Facts & Figures

Report profile

Part of the non-financial report

We have a long tradition of corporate responsibility reporting, with this being our ninth Corporate Responsibility (CR) Report. This started in 1993 as a series of environmental reports describing how we fulfill our responsibility to society, but then evolved in 2003 into a full CR Report that was released every two years. Since 2016, we've been publishing this report on an annual basis.

With transparency as a key goal, we aim to inform our stakeholders of our activities and successes, as well as the challenges we face. Our 2017 Corporate Responsibility Report is the first time we've met the requirements for a combined separate non-financial report as defined in the CSR Directive Implementation Act that took effect in Germany in 2017. An index on the non-financial report (p. 164) provides an overview of the relevant content. This CR Report also documents the progress we've made in implementing the principles of the United Nations Global Compact (Communication on Progress (p. 190)) and meets the criteria of the German Sustainability Code (DNK). Our Statement of Compliance with the DNK can be accessed via the DNK database.

Reporting framework

This CR report covers fiscal 2017 and pertains to our entire Group including our subsidiaries across 66 countries. Any deviations from this reporting framework are indicated on a case-by-case basis.

Data collection and consolidation systems

Since 2005, we've been using a Group-wide electronic data acquisition system to collect environmental and occupational health and safety data, which is input locally at our individual sites and approved following review. To maximize the quality of this data, we support the sites in optimizing their collection processes and their corresponding quality assurance measures. Moreover, our Group function Environment, Health, Safety, Security, Quality (EQ) conducts internal EHS audits that review both the processes and the data provided.

We compile environmental performance indicators from all our production sites across the Group, as well as those warehouse and research sites that are relevant in terms of their environmental impact and employee count. The scope of consolidation therefore covers all Group sites that have relevant impacts on the environment.

The data on employees and community outreach pertain to our entire Group. All employee master data is continually updated in an SAP database. We use community data management software to log data pertaining to our community involvement at subsidiary level.

Some employee data is only disclosed for select sites or countries, which is accordingly indicated in the respective text passages.

Determining report content

We align the content of our CR Report with the internationally recognized guidelines of the Global Reporting Initiative (GRI) and the principles of completeness and materiality, as well as input from our stakeholders. This report has been prepared in accordance with the GRI Standards: 'Comprehensive' option. Moreover, we have taken into consideration the requirements of the capital market for assessing companies' sustainability performance.

In 2016, we performed a comprehensive materiality assessment to determine the CR topics of relevance to our Group. In 2017, experts from the responsible business sectors reviewed these issues and validated them once again, taking into account current trends. Moreover, as stipulated by Section 289c (2) of the German Commercial Code (HGB), we checked the topics validated in 2017 for "double materiality". We have derived the content of this CR report from the results of the materiality assessment, addressing all issues identified as material. Detailed information on the materiality assessment and the materiality matrix can be found under Materiality (p. 22).

Our Executive Board has reviewed and approved this report. The content of the non-financial report has also been reviewed by the Supervisory Board in accordance with Section 111 (2) of the German Stock Corporation Act (AktG).

External audit

KPMG AG Wirtschaftsprüfungsgesellschaft has audited the annual financial statements and management report of the Merck Group for the fiscal year spanning January 1 to December 31, 2017 and issued an unqualified opinion. Furthermore, after undergoing a limited assurance audit, our company has received an independent audit certificate for the following criteria:

- Strategy & management
- Products
- Employees
- Environment
- Suppliers
- Community
- Facts & figures

The additional content provided on the company's websites and external webpages indicated in this report is not part of the non-financial report or information assured by KPMG.

Contact:

We welcome your feedback and are happy to answer any questions.

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This CR Report was published in April 2017. Our next CR Report is scheduled for publication in April 2019.

Economics

Net sales, operating result (EBIT) and research and development costs, by business sector

€ million	Healthcare	Life Science	Performance Materials	Group[1]
2016				
Net sales	6,855	5,658	2,511	**15,024**
Operating result (EBIT)	1,593	556	823	**2,481**
R&D costs	1,496	260	213	**1,976**
2017				
Net sales	6,999	5,882	2,446	**15,327**
Operating result (EBIT)	1,447	834	689	**2,525**
R&D costs	1,632	241	225	**2,140**

1 As a non-operating segment, Corporate and Other is not shown here as a separate item, but rather under Segment Reporting in our 2017 Annual Report.

compliance

Part of the non-financial report

Internal audits on corruption and Human Rights Charter

	2014	2015	2016[1]	2017 Merck Group	2017 thereof Merck KGaA[2]
Number of audits relating to corruption	36	49	55	50	13
% of audits relating to corruption	68	64	68	65	17
Number of audits relating to the workplace requirements of our Human Rights Charter	32	41	47	45	12

1 Includes Sigma-Aldrich as of 2016
2 Includes global audits which are conducted at the headquarters in Darmstadt and/or the management of the audited function is reporting into KGaA.

In 2017, we audited 16% of all Merck subsidiaries (status June 2017, excluding minority holdings), covering approximately 30% of all sales generated between the third quarter of 2016 and the second quarter of 2017.

In 2017, during 45 of our audits conducted in 22 countries, we additionally reviewed workplace parameters as per our Human Rights Charter. No violations were identified.

Reported compliance violations

	2014	2015	2016[1]	2017 Merck Group	2017 thereof Merck KGaA
Total number of reported compliance violations					
Number of reported compliance incidents	26	33	36	39	1
Number of confirmed cases	11	8	12	14	1
confirmed cases by category					
Violation of the Merck Human Rights Charter	1	0	2	0	0
Bribery and Corruption	2	0	2	1	0
Violation of the Merck Pharmaceutical Guidelines	2	2	4	2	0
Violation of Data Privacy and Confidentiality Guidelines	0	1	0	2	1
Manipulation of Business Documents	0	0	2	1	0
Violation of cartel laws and fair competition rules	0	1	0	0	0
Infringements in the areas of finance, accounting and banking	0	0	0	0	0
Theft and fraudulent Actions against Merck	1	2	1	1	0
Other violations of the Merck Compliance Principles for the relations with Business Partners	0	0	1	2	0
Other violations of Merck values, internal guidelines or legal requirements	5	2	0	5	0

1 Includes Sigma-Aldrich as of 2016

In 2017 there was a total of 14 confirmed compliance cases, 2 of which were already reported in 2016, but closed in 2017.

Compliance training

	2014[1]	2015	2016[2]	2017 Merck Group	2017 thereof Merck KGaA
Total number of persons trained on anti-corruption guidelines[3]	**7,519**	**20,404**	**29,764**	**17,044**	**2,326**
Total number of employees trained on anti-corruption guidelines	**5,496**	**17,378**	**25,889**	**13,345**	**1,450**
% of employees trained on anti-corruption	14	43	51	25	14
by employee category					
Number of Role 2+ employees trained on anti-corruption	3,071	12,747	14,379	7,080	635
% of Role 2+ employees trained on anti-corruption	17	64	84	27	13
% of employees below Role 2 trained on anti-corruption	12	22	34	24	15
by region (%)[4]					
Europe	–	–	54	18	14
North America	–	–	57	46	not applicable
Asia-Pacific (APAC)	–	–	38	25	not applicable
Latin America	–	–	52	19	not applicable
Middle East and Africa (MEA)	–	–	66	29	not applicable

1 In Q1 – Q3 2014, Group Compliance performed a thorough analysis and review of its Compliance Training Program. No courses were scheduled for these quarters.
2 Includes Sigma-Aldrich as of 2016
3 Includes contractors, external supervised workers (e.g. temps) and contract partners working on-site who were trained on anti-corruption guidelines (2017: 3,699).
4 As of 2016, we are also reporting the training rate by region. No such data was tracked for the preceding years.

In order to address the special responsibility held by management personnel, as well as by staff with HR responsibility, these employees are increasingly receiving training on anti-corruption guidelines. This applies to all employees rated Role 2+.

Our compliance and anti-corruption principles are communicated to all our business partners, who undergo a Business Partner Risk Management (BPRM) process.

Training increased in 2016 due to the initial integration of employees of Sigma-Aldrich, a company acquired at the end of 2015.

Legal actions

	2014	2015[1]	2016	2017 Merck Group	2017 thereof Merck KGaA
Total number[2] of legal actions pending or completed (for anti-competitive behavior, violations of anti-trust or violations of monopoly legislation)	**2**	**2**	**2**	**3**	**2**
pending	2	2	2	3	2
completed	0	0	0	0	0

1 Includes Sigma-Aldrich as of 2015
2 As published in the annual reports, the herein listed total number of legal actions refers to the significant legal risks as per the company's definition. The significance of legal risks is based on potential negative effects on projected financial objectives as well as on the probability of occurrence.

For further information please see our annual reports:

- Annual Report 2014, pages 130-131 and pages 213-215, no. 48
- Annual Report 2015, pages 128-129 and pages 212-213, no. 27
- Annual Report 2016, pages 135-136 and pages 228-229, no. 26
- Annual Report 2017, pages 148-150 and pages 252-254, no. 27

Products

Part of the non-financial report

Customer privacy[1]

	2014	2015	2016	2017[2]
Total number of substantiated complaints received from outside parties	0	0	0	0
Total number of complaints from regulatory bodies	1	0	0	0
Total number of identified leaks, thefts, or losses of customer data	0	0	1	0

1 This data only reflects incidents classified as significant.
2 Includes Sigma-Aldrich as of 2017

Employees

Part of the non-financial report

Total number of employees

As of Dec. 31	2014	2015[1]	2016	2017 Merck Group	2017 thereof Merck KGaA
Total number of employees	**39,639**	**49,613**	**50,414**	**52,941**	**10,677**
Men	23,273	28,997	28,848	30,083	6,779
Women	16,366	20,616	21,566	22,858	3,898

1 Includes Sigma-Aldrich as of 2015

Number of employees by hierarchical level[1]

As of Dec. 31	2014	2015[2]	2016[2]	2017 Merck Group[2]	2017 thereof Merck KGaA
Total employees	**39,639**	**49,613**	**50,414**	**52,941**	**10,677**
Senior management (Role 6+)	118	146	181	197	90
Middle management (Role 4 & 5)	1,973	2,211	2,685	2,927	1,037
Low management (Role 3)	6,109	6,622	8,139	8,904	2,451
Other employees (below Role 3)	31,439	40,634	39,409	40,913	7,099
% of women (total)	**41**	**41**	**43**	**43**	**37**
thereof in senior management (Role 6+)	20	21	25	30	16
thereof in middle management (Role 4 & 5)	539	611	805	917	319
thereof in low management (Role 3)	2,385	2,636	3,361	3,714	950
thereof other employees (below Role 3)	13,422	17,348	17,375	18,197	2,613
% of men (total)	**59**	**59**	**57**	57	63
thereof in senior management (Role 6+)	98	125	156	167	74
thereof in middle management (Role 4 & 5)	1,434	1,600	1,880	2,010	718
thereof in low management (Role 3)	3,724	3,986	4,778	5,190	1,501
thereof other employees (below Role 3)	18,017	23,286	22,034	22,716	4,486
by age group **Up to 29 years old (%)**	**15**	**15**	**15**	**15**	**15**
thereof in senior management (Role 6+)	0	0	0	0	0
thereof in middle management (Role 4 & 5)	6	5	7	3	3
thereof in low management (Role 3)	127	130	183	194	100
thereof other employees (below Role 3)	5,750	7,424	7,229	7,479	1,486
30 to 49 years old (%)	**64**	**64**	**62**	**62**	**55**
thereof in senior management (Role 6+)	64	68	76	72	33
thereof in middle management (Role 4 & 5)	1,264	1,407	1,670	1,782	648
thereof in low management (Role 3)	4,424	4,770	5,784	6,308	1,670
thereof other employees (below Role 3)	19,703	24,815	23,996	24,733	3,487
50 years or older (%)	**21**	**21**	**23**	**23**	**30**
thereof in senior management (Role	54	78	105	125	57

1 In 2017, we switched our job architecture from a Global Grading System to Roles. Figures have been retroactively adjusted for previous years.

2 From 2015 on, these figures include Sigma-Aldrich, however as of Dec. 31, 2017 the job grading system had not yet been implemented for employees of Sigma-Aldrich legal entities in Germany, or for employees of Allergopharma. These employees are included under "thereof other employees (Role 3 and below)".

Number of employees by hierarchical level[1]

As of Dec. 31	2014	2015[2]	2016[2]	2017 Merck Group[2]	2017 thereof Merck KGaA
6+)					
thereof in middle management (Role 4 & 5)	703	799	1,008	1,142	386
thereof in low management (Role 3)	1,558	1,722	2,172	2,402	681
thereof other employees (below Role 3)	5,986	8,395	8,184	8,701	2,126

1 In 2017, we switched our job architecture from a Global Grading System to Roles. Figures have been retroactively adjusted for previous years.

2 From 2015 on, these figures include Sigma-Aldrich, however as of Dec. 31, 2017 the job grading system had not yet been implemented for employees of Sigma-Aldrich legal entities in Germany, or for employees of Allergopharma. These employees are included under “thereof other employees (Role 3 and below)”.

Average number of employees by functional area

Average number of employees	2014[1]	2015[2]	2016[2]	2017[2]
Group	**38,930**	**41,511**	**50,439**	**52,053**
Thereof women	**16,110**	**17,180**	**21,136**	**22,353**
Production	10,176	11,563	14,829	15,571
Thereof women	3,202	3,642	4,698	5,059
Logistics/ Supply Chain[3]	2,207	2,581	3,955	3,729
Thereof women	774	913	1,459	1,442
Marketing and Sales/ Commercials[3]	12,113	12,871	14,887	15,115
Thereof women	4,814	5,204	6,401	6,609
Administration	6,342	6,763	8,190	9,286
Thereof women	3,557	3,757	4,421	4,798
Research and Development	4,738	5,097	6,249	6,789
Thereof women	2,534	2,674	3,274	3,591
Infrastructure and Other	3,354	2,636	2,329	1,564
Thereof women	1,230	990	883	854

1 Average headcount (HC) 2014 is calculated based on the End HC of the last 5 quarters divided by 5.

2 The average employee headcount for 2015 through 2017 is calculated by adding up all employees at the end of each of the last 13 months, and dividing this total by 13. Employees of Sigma-Aldrich, a company acquired in November 2015, are only included in the employee headcount calculations as of November 2015.

3 In conjunction with the new job architecture implemented in 2017, some functional areas have been renamed and reorganized. Due to the new structure from 2017 on, it will only be possible to deliver a limited trend forecast in a year-on-year comparison.

Number of employees by region

As of Dec. 31	2014	2015[1]	2016	2017 Merck Group	2017 thereof Merck KGaA
Total	**39,639**	**49,613**	**50,414**	**52,941**	**10,677**
Europe	**20,537**	**23,429**	**24,438**	**25,980**	**10,677**
women	8,893	10,316	10,884	11,627	**3,898**
women (%)	43	44	45	45	37
Number of employees with temporary contracts	906	1,079	1,031	1,279	513
% of employees with temporary contracts	4	5	4	5	5
North America	**5,092**	**9,794**	**10,037**	**10,520**	**0**
women	2,272	4,183	4,308	4,518	not applicable
women (%)	45	43	43	43	not applicable
Number of employees with temporary contracts	18	22	122	138	not applicable
% of employees with temporary contracts	0.4	0.2	1	1	not applicable
Asia-Pacific (APAC)	**9,488**	**11,096**	**10,754**	**11,294**	**0**
women	3,176	3,706	3,981	4,298	not applicable
women (%)	33	33	37	38	not applicable
Number of employees with temporary contracts	156	1,888	2,231	2,603	not applicable
% of employees with temporary contracts	2	17	21	23	not applicable
Latin America	**3,883**	**4,352**	**4,140**	**4,050**	**0**
women	1,745	1,986	1,910	1,896	not applicable
women (%)	45	46	46	47	not applicable
Number of employees with temporary contracts	28	43	40	40	not applicable
% of employees with temporary contracts	1	1	1	1	not applicable
Middle East and Africa (MEA)	**639**	**942**	**1,045**	**1,097**	**0**
women	280	425	483	519	not applicable
women (%)	44	45	46	47	not applicable
Number of employees with temporary contracts	111	127	153	172	not applicable
% of employees with temporary contracts	17	13	15	16	not applicable

1 Includes Sigma-Aldrich as of 2015

External contractors are currently not logged in our employee data system, nor do we currently have any plans to integrate them.

