim Biotech has high safety standards to further reduce job-related medical conditions, risks to health and potential causes of industrial accidents. We draw on the standards of the International Labor Organization as well as on national regulations and recommendations. The job safety and occupational conditions are continuously improved. In this effort, we are responsive to the concerns of our employees as well: At the Aubagne site, for example, we operate a special program that implements specific improvements suggested by employees to prevent potential health hazards. Regular employee training on occupational health and safety, as well as on environmental protection, ensures that employees can recognize risks and avoid them. At our local Group locations, work safety committees confer regularly to discuss measures that promote health and prevent work-related accidents.

Statistics on Accidents at Work

	2016	2015
Number of work accidents ¹⁾	70	41
Number of days lost due to work accidents ²⁾	1,350	1,710
Frequency rate ³⁾	8.8	6.0
Severity rate ⁴⁾	170.4	250.5

¹⁾ Excluding accidents that occurred during the employee's travel between home and work

²⁾ Measured in calendar days

³⁾ Represents the number of accidents per 1,000,000 theoretical working hours (theoretical working hours in 2016: 7,921 448.09)

⁴⁾ Represents the number of days lost through accidents per 1,000,000 theoretical working hours

In the reporting year, the number of days lost due to work-related accidents decreased by 360 days compared with 2015, although the absolute number of work accidents rose from 41 in 2015 to 70 in the reporting year. The severity rate also shows that the majority of these accidents did not entail any very severe injuries; this figure dropped by 80.1 days per million workhours to 170.4 days. With regard to the higher headcount, the frequency rate did not increase proportionally and was 8.8 compared with 6.0 in the previous year.

A Trusting Relationship Between Employer and Employees

One aspect of our corporate culture is that we regularly and promptly share information with our employees about our financial progress, strategic objectives and changes within the company. This information is disseminated in internal notices, newsletters and the company magazine, among other means of communication. Our Group companies also comply with the national regulations governing the minimum reporting deadlines regarding changes to operations.

In France, Sartorius Stedim Biotech staff is represented by three employee councils; this also applies for the German sites. These employees' councils hold regular staff meetings. In 2016, 17 collective agreements were signed at the French sites, of which two were collective agreements on health insurance. At the German locations, 11 collective agreements were signed. These agreements cover topics such as profit sharing, retirement, reintegration after a long absence or temporal relocations to other premises.

Ecological Sustainability

Sustainable production and ecological product innovations are key to our long-term financial success. Sartorius Stedim Biotech designs its manufacturing processes to conserve resources, and offers products that are not only efficient and safe, but also provide added ecological value for our customers. Growth coupled with underproportionate use of natural resources – this is a goal we achieve at various levels.

The focal points of our ecological sustainability management are compliance with environmental regulations, efficient handling of our energy, water and waste resources and the further eco-friendly development of our products.

Information on health and safety measures adopted for Sartorius Stedim Biotech employees is described on page 40.

Again in 2016, no specific environmental risks requiring provisions to be set up were identified.

High Standards in Quality and in Environmental Protection

At Sartorius Stedim Biotech, an increasing number of manufacturing companies apply for certification with international standards, thus continuously widening the scope. Currently, all our manufacturing sites are certified according to internationally recognized quality standards (ISO 9001), apart from Tagelswangen in Switzerland, which employs around 50 staff members. An environmental management system according to ISO 14001 has been introduced at our two plants in Goettingen, Germany, as well as in Aubagne, France, and in Bangalore, India. Related to the average number of employees working at our manufacturing sites (2016: 3,825), 56% of these sites meet the requirements of this international standard for environmental protection. These two management systems ensure that we comply with quality requirements in the manufacture of our products, conserve the resources we use and prevent environmental risks. We also operate an energy management system according to ISO 50001 at our two plants in Goettingen and the one in Guxhagen, where we manufacture equipment and systems for biopharmaceutical production. In relation to the average number of employees, this represents 40% of all our manufacturing sites.