Employees by business sector

As of Dec. 31	2014	2015[1]	2016	2017
Healthcare employees	**17,757**	**18,566**	**18,837**	**19,795**
Thereof women	8,130	8,522	9,090	9,656
Thereof women (%)	46	46	48	49
Life Science employees	**9,796**	**18,611**	**19,178**	**19,607**
Thereof women	4,134	7,883	7,928	8,276
Thereof women (%)	42	42	41	42
Performance Materials employees	**5,995**	**6,228**	**5,469**	**5,529**
Thereof women	1,498	1,531	1,427	1,455
Thereof women (%)	25	25	26	26

1 Includes Sigma-Aldrich as of 2015

Employees by contract type

As of Dec. 31	2014	2015[1]	2016	2017
Total employees	**39,639**	**49,613**	**50,414**	**52,941**
Number of employees with permanent contracts	38,410	46,454	46,837	48,709
% of employees with permanent contracts	97	94	93	92
thereof women	15,826	19,034	19,741	20,741
thereof women (%)	41	41	42	43
Number of employees with temporary contracts	1,219	3,159	3,577	4,232
% of employees with temporary contracts	3	6	7	8
thereof women	536	1,563	1,744	2,117
thereof women (%)	44	49	49	50
full-time employees	37,573	47,292	48,056	50,498
% full-time	98	95	95	95
thereof women	14,497	18,557	19,457	20,677
thereof women (%)	39	39	40	41
part-time employees	2,066	2,321	2,358	2,443
% part-time	5	5	5	5
thereof women	1,869	2,059	2,109	2,181
thereof women (%)	90	89	89	89

1 Includes Sigma-Aldrich as of 2015

New employees

	2014	2015[1]	2016	2017 Merck Group	2017 thereof Merck KGaA
Total number of new employee hires	**6,212**	**5,710**	**7,085**	**7,285**	**1,032**
by age group					
Up to 29 years old	2,305	2,088	2,930	2,940	435
30 to 49 years old	3,361	3,252	3,736	3,848	543
50 or older	546	370	419	497	54
by gender					
Women	2,513	2,450	3,388	3,412	462
Men	3,689	3,260	3,697	3,873	570
by region					
Europe	2,312	2,119	2,689	3,058	1,032
North America	826	730	1,348	1,603	not applicable
Asia-Pacific (APAC)	2,298	1,913	2,201	1,955	not applicable
Latin America	619	780	636	497	not applicable
Middle East and Africa (MEA)	157	168	211	172	not applicable
Rate of new employee hires[2] (%)	**16**	**14**	**14**	**14**	**10**
by age group[3]					
Up to 29 years old	37	37	41	40	42
30 to 49 years old	54	57	53	53	53
50 or older	9	6	6	7	5
by gender[3]					
Women	41	43	48	47	45
Men	59	57	52	53	55
by region[3]					
Europe	37	37	38	42	100
North America	13	13	19	22	not applicable
Asia-Pacific (APAC)	37	33	31	27	not applicable
Latin America	10	14	9	7	not applicable
Middle East and Africa (MEA)	3	3	3	2	not applicable

1 These figures exclude the 8,975 Sigma-Aldrich employees, who are not classified as new hires because they joined Merck as part of the Sigma-Aldrich acquisition.
2 Formula for calculating the rate of new employee hires: Total number of new employee hires divided by Number of employees at the end of the fiscal year.
3 Formula for calculating the rate of new employee hires by age/gender/region: New employee hires of the focus group divided by the total number of new employee hires. In consequence of the modified calculation method and the new composition of our regions effective January 1, 2015 corresponding figures for the preceding year have been retroactively adjusted.

Staff turnover[1]

	2014[2]	2015[3]	2016[3,4]	2017 Merck Group[3]	2017 thereof Merck KGaA[3]
Total turnover rate	**11.01**	**10.38**	**12.07**	**9.05**	**2.35**
Turnover rate by gender					
Men	10.75	10.13	12.87	8.75	2.18
Women	11.38	10.73	10.96	9.46	2.43
Turnover rate by age group					
Up to 29 years old	18.71	17.49	19.20	13.66	3.51
30 to 49 years old	9.72	9.69	11.37	8.38	2.08
50 or older	9.49	8.08	9.19	7.87	2.22
Turnover rate by region					
Europe	7.05	6.22	6.23	6.22	2.35
North America	12.45	12.72	11.50	11.02	not applicable
Asia-Pacific (APAC)	17.55	15.95	22.37	12.53	not applicable
Latin America	13.67	15.29	18.85	13.74	not applicable
Middle East and Africa (MEA)	13.62	12.00	10.80	11.22	not applicable
Total number of leavers	**4,364**	**4,168**	**6,087**	**4,710**	**244**
by gender					
Men	2,502	2,386	3,771	2,596	162
Women	1,862	1,782	2,316	2,114	82
by age group					
Up to 29 years old	1,102	943	1,464	1,058	55
30 to 49 years old	2,474	2,505	3,589	2,713	120
50 or older	788	720	1,034	939	69
by region					
Europe	1,447	1,290	1,490	1,488	244
North America	634	638	1,132	1,143	not applicable
Asia-Pacific (APAC)	1,665	1,540	2,543	1,387	not applicable
Latin America	531	618	814	570	not applicable
Middle East and Africa (MEA)	87	82	108	122	not applicable

1 The table contains unadjusted turnover rates. The rate excludes employees who depart due to parental leave or a long-term illness, as well as employees who are transitioning to the non-working phase of partial retirement.

2 Employee turnover for fiscal year 2014 is calculated as follows: Total number of leavers of the past 12 months multiplied by 100 divided by the employee headcount as of December 31.

3 Employee headcount for fiscal 2015, 2016 and 2017 is calculated as follows: Total number of leavers from the past 12 months divided by the average employee headcount multiplied by 100.

4 Includes Sigma-Aldrich as of 2016

Work-related accidents[1]

	2014	2015[2]	2016	2017 Merck Group	2017 thereof Merck KGaA
Lost Time Injury Rate (LTIR = workplace accidents resulting in missed days of work per one million man-hours)	**1.8**	**1.4**	**1.3**	**1.5**	**3.1**
by region					
Europe	2.9	2.6	2.2[3]	2.4	3.1
North America	1.0	0.9	1.1	1.0	not applicable
Asia-Pacific (APAC)	0.5	0.3	0.4	0.3	not applicable
Latin America	1.3	0.7	0.4	1.3	not applicable
Middle East and Africa (MEA)	0.9	0.5	1.6	0.0	not applicable
Number of deaths	**2**	**2**	**0**	**0**	**0**
by region					
Europe	0	1	0	0	0
North America	0	1	0	0	0
Asia-Pacific (APAC)	1	0	0	0	0
Latin America	1	0	0	0	0
Middle East and Africa (MEA)	0	0	0	0	0
by gender					
Women	1	1	0	0	0
Men	1	1	0	0	0

1 Including supervised workers
2 Includes Sigma-Aldrich as of 2015
3 Figure retroactively adjusted.

Both Merck employees as well as contractors have been included in the calculation of these indicators.

Through the LTIR, we record work-related accidents that involve at least one day of missed work. A work-related accident is an injury that results from the type of work, in the course of doing said work, and that has no internal cause. Work-related accidents are considered relevant if they occur on the premises, on business trips, during goods transport, as a result of external influences (e.g. natural disasters), or due to criminal acts involving personal injury. Commuting accidents and accidents during company sporting activities are not included. First-aid incidents are generally not included in the LTIR since these usually do not result in more than one day of missed work.

By 2020, we intend to sustainably lower the LTIR to 1.5. The aim is to permanently stabilize or outperform this challenging number, which we achieved for the first time in 2015.

We have defined the LTIR as a key indicator for the Merck Group. Therefore, we do not publish any other indicators such as workplace accidents, lost days or days of absence. The LTIR is not broken down by gender as this differentiation is not relevant to our strategic planning.

For the Merck KGaA (about 20% of the employees of the Merck Group), we only report work-related illnesses if these have been diagnosed and verified by a physician. In 2017 period, no cases of work-induced illness were verified.

Employees who regularly receive a performance and development evaluation

	2014[1]	2015[2]	2016[3]	2017 Merck Group	2017 thereof Merck KGaA
% of employees who receive a performance and development evaluation	**79**	**88**	**97**	**–[4]**	**–[4]**
by gender					
Women	84	90	97	–[4]	–[4]
Men	77	87	97	–[4]	–[4]
by employee category					
Senior management (Global Grade above 17)	97	100	100	–[4]	–[4]
Low and middle management (Global Grade 14–17)	96	100	100	–[4]	–[4]
Other employees (Global Grade below 14)	78	88	97	–[4]	–[4]

1 The 2014 data is based on a reporting date of March 2, 2015.
2 The 2015 data is based on a reporting date of February 29, 2016.
3 From 2016 on, figures include Sigma-Aldrich, but as of Dec. 31 2017, the job grading system had not yet been implemented for employees of Sigma-Aldrich legal entities in Germany and of Allergopharma.
4 Figure will be available on Dec. 31, 2018.

Regular feedback and employee performance evaluations are essential to fairly ranking individual performance and to helping all employees follow their own career path at Merck. Our globally uniform Performance and Talent Management Process requires annual feedback meetings and performance assessments for all employees rated Role 2 and up in the job grading system that was used in 2017 (corresponds to Global Grade 10 or higher in the job grading system that was used until the end of 2016). Apart from evaluating employee performance, this helps us to identify individual development opportunities.

When it comes to applying this process, our individual subsidiaries can decide for themselves whether to include employees rated below Role 2 (corresponds to Global Grade 9 or lower in the job grading system that was used until the end of 2016). In Germany, all permanent employees have been participating in the Performance and Talent Management Process since 2013. In 2017, a total of 51,240 employees worldwide were involved in the process. The Performance and Talent Management Process is coordinated via our online platform HR4You.

Internationality of employees

As of Dec. 31	2014[1]	2015[2]	2016[3]	2017 Merck Group[3]	2017 thereof Merck KGaA
Number of nationalities	122	122	129	131	97
Number of nationalities in management positions (Role 4 or above)	67	64	70	65	41
% of non-Germans in management positions (Role 4 or above)	60	61	65	64	17

1 These figures do not include the employees of AZ Electronic Materials, a company that was acquired in July 2014. As of December 31, 2014, the job grading system had not yet been implemented there.
2 These figures do not include the employees of Sigma-Aldrich, a company that was acquired in November 2015. As of December 31, 2015, the job grading system had not yet been implemented there.
3 From 2016 on, figures include Sigma-Aldrich. However, as of Dec. 31 2017, the job grading system had not yet been implemented for employees of Sigma-Aldrich legal entities in Germany or for employees of Allergopharma.

Employee age by region

As of Dec. 31

Number of employees	Worldwide	North America	Europe (including Germany)	Germany[1]	Asia-Pacific (APAC)	Latin America	Middle East and Africa (MEA)
2016							
Up to 29 years old	7,419	1,319	3,087	1,757	2,260	562	191
thereof women	3,331	548	1,470	695	922	312	79
30 to 49 years old	31,523	5,224	15,023	6,938	7,625	2,972	679
thereof women	13,849	2,327	6,985	2,780	2,817	1,405	315
50 or older	11,472	3,494	6,328	3,755	869	606	175
thereof women	4,386	1,433	2,429	1,333	242	193	89
Average age	**41.3**	**44.3**	**42.4**	**42.9**	**36.7**	**39.9**	**39.3**
Total employees	**50,414**	**10,037**	**24,438**	**12,450**	**10,754**	**4,140**	**1,045**
2017							
Up to 29 years old	7,676	1,438	3,272	1,589	2,257	521	188
thereof women	3,512	608	1,585	634	945	294	80
30 to 49 years old	32,895	5,465	15,680	5,838	8,099	2,913	738
thereof women	14,540	2,423	7,287	2,195	3,074	1,405	351
50 or older	12,370	3,617	7,028	3,250	938	616	171
thereof women	4,806	1,487	2,755	1,069	279	197	88
Average age	**41.4**	**44.1**	**42.5**	**42.6**	**36.9**	**40.3**	**39.4**
Total employees	**52,941**	**10,520**	**25,980**	**10,677**	**11,294**	**4,050**	**1,097**

1 From 2017 on, the figure only includes the employees of Merck KGaA.

Age of youngest employee

As of Dec. 31	2014	2015	2016[1]	2017
Age of youngest employee, excluding apprentices	17	17	17	18

1 Includes Sigma-Aldrich as of 2016

Voluntary insurance benefits (voluntarily introduced and (co-) financed)

As of Dec. 31	2014[1]	2015[1]	2016	2017 Merck Group	2017 thereof Merck KGaA
% of employees with healthcare benefits[2]	–	–	68[3]	68	0
% of employees with Group accident insurance[4]	–	–	39	42	1
% of employees with life insurance[5]	–	–	57	58	0
% of employees with disability insurance (short-term and long-term)[6]	–	–	32	35	0

1 Since 2016, we've been reporting voluntary insurance benefits that we offer our employees. No such data was tracked for the preceding years.
2 Any spend on voluntarily introduced and (co-) financed healthcare benefits for employees and possibly their dependents. Not taking into consideration any mandatory social security cover (Mostly covered by an insurance policy).
3 Figure retroactively adjusted.
4 Any spend on voluntarily introduced and (co-) financed accident insurance that pays a defined amount in case of death or disability caused by a work-related accident (not taking into consideration any mandatory social security cover, e.g. workman's compensation).
5 Any spend on voluntarily introduced and (co-) financed life insurance cover that pays a defined amount of money in case of natural death (not accidental).
6 Any spend on voluntarily introduced and (co-) financed insurance cover that disability pays for salary continuation in case of inability to work caused by an insured incident.

All our employees are covered by either statutory or voluntary accident and health insurance. Employees of Merck KGaA are covered by statutory insurance as stipulated by the regulations in force in Germany.

We offer a company pension in numerous countries along with various programs for supplemental company pensions and survivor's benefits.

The global benefits listed in the table above are designed to provide additional security to our workforce and their families and to improve their quality of life. Benefits represent voluntarily employer-initiated as well as employer-financed assistance to our workforce in addition to the regular compensation package.

Our benefits offer meaningful choices, where possible, to support a diverse workforce and are sensitive to the needs and customs of the employees who use them, regardless of country, age, family status, interests, or values.

Long-term pension obligations and post-employment benefits

€ million	2014	2015[1]	2016	2017
Present value of all defined benefit obligations as of Dec. 31	3,813	4,153	4,698	4,707
Pension expenses	157	210	226	304

1 Includes Sigma-Aldrich as of 2015

Depending on the legal, economic and fiscal circumstances prevailing in each country, different retirement benefit systems are provided for the employees of the Merck Group. Generally, these systems are based on the years of service and salaries of the employees. Pension obligations of the Merck Group include both defined benefit and defined contribution plans and comprise both obligations from current pensions and accrued benefits for pensions payable in the future. In the Merck Group, defined benefit plans are funded and unfunded (see our Annual Report 2017, Note on Provisions for pensions and other post-employment benefits).

Flexible working hours in Germany

As of Dec. 31	2014	2015	2016[1]	2017[2]
% of employees utilizing the "mywork@Merck" working model	31	35	36	40

1 Includes Sigma-Aldrich as of 2016
2 Essentially reflects the figures of Merck KGaA.

In coordination with their teams and supervisors, employees taking advantage of "mywork@merck" can choose when and where they work.

Parental leave in Germany

As of Dec. 31	2014[1]	2015[1]	2016[1]	2017[2]
Number of employees with a right to parental leave	331	317	359	353
thereof women (recorded via maternity leave in the respective year)	165	149	191	151
thereof men (recorded via special paternity leave in the respective year)	166	168	168	202
Number of employees who took parental leave[3]	507	485	480	352
thereof women	349	301	303	150
thereof men	158	184	177	202
Number of employees on parental leave who worked part time during their leave	99	102	102	49
thereof women	94	99	95	47
thereof men	5	3	7	2
Number of employees who returned from parental leave	187	183	174	312
thereof women	83	51	62	143
thereof men	104	132	112	169
Return to work rate (%)	36.9	37.7	36.3	88.6
thereof women	23.8	16.9	20.5	95.3
thereof men	65.8	71.7	63.3	83.7
Number of employees still working for Merck one year after their return from parental leave	137	184	190	–[4]
thereof women	35	55	73	–[4]
thereof men	102	129	117	–[4]
Retention rate (%)	90.7	96.8	95.6	–[4]
thereof women	58.3	98.2	93.8	–[4]
thereof men	112.1	96.3	96.8	–[4]

1 Figures only pertain to the Darmstadt and Gernsheim sites in Germany (which accounted for around 20 % of Merck Group employees in 2017). Figures are calculated on the basis of the data from one entire year, which also includes those employees who took parental leave during the calendar year, but who had not returned by Dec. 31.
2 Figures only pertain to Merck KGaA (which accounted for around 20 % of Merck Group employees in 2017). Figures are calculated on the basis of the data from one entire year, which also includes those employees who took parental leave during the calendar year, but who had not returned by Dec. 31.
3 Since parental leave can be taken for a period ranging from one month to three years, it is possible for employees to be recorded across a period of up to four calendar years. This explains why the number of employees on parental leave exceeds the number of employees who have a right to it.
4 Figure will be available on Dec. 31, 2018.

Employees with disabilities[1] (%)

As of Dec. 31	2014	2015	2016	2017
Employees with disabilities[1]	4.7	4.7	4.5	4.3

1 Only pertains to Merck KGaA (which accounted for around 20% of Merck Group employees in 2017, calculations based on the German Social Code IX - SGB IX).

Apprentices

As of Dec. 31	2014[1]	2015[2]	2016[3]	2017[3]
Number of apprentices	498	506	576	588
% of apprentices	5.4	5.3	4.6	4.4

1 Only pertains to Merck KGaA sites in Darmstadt, Gernsheim and Grafing, Germany (which accounted for roughly 24% of the Merck Group's employees in 2014).
2 Only pertains to Merck KGaA (roughly 19% of the Merck Group's total employee headcount in 2015).
3 Only pertains to Merck sites in Germany (approximately 25% of the Group's total workforce in 2016 and 2017). Essentially reflects the figures of Merck KGaA.

Environment

Spending on environmental protection, safety and health

€ million	2014	2015	2016[1]	2017
Spending	145	148	189	200

1 Includes Sigma-Aldrich as of 2016

These figures include both investments in as well as internal and external spending on waste and wastewater management, water, occupational safety, fire protection, noise reduction, air pollution prevention, decontamination, preservation of nature and the landscape, climate impact mitigation, and energy efficiency. We do not further break down our spending on environmental protection by type.

Total greenhouse gas emissions (Scope 1 and 2 of the GHG Protocol)[1]

metric kilotons	2006[2]	2014	2015	2016	2017
Total CO_2eq[3] emissions	**793**	**731**	**726**	**711**	**731**
Thereof					
direct CO_2eq emissions	379	390	393	387	374
indirect CO_2eq emissions	414	341	333	324	357
Biogenic CO_2 emissions	**6**	**11**	**54**	**56**	**38**

1 In line with the Greenhouse Gas Protocol, for all previous years (up to the 2006 baseline) the greenhouse gas emissions have been calculated based on the current corporate structure of the reporting year and retroactively adjusted for acquisitions (e.g. Sigma-Aldrich in 2015) or divestments of (parts of) companies, or for changes in emission factors (portfolio-adjusted).
2 Baseline for our emission targets is 2006.
3 eq = equivalent

Our response to the Carbon Disclosure Project contains a detailed description of our calculation methods.

We have included the following gases in our calculation of direct and indirect CO_2eq emissions:

- Direct CO_2 emissions: CO_2, HFCs, PFCs; CH_4/N_2O negligible; SF_6/NF_3 not available.
- Indirect CO_2 emissions: CO_2.

In 2017, we emitted 0.048 kg of CO_2eq per euro of net sales.

Other relevant indirect greenhouse gas emissions (Scope 3 of the GHG Protocol)

	2014[1]	2015[1]	2016[1,2]	2017
Total gross other indirect emissions (metric kilotons CO_2eq[3])	**319**	**349**	**426**	**353**
Fuel- and energy-related emissions, not included in Scope 1 or 2 (category 3)	97	95	127	118
Waste generated in operations (category 5)	96	123	127	68
Business travel - air travel (category 6)	74	79	103[4]	98
Business travel - rail travel (category 6)	0.02	0.02	0.02	0.02[5]
Business travel - rental car travel (category 6)	1.2	1.1	0.6	0.6
Employee commuting (category 7)	51	51	68	68
Upstream leased assets (category 8)	0	0[6]	0[6]	0[6]
Processing of sold products (category 10)	0	0[7]	0[7]	0[7]
Downstream leased assets (category 13)	0	0	0	0
Franchises (category 14)	0	0	0	0

1 Because of the characteristics of the Scope 3 emissions data we do not correct these data subsequently.
2 Includes Sigma-Aldrich as of 2016
3 eq = equivalent
4 This figure covers roughly 80% - 85% of the employees of the Merck Group because the data for the employees of Sigma-Aldrich, acquired in November 2015, are only partially available.
5 German Railway
6 Already covered under Scope 1 and 2 emissions
7 Merck produces a huge variety of intermediate products for various purposes. Due to their many applications and our customer structure, the associated GHG emissions cannot be tracked in a reasonable fashion.

No data is available for Scope 3 categories not listed above. Their relevance to Merck is assessed in the Scope 3 document.

Biogenic emissions (Scope 3), if present, are not being recorded.

Emissions of ozone-depleting substances

metric tons	2014	2015	2016	2017
Total emissions of ozone-depleting substances	2.0	2.5	2.2	2.1
CFC-11eq[1]	0.1	0.1	0.1	0.1

1 CFC-11eq is a unit of measure used to compare the potential of various substances to deplete the ozone. Reference figure 1 indicates the potential of CFC-11 to cause the depletion of the ozone layer.

Substances included: R-12, R-22, R-141b, R-402a, R-409a, R-401a.

Source for the emission factors: Montreal Protocol.

Other air emissions

metric kilotons	2014	2015	2016[1]	2017
Volatile organic compounds (VOC)	0.3	0.3	0.3	0.3
Nitrogen oxide	0.2	0.3	0.2	0.2
Sulfur dioxide	0.02	0.05	0.05	0.03
Dust	0.02	0.06	0.02	0.04

1 Includes Sigma-Aldrich as of 2016

The VOC, nitrogen oxide, sulfur dioxide, and dust emissions reported here are attributable to production activities as well as energy generation. These figures do not include emissions from vehicles. Emissions are determined partially based on measurements and partially based on calculations or estimates. Only some sites are required to measure individual parameters.

Transport of finished goods, by means of transportation

	2014[1]	2015[1]	2016[2]	2017
% Truck	56	53	71	73
% Boat	38	41	18	15
% Airplane	6	6	11	12

1 The figures until 2015 pertain to goods shipped by our Darmstadt, Gernsheim and Hohenbrunn sites in Germany (excluding Sigma-Aldrich).
2 From 2016 on, the figures contain the volumes of the biggest global distribution centers of our Healthcare, Life Science and Performance Materials business sectors. These figures pertain to the total weight of transported products and indicate the primary means of transport.

In shipping finished goods from our production sites to the local warehouses of our subsidiaries, we have been working to reduce the use of air shipping in favor of sea freight. This change aims to both reduce costs as well as lower transport-related CO_2 emissions.

Energy consumption[1]

In GWh	2014	2015	2016	2017
Total energy consumption	**2,162**	**2,260**	**2,241**	**2,270**
Direct energy consumption	**1,354**	**1,452**	**1,445**	**1,386**
Natural gas	1,207	1,206	1,267	1,256
Liquid fossil fuels[2]	120	111	37	34
Biomass and self-generated renewable energy	27	135	141	96
Indirect energy consumption	**808**	**808**	**796**	**884**
Electricity	711	712	701	740
Steam, heat, cold	97	96	95	144
Total energy sold	**0.6**	**0.5**	**0.5**	**0.3**
Electricity	0.6	0.5	0.5	0.3
Steam, heat, cold	0	0	0	0

In TJ	2014	2015	2016	2017
Total energy consumption	**7,783**	**8,137**	**8,068**	**8,172**
Direct energy consumption	**4,874**	**5,228**	**5,202**	**4,990**
Natural gas	4,345	4,342	4,561	4,522
Liquid fossil fuels[2]	432	400	133	122
Biomass and self-generated renewable energy	97	486	508	346
Indirect energy consumption	**2,909**	**2,909**	**2,866**	**3,182**
Electricity	2,560	2,563	2,524	2,664
Steam, heat, cold	349	346	342	518
Total energy sold	**2.2**	**1.8**	**1.8**	**1.1**
Electricity	2.2	1.8	1.8	1.1
Steam, heat, cold	0.0	0.0	0.0	0.0

1 In line with the Greenhouse Gas Protocol, for all previous years (up to the 2006 baseline) the energy consumption has been calculated based on the current corporate structure of the reporting year and retroactively adjusted for acquisitions or divestments of (parts of) companies, or for changes in emission factors (portfolio-adjusted).
2 Light and heavy fuel oil, liquefied petroleum gas (LPG), diesel and gasoline

At our sites in Billerica (MA, USA), Bedford (MA, USA), Molsheim (France), Tel Aviv (Israel), Rome (Italy), Guatemala City (Guatemala), Shizuoka-ken (Japan), and Shanghai (China), we use photovoltaics to produce power.

Merck currently only records purchased secondary energy – this is primarily electricity and, to a lesser extent, heat/steam/cold. Details on the local energy mix, including the respective percentage of primary energy, renewable energy, etc. are not available. Data on local energy efficiency in electricity or heat generation are not available either. Our production sites are located in countries with a widely varying energy mix.

Our Darmstadt and Gernsheim sites in Germany consume the most energy, representing 28% of our Group-wide total. At these sites, fossil energy (coal, gas, etc.) accounts for approx. 53.7%, nuclear energy approx. 14.3% and renewable energies approx. 32% of the energy mix. Renewable energies account for a higher share of electricity generation at production sites in Switzerland, with nuclear energy taking the lead in France. Based on an estimated global energy efficiency of 37% for the conversion and distribution of generated electricity, this results in a primary energy consumption of 2,000 GWh for 2017. Based on an estimated global energy efficiency of 85% for heat/steam/cold, this results in a primary energy consumption of 170 GWh for 2017. This yields a total primary energy consumption of 2,170 GWh for 2017. (The calculation is based on factors stated in the “Manual for energy management in practice - Systematically reducing energy costs” published by DENA, 12/2012.)

In 2017, Merck's energy intensity relative to net sales totaled 0.150 kWh/€.

Water consumption

millions of m^3	2014	2015[1]	2016	2017
Total water consumption	**11.1**	**13.7**[2]	**13.8**[2]	**14.0**
Surface water (rivers, lakes)	1.2	1.8[2]	1.8[2]	1.8
Groundwater	6.3	7.1[2]	7.2	7.3
Drinking water (from local suppliers)	3.6	4.8[2]	4.8[2]	4.9
Rain water and other sources	0.01	0.01	0.01	0.01

1 Includes Sigma-Aldrich as of 2015
2 Figure retroactively adjusted.

These figures do not include the ground water that we use for safety measures at our Gernsheim site in Germany. Here, the water is fed back directly into natural circulation.

Water reused

millions of m^3	2014	2015[1]	2016	2017
Water reused	16.0	23.0	22.7	22.4

1 Includes Sigma-Aldrich as of 2015

The increase in reused water in 2015 is attributable to the recirculating cooling system that went online at our facility in Darmstadt, Germany. This system provides recirculating cooling water to both our new co-generation unit as well as our new cold and compressed air generator. The recirculating cooling system largely accounts for the amount of reused water as it allows the water to be re-utilized multiple times. The volume of reused water is thus greater than the total volume of consumed water.

Wastewater volume and quality

	2014	2015[1]	2016	2017
Total wastewater volume (millions of m^3)	**10.1**	**11.8**	**12.1**	12.3
Chemical oxygen demand (metric tons of O_3)	1,319	1,933	1,535	1,654
Phosphorous (metric tons)	10	10	12	8
Nitrogen (metric tons)	81	487[2]	379[2]	254
Zinc (kg)	410	491[2]	448[2]	351
Chromium (kg)	36	42	34	34
Copper (kg)	34	78[2]	48[2]	61
Nickel (kg)	128	127[2]	124	138
Lead (kg)	55	54	56	63
Cadmium (kg)	10	13	11	12
Mercury (kg)	1	2	2	1
Arsenic (kg)	4	5	4	3

1 Includes Sigma-Aldrich as of 2015
2 Figure retroactively adjusted.

The wastewater volume includes indirect discharge into both public and Merck-owned wastewater treatment plants, as well as direct discharge (such as rainwater and cooling water).

The wastewater treatment plant at our Gernsheim, Germany site also treats wastewater from the neighboring municipality of Biebesheim. The communal wastewater from Biebesheim is included in the wastewater volume as well as in the emissions stated in the table.

Emissions are determined partially based on measurements and partially based on calculations or estimates. Only some sites are required to measure individual parameters.

Hazardous and non-hazardous waste

metric kilotons	2014	2015[1]	2016	2017
Total waste	**228**	**320[2]**	**252[2]**	**252**
Hazardous waste disposed[3]	53	55	47[2]	43
Non-hazardous waste disposed[3]	55	35	38[2]	34
Hazardous waste recycled[4]	49	73	78[2]	69
Non-hazardous waste recycled[4]	71	157[2]	89[2]	106

1 Includes Sigma-Aldrich as of 2015
2 Figure retroactively adjusted.
3 Disposed = incineration (without energy recovery) and landfill
4 Recycled = incineration (with energy recovery) and material recycling

Exported/Imported hazardous waste

metric kilotons	2014	2015[1]	2016	2017
Exported[2]	9.6	5.1	4.6	4.9
Imported[3]	0.003	0.010	0.010	0.005

1 Includes Sigma-Aldrich as of 2015
2 Disposal within the EU and the United States.
3 As part of the return system for our cell tests, these kits are brought to our Gernsheim site in Germany for proper disposal.

In 2017, less than 2% of hazardous waste was shipped internationally.

Waste by disposal method

	2014	2015[1]	2016	2017
Total waste (metric kilotons)	**228**	**320[2]**	**252[2]**	**252**
Disposed waste (metric kilotons)	**108**	**90**	**85[2]**	**77**
Landfilled waste (metric kilotons)	37	16	15[2]	13
Incinerated waste (metric kilotons)	71	74	70[2]	64
Recycled waste (metric kilotons)	**120**	**230[2]**	**167[2]**	**175**
Material recycling (metric kilotons)	93	198[2]	135[2]	145
Waste-to-energy (metric kilotons)	27	32	32[2]	30
Recycling rate (%)	**53**	**72**	**66[2]**	**69**

1 Includes Sigma-Aldrich as of 2015
2 Figure retroactively adjusted.

As in previous years, the total waste generated continues to be heavily influenced by the waste from construction and remodeling activities. Construction, excavation and demolition waste accounted for 37% of our waste in 2017. Around 74 metric kilotons of construction, excavation and demolition waste was recycled.

Significant spills

	2014	2015[1]	2016	2017
Total number of significant spills	0	0	0	0

1 Includes Sigma-Aldrich as of 2015

Community

Spending on community involvement

€ million	2014	2015	2016[1,2]	2017
Total spending	50.8	100.0	43.0	33.8

1 Includes Sigma-Aldrich as of 2016
2 From 2016 on, we are separating spending on patient support programs such as our Erbitux® China Patients Assistance Program from our community involvement figures.

We calculate the value of pharmaceutical product donations according to the WHO Guidelines for Medicine Donations; for other product donations, we apply their fair value.

Community involvement spending by region[1]

	Europe	North America	Asia-Pacific (APAC)	Latin America	Middle East and Africa (MEA)
2016					
€ million	10.1	2.3	4.4	1.1	25.1
%	24	5	10	3	58
2017					
€ million	**8.7**	**2.9**	**3.2**	**0.5**	**18.5**
%	**26**	**9**	**9**	**1**	**55**

1 This table presents the regions across the globe in which we support initiatives. For projects that benefit multiple regions, we have calculated the amount per region by dividing the project spending evenly per country.

Focus of our local community involvement[1]

%	2014	2015	2016[2,3,4]	2017
Health	33	33	35	38
Education and culture	38	33	36	43
Environment	10	7	5	4
Disaster relief	4	6	2	2
Other	15	21	22	13

1 Based on number of projects
2 Includes Sigma-Aldrich as of 2016
3 Since 2016, we have integrated our global projects into our community outreach figures, specifically the Global Pharma Health Fund, the Merck Praziquantel Donation Program and the Deutsche Philharmonie Merck. This change in approach was due to the increasingly international nature of our efforts. We are spearheading a rising number of global projects that account for a growing percentage of our project portfolio. To ensure maximal accuracy, we are therefore including all international initiatives in our figures as of 2016.
4 From 2016 on, we are separating spending on patient support programs such as our Erbitux® China Patients Assistance Program from our charitable spending figures.

Motivations for our community involvement[1]

%	2014	2015	2016[2,3,4]	2017
Charitable activities	9	3	4	9
Community investment	59	92	87	84
Commercial initiatives in the community	32	5	9	7

1 Based on total spending on all projects
2 Including Sigma-Aldrich as of 2016
3 Since 2016, we have been integrating our global projects into our community outreach figures, specifically the Global Pharma Health Fund, the Merck Praziquantel Donation Program and the Deutsche Philharmonie Merck. This change in approach was due to the increasingly international nature of our efforts. We are spearheading a rising number of global projects that account for a growing percentage of our project portfolio. To ensure maximal accuracy, we are therefore including all international initiatives in our figures as of 2016.
4 As of 2016, we are separating patient support programs such as our Erbitux® China Patients Assistance Program from our charitable spending.

We categorize the motivations for our activities based on the London Benchmarking Group model as well as the guidelines of the Bertelsmann Foundation for corporate social responsibility. Projects that primarily aim to make improvements within the community are classified as community investment.