Continuous Improvement of Processes

Supported by regular EHS meetings and briefings, persons responsible for EHS at our international sites ensure that the company complies with the relevant environmental laws, regulations and standards. The company's international Environmental, Health and Occupational Safety Steering Group gives recommendations for harmonizing and continuously improving our processes in these three areas worldwide. In 2016, we introduced a software solution to also standardize and accelerate the process of global data acquisition. Starting in 2017, the data on sustainability will be centrally collected by this system.

Promoting Consumer Health and Safety

Sartorius Stedim Biotech does not supply its products directly to end consumers, but rather to manufacturers of pharmaceuticals, foods and chemicals. A high level of product quality and delivery reliability is critical for our customers in these strictly regulated industries. The company employs rigorous quality checks and advanced manufacturing methods and processes, such as cleanroom technology, to ensure that these products, when used as intended, comply with current Good Manufacturing Practices (cGMPs) and do not pose any risk to health or safety.

Our methods and processes are subject to constant review as part of our continuous improvement policy, moreover, and are refined appropriately as requirements evolve. The high standard of quality achieved in Sartorius Stedim Biotech products and processes is documented both by our successful completion of a host of annual audits by customers and our certification according to the standards for quality (ISO 9001) and for quality management for medical devices (ISO 13485). Detailed application brochures, as well as our service team, provide guidance to the customer on the correct use of our products. To respond rapidly to any product defects and minimize any adverse consequences, we have established a traceability system that enables us to recall entire product batches immediately, if necessary.

Energy Consumption and Greenhouse Gases

As a technology company that manufactures products, Sartorius Stedim Biotech consumes the major part of its energy at its 15 production sites. Our largest site in Goettingen accounts for 72.2% of the energy used by all our manufacturing plants. For this reason, it is a focal point of our energy-saving measures and plays a pioneering role.

Emissions Monitoring in Line with the Greenhouse Gas Protocol

Since 2013, Sartorius Stedim Biotech has been using the Greenhouse Gas Protocol (GHG) – a global standard for recording greenhouse gas emissions – as a guide for reporting its CO₂ emissions. We thus account for emissions not only of CO₂, but of all gases of relevance to climate change, and report them in CO₂ equivalents (CO_{2eq}). Currently, we report climate-relevant emissions that are directly given off by our production sites (Scope 1). We also report energy indirect emissions that arise during power generation by external energy suppliers (Scope 2). Other greenhouse gas emissions that are produced, for instance, in the manufacture of precursor products or through distribution (Scope 3) are analyzed only at our plant for single-use bags in Aubagne. We are considering phased integration of Scope 3 greenhouse gas emissions, which are time-consuming to record and calculate.

Energy Consumption and Greenhouse Gases

	2016	2015
Total energy consumption in MWh	88,437	90,404¹⁾
- of which electricity	47,100	42,746
- of which natural gas	37,589	43,652 ¹⁾
- of which fuels ²⁾	2,024	2,331
- of which other energy sources ³⁾	1,725	1,675
Total Greenhouse Gas Emissions in t CO_{2eq}⁴⁾	27,255	24,218¹⁾
- Scope 1 ⁵⁾	10,886	9,668 ¹⁾
- Scope 2	16,369	14,551
Key Indicators		
CO _{2eq} -Emissions per employee in t ⁶⁾	7.1	7.4

¹⁾ Adjusted

²⁾ Data range covers diesel consumption for electricity generators

³⁾ Including liquid gas

⁴⁾ Emissions in t of CO_{2eq} were calculated by the University of Applied Sciences and Arts Goettingen using emission factors listed in professional software called "Gabi"

⁵⁾ Excluding fuel consumption for car fleet

⁶⁾ Applies to the average number of employees at manufacturing sites; 2016: 3,825

Primary energy sources, such as coal, oil and natural gas, represent 46% of our total energy consumption, with natural gas accounting for a major share. Secondary energy, such as electricity generated by primary energy sources, constitutes 53% of our power requirements. Regenerative energy covers 1% of the Group's needs.