Initiatives that are predominantly aimed at company-relevant factors such as image or personnel recruitment are classified as commercial initiatives in the community. Charitable activities cover any other projects that benefit a charitable organization, but cannot be listed under either of the other two motivation categories due to missing data or their narrow scope.

Goals

Part of the non-financial report

Legend: New goal · Goal achieved · In progress · Goal not achieved

Products

Access to health

We aim to improve access to health for underserved populations in low- and middle-income countries.

Goal: Monitor and assess the progress and effectiveness of our A2H programs.

Action(s):	By:	Progress by end of 2017:	Status:
Develop quantitative and qualitative performance indicators for the 4 As: Availability, Accessibility, Affordability, and Awareness.	2018	We developed indicators for the 2014, 2016 and 2017 CR Reports for each A of the "4As of Access" framework.	Goal achieved

Goal: Affordability: Overcome inability to pay.

Action(s):	By:	Progress by end of 2017:	Status:
Participate in at least one partnership with a public-sector partner in an effort to share our intellectual property and expertise in infectious and neglected tropical diseases.	End of 2018	In 2017, we entered into a partnership with the University of California San Diego, United States to share compounds from our library under the WIPO Re:Search open innovation umbrella in order to identify potential cures for leishmaniasis, Chagas disease (American trypanosomiasis) and human African trypanosomiasis (HAT - sleeping sickness).	Goal achieved
Establish a partnership to share intellectual property with a non-commercial organization.	End of 2018	In April 2017, we entered into a partnership with the Drug for Neglected Diseases initiative (DNDi), under which we are participating in the Drug Discovery Booster project for neglected tropical diseases.	Goal achieved

Goal: Awareness: Empower health workers, communities and people.

Action(s):	By:	Progress by end of 2017:	Status:
Create an awareness initiative run jointly by our Healthcare and Life Science business sectors.	End of 2017	In 2017, our Water for Health public-private partnership was rolled out in Ghana. Through this initiative, we are seeking to raise awareness of water quality and expand local water analysis capacities.	Goal achieved
Engage in a dialogue to jointly identify the key access challenges and opportunities for our A2H strategy.	End of 2018	In 2017, we conducted an Access Dialogue on the topics of innovation and intellectual property, along with an Accessibility Platform dialogue on challenges in local supply chains.	Goal achieved

We aim to improve global health for underserved populations in low- and middle-income countries, with a focus on combating infectious diseases.

Goal: Availability: Address unmet needs through the research, development and optimization of health solutions.

Action(s):	By:	Progress by end of 2017:	Status:
Develop a pediatric formulation of praziquantel for the treatment of schistosomiasis in children under six. Milestone: Entry into Phase III	End of 2018	In 2015, we completed both the Phase I bioavailability study (South Africa) in healthy volunteers and the swill & split taste study (Tanzania). Since 2016, we have been conducting a Phase II study in Côte d'Ivoire aimed at assessing the efficacy and safety of two different formulations for orodispersible tablets in schistosomiasis-infected children under the age of six. We expect initial results in the second quarter of 2018.	
Develop a new antimalarial. Milestone: Entry into Phase I	2017	In March 2015, we obtained the rights to a promising investigational antimalarial compound originating from a collaboration between the Medicines for Malaria Venture (MMV) and the University of Dundee (United Kingdom). The compound potentially offers a new mechanism of action for the treatment and prevention of malaria in young children. The project completed its preclinical phase in 2016, and the Phase I study was initiated in 2017.	
Develop a new antimalarial. Milestone: Completion of Phase I	End of 2018	The Phase I study for the investigational antimalarial compound originating from a collaboration between MMV and the University of Dundee (United Kingdom) is expected to be completed by December 2018.	
Develop a new diagnostic kit to detect and characterize the type of malaria parasite. Milestone: Start of clinical trial	End of 2018	In 2017 we completed the preclinical phase having achieved promising results. We will start clinical trials in 2018.	

Goal: Accessibility: Strengthen supply chains and provide localized health solutions

Action(s):	By:	Progress by end of 2017:	Status:
Engage stakeholders in overcoming the challenges in creating an end-to-end secure supply chain and supplying goods in developing countries.	End of 2018	We have launched the Accessibility Platform as a forum for dialogue.	
Host one to two meetings under the auspices of the Accessibility Platform.	End of 2018	In 2017, one dialogue on the challenges of local supply chains was hosted under the banner of the Accessibility Platform. We also held a panel session in conjunction with the World Health Summit on "Supply Chain & Delivery Capabilities: Critical enablers to improving access to health," co-hosted with platform members Roche and Novartis.	
Form a partnership to improve healthcare at the point of care in developing countries.	End of 2019	In 2017, we identified a variety of options for developing this sort of partnership.	
NTDeliver: Reach more than 1,000 schools via a school-based deworming campaign with praziquantel and Albendazole (GlaxoSmithKline)	End of 2018	In 2017, a pilot was run in Kenya and showed that the system works. The decision was taken to implement the school-based deworming program in 2018.	

Chemical product safety

Goal: Use precautionary principle to establish a globally aligned hazard and risk communication system for all our relevant chemical products in the supply chain

Action(s):	By:	Progress by end of 2017:	Status:
Implement REACH: Register substances produced in quantities of 1-100 metric tons per year (phase 3 of REACH implementation) and register non-phase-in substances.	Mid-2018	By the end of 2017, we had registered 250 phase 3 substances for various subsidiaries of our company.	
Implement the Global Product Strategy: Issue product safety summaries for all hazardous substances registered under REACH.	End of 2020	Because we were heavily focused on completing phase 3 REACH registrations on time, the product safety summaries were not a priority in 2017.	
Projects for hazard communication: Update safety data sheets for non-hazardous materials.	End of 2020	By the end of 2017, we had updated 65% of the safety data sheets for non-hazardous materials within Performance Materials and 74% in Life Science. The integration of Sigma-Aldrich should be completed by the end of 2018, by which time we intend to have updated all safety data sheets.	
Harmonize safety data sheets to align with a globally uniform standard.	End of 2020	Within Performance Materials, in 2017 we began drafting all safety data sheets Group-wide using a single system. Within Life Science, safety data sheets for all new product launches have been harmonized. Existing substances will be transitioned to the globally harmonized system by 2020.	

Counterfeit products

Goal: Integrate safety into relevant business processes for our Healthcare and Life Science business sectors.

Action(s):	By:	Progress by end of 2017:	Status:
Identify strategic and commercial data that require greater protection; minimize risks by modifying processes.	End of 2018	In 2017, we harmonized the processes for reporting incidents and conducting audits. For our Biopharma business, we are looking into ways to further harmonize security features.	

Goal: Step up interdisciplinary collaboration within global security network.

Action(s):	By:	Progress by end of 2017:	Status:
Expand organizational structures and certify employees who deal with product crime.	Ongoing	In 2017, we expanded our MACON network to eight key countries: the United Kingdom, Poland, Russia, Indonesia, Nigeria, South Africa, Egypt, and Tunisia. Network members hold discussions twice a month.	
Implement a Group-wide notification system for counterfeit products.	End of 2017	Our new Group-wide reporting system has been rolled out. Thanks to greater transparency and better tracking, cases can now be investigated more efficiently or prevented altogether by identifying possible ties to other incidents.	

Goal: Educate employees and other target groups on the strategic relevance of counterfeit medicines.

Action(s):	By:	Progress by end of 2017:	Status:
Host conferences and seminars; share best practices and lessons learned through international networks.	Ongoing	In 2017, all our Product Crime Officers took part in a variety of training programs. They regularly share best practices and lessons learned.	

Goal: Develop and implement security technology and solutions for supply chain authentication, identification, integrity, and security.

Action(s):	By:	Progress by end of 2017:	Status:
Support regional activities to counter product crime.	Ongoing	We supported around 128 investigations across approximately 30 countries. We also participated in workshops and seminars with law enforcement in the United Kingdom, Italy, Mexico, Brazil, Nigeria, China, and the United States, and furthermore engaged German federal authorities in dialogue.	
Monitor the number of unreported cases of counterfeit medicines in select countries and step up internet searches to track down trademark infringement and counterfeit products.	Ongoing	We are constantly scouring the Internet for criminal offenses involving our products, tapping into partner networks in high-risk countries to do so. This enables us to raise the clearance rate for product crime incidents. Our countermeasures are increasingly covering the darknet and social media. Among other steps, we launched our "Evaluating product crime in the darknet" initiative.	
Support regional activities in five high-risk countries.	End of 2017	We appointed Product Crime Officers from 20 countries to the global MACON network. An additional ten countries are slated to join in 2018 and are already undergoing preparations to do so. Half of these 30 countries are high-risk markets.	
Monitor counterfeit pharmaceuticals in conventional distribution channels as well as online sales.	Ongoing	-	

Transport and warehouse safety

Goal: Ensure warehouse and transport safety for our company and our suppliers.

Action(s):	By:	Progress by end of 2017:	Status:
Integrate all freight forwarders into our audit process.	End of 2017	As a member of the Logistics & Distributors User Group of SQAS, a service provided by the European Chemical Industry Council, Cefic, we receive additional audit reports of our logistics providers. In 2017 we developed criteria to evaluate these findings, which we subsequently make available to all internal stakeholders.	
Harmonize transport and warehouse safety master data through Group-wide ERP systems.	End of 2022	By the end of 2017, we had straightened out 84% of all deviations in the transport and warehouse safety master data of identical products in our Life Science portfolio.	

Animal welfare

We work to safeguard the welfare of animals used by our company, contract research organizations, suppliers, and other partners.

Goal: Ensure consistently high quality across our animal facilities

Action(s):	By:	Progress by end of 2017:	Status:
Inspect Life Science animal facilities in preparation for potential accreditation: Conduct a feasibility study and make a decision about accreditation.	End of 2018	The feasibility study was conducted. Accreditation of additional Life Science facilities is not currently planned.	
Re-accredit relevant animal facilities.	Ongoing	Re-accreditations are conducted every three years. In 2017, one of our animal facilities was successfully re-accredited.	

Goal: Promote the 3Rs (Reduce, Refine, Replace)

Action(s):	By:	Progress by end of 2017:	Status:
Develop a Group-wide 3R program.	End of 2019	Our award program was approved by the Group Animal Welfare Council in November 2017; the prize will be presented for the first time in 2018.	

Goal: Ensure animal welfare in our supply chain

Action(s):	By:	Progress by end of 2017:	Status:
Identify animal welfare risks in our supply chain and develop a strategy for certifying suppliers.	End of 2017	We developed a strategy and processes to account for potential risks in our supply chain and certify suppliers. The certification process is supported by Interpharma's cross-company audit concept. We also drafted a Standard on Vendor Qualification, which describes our criteria for evaluating the quality of our suppliers' and partners' animal welfare practices. This standard took effect in March 2018.	
Develop and implement an audit plan for suppliers.	Ongoing		

Compliance

Goal: Bring Compliance closer to the business

Status: We're working on a more integrated compliance approach, building on enhanced business accountability and ownership that are supported by a risk-based and business sector-oriented compliance framework.

Action(s):	By:	Progress by end of 2017:	Status:
Quantum LEAP: Develop and introduce an automated, lean process and tool landscape to support transparency reporting requirements and the streamlined processing of interactions with our partners in the Healthcare sector. Build on adapted compliance controls and enhanced business ownership and accountability.	September 2018	We have redesigned the overall system landscape and developed processes which are now being implemented in pilot countries.	

Business Partner Risk Management Process update: Design an updated and more automated tool with integrated risk assessment and controls.	June 2018	We developed a new tool architecture based on key user input and launched the technical implementation.	
New Merck Code of Conduct: The Code has a strong relation to the Merck values, built on core principles to adhere to. Supported by a business specific roll-out and e-learning.	March 2018	A new Code of Conduct was rolled out in December 2017. The corresponding e-learning script will be developed and implemented by the end of March 2018.	
Self-monitoring as part of the Compliance Risk Assessment process: Integrate self-assessment of compliance program implementation status in existing Compliance Risk Assessment.	September 2018	In 2017, we designed new functionalities and launched the technical implementation. Self-assessment will be driven by business, and supported by Compliance.	

Employees

Attractive employer

Goal: Consistently fill at least two-thirds of leadership positions (Role 6+) with internal candidates

Action(s):	By:	Progress by end of 2017:	Status:
Use the Talent Management Process to identify suitable employees with leadership potential and optimize the process to systematically advance them.	Ongoing	In 2017, 84% of our vacant leadership positions (Role 6+) were filled internally.	
Build a high-potential pool that reflects our demographic structure.	Ongoing	We are continuously developing our high-potential pool, which is a reflection of the diversity within our company.	

Goal: Position our Group as an attractive employer for university graduates

Action(s):	By:	Progress by end of 2017:	Status:
Participate in university fairs and organize in-house events for graduates; position our company via employer branding channels.	Ongoing	We are continuously positioning ourselves as an attractive employer for university graduates via editorial articles on careerloft, through event information on e-fellows.net and through trainee and employee films on YouTube. By the end of 2017, all 49 planned trainee slots and direct hires were filled through our employer branding and talent sourcing efforts.	

Goal: Increase the share of employees (Group-wide) with development plans to 70% by 2020

Action(s):	By:	Progress by end of 2017:	Status:
Conduct extensive internal communications and people development campaigns, and optimize existing tools.	2020	The percentage of employees with development plans increased from 26% (2016) to 61% (2017).	

Diversity

Goal: Our target for 2021 is to maintain a 30% representation of women in leadership roles (Role 4+)

Action(s):	By:	Progress by end of 2017:	Status:
Deploy teams at departmental level to develop goals and measures to move women into positions in various units and hierarchies.	End of 2021	All business sectors have performed analyses and identified focus areas for actions.	

Health and safety

Goal: Reduce the lost time injury rate Group-wide (to 1.5 or less).

Action(s):	By:	Progress by end of 2017:	Status:
Reinforce our safety culture to prevent behavior-related accidents/Roll out our BeSafe! program at all newly acquired sites and monitor ongoing implementation via appropriate performance indicators.	End of 2020	In 2017, we achieved a Group-wide LTIR of 1.5. Through manager training, safety tours and train-the-trainer programs, we continued to sustain a high level of safety awareness in 2017 as well. We took these steps at numerous sites – including ten newly acquired ones.	

Employee engagement

Goal: Measure and improve employee engagement

Action(s):	By:	Progress by end of 2017:	Status:
Implement a regularly occurring process to measure employee engagement and take actions to improve it.	Ongoing	Action plans were implemented throughout the organization based on 2016 results. Repeat survey conducted in November 2017 to check progress.	

Good leadership

Goal: Ensure that people managers are enabled to motivate and develop their employees

Action(s):	By:	Progress by end of 2017:	Status:
Have at least 50% of people managers rated Role 3+ take part in a management program.	End of 2018	As planned, all 400 of our top executives have taken part in our Global Leadership Program. Regarding our other management programs, 765 employees completed our Advanced Management program and 2,901 our Managerial Foundation program.	

Environment

Environmental stewardship

Goal: Incorporate all production sites into our Group ISO 14001 certificate for environmental management systems.

Action(s):	By:	Progress by end of 2017:	Status:
At newly acquired production sites, introduce environmental management systems in line with our Group ISO 14001 certificate and certify them accordingly.	Ongoing	In 2017, 15 sites transferred their environmental management system to our Group certificate. All sites pertinent to the Group certificate have thus been transitioned to the new version of ISO 14001:2015.	

Climate protection

Goal: 20% reduction in our direct and indirect greenhouse gas emissions (Scope 1 and 2) by 2020 (2006 baseline)

Status: By the end of 2017, we had lowered our greenhouse gas emissions by roughly 8% relative to 2006 – despite operational growth.

Action(s):	By:	Progress by end of 2017:	Status:
Systematically examine the energy consumption at our individual production sites	End of 2020	We continued to systematically examine potential energy savings at our production facilities. In 2017, these analyses became part of our routine processes.	
Identify potential energy savings and implement appropriate measures	End of 2020	In 2017, we implemented **36** Edison projects with a view to cutting CO_2 emissions by **3,500** metric tons in the medium term. We thus failed to achieve our goal of saving up to 34,000 metric tons of CO_2. Multiple projects had to be postponed until 2018. In 2018, we intend to initiate 30 new projects with potential savings of 4,600 metric tons of CO_2.	
Reduce process-related emissions	End of 2020	We have successfully completed an emissions reduction project for process-related emissions (launched in 2015). Through this project, we hope to cut greenhouse gas emissions by up to 28,000 metric tons per year. In 2017, the project saved approximately 10,000 metric tons of CO_2. Technical issues have forced us to postpone another project (offering savings of roughly 23,000 metric tons of CO_2) until 2018. We intend to roll out two further projects in 2018 that aim to reduce CO_2 emissions by 24,000 metric tons.	

Waste and recycling

Goal: Set a reduction target by the end of 2017 for the volume of waste generated by our company

Status: goal achieved

Action(s):	By:	Progress by end of 2017:	Status:
Implement a waste scoring model (Merck Waste Score) to quantify our waste reduction efforts and set a baseline.	End of 2017	Using the Merck Waste Score, we established a Group-wide baseline for 2016 from which has been used to set a new reduction target.	✓

Goal: Reduce the environmental impact of our waste disposal (Merck Waste Score) by 5% by 2025 (baseline 2016)

Status: The goal was adopted by the Executive Board, under the guidance of the CR Committee, in November 2017. We are now developing a course of action to achieve it.

Water management

Goal: Introduce a sustainable water management system at seven appropriate sites in water-stressed areas and reduce their water consumption by 10% by the end of 2020 (2014 baseline)

Status: By the end of 2017, we had reduced our water use at relevant sites by around 9% relative to 2014. Going forward, we want to ensure a sustainable 10% reduction in water use.

Action(s):	By:	Progress by end of 2017:	Status:
Create a water balance to make water use transparent.	April 2017	In 2017, the relevant sites developed their own water balances, thus creating transparency regarding their water use. To help in their efforts, water meters were installed at individual sites and consumption was measured at various points within the facilities.	✓

Goal: Introduce a sustainable water management system at 24 production sites with high water use by 2020.

Status: Using the CEFIC Water Matters flagship initiative self-assessment tool, our sites are implementing a water management system in three stages. While stage 1 (basic) has already been achieved, we expect to achieve stage 2 (progressed) by May 2018 and stage 3 (advanced) by May 2020. Based on water use in 2016, a further site (Sheboygan, WI, USA) was included in the target group in 2017.

Action(s):	By:	Progress by end of 2017:	Status:
Meet the basic requirements set out in the CEFIC flagship self-assessment tool (stage 1). These include water quantity and quality evaluations at the sites, as well as an environment analysis. One of the measures to be taken during stage 1, for instance, is the creation of water balances to make water use transparent.	April 2017	Stage 1 of the self-assessment was largely concluded in 2017.	✓

Meet the "progressed" requirements set out in the CEFIC flagship self-assessment tool (stage 2). This involves creating transparency regarding the situation in the vicinity of the respective sites and beginning the evaluation of the sites' influence on their environment.	May 2018	During stage 2 of the self-assessment, we will essentially create transparency regarding the water situation in the vicinity of our individual sites. We will also start work on evaluating the influence our sites have on their surroundings.	

Suppliers

Goal: Ensure that suppliers adhere to ethical, social, environmental, and compliance standards.

Action(s):	By:	Progress by end of 2017:	Status:
Perform a qualitative analysis of the available assessment and audit findings, and define potential courses of action.		After analyzing 670 audit and assessment results, it became clear that 45 suppliers fell short of the score we specified for a working relationship and for procurement activities, and/or returned more than five critical defects.	
		Joint meetings were held to discuss risk minimization options based on the evaluation results from Procurement and Quality Assurance. Following implementation of the corrective actions, suppliers are either re-assessed or re-audited.	
Create a holistic approach to managing sustainability within global supply chains.	2017	During the first half of 2017, Group Procurement conducted a management workshop and drafted a position statement on sustainability. As a result, four focus areas were defined and were further elaborated by the individuals responsible for sourcing within each business sector.	

Community

Health

Hand in hand with our partners, we aim to eliminate the tropical worm disease schistosomiasis worldwide.

Goal: Eliminate schistosomiasis in African school children

Status: Since the start of our donation program, more than 150 million patients have been treated, primarily school-aged children.

Action(s):	By:	Progress by end of 2017:	Status:
Donate up to 250 million praziquantel tablets annually to WHO for African school children.	Ongoing	We keep production capacities at a level sufficient for manufacturing 250 million praziquantel tablets a year. In response to the needs of WHO, in 2017 we donated approximately 150 million tablets for distribution in 26 African countries.	
Optimize the praziquantel formulation.	End of 2019	In 2017, we coordinated with WHO to draft the design for the bio-equivalence study. It is currently under consideration by the Mexican Food and Drug Administration. The study is to be carried out in 2018.	

Develop a pediatric formulation of praziquantel for children under the age of six.	End of 2019	Since 2016, we've been conducting a Phase II study in Côte d'Ivoire to test the efficacy and safety of two different formulations for orodispersible tablets in schistosomiasis-infected children under six. We expect to have initial results by the second quarter of 2018. At the same time, we are preparing the Phase III study.	
Initiate new partnerships to promote behavioral change in African school children.	Ongoing	Since 2017, we have been partnering with the NALA Foundation to raise awareness. Together, we are supporting a national health project sponsored by the Ethiopian Federal Ministry of Health.	
Provide WHO with educational booklets to teach children about schistosomiasis and ways to prevent it.	Ongoing	In 2017, we donated 200,000 educational booklets to WHO for distribution across 12 African countries.	
Position the Global Schistosomiasis Alliance (GSA) as a partner platform for advocacy, implementation, research, communication, and strategy development.	Ongoing	In 2017, the GSA expanded its global collaboration with schistosomiasis stakeholders. Furthermore, several NGOs became members of the organization. The GSA hosted multiple schistosomiasis research conferences with experts from across the globe and continued to work towards the elimination of the disease in Ethiopia, Cameroon, Uganda, and Egypt.	

Minilab

Goal: Provide and further develop the GPHF Minilab®

Through the GPHF Minilab®, we seek to fight counterfeit medicines in developing and emerging economies.

Develop new test methods for five active ingredients and expand manuals to describe the new testing methods.	End of 2017	In 2017, the GPHF developed test methods for five new active ingredients, meaning that a total of 90 test protocols are now available. The manuals have been updated accordingly.	
Conduct at least three training seminars using the GPHF Minilab®; sell at least 35 Minilabs.	End of 2017	In 2017, the GPHF conducted three Minilab training seminars with a total of around 50 participants. Seven additional seminars with well over 100 participants were conducted by GPHF partner organizations. The GPHF sold a total of 41 Minilabs at cost and supplied 49 additional material deliveries for Minilabs currently in use.	
Conduct at least two Minilab training seminars, sell at least 30 Minilabs and maintain rising demand for additional materials.	End of 2018		
Develop new test methods for ten active ingredients and revise ten existing methods.	End of 2018		
Update the Minilab manuals and consolidate all test methods into one single volume.	End of 2020		

Recognition and rankings

The following overview presents a selection of major ratings and rankings. Information on additional ratings and accolades received by individual businesses or sites can be found in the respective chapter of our 2017 Corporate Responsibility Report, or on our company's website.

CR performance

Access to Medicine Index

In 2016, our company moved up to fourth place in the Access to Medicine Index (2014: sixth place). This index assesses 20 pharmaceutical companies with respect to their efforts to improve access to medicine in developing countries. It is published every two years by the Access to Medicine Foundation, an international non-profit organization.

www.accesstomedicineindex.org

CDP climate and water

Since 2008, we've been reporting our climate impact mitigation activities to the CDP (formerly the Carbon Disclosure Project). In 2017, we scored a B in the CDP and are thus among the top 37% of healthcare companies. The CDP assesses the strategy used and the success achieved by companies in reducing their greenhouse gas emissions, as well as how they address the risks and consequences of climate change.

In addition to these efforts, since 2016 we have also been reporting our water-related performance and processes to the CDP. In 2017, we received a B for our water management, thus moving up two places over the previous year. This good score was particularly attributable to our Water Protection standard, our strategic goals and the concrete steps we took to conserve water. The CDP evaluates performance in the areas of climate and water on a scale from A to D-, with A being the top score.

www.cdp.net

EcoVadis rating

The independent rating agency EcoVadis assesses suppliers from 120 countries across the categories of Environment, Labor Practices, Fair Business Practices, and Sustainable Procurement. As a member of the Together for Sustainability initiative, we also undergo this assessment. In 2017 we were awarded the Gold recognition level and were thus among the top 1% of all participating companies.

www.ecovadis.com

Good Company Ranking

In 2016 Kirchhoff Consult, a management consultancy, published its fifth Good Company Ranking. Among the 30 companies included in the DAX, we took tenth place. The ranking is published every two years.

www.kirchhoff-consult.com

oekom research Sustainability Rating

In 2017, the sustainability ratings agency oekom research AG gave our company a B- on a scale of A+ (top grade) to D-. As in the previous year, we thus once more achieved oekem Prime Status ("good" to "very good").

www.oekom-research.com

Vigeo Eiris Human Rights Study

In 2016 Vigeo Eiris, a sustainability rating and research agency, analyzed the extent to which over 3,000 companies meet their social responsibility to respect human rights. Our company ranks among the top 30 companies and achieved 69 out of 100 points, a score which corresponds to the highest of the four levels.

www.vigeo-eiris.com

Sustainability indices

Ethibel Sustainability Index (ESI) Excellence Europe and Ethibel EXCELLENCE Investment Register

In 2015 we were added to the ESI Excellence Europe, which includes the 200 top-rated European companies based on their corporate responsibility performance. We are also included in the Ethibel EXCELLENCE Investment Register.

www.forumethibel.org

Euronext Vigeo Eurozone 120 Index

Since 2015, we have been included in the Euronext-Vigeo Eurozone 120, which comprises the 120 highest-ranking European companies in terms of their environmental, social and governance efforts.

www.vigeo-eiris.com

FTSE4GOOD Global Index

Since 2008, we have been included in the FTSE4GOOD Global Index, a leading international sustainability index that annually measures the performance of companies in demonstrating strong environmental, social and ethical practices.

www.ftse.com

STOXX® Global ESG Leaders Index

In 2017, our company was once again included in the STOXX Global ESG Leaders sustainability index, which assesses companies based on key environmental, social and governance criteria.

www.stoxx.com

CR awards

Annual Report Competition (ARC) awards

In October 2017, our 2016 CR Report was awarded eight international ARC accolades across various categories, in particular in Interactive Annual Report, Interior Design, and Design/Graphics. Established by MerComm, Inc. in 1987, the ARC awards were created to honor particularly harmonious concepts in the fields of design, picture composition and written text.

www.mercommawards.com

Econ Awards

Presented by the German publisher Econ, the Econ Awards recognize outstanding concepts and practices in corporate communications. In November 2017, we won a Gold Econ Award for the digital version of our 2016 CR Report, with special mention made of its user-friendliness, information content and attractive presentation. We also received a Gold Econ Award for our curiosity campaign entitled #catchcurious, which was especially praised by the jury for linking scientific curiosity with our company values.

www.econforum.de (German only)

Sustainable Development Goals

In 2015, the United Nations adopted the Sustainable Development Goals (SDGs), which are aimed at all countries and organizations across the globe. We too are doing our bit to achieve these targets.

Our efforts

Under our Corporate Responsibility (CR) strategy (p. 9), we're already working to solve key challenges through efforts in the spheres of health, environment, and culture & education. We especially support Good Health & Well-Being (SDG 3), Quality Education (SDG 4) and Affordable & Clean Energy (SDG 7). To achieve these goals, we build strategic partnerships (SDG 17) that allow us to work hand in hand with other companies, non-governmental organizations and governments.

SDG 3: Good Health & Well-Being

"Ensure healthy lives and promote well-being for all at all ages."

Across the globe, two billion people have no access to medicines. According to estimates, approximately 400 million people lack access to effective and affordable medical care, a situation we intend to rectify through our Access to Health strategy (p. 38). Recognizing that we can't solve these challenges alone, we have joined forces with strong partners to work towards a solution.

Examples of our activities:

- Eliminating schistosomiasis
- Efficient supply chains for better access to health (p. 44)
- Battle against neglected tropical diseases (p. 41)
- SDG 17: Partnerships for the goals (p. 19)

SDG 4: Quality education

“Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”

The sciences in particular play a key role in the development of pioneering solutions. A well-educated and well-trained workforce is also essential to our future as a science and technology company, which is why we are working to spark students' passion for science. To this end, we conduct a number of education projects (p. 114) across our sites worldwide, going to great lengths to provide underprivileged students with access to education.

Examples of our activities:

- School sponsorship project in India
- Supporting education at our Darmstadt site and our facilities worldwide (p. 114)
- School funding and scholarships across our supply chain (p. 108)
- SDG 17: Partner in the GIZ capacity building program "Afrika kommt!" (p. 85)

SDG 5: Gender equality

“Achieve gender equality and empower all women and girls.”

- Promoting diversity and equal opportunity (p. 77)
- Promoting women's health and economic participation in developing countries (p. 50)

SDG 6: Clean water and sanitation

“Ensure availability and sustainable management of water and sanitation for all.”

- Protecting water as a resource (p. 97)

SDG 7: Affordable and clean energy

“Ensure access to affordable, reliable, sustainable and modern energy for all.”

Our materials create ultra-efficient solar cells that can be used in innovative applications. Moreover, our products help customers save energy. For instance, state-of-the-art liquid crystals and OLED technology from our Performance Materials business sector make displays more energy-efficient. You can find more information under Sustainable product design (p. 32).

Examples of our activities:

- Integrating solar cells into architecture
- Energy-efficient products (p. 33)
- Investing in renewable energy (p. 92)

SDG 8: Decent work and economic growth

“Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.”

- Respecting human rights (p. 17)
- Creating a safe work environment (p. 80)

SDG 12: Responsible consumption and production

"Ensure sustainable consumption and production patterns."

- Design for Sustainability (p. 34)
- Preventing and recycling waste (p. 95)

SDG 13: Climate action

"Take urgent action to combat climate change and its impacts."

- Edison, our climate impact mitigation program (p. 91)
- Educating employees about climate impact mitigation (p. 92)

SDG 17: Partnerships for the goals

"Strengthen the means of implementation and revitalize the global partnership for sustainable development."

- Partnerships for quality healthcare (p. 19)
- Partnerships for discovering new compounds (p. 38)
- Active participation in the Alliance for Integrity (p. 16)
- Partner in the GIZ capacity building program "Afrika kommt!" (p. 85)

Non-financial report

Part of the non-financial report

Index for the combined separate integrated non-financial report

Through our combined separate integrated non-financial report (hereinafter referred to as "non-financial report"), we fulfill the requirements arising from the CSR Directive Implementation Act. The separate non-financial report of the Merck Group has been combined with the separate non-financial report of the parent undertaking, Merck KGaA, in accordance with Section 289b (3) sentence 2 in conjunction with Section 298 (2) of the German Commercial Code, and integrated into our Corporate Responsibility Report. The following index provides an overview of the contents of the non-financial report and contains links to the relevant passages in the CR report. External references within our CR Report are not part of the non-financial report.

To provide the type of framework stipulated in Section 289b in conjunction with Section 315c (3) of the German Commercial Code, we have applied the standards of the Global Reporting Initiative (Option: Comprehensive) for this report.

Description of business model

We describe our business model, corporate structure, governance, and Group strategy under Company profile (p. 6).

Strategic and organizational approach to sustainability

Under Governance (p. 8), we present external guidelines and initiatives to which we've committed ourselves, along with Group-wide guidelines that are the cornerstone of our responsible governance. Our CR strategy (p. 9) sets out how we practice corporate responsibility, both in terms of strategy and at the organizational level.

Material aspects and issues

To determine the aspects and issues of relevance to the non-financial report, we conducted a materiality assessment (p. 22) that identified several issues that could not be assigned to any of the five aspects defined as minimum contents under Section 289c (2) of the German Commercial Code. Along with these five aspects, we have therefore decided to report on the following additional relevant issues:

Aspect	Issue
Environmental matters	■ Environmental stewardship ■ Pharmaceutical and chemical residues in the environment (incl. abandoned hazardous waste) ■ Plant & process safety
Employee-related matters	■ Attracting, recruiting and retaining employees
Social matters	■ Patient safety ■ Counterfeit products ■ Responsible marketing ■ Data protection

Aspect	Issue
Respect for human rights	■ Bioethics (incl. genome editing) ■ Clinical studies
Anti-corruption and anti-bribery	■ Compliance ■ Interactions with health systems
	■ Chemical product safety ■ Labeling of chemicals and other products ■ Transport and warehouse safety ■ Prices of medicines ■ Innovation and R&D ■ Digitalization

Within our approach to comprehensive risk and opportunity management, we also identify current and potential risks and opportunities in the areas of environment, community and governance. This includes information on the gross risks in terms of potential damage and probability, as well as the residual net risks remaining after mitigation measures have been effected. We did not identify any net risks that fulfill the materiality criteria as set forth by Section 289c (3) no. 3 and 4 of the German Commercial Code. Additional risks are described in the Report on Risks and Opportunities in the combined management report.

Aspect: Environmental matters

Within our Group, environmental matters fall under environmental stewardship. In the following section, we report on the measures implemented to further environmental stewardship, enhance plant & process safety, and address pharmaceutical and chemical residues in the environment (incl. abandoned hazardous waste).