At our Goettingen site, we produce our own electricity and heat using two combined heat and power plants, but we purchase most of our electricity from suppliers.

Emissions from the consumption of electricity are classified as Scope 2 and account for two-thirds of our emissions of relevance to climate change. One-third of these emissions primarily result from the use of fossil fuels (Scope 1).

Emissions from solvents, which occur only in filter manufacturing at the Goettingen and Yauco sites, amounted to 45.3 metric tons total carbon in the reporting year, (2015: 40.6 metric tons). The proportion of the total carbon relevant to greenhouse gas emissions has been taken into account when calculating the CO_{2eq} figure.

Climate Footprint at the Aubagne Site

Scope 1, 2 and 3 emissions at the Aubagne site for manufacturing single-use bags have been assessed for quite some years according to the "Bilan Carbone" method developed by the French Environment and Energy Management Agency (ADEME). It also includes indirect greenhouse gas emissions generated by preliminary and subsequent steps across the value-added chain. Results for 2014, the most recent year analyzed, yields the following distribution: Over half of our ecological footprint is caused by freight transport (29%) and by preliminary products that Sartorius Stedim Biotech sources from its suppliers (22%). Business travel and work-related commuting by employees contributes 20% to the generation of greenhouse gas emissions; energy consumption in buildings, 10% packaging; 9%. Based on these data, the site set up a plan of action for ongoing reduction in CO₂ emissions.

Use of Advanced Technology to Reduce CO₂

Sartorius Stedim Biotech is adapting to the negative consequences of climate change and endeavoring to continuously reduce greenhouse gas emissions associated with its business. In addition, more efficient use of energy is economically sensible.

At our site in Goettingen, we employ state-of-the-art technology, such as two energy-efficient combined heat and power plants, an advanced compressed air center for controlling and regulating production equipment, and intelligent control systems. We thus lower our carbon dioxide emissions by about 7,000 tons each year. The company's energy management system facilitates systematic identification of additional energy savings potential.

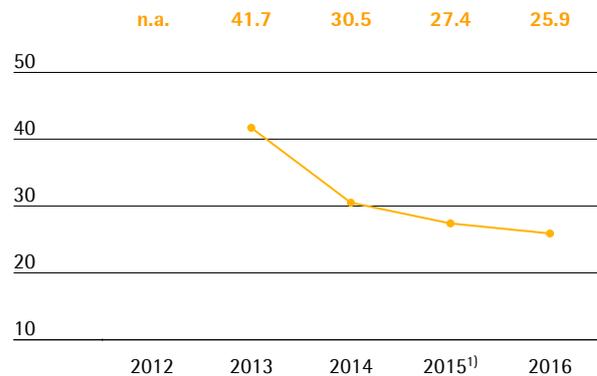
At its international sites as well, Sartorius Stedim Biotech continuously develops its manufacturing processes and enhances its building facilities to conserve resources. Particularly at our new buildings, we are increasing the proportion of renewable energy sources in our energy mix.

Sartorius Stedim Biotech reduces transportation routes that burden the environment by supplying the various markets directly from its local production facilities. Where possible and practical, we ship via environmentally friendlier sea freight instead of air freight. We also work to minimize energy consumption caused by business travel, for example, by making greater use of teleconferencing as well as video conferencing.

The success of these and other eco-friendly measures is reflected in the company's overall energy consumption and greenhouse gas emissions, which have increased at a much lower rate over the last few years than the company's expansion in terms of sales revenue.

Development of CO_{2eq} Emissions

Related to annual sales in t/€ in millions



¹⁾ Adjusted

Water Consumption

We consider water a valuable resource and use it responsibly at our sites. The company takes care to reduce water consumption and soil sealing, particularly at its manufacturing plants located in baseline water stress areas according to the Aqueduct Water Risk Atlas, such as Yauco or Bangalore. Most of the water we use is for rinsing in the manufacture of filter membranes according to the precipitation bath method at the Goettingen site.