Issue	Specification	Reference
Environmental stewardship	Concepts incl. due diligence processes	■ Organizational structure of the Group function EQ (p. 87) ■ Standards and standard operating procedures for environmental stewardship (p. 87) ■ Assessing environmental impacts (p. 89) ■ ISO 14001 Group certificate (p. 89) ■ Stakeholder engagement and dialogue (p. 200) ■ Goals: Environment (p. 155)
	Outcome of activities	■ Updating standards and standard operating procedures in line with amended version of ISO 14001:2015 (p. 87) ■ Sizable investments in environmental impact mitigation (p. 89) ■ Auditing our sites and reporting violations (p. 89) ■ Sites obtain ISO 14001 certification (p. 89) ■ Goal progress: Environment (p. 155)
Pharmaceutical and chemical residues in the	Concepts incl. due diligence processes	■ Provisions for environmental impact mitigation (p. 89)

Issue	Specification	Reference
environment (incl. aban-doned hazardous waste)	Outcome of activities	■ Amount of provisions for environmental impact mitigation (p. 89) ■ Remediation of contamination at Gernsheim site (p. 89)
Plant & process safety	Concepts incl. due diligence processes	■ Organizational structure: Plant & process safety within EQ (p. 100) ■ EHS standards and processes (p. 100) ■ Tracking EHS performance indicators (p. 100) ■ „Risk Management Process" (p. 101) ■ Employee training and sharing lessons learned (p. 101)
	Outcome of activities	■ EHS Incident Rate (p. 100) ■ Substance spills and environmental impacts (p. 101) ■ Employee training (p. 101)

Aspect: Employee-related matters

Within our Group, employee-related matters fall under the purview of Human Resources (HR). Under this aspect, we report on concepts pertaining to attracting, recruiting and retaining employees.

Issue	Specification	Reference
Attracting, recruiting and retaining employees	Concepts incl. due diligence processes	■ Approach to attracting, recruiting and retaining employees (p. 73) ■ Organization of HR (p. 73) ■ People Development Policy and global standards (p. 73) ■ Performance and Potential Management Process (p. 74) ■ Performance-based pay (p. 74) ■ Attracting qualified university graduates (p. 74) ■ Vocational training (p. 75) ■ Digitalization of work (p. 75) ■ Employer brand (p. 76) ■ Finding work-life balance (p. 76) ■ Goals: Employees (p. 153) ■ Diversity concept (p. 77) ■ Organizational structure of diversity (p. 77) ■ Industry-wide diversity initiatives (p. 77) ■ Diversity awareness (p. 78) ■ Networks to bolster diversity (p. 79) ■ Taking action against discrimination (p. 79) ■ Integrating international employees (p. 79) ■ Addressing demographic change (p. 79) ■ Organizational structure of health and safety (p. 80) ■ Policies and bylaws (p. 80) ■ OHSAS 18001 safety certification (p. 80)

Issue	Specification	Reference
		■ BeSafe! safety culture initiative (p. 81) ■ Workplace health management (p. 81) ■ Structural organization for engagement and inclusion (p. 82) ■ Employee engagement surveys (p. 82) ■ Rewarding innovative ideas (p. 82) ■ Innovation Center (p. 82) ■ Keeping employees informed and encouraging dialogue (p. 83) ■ Deepening employee engagement (p. 83) ■ Competency model (p. 84) ■ Management program for leaders (p. 85) ■ Merck University (p. 85) ■ Programs in growth markets (p. 85)
	Outcome of activities	■ Participation in Performance and Potential Management Process and advanced training courses (p. 74) ■ Gender pay equity (p. 74) ■ Number of trainees at Merck (p. 74) ■ Number of apprentices and hiring rate (p. 75) ■ Leveraging digitalization (p. 75) ■ Good standing in employer rankings (p. 76) ■ Flexible working models, part-time work and parental leave (p. 76) ■ Goal progress: Employees (p. 153) ■ Indicators: Employees (p. 126) ■ Increasing diversity awareness through “Different Perspectives” Diversity month (p. 78) ■ Activities within networks to bolster diversity (p. 79) ■ No suspected cases of discrimination (p. 79) ■ Key figures on international employees (p. 79) ■ Demographic change campaign (p. 79) ■ Sites obtain OHSAS 18001 certification (p. 80) ■ Reducing our accident rate (p. 80) ■ Initiatives and awareness campaigns as part of BeSafe! 2017 (p. 81) ■ Projects to promote the health of our workforce (p. 81) ■ Improving working environment (p. 82) ■ Participation in innovation initiatives (p. 82) ■ Teams at the Innovation Center (p. 82) ■ Merck Biopharma Innovation Cup 2017 (p. 83) ■ Availability of pro and EVA (p. 83) ■ Participation in management program (p. 85) ■ Participation in Merck University courses (p. 85) ■ Participation in Growth Markets Management Program (p. 85)

Aspect: Social matters

"Social matters" encompasses our relationship with consumers. Under this heading, we report on concepts relating to patient safety, counterfeits, responsible marketing, and data security.

Issue	Specification	Reference
Patient safety	Concepts incl. due diligence processes	■ Approach to patient safety (p. 53) ■ Pharmacovigilance (p. 53) ■ Infrastructure for patient safety (p. 53) ■ Patient safety guidelines (p. 53) ■ Pharmacovigilance monitoring (p. 54) ■ Product labeling (p. 54) ■ Internal and external training (p. 54)
	Outcome of activities	■ Inspecting and auditing our pharmacovigilance system (p. 54) ■ Changing product labels (p. 54) ■ Pharmacovigilance campaigns (p. 54)
Counterfeit products	Concepts incl. due diligence processes	■ Approach to anti-counterfeiting (p. 55) ■ Anti-counterfeiting organization (p. 55) ■ Anti-counterfeiting guidelines and standards (p. 55) ■ Monitoring and reporting systems (p. 56) ■ Supporting customers and patients (p. 56) ■ Industry-wide exchange (p. 57) ■ Educating our employees and business partners (p. 57) ■ Safety audits for contract manufacturers and distributors (p. 57) ■ Goals: Products (p. 148)
	Outcome of activities	■ Our own approach to supporting customers and patients (p. 56) ■ Employee training (p. 57) ■ Findings from safety audits (p. 57) ■ Goal progress: Products (p. 148)
Responsible marketing	Concepts incl. due diligence processses	■ Infrastructure for responsible marketing (p. 59) ■ Code of conduct and industry-wide rules (p. 59) ■ Reviewing marketing material (p. 60) ■ Employee training (p. 60) ■ Direct marketing only in certain countries (p. 60) ■ Marketing chemicals (p. 60)
	Outcome of activities	■ Addressing violations of standards and regulations (p. 60) ■ Employee training participants (p. 60) ■ Preventing chemical misuse (p. 60)

Issue	Specification	Reference
Data Privacy	Concepts incl. due diligence processes	■ Organization: Integrated into Compliance (p. 11) ■ Policy for Data Protection and Personal Data Privacy (p. 11) ■ Data privacy management system (p. 15)
	Outcome of activities	■ Indicators: Protecting customer data (p. 125)

Aspect: Respect for human rights

Under "Respect for human rights", we report on concepts related to bioethics (including genome editing) and clinical studies.

Issue	Specification	Reference
Bioethics (including genome editing)	Concepts incl. due diligence processes	■ Organizational structure for addressing bioethical issues (p. 61)
	Outcome of activities	■ Discussions within the Merck Bioethics Advisory Panel (MBAP) (p. 61) ■ Genome Editing Technology Principle (p. 62) ■ Stem Cells Principle (p. 62) ■ Fertility Principle (p. 62) ■ Guidelines and standard operation procedures for biosampling and biobanking (p. 62) ■ Guidelines on off-label use (p. 62)
Clinical studies	Concepts incl. due diligence processes	■ Fundamental requirements for clinical studies (p. 63) ■ Organizational structure for clinical studies (p. 63) ■ Clinical study guidelines and agreements (p. 63) ■ Supervision of clinical studies (p. 64) ■ Teaming up to get results (p. 65) ■ Close dialogue with patients and advocacy groups (p. 65) ■ Responsible data sharing and data publication (p. 65) ■ Early Access Program (p. 66)
	Outcome of activities	■ Findings from audits on contract research organizations (p. 65) ■ EUPATI (p. 65) ■ Marketing approval for Avelumab (p. 66) ■ Position paper on the Early Access Program (p. 66)

Aspect: Anti-corruption and anti-bribery matters

Within our corporate structure, anti-corruption efforts fall under Compliance Management, so we report here on compliance and interactions with health systems.

Issue	Specification	Reference
Compliance	Concepts incl. due diligence processes	■ Structural organization: Group Compliance (p. 11) ■ Compliance guidelines and standards (p. 11) ■ Compliance audits (p. 14) ■ Compliance training (p. 14) ■ Compliance. Because We Care initiative (p. 14) ■ SpeakUp Line (p. 14) ■ Businss Partner Risk Management (p. 15) ■ Alliance for Integrity (p. 15) ■ Goals: Compliance (p. 152)
	Outcome of activities	■ Compliance training participants (p. 14) ■ SpeakUp Line for reported and confirmed cases of non-compliance (p. 14) ■ Risk analysis and training of business partners (p. 15) ■ Goal progress: Compliance (p. 152) ■ Indicators: Compliance (p. 121)
Interactions with health systems	Concepts incl. due diligence processes	■ Organizational structure for interactions with health systems (p. 70) ■ Group-wide guidelines and industry-wide standards (p. 70) ■ Transparent reporting (p. 70) ■ Collaboration with patient advocacy groups (p. 71) ■ Transparent promotion of research and education (p. 71)
	Outcome of activities	■ Publication of an EFPIA transparency report (p. 70) ■ Publication of a position paper on continuing medical education (p. 71)

Other matters

In the following section, we report on significant issues that are not covered in any of the five minimum aspects stipulated in section 289c (2) of the German Commercial Code:

Issue	Specification	Reference
Chemical product safety	Concepts incl. due diligence processes	■ Organizational structure for product safety (p. 50) ■ Group-wide and industry-wide guidelines (p. 50) ■ REACH registration (p. 50) ■ Supporting our Global Product Strategy (p. 50) ■ Assessing safety during product development (p. 51) ■ Safe nanotechnology (p. 51) ■ Standardized product safety information (p. 52) ■ Goals: Products (p. 148)
	Outcome of activities	■ Number and languages of safety data sheets (p. 52) ■ ScIDeEx (p. 52) ■ Goal progress: Products (p. 148)
Labeling chemicals and other products	Concepts incl. due diligence processes	■ Organizational structure for product safety (p. 50) ■ Statutory regulations and Group-wide guidelines (p. 50) ■ Standardized product safety information (p. 52) ■ Goals: Products (p. 148)
	Outcome of activities	■ Number and languages of safety data sheets (p. 52) ■ ScIDeEx (p. 52) ■ Goal progress: Products (p. 148)
Transport & warehouse safety	Concepts incl. due diligence processes	■ Structural organization: EQ and dangerous goods manager (p. 57) ■ Globally applicable standards (p. 57) ■ Transport & warehouse safety audits (p. 58) ■ Strengths and weaknesses profile (p. 58) ■ Employee training and regular discussions (p. 59) ■ Proper transport (p. 59) ■ Transport vehicles (p. 59) ■ Goals: Products (p. 148)
	Outcome of activities	■ Number and results of audits (p. 58) ■ No incidents or violations (p. 58) ■ Employee training and internal best practice sharing events (p. 59) ■ Goal progress: Products (p. 148)

Issue	Specification	Reference
Prices of medicines	Concepts incl. due diligence processes	■ Structural pricing organization (p. 46) ■ Medicine price guidelines and principles (p. 46) ■ Data-based pricing (p. 46) ■ Innovative contracting models (p. 46) ■ Government tenders (p. 46) ■ Second lower-price brands (p. 47) ■ Patient Access Programs (p. 47)
	Outcome of activities	■ Examples of innovative contracting models (p. 46) ■ Examples of government tenders (p. 46) ■ Examples of second lower-price brands (p. 47) ■ Examples of Patient Access Programs (p. 47)
Innovation and R&D	Concepts incl. due diligence processes	■ Continuous innovation process (p. 29) ■ Structural organization of research and development (p. 29) ■ Innovation Center (p. 30) ■ Displaying Futures Award (p. 31) ■ Fostering young talent: An investment in the future (p. 31)
	Outcome of activities	■ Research & development spending (p. 29) ■ Strategic partnerships (p. 29) ■ Merck Venture Fund (p. 29) ■ Projects in the Innovation Center (p. 30) ■ 2017 Displaying Futures Award (p. 31) ■ Examples of fostering talent (p. 31)
Digitalization	Concepts incl. due diligence processes	■ Structural organization of research and development (p. 29) ■ Four strategic focus areas (p. 29)
	Outcome of activities	■ Examples from the strategic focus areas (p. 32)

General disclosures

The CR Report 2017 has been prepared in accordance with the GRI Standards: 'Comprehensive' option. The following GRI content index provides an overview of general disclosures, the GRI standards (Topic-specific Standards) and management approaches identified as relevant, as well as where the corresponding contents are described. The GRI content index, as a part of the CR report 2017 (p. 118), has received an independent audit certificate after undergoing a limited assurance (p. 194) audit.

GRI Content Index: General disclosures

GRI Standards and Disclosure Number		Comment	Reference
Organizational profile			
102-1	Name of the organization		Company profile (p. 6)
102-2	Activities, brands, products, and services		Company profile (p. 6) Products & Industries
102-3	Location of headquarters		Company profile (p. 6)
102-4	Location of operations		Company profile (p. 6) List of shareholdings
102-5	Ownership and legal form		Company profile (p. 6)
102-6	Markets served		Company profile (p. 6) Macroeconomic and Sector-Specific Environment
102-7	Scale of the organization		Company profile (p. 6) Indicators: employees (p. 126) Indicators: environment (p. 139) Net sales Capitalization Consolidated Balance Sheet
102-8	Information on employees and other workers	Supervised workers such as temps are not logged in our employee data system.	Indicators: employees (p. 126) Attractive employer (p. 73)
102-9	Supply chain		Supply chain standards (p. 104) Mica supply chain (p. 106) Resource efficiency (p. 94)
102-10	Significant changes to the organization and its supply chain		Company profile (p. 6) Supply chain standards (p. 104) Resource efficiency (p. 94) Fundamental Information about the Group
102-11	Precautionary Principle or approach		Transport and warehouse safety (p. 57) Health and safety (p. 80) Environmental stewardship (p. 87) Climate protection (p. 90) Plant and process safety (p. 100) Chemical product safety (p. 50)
102-12	External initiatives		Governance (p. 8) Compliance (p. 11) Human rights (p. 17)
102-13	Membership of associations		Stakeholder dialogue (p. 19) Environmental stewardship (p. 87)

Strategy		
102-14	Statement from senior decision-maker	Letter from the CEO (p. 3)
102-15	Key impacts, risks, and opportunities	CR strategy (p. 9) Materiality analysis (p. 22) Goals (p. 148) Report on Risks and Opportunities
Ethics and integrity		
102-16	Values, principles, standards, and norms of behavior	Diversity (p. 77) Good leadership (p. 84) Governance (p. 8) Human rights (p. 17) Compliance (p. 11) Bioethics (p. 61) Clinical studies (p. 63) Animal welfare (p. 67)
102-17	Mechanisms for advice and concerns about ethics	Compliance (p. 11) Diversity (p. 77) Mica supply chain (p. 106) Bioethics (p. 61) Clinical studies (p. 63) Animal welfare (p. 67)
Governance		
102-18	Governance structure	CR strategy (p. 9) Management Statement on Corporate Governance
102-19	Delegating authority	CR strategy (p. 9) Procedures of the corporate bodies
102-20	Executive-level responsibility for economic, environmental, and social topics	CR strategy (p. 9)
102-21	Consulting stakeholders on economic, environmental, and social topics	CR strategy (p. 9) Stakeholder dialogue (p. 19) Employee engagement (p. 82) Materiality analysis (p. 22)
102-22	Composition of the highest governance body and its committees	Management Statement on Corporate Governance The Executive Board The Supervisory Board Objectives of the Supervisory Board with respect to its composition
102-23	Chair of the highest governance body	Management Statement on Corporate Governance
102-24	Nominating and selecting the highest governance body	Diversity (p. 77) The Executive Board Statement on Corporate Governance Gender quota Diversity policy Objectives of the Supervisory Board with respect to its composition
102-25	Conflicts of interest	Compliance (p. 11) Information on corporate governance practices
102-26	Role of highest governance body in setting purpose, values, and strategy	CR strategy (p. 9) Values and compliance Report of the Supervisory Board