Water Consumption

	2016	2015
Water consumption in cbm	385,333	336,917
Water consumption per employee in cbm ¹⁾	101	103
Wastewater Biological Oxygen Demand-BOD ²⁾ in t	213	243

¹⁾ Applies to the average number of employees at manufacturing sites; 2016: 3,825

²⁾ Contaminated wastewater only; without sanitary wastewater

We primarily draw water from public sources, but also use surface water. The amount of wastewater discharged into public sewage systems roughly corresponds to total water consumption, plus rainwater drainage. The biochemical oxygen demand is determined for production wastewater classified as significant. This figure identifies the amount of dissolved oxygen needed to break down organic material present in wastewater.

Sustainable Use of Water Resources

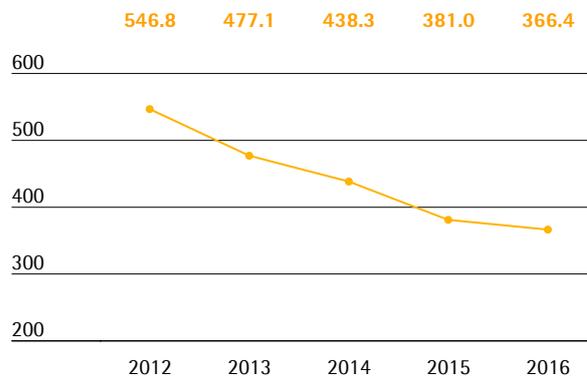
When expanding our membrane production capacity at the Goettingen site, we purch

ased advanced casting machines that need considerably less water for rinsing procedures than earlier machine generations. Our own water treatment plants that we operate at our large production sites also help ensure efficient use of water. Based on the low water usage strategy implemented at our green facility in Yauco, we reduce its consumption of drinking water by approximately 85% compared with a conventional plant, for example by using rain water. In Bangalore, we minimized sealing of the production facility grounds, and large green spaces enable rainwater to seep into the soil.

Our water consumption has also been considerably decreasing since 2012 in proportion to our increasing sales revenue.

Development of Water Consumption

Related to annual sales in cbm/€ in millions



Waste

We strive to reduce waste and, by using waste sorting systems, contribute toward recycling reusable materials and lowering the proportion of waste stored in landfills. All of our local sites are requested to develop appropriate measures according to the national legal requirements and options as well as internal policy.

Amount of Waste

	2016	2015
Total amount of waste in t	4,025	3,471
- of which waste for recycling	2,307	1,712
- of which waste for disposal	1,718	1,759
Waste per employee in t ¹⁾	1.05	1.06
Recycling rate in %	57	49

¹⁾ Applies to the average number of employees at manufacturing sites; 2016: 3,825

Sartorius Stedim Biotech complies with the European Directive on Waste from Electrical and Electronic Equipment (WEEE).

At our sites in Germany, where about 40% of total waste is produced, we use an electronic signature for hazardous materials, such as acids and oils. As a result, we document the production of hazardous waste and provide digital proof of its proper recovery and/or disposal, ensuring that such waste is fully tracked from end to end.

To use less polyethylene packaging, we have switched delivery of polypropylene from sacks to silos for the manufacture of injection-molded components for single-use products.

We give away unsold food from our cafeterias in Goettingen to a local charity organization. Any food that cannot be donated is sent to a biogas facility for anaerobic digestion to generate biogas from this organic food waste.

Waste is primarily disposed of in the countries, where such waste is created. Exceptions to this principle are only made in justified cases. For instance, the Mohamdia site sends a small part of its waste to Aubagne to be disposed of properly.

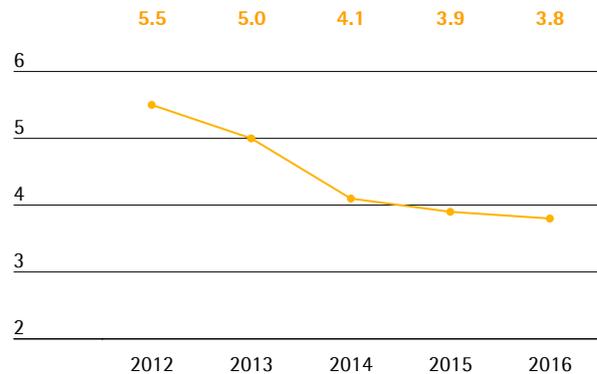
Return of Recyclable Materials

Organic solvents, which we need for manufacturing membranes for filter cartridges, are recovered and recycled. The Goettingen facility, which accounts for most of our solvent usage, has a solvent reprocessing plant on site so that solvents can be reused in production operations. In this way, we maintain closed-loop material cycles, minimize transportation requirements and reduce the quantities of water used and wastewater produced. By conducting our own research and development, we also continuously lower the relative volume of solvents needed for membrane manufacture.

As a supplier for the pharmaceutical industry, Sartorius Stedim Biotech is currently prohibited by regulatory requirements from using recycled plastics on the grounds of product safety. In Germany, we consistently employ special waste disposal companies that send plastic waste for recycling or have it disposed of in an environmentally responsible way. In France, energy-rich, but composite, plastic waste resulting from our bag manufacture is reused to generate energy by incineration in a special power plant. A large proportion of polymer waste is separated and collected according to type of material, such as polyamide and polyethylene, for recycling as secondary materials.

Development of Waste

Related to annual sales in t/€ in millions



Use of Raw Materials According to Legal Regulations

Based on an international ERP software standard in use, Sartorius Stedim Biotech developed a hazardous materials management system that enables chemicals to be selected within the Group by a release process. As a result, it is also possible to provide safety data sheets for customers as well as instructions for the in-house use and handling of such hazardous substances. The legal basis for releasing such materials is constituted by global and national regulations, such as REACH ("Registration, Evaluation, Authorisation of Chemicals"), and GHS ("Globally Harmonised System"), as well as RoHS ("Restriction of the use of certain hazardous substances in electrical and electronic equipment").

We defined three types of raw materials as particularly important for manufacturing our products: chemicals and solvents for membranes for filter cartridges, polymers for single-use materials and stainless steel for reusable bioreactors and systems. In 2016, we purchased 5,216 metric tons of chemicals and solvents (2015: 4,325 metric tons) and 1,568 metric tons of polymers (2015: 1,467 metric tons). The quantity of stainless steel decreased to 869 metric tons (2015: 25,870 metric tons). These figures may vary to some extent as they reflect the quantities purchased and not the amounts used.

According to its general manufacturing policy, Sartorius Stedim Biotech has a high in-house manufacturing rate, which is nearly 100% in some cases, such as for filter membranes. Regarding trading goods, Sartorius Stedim Biotech spent €52.5 million in the reporting year (2015: €53.9 million), mainly for supplies sourced from companies based in Europe and the U.S. This equates to a rate of just under 5% of sales revenue.

Environmentally Friendly Expansion of the Group's Infrastructure

We invest continuously in new plants and plant expansions to accommodate our constant growth. In the process, we comply with local regulations and practices for land use. We also reduce the impact on the environment by selecting areas for its premises that are already developed as industrial zones. None of our production sites is situated in nature reserves or in intact ecosystems. Where possible, we maximize green space and minimize impermeable areas at our facilities. A good example of this is our site in Bangalore. Although we generally estimate that our impact on biodiversity is negligible, Sartorius Stedim Biotech strives to meet the special protection needs of biodiversity hotspots where our factories in Tunisia and Puerto Rico are located. For example, our site in Puerto Rico, which was expanded in 2012 to serve as the central manufacturing and logistics site for the North American market, meets the highest U.S. standards for green, resource-saving and efficient construction. We became the first pharmaceutical industry supplier worldwide to achieve Platinum-level certification under the U.S. Green Building Council's LEED initiative. As part of the expansion of the Goettingen site, we are seeking to gain certification from the German Sustainable Building Council.