102-27	Collective knowledge of highest governance body	CR strategy (p. 9) The Executive Board Statement on Corporate Governance
102-28	Evaluating the highest governance body's performance	Company profile (p. 6) Board of Partners The Supervisory Board Articles of Association Statement on Corporate Governance
102-29	Identifying and managing economic, environmental, and social impacts	CR strategy (p. 9) Compliance (p. 11) Materiality analysis (p. 22) Report profile (p. 118) Report on Risks and Opportunities Statement on Corporate Governance
102-30	Effectiveness of risk management processes	CR strategy (p. 9) Report profile (p. 118) Report on Risks and Opportunities Report of the Supervisory Board
102-31	Review of economic, environmental, and social topics	CR strategy (p. 9) Report profile (p. 118) Report on Risks and Opportunities Report of the Supervisory Board
102-32	Highest governance body's role in sustainability reporting	Report profile (p. 118)
102-33	Communicating critical concerns	Compliance (p. 11) Values and compliance
102-34	Nature and total number of critical concerns	Compliance (p. 11) Values and compliance
102-35	Remuneration policies	Compensation report
102-36	Process for determining remuneration	Compensation report
102-37	Stakeholders' involvement in remuneration	Attractive employer (p. 73) Compensation report Voting results Annual General Meeting 2017

102-38	Annual total compensation ratio	Competitive salaries and additional benefits not only increase our attractiveness as an employer; they also motivate our people and build loyalty to the company. The compensation we offer is based on market analyses in the relevant field and the value of the respective position, as well as the employee's skill set and performance. Our Global Rewards Policy defines the framework for compensation and benefits across the entire Group. As far as possible, we strive to offer all our employees comparable compensation structures. Furthermore, we monitor compliance with minimum standards. We do not consider the information required under GRI 102-38 and GRI 102-39 to be relevant to assessing the fairness of our compensation structures.	
102-39	Percentage increase in annual total compensation ratio	Competitive salaries and additional benefits not only increase our attractiveness as an employer; they also motivate our people and build loyalty to the company. The compensation we offer is based on market analyses in the relevant field and the value of the respective position, as well as the employee's skill set and performance. Our Global Rewards Policy defines the framework for compensation and benefits across the entire Group. As far as possible, we strive to offer all our employees comparable compensation structures. Furthermore, we monitor compliance with minimum standards. We do not consider the information required under GRI 102-38 and GRI 102-39 to be relevant to assessing the fairness of our compensation structures.	
Stakeholder engagement			
102-40	List of stakeholder groups		Stakeholder dialogue (p. 19) Materiality analysis (p. 22)
102-41	Collective bargaining agreements		Employee engagement (p. 82)
102-42	Identifying and selecting stakeholders		Stakeholder dialogue (p. 19) Materiality analysis (p. 22)

102-43	Approach to stakeholder engagement	Stakeholder dialogue (p. 19) Materiality analysis (p. 22)
102-44	Key topics and concerns raised	Stakeholder dialogue (p. 19) Materiality analysis (p. 22)
Reporting practice		
102-45	Entities included in the consolidated financial statements	Report profile (p. 118) Company profile (p. 6)
102-46	Defining report content and topic Boundaries	Report profile (p. 118) Materiality analysis (p. 22)
102-47	List of material topics	Materiality analysis (p. 22)
102-48	Restatements of information	Report profile (p. 118)
102-49	Changes in reporting	Report profile (p. 118) Materiality analysis (p. 22)
102-50	Reporting period	Report profile (p. 118)
102-51	Date of most recent report	Report profile (p. 118)
102-52	Reporting cycle	Report profile (p. 118)
102-53	Contact point for questions regarding the report	Report profile (p. 118)
102-54	Claims of reporting in accordance with the GRI Standards	GRI content index (p. 173)
102-55	GRI content index	GRI content index (p. 173)
102-56	External assurance	GRI content index (p. 173) Report profile (p. 118)

Economic standards

GRI Content Index: Economic Standards

GRI Standards and Disclosure Number	Comment	Reference
GRI 201: ECONOMIC PERFORMANCE 2016		
103-1 Explanation of the material topic and its Boundary 103-2 The management approach and its components 103-3 Evaluation of the management approach		Employee engagement (p. 82) Materiality analysis (p. 22) Statement on Corporate Governance Economic performance Pension schemes Report on Risks and Opportunities
201-1 Direct economic value generated and distributed		Indicators: community (p. 146) Consolidated Income Statement Consolidated Cash Flow Statement Information by business sector /country and region Personnel expenses
201-2 Financial implications and other risks and opportunities due to climate change	We report in detail on various aspects of climate change as part of our participation in the CDP (formerly known as the Carbon Disclosure Project).	Climate protection (p. 90) Water management (p. 97) Global Compact CoP (p. 190) CDP Report on Risks and Opportunities
201-3 Defined benefit plan obligations and other retirement plans		Indicators: employees (p. 126) Pension schemes
201-4 Financial assistance received from government		Accounting: Property, plant and equipment Property, plant and equipment Research and development costs
GRI 202: MARKET PRESENCE 2016		
103-1 Explanation of the material topic and its Boundary 103-2 The management approach and its components 103-3 Evaluation of the management approach		Good leadership (p. 84) Diversity (p. 77) Employee engagement (p. 82) Materiality analysis (p. 22)

202-1	Ratios of standard entry level wage by gender compared to local minimum wage	This indicator is not relevant to us, which is why we do not collect data on the ratio of the standard entry level wage compared to local minimum wage. Our Global Rewards Policy applies to all our subsidiaries worldwide and guarantees a systematic compensation structure. Both base pay and short-term variable compensation are oriented to the median base pay of the relevant reference market. Our pay brackets are reviewed on an annual basis and reflect market conditions. It goes without saying that we always adhere to local minimum wage levels.	Attractive employer (p. 73)
202-2	Proportion of senior management hired from the local community	We encourage both local hiring and international appointments across all levels of the company. The percentage of local managers is not recorded as it is not relevant to our strategic personnel planning.	Diversity (p. 77) Good leadership (p. 84)
GRI 204: PROCUREMENT PRACTICES 2016			
103-1	Explanation of the material topic and its Boundary		Supply chain standards (p. 104) Mica supply chain (p. 106) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
204-1	Proportion of spending on local suppliers		Supply chain standards (p. 104)
GRI 205: ANTI-CORRUPTION 2016			
103-1	Explanation of the material topic and its Boundary		Compliance (p. 11) Interactions with health systems (p. 70) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
205-1	Operations assessed for risks related to corruption		Compliance (p. 11) Indicators: compliance (p. 121) Values and compliance Report on Risks and Opportunities
205-2	Communication and training about anti-corruption policies and procedures		Governance (p. 8) Compliance (p. 11) Indicators: compliance (p. 121)
205-3	Confirmed incidents of corruption and actions taken	As applicable, we report on risks from litigation and legal proceedings in our Report on Risks and Opportunities.	Compliance (p. 11) Indicators: compliance (p. 121) Report on Risks and Opportunities

GRI 206: ANTI-COMPETITIVE BEHAVIOR 2016		
103-1	Explanation of the material topic and its Boundary	Compliance (p. 11) Materiality analysis (p. 22)
103-2	The management approach and its components	
103-3	Evaluation of the management approach	
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Indicators: compliance (p. 121)

Additional material topics

TECHNOLOGY (Innovation and R&D, Digitalization)		
103-1	Explanation of the material topic and its Boundary	Innovation and digitalization (p. 29) Materiality analysis (p. 22)
103-2	The management approach and its components	
103-3	Evaluation of the management approach	
DATA SECURITY		
103-1	Explanation of the material topic and its Boundary	Compliance (p. 11) Materiality analysis (p. 22)
103-2	The management approach and its components	
103-3	Evaluation of the management approach	

Environmental standards

GRI Content Index: Environmental Standards

GRI Standards and Disclosure Number	Comment	Reference
GRI 301: MATERIALS 2016		
103-1 Explanation of the material topic and its Boundary 103-2 The management approach and its components 103-3 Evaluation of the management approach	In all our endeavors, we attempt to efficiently utilize materials and recycle as much as possible. Where feasible, we use recycled materials (in packaging, for instance). Overall, material consumption is not a major concern for us. There are few opportunities to use recycled material in our production processes because our business model puts us at the start of the value chain. We therefore do not collect such data at the Group-level. Individual data and measures are reported under the respective chapters.	Resource efficiency (p. 94) Packaging (p. 36) Reuse and recycling (p. 37) Materiality analysis (p. 22)
301-1 Materials used by weight or volume	See GRI 103: 301	Resource efficiency (p. 94) Sustainable product design (p. 32) Packaging (p. 36)
301-2 Recycled input materials used	See GRI 103: 301	Packaging (p. 36) Reuse and recycling (p. 37) Resource efficiency (p. 94) Sustainable product design (p. 32) Waste and recycling (p. 95)
301-3 Reclaimed products and their packaging materials	Owing to the multitude of products we supply and the minimal comparability of our various initiatives, we do not collect quantitative data at the Group level. The individual measures taken by our various businesses are reported in the respective chapters.	Packaging (p. 36) Reuse and recycling (p. 37)
GRI 302: ENERGY 2016		
103-1 Explanation of the material topic and its Boundary 103-2 The management approach and its components 103-3 Evaluation of the management approach		Climate protection (p. 90) Sustainable product design (p. 32) Materiality analysis (p. 22)
302-1 Energy consumption within the organization		Climate protection (p. 90) Indicators: environment (p. 139)
302-2 Energy consumption outside of the organization		Climate protection (p. 90)
302-3 Energy intensity		Climate protection (p. 90) Indicators: environment (p. 139)
302-4 Reduction of energy consumption		Climate protection (p. 90) Indicators: environment (p. 139)

302-5	Reductions in energy requirements of products and services		Sustainable product design (p. 32) Resource efficiency (p. 94)
GRI 303: WATER 2016			
103-1	Explanation of the material topic and its Boundary		Water management (p. 97) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
303-1	Water withdrawal by source		Water management (p. 97) Indicators: environment (p. 139)
303-2	Water sources significantly affected by withdrawal of water		Water management (p. 97)
303-3	Water recycled and reused		Water management (p. 97) Indicators: environment (p. 139)
GRI 305: EMISSIONS 2016			
103-1	Explanation of the material topic and its Boundary		Climate protection (p. 90) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
305-1	Direct (Scope 1) GHG emissions		Climate protection (p. 90) Indicators: environment (p. 139)
305-2	Energy indirect (Scope 2) GHG emissions		Climate protection (p. 90) Indicators: environment (p. 139)
305-3	Other indirect (Scope 3) GHG emissions		Climate protection (p. 90) Indicators: environment (p. 139) CDP
305-4	GHG emissions intensity		Indicators: environment (p. 139)
305-5	Reduction of GHG emissions		Climate protection (p. 90) Indicators: environment (p. 139) Sustainable product design (p. 32) Packaging (p. 36) CDP
305-6	Emissions of ozone-depleting substances (ODS)	This disclosure is not material to Merck.	Indicators: environment (p. 139)
305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	This disclosure is not material to Merck.	Indicators: environment (p. 139)
GRI 306: EFFLUENTS AND WASTE 2016			
103-1	Explanation of the material topic and its Boundary		Water management (p. 97) Waste and recycling (p. 95) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
306-1	Water discharge by quality and destination		Water management (p. 97) Indicators: environment (p. 139)
306-2	Waste by type and disposal method		Waste and recycling (p. 95) Reuse and recycling (p. 37) Indicators: environment (p. 139)
306-3	Significant spills		Plant and process safety (p. 100) Indicators: environment (p. 139)

306-4	Transport of hazardous waste	Indicators: environment (p. 139)
306-5	Water bodies affected by water discharges and/or runoff	Water management (p. 97)
GRI 307: ENVIRONMENTAL COMPLIANCE 2016		
103-1	Explanation of the material topic and its Boundary	Environmental stewardship (p. 87) Materiality analysis (p. 22)
103-2	The management approach and its components	
103-3	Evaluation of the management approach	
307-1	Non-compliance with environmental laws and regulations	Environmental stewardship (p. 87)
GRI 308: SUPPLIER ENVIRONMENTAL ASSESSMENT 2016		
103-1	Explanation of the material topic and its Boundary	Supply chain standards (p. 104) Materiality analysis (p. 22) Mica supply chain (p. 106)
103-2	The management approach and its components	
103-3	Evaluation of the management approach	
308-1	New suppliers that were screened using environmental criteria	Supply chain standards (p. 104) Mica supply chain (p. 106)
308-2	Negative environmental impacts in the supply chain and actions taken	Supply chain standards (p. 104) Mica supply chain (p. 106)

social standards

GRI Content Index: Social Standards

GRI Standards and Disclosure Number	Comment	Reference
GRI 401: EMPLOYMENT 2016		
103-1 Explanation of the material topic and its Boundary 103-2 The management approach and its components 103-3 Evaluation of the management approach		Attractive employer (p. 73) Diversity (p. 77) Health and safety (p. 80) Materiality analysis (p. 22)
401-1 New employee hires and employee turnover		Indicators: employees (p. 126)
401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	At Merck KGaA (20% of the company's total workforce), part-time employees receive the same job benefits as full-time workers. Employees with temporary contracts, however, are not entitled to all company benefits, such as a company pension.	Indicators: employees (p. 126) Attractive employer (p. 73)
401-3 Parental leave		Attractive employer (p. 73) Indicators: employees (p. 126)
GRI 402: LABOR/MANAGEMENT RELATIONS 2016		
103-1 Explanation of the material topic and its Boundary 103-2 The management approach and its components 103- 3 Evaluation of the management approach		Attractive employer (p. 73) Health and safety (p. 80) Employee engagement (p. 82) Materiality analysis (p. 22)
402-1 Minimum notice periods regarding operational changes	The regulations on periods of notice vary worldwide. We apply the rules that are in force locally. There is no need for us to track periods of notice at Group level.	
GRI 403: OCCUPATIONAL HEALTH AND SAFETY 2016		
103-1 Explanation of the material topic and its Boundary 103-2 The management approach and its components 103-3 Evaluation of the management approach		Health and safety (p. 80) Materiality analysis (p. 22)

403-1	Workers representation in formal joint management–worker health and safety committees	Occupational health and safety committees are required by law in Germany. All employees of Merck KGaA are therefore represented by such committees, which operate at the site level. These employees account for around 20% of our total workforce. The majority of facilities outside Germany also have health and safety committees to represent their employees. Each individual site is responsible for arranging and maintaining such committees.	Health and safety (p. 80)
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	We have identified the lost time injury rate (LTIR) as a key performance indicator for our company.	Health and safety (p. 80) Indicators: employees (p. 126)
403-3	Workers with high incidence or high risk of diseases related to their occupation		Health and safety (p. 80) Indicators: employees (p. 126)
403-4	Health and safety topics covered in formal agreements with trade unions	Health and safety issues are governed Group-wide by our EHS Policy. The organizational implementation of the policy is the responsibility of our individual sites and is subject to local laws and regulations. Merck KGaA, which accounts for approximately 20% of our total workforce, has bylaws on occupational health and safety in place.	Health and safety (p. 80)
GRI 404: TRAINING AND EDUCATION 2016			
103-1	Explanation of the material topic and its Boundary		Attractive employer (p. 73) Diversity (p. 77) Good leadership (p. 84) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
404-1	Average hours of training per year per employee	We do not keep track of the average hours our employees spend on vocational training and continuing education because this indicator does not have any bearing on the quality or success of our efforts.	Compliance (p. 11) Patient safety (p. 53) Chemical product safety (p. 50) Counterfeit products (p. 55) Animal welfare (p. 67) Attractive employer (p. 73) Diversity (p. 77) Health and safety (p. 80) Good leadership (p. 84) Plant and process safety (p. 100) Transport and warehouse safety (p. 57) Responsible marketing (p. 59)
404-2	Programs for upgrading employee skills and transition assistance programs		Attractive employer (p. 73) Diversity (p. 77) Good leadership (p. 84)
404-3	Percentage of employees receiving regular performance and career development reviews		Attractive employer (p. 73) Indicators: employees (p. 126)

GRI 405: DIVERSITY AND EQUAL OPPORTUNITY 2016			
103-1	Explanation of the material topic and its Boundary		Diversity (p. 77) Attractive employer (p. 73) Materiality analysis (p. 22) Objectives of the Supervisory Board with respect to its composition
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
405-1	Diversity of governance bodies and employees	Since there is no globally uniform definition of the term "minority", we do not record this sort of data. Moreover, many countries in which we operate have strict data privacy regulations governing the recording of personal employee data.	Diversity (p. 77) Indicators: employees (p. 126) The Executive Board The Supervisory Board Objectives of the Supervisory Board with respect to its composition
405-2	Ratio of basic salary and remuneration of women to men	The salaries we offer are predicated on the respective job description and are based on our Global Job Catalog, which has fixed salary bands that are identical for men and women. Variable salary components that fall under performance-based compensation are paid on the basis of whether mutually agreed targets have been achieved. A performance management system governs this process.	Attractive employer (p. 73)
GRI 406: NON-DISCRIMINATION 2016			
103-1	Explanation of the material topic and its Boundary		Diversity (p. 77) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
406-1	Incidents of discrimination and corrective actions taken		Diversity (p. 77)
GRI 407: FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING 2016			
103-1	Explanation of the material topic and its Boundary		Supply chain standards (p. 104) Mica supply chain (p. 106) Attractive employer (p. 73) Human rights (p. 17) Compliance (p. 11) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk		Supply chain standards (p. 104) Mica supply chain (p. 106) Attractive employer (p. 73)