At our other sites, too, we integrate advanced ecological utilities and technologies for lowering energy consumption, preventing waste, limiting noise pollution for employees and reducing scrap that results from manufacturing processes. In doing so, we often exceed the requirements imposed on us by local environmental protection regulations.

Because our manufacturing plants are mostly situated in industrial areas, noise pollution for residents is not a relevant issue for the company.

Sustainable Product Innovations

Our efforts to optimize the environmental performance of our products and production methods begin at the research and development stage. We reduce the amount of packaging and increase the share of environmentally friendly raw materials when such steps do not affect the safety and functionality of products and packaging. Sartorius Stedim Biotech also works with partners from industry and the scientific community on sustainable product solutions and efficient use of raw materials.

High-Performance Products Improve Customers' Environmental Footprint

Single-use products are becoming increasingly widespread in the manufacture of innovative, effective medications. They are not only practical under economic aspects, but also provide ecological benefits. Studies have shown that single-use products are far superior to complex reusable systems in their consumption of energy, water and chemicals over a product's lifecycle. Experts have compared approaches based primarily on reusable materials with those based predominantly on single-use materials across various scenarios, which included a typical industrial manufacturing process for monoclonal antibodies. The result is clear-cut: manufacturers employing mostly single-use solutions use around 87% less water and 30% less energy. In addition, the experts found that the deployment of single-use solutions reduces the size of production units. Manufacturers are said to require 30% less space, thus also saving energy and materials. Other studies have confirmed that the energy needed for sterilization, cleaning and materials in processes based on single-use products is around half that of conventional processes.¹⁾

Although single-use products have clear ecological benefits, their usage generates more waste. Yet consistent reuse and recycling can improve environmental performance here as well. The ultrapure plastics we utilize to manufacture our various single-use products contain around 80% to 90% of the energy of pure crude oil and are thus valuable secondary raw materials. The high energy content of polymers, for example, means that they can be reused as fuel in heat and | or for power generation.

The integrated solutions of the Sartorius Stedim Biotech FlexAct product range are a further example of this approach: Beyond the ecological benefits generally offered by single-use technologies, FlexAct solutions reduce the need for stationary installation of equipment and thus the quantity of materials and land required. The versatile central control unit of FlexAct, for instance, can be used in a number of different biopharmaceutical processes.

Technical refinements made by our R&D specialists to the Sartopore Platinum membrane filter series slashed consumption of ultrapure water for wetting and rinsing the membranes by around 95%. The filters' significantly lower adsorption lessens the amount of expensive protein solutions lost. As a result, pharmaceutical manufacturers can substantially reduce resources, while recovering higher yields.

Our Services unit assists customers in adapting solutions optimally to their requirements on site. We always analyze customer processes as a whole and identify potential for both financial and ecological improvements. In this way, we contribute to increasing the efficiency and environmental compatibility of our customers' processes.

¹⁾ Sinclair A., Lindsay I., et al.: The Environmental Impact of Disposable Technologies. *BioPharm Int.* November 2, 2008. www.biopharmservices.com/docs/EnvironmentImpactDisposables.pdf. Rawlings B., Pora H.: Environmental Impact of Single-Use and Reusable Bioprocess Systems. *BioProcess Int.* February 2009: 18 - 25.

Contributing to Society

Our products help the pharmaceutical and biopharmaceutical industry to develop and manufacture medications at the forefront of technology. Single-use products, in particular, contribute toward faster development of new biopharmaceuticals that improve treatment of serious diseases, such as cancer and autoimmune illnesses. As a result, Sartorius Stedim Biotech is helping to supply society with safe, effective and affordable medical drugs.

Beyond this, our business activities have many positive effects on the progress of the cities and communities in which Sartorius Stedim Biotech has been operating for many years in most instances. Particularly at our production facilities located in small- to mid-sized cities and communities, such as our Goettingen, Guxhagen, Aubagne and Yauco sites, we rank among the important private employers and customers in their regions, contributing to the growth and purchasing power of such communities.

Together with our cooperation partners, we are actively involved in shaping the economic and social environments around our sites, focusing on areas that are directly or indirectly affected by our business activities. By providing financial support to projects in education, culture, social affairs and sports, we additionally contribute toward making the regions in which we operate more attractive for current and future Sartorius Stedim Biotech employees alike.

Our social outreach activities targeting areas beyond our home regions concentrate on fields related to our core business. Fostering research and education and supporting events for the scientific community remain our chief priorities.

Sartorius Stedim Biotech is politically independent and does not provide financial or in-kind support to politicians or political parties.

Dedicated to the Local Environment

At our headquarters in Aubagne, a city with some 45,000 inhabitants, for instance, we provide attractive long-term jobs for more than 750 people. As a member of the large French employers' organization MEDEF, Sartorius Stedim Biotech collaborates closely with national and local institutes to help improve the job market situation. Our expanded Yauco plant provides employment for around 450 people directly with Sartorius Stedim Biotech, an increase of 17%

compared with 2015, and for around 120 additional people with local service providers and suppliers, such as for maintenance of machines and buildings and for plant security.

A Reliable Partner

Our local subsidiaries are involved alongside representatives from city councils, the industrial and social communities in initiatives to strengthen the competitiveness of their respective regions. Our corporate values of sustainability, openness and enjoyment guide us, also in our relationships with various local stakeholders. We remain a reliable partner for regional organizations. As part of our policy to maintain a constructive, open dialogue with the communities in which we are based, we inform them promptly and comprehensively about all our activities and developments that could affect them. We also involve them in our projects, where possible and expedient.

In 2016, for instance, Sartorius Stedim Biotech continued a trainee program for refugees from the Middle East and Africa as part of its activities in cooperating with the city of Goettingen and the local employment agency. In 2015, we had launched a similar program and were able to offer job perspectives to many of the refugees at the end of this initiative.

At our subsidiary in Yauco, Puerto Rico, we work with more than ten local schools, and award around 20 scholarships annually to especially talented high-school and university students from low-income families. In addition, visits to the company are organized to motivate these young people to begin vocational training or university studies. We also sponsored a variety of youth sports teams and other local sporting events, as well as supported two local organizations that look after homeless people in Yauco.

Christmas Donation Instead of Gifts

Besides its regional social engagement, Sartorius Stedim Biotech also has been supporting international non-profit organizations since 2014 by making charitable donations as part of the company's "Christmas Donations Instead of Gifts" initiative. In the reporting year, we again donated €50,000 to the

global medical aid organization action medeor, which supplies life-saving medications to a mobile health clinic in difficult-to-access regions of northern Iraq.

Alliances with Research and Educational Institutions

Promoting academic excellence and interdisciplinary communication are key aspects of our long-term alliances with research and educational institutions.

At Group headquarters in Aubagne, we collaborate with several schools and universities, which included the École Nationale Supérieure de Technologie des Biomolécules in Bordeaux, to support the education and training of biotechnology engineers and business administrators and help young graduates start off their careers. We also cooperate closely with higher institutes of learning, such as the Institut Universitaire de Technologie, Hygiène, Sécurité, Environnement in Le Ciobat and the Kedge Business School in Marseille.

Sponsoring Events for the Scientific Community

As a partner of the pharmaceutical and biopharmaceutical industries, Sartorius Stedim Biotech regularly contributes to symposia, conventions and annual conferences, which cover subjects such as the development of antibodies and vaccines, single-use systems and microbiological analysis. For instance, we regularly support the international and regional annual conferences of the International Society for Pharmaceutical Engineering (ISPE), an independent not-for-profit association dedicated to employee education and information-sharing across the pharmaceutical industry worldwide.