GRI 408: CHILD LABOR 2016		
103-1	Explanation of the material topic and its Boundary	Supply chain standards (p. 104) Mica supply chain (p. 106) Attractive employer (p. 73) Human rights (p. 17) Compliance (p. 11) Materiality analysis (p. 22)
103-2	The management approach and its components	
103-3	Evaluation of the management approach	
408-1	Operations and suppliers at significant risk for incidents of child labor	Supply chain standards (p. 104) Mica supply chain (p. 106) Attractive employer (p. 73) Indicators: employees (p. 126)
GRI 409: FORCED OR COMPULSORY LABOR 2016		
103-1	Explanation of the material topic and its Boundary	Supply chain standards (p. 104) Mica supply chain (p. 106) Attractive employer (p. 73) Human rights (p. 17) Compliance (p. 11) Materiality analysis (p. 22)
103-2	The management approach and its components	
103-3	Evaluation of the management approach	
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Supply chain standards (p. 104) Mica supply chain (p. 106) Attractive employer (p. 73) Human rights (p. 17)
GRI 412: HUMAN RIGHTS ASSESSMENT 2016		
103-1	Explanation of the material topic and its Boundary	Human rights (p. 17) Compliance (p. 11) Materiality analysis (p. 22)
103-2	The management approach and its components	
103-3	Evaluation of the management approach	
412-1	Operations that have been subject to human rights reviews or impact assessments	Human rights (p. 17)
412-2	Employee training on human rights policies or procedures	Human rights (p. 17)
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	Human rights (p. 17)
GRI 414: SUPPLIER SOCIAL ASSESSMENT 2016		
103-1	Explanation of the material topic and its Boundary	Supply chain standards (p. 104) Mica supply chain (p. 106) Materiality analysis (p. 22)
103-2	The management approach and its components	
103-3	Evaluation of the management approach	
414-1	New suppliers that were screened using social criteria	Supply chain standards (p. 104) Mica supply chain (p. 106)
414-2	Negative social impacts in the supply chain and actions taken	Supply chain standards (p. 104) Mica supply chain (p. 106)
GRI 415: PUBLIC POLICY 2016		
103-1	Explanation of the material topic and its Boundary	Stakeholder dialogue (p. 19) Materiality analysis (p. 22)
103-2	The management approach and its components	

103-3	Evaluation of the management approach		
415-1	Political contributions		Stakeholder dialogue (p. 19)
GRI 416: CUSTOMER HEALTH AND SAFETY 2016			
103-1	Explanation of the material topic and its Boundary		Patient safety (p. 53) Chemical product safety (p. 50) Sustainable product design (p. 32) Plant and process safety (p. 100) Materiality analysis (p. 22) Report on Risks and Opportunities
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
416-1	Assessment of the health and safety impacts of product and service categories		Patient safety (p. 53) Chemical product safety (p. 50) Sustainable product design (p. 32) Plant and process safety (p. 100)
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	As applicable, we report on risks from litigation and legal proceedings in our Report on Risks and Opportunities.	Report on Risks and Opportunities
GRI 417: MARKETING AND LABELING 2016			
103-1	Explanation of the material topic and its Boundary		Patient safety (p. 53) Chemical product safety (p. 50) Responsible marketing (p. 59) Interactions with health systems (p. 70) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
417-1	Requirements for product and service information and labeling	Within our businesses, product labels are both important and mandatory. All pharmaceuticals and chemicals are subject to reporting and notification requirements that we fulfill. The individual requirements are reported in the respective chapters.	Patient safety (p. 53) Chemical product safety (p. 50)
417-2	Incidents of non-compliance concerning product and service information and labeling		Patient safety (p. 53) Chemical product safety (p. 50) Report on Risks and Opportunities
417-3	Incidents of non-compliance concerning marketing communications	As applicable, we report on risks from litigation and legal proceedings in our Report on Risks and Opportunities.	Responsible marketing (p. 59) Report on Risks and Opportunities
GRI 418: CUSTOMER PRIVACY 2016			
103-1	Explanation of the material topic and its Boundary		Clinical studies (p. 63) Compliance (p. 11) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data		Indicators: products (p. 125) Clinical studies (p. 63) Compliance (p. 11)
GRI 419: SOCIOECONOMIC COMPLIANCE 2016			
103-1	Explanation of the material topic and its Boundary		Compliance (p. 11) Materiality analysis (p. 22) Report on Risks and Opportunities
103-2	The management approach and its components		

103-3	Evaluation of the management approach		
419-1	Non-compliance with laws and regulations in the social and economic area	As applicable, we report on risks from litigation and legal proceedings in our Report on Risks and Opportunities.	Indicators: compliance (p. 121) Report on Risks and Opportunities

Additional material topics

ETHICAL CONDUCT (Bioethics, Clinical studies, Animal welfare)			
103-1	Explanation of the material topic and its Boundary		Bioethics (p. 61) Clinical studies (p. 63) Animal welfare (p. 67) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
HEALTH FOR EVERYONE (Access to health, Prices of medicines, Medicals to combat rare and neglected diseases, Health awareness)			
103-1	Explanation of the material topic and its Boundary		Access to health (p. 38) Prices of medicines (p. 46) Infectious diseases (p. 41) Health awareness (p. 47) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
COUNTERFEIT PRODUCTS			
103-1	Explanation of the material topic and its Boundary		Counterfeit products (p. 55) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		
COMMUNITY INVOLVEMENT			
103-1	Explanation of the material topic and its Boundary		Community involvement (p. 110) Health (p. 111) Education and culture (p. 114) Materiality analysis (p. 22)
103-2	The management approach and its components		
103-3	Evaluation of the management approach		

Global Compact CoP

2017 Communication on progress in implementing the ten principles of the Global Compact

We have been a UN Global Compact participant since 2005. As a signatory of the initiative, we have committed ourselves to ten principles based on key UN conventions regarding human rights, labor standards, environmental protection, and anti-corruption. At the same time, the UN Global Compact calls on its signatories to actively engage in propagating the principles within their own sphere of influence.

The following table summarizes the key measures we took in 2017 to support and implement the principles of the Global Compact.

COMMUNICATION ON PROGRESS

UN GLOBAL COMPACT

This is our **Communication on Progress** in implementing the Ten Principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

Link: www.unglobalcompact.org

UNGC principles:	Key measures in 2017	Relevant GRI disclosures:	Reference:
Human rights			
Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights.	▪ Updated our Code of Conduct, entitled “What guides us” ▪ Analyzed the results of our human rights self-assessment ▪ Launched an electronic confirmation course on our Human Rights Charter for certain groups and leaders ▪ Donated 150 million praziquantel tablets to the World Health Organization to treat schistosomiasis, a donation that included Egypt and Uganda for the first time.	410-1, 411-1, 103-2: 412, 412-2, 413-1, 413-2	Compliance (p. 11) Human rights (p. 17) Health (p. 111)
Principle 2: Businesses should make sure that they are not complicit in human rights abuses.	▪ Analyzed the results of our human rights self-assessment ▪ Launched an electronic confirmation course on our Human Rights Charter for certain groups and leaders ▪ Conducted internal and external audits, assessments and inspections of suppliers with regard to corporate responsibility, and collected self-reported information.	412-3, 414-1, 414-2	Human rights (p. 17) Compliance (p. 11) Supply chain standards (p. 104)

Labor standards

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the rights to collective bargaining.	■ Analyzed the results of our human rights self-assessment ■ Conducted internal audits on workplace aspects of our Human Rights Charter ■ Conducted internal and external audits, assessments and inspections of suppliers with regard to corporate responsibility, and collected self-reported information.	102-41, 402-1, 407-1	Human rights (p. 17) Compliance (p. 11) Employee engagement (p. 82)Supply chain standards (p. 104)
Principle 4: Businesses should support the elimination of all forms of forced and compulsory labor.	■ Conducted internal audits on workplace aspects of our Human Rights Charter ■ Analyzed the results of our human rights self-assessment ■ Published the UK Modern Slavery Statement, which was adopted by our Executive Board, on our website ■ Conducted internal and external audits, assessments and inspections of suppliers with regard to corporate responsibility, and collected self-reported information.	409-1	Human rights (p. 17) Compliance (p. 11) (p. 82)Supply chain standards (p. 104)
Principle 5: Businesses should support the effective abolition of child labor.	■ Analyzed the results of our human rights self-assessment ■ Conducted internal audits on workplace aspects of our Human Rights Charter ■ Participated in the kick-off conference of the Responsible Mica Initiative in Delhi: jointly announced a five-year action plan for a responsible mica supply chain ■ The Indian organization IGEP performed monthly inspections on mica mines and mica processors ■ Conducted internal and external audits, assessments and inspections of suppliers with regard to corporate responsibility, and collected self-reported information.	408-1	Human rights (p. 17) Compliance (p. 11) Supply chain standards (p. 104)Mica supply chain (p. 106)
Principle 6: Businesses should support the elimination of discrimination in respect of employment and occupation.	■ Conducted internal audits on workplace aspects of our Human Rights Charter ■ Identified focus areas to achieve our 2021 target of maintaining a 30% representation of women in leadership roles (role 4+) ■ Expanded internal diversity initiatives.	102-8, 202-1, 202-2, 401-1, 401-3, 404-1, 404-3, 405-1, 405-2, 406-1	Human rights (p. 17) Compliance (p. 11) Diversity (p. 77)

Environmental stewardship

Principle 7: Businesses should support a precautionary approach to environmental challenges.	■ Recertified environmental management systems to updated version of ISO 14001 (Group certificate for 83 sites) ■ Annually reduced CO_2 emissions (reduction target by 2020: 20% versus 2006 baseline) ■ Implemented more than 300 climate impact mitigation projects since 2012 ■ Analyzed and assessed our water management practices with the goal of implementing a sustainable water management system at sites with high consumption levels by 2020 ■ Implemented measures to ensure product safety (e.g. REACH, GHS, Global Product Strategy) as well as plant and process safety (e.g. Risk Management Process) ■ Had internal and external EHS audits performed ■ Introduced the Merck Waste Scoring System with the goal of reducing the environmental impact of our waste by 5% by 2025.	201-2, 301-1, 302-1, 303-1, 305-1, 305-2, 305-3, 305-6, 305-7	Environmental stewardship (p. 87) Climate protection (p. 90) Resource efficiency (p. 94) Water management (p. 97) Waste and recycling (p. 95) Plant and process safety (p. 100) Sustainable product design (p. 32)Packaging (p. 36) Patient safety (p. 53) Chemical product safety (p. 50) Transport and warehouse safety (p. 57)
Principle 8: Businesses should undertake initiatives to promote greater environmental responsibility.	■ Systematically examined potential energy savings at our production facilities ■ Reduced maximum CO_2 emissions for new company vehicles as of January 1, 2017 ■ Offered employees sustainable mobility options such as Jobtickets and rental bicycles ■ Labeled products to provide information on their use and disposal.	301 – 308	Climate protection (p. 90) Water management (p. 97) Waste and recycling (p. 95) Plant and process safety (p. 100) Chemical product safety (p. 50) Patient safety (p. 53) Transport and warehouse safety (p. 57)
Principle 9: Businesses should encourage the development and diffusion of environmentally friendly technologies.	■ Developed sustainable products such as liquid crystal technologies, raw materials for natural cosmetics and green alternatives to chemicals ■ Developed a new, sustainable packaging strategy ■ Used and took back eco-friendlier reusable packaging ■ Updated a recycling program for our Life Science customers.	302-4, 302-5, 305-5	Sustainable product design (p. 32) Packaging (p. 36) Reuse and recycling (p. 37) Performance Materials

Anti-corruption

Prinzip 10: Businesses should work against corruption in all its forms, including extortion and bribery.	■ Redesigned our Business Partner Risk Management process ■ Performed internal corruption audits ■ Strategically reorganized our Group function Compliance ■ Trained employees on anti-corruption ■ Provided global SpeakUp Line for employees to report corruption anonymously ■ Published annual EFPIA transparency report ■ Updated our anti-corruption guideline, for instance regarding rules for gifts and invitations.	102-16, 102-17, 205-1, 205-2, 205-3, 415-1	Compliance (p. 11) Interactions with health systems (p. 70)

Assurance Report

Independent Assurance Report[1]

To the Executive Board of Merck KGaA, Darmstadt

We have been engaged to perform an independent limited assurance engagement on the qualitative and quantitative disclosures on sustainability in the "Corporate Responsibility Report 2017" (further "Report") of Merck KGaA, Darmstadt (further "Merck") for the fiscal year 2017 published at http://reports.merckgroup.com/2017/cr-report/.

It was not part of our engagement to review product or service related information, references to external information sources, expert opinions and futurerelated statements in the Report.

Management's Responsibility for the Report

The legal representatives of Merck are responsible for the preparation of the Report in accordance with the Reporting Criteria. Merck applies the principles and standard disclosures of the Standards of the Global Reporting Initiative in combination with the Corporate Accounting and Reporting Standard (Scope 1 und 2), the Corporate Value Chain (Scope 3) Standard of the World Resources Institute/World Business Council for Sustainable Development (WBCSD), as described in the section of the Report "Report profile", as Reporting Criteria.

The responsibility includes the selection and application of appropriate methods to prepare the Report and the use of assumptions and estimates for individual qualitative and quantitative sustainability disclosures which are reasonable under the circumstances. Furthermore, this responsibility includes designing, implementing and maintaining systems and processes relevant for the preparation of the Report in a way that is free of – intended or unintended – material misstatements.

Independence and quality assurance on the part of the auditing firm

We are independent from the company in accordance with the requirements of independence and quality assurance set out in legal provisions and professional pronouncements and have fulfilled our additional professional obligations in accordance with these requirements.

Our audit firm applies the legal provisions and professional pronouncements for quality assurance, in particular the Professional Code for German Public Auditors and Chartered Accountants (in Germany) and the quality assurance standard of the German Institute of Public Auditors (Institut der Wirtschaftsprüfer, IDW) regarding quality assurance requirements in audit practice (IDW QS 1).

Practitioner's Responsibility

Our responsibility is to express a conclusion based on our work performed and the evidences obtained on the qualitative and quantitative disclosures within the scope of our engagement.

[1] Translation of the independent assurance report, authoritative in German language.

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): "Assurance Engagements other than Audits or Reviews of Historical Financial Information" and the International Standard on Assurance Engagements (ISAE) 3410: "Assurance Engagements on Greenhouse Gas Statements" of the International Auditing and Assurance Standards Board (IAASB). These standards require that we comply with our professional duties and plan and perform the assurance engagement to obtain a limited level of assurance to preclude that the information above is not in accordance, in material respects, with the aforementioned Reporting Criteria. We do not, however, issue a separate conclusion for each disclosure. In a limited assurance engagement the evidence gathering procedures are more limited than in a reasonable assurance engagement and therefore less assurance is obtained than in a reasonable assurance engagement. The choice of audit activities is subject to the auditor's own judgement. This includes the assessment of the risk of material misstatement in the Report under consideration of the Reporting Criteria.

Within the scope of our engagement, we performed amongst others the following procedures:

- Inquiries of personnel on Group level responsible for the materiality analysis, in order to gain an understanding of the processes for determining material sustainability topics and respective reporting boundaries of Merck.
- A risk analysis, including a media search, to identify relevant sustainability aspects for Merck in the reporting period.
- Evaluation of the design and implementation of the systems and processes for the collection, processing and control of the sustainability disclosures included in the scope of this engagement, including the consolidation of the data, at corporate and site level.
- Interviews with relevant staff on corporate level responsible for providing and consolidating the data and information, as well as carrying out internal control procedures on the data and information, including the explanatory notes.
- Assessment of local data collection and reporting processes and reliability of reported data via a sampling survey at the sites Darmstadt and Wiesbaden (Merck Performance Materials GmbH), as well as Savannah, Billerica/Rockland and Jaffrey (USA).
- Evaluation of selected internal and external documents.
- Analytical evaluation of data and trends of quantitative disclosures which are reported by all sites on group level.
- Use of the insights and relevant work performed for the group and statutory audit of the (consolidated) financial statements for the year ended December 31, 2017 of Merck KGaA with regard to audit procedures on those information and indicators that were derived from those consolidated financial statements.
- Reviewing the consistency of GRI Standards in-accordance option 'Comprehensive' as declared by Merck with sustainability information in the Report
- An evaluation of the overall presentation of the information, including the explanatory notes, within the scope of our engagement.

As described in the Report, in 2017 Merck engaged external providers to perform assessments and audits. The adequacy and accuracy of the conclusions from these external assessments were not part of our limited assurance engagement.

Conclusion

Based on our limited assurance engagement, nothing has come to our attention that causes us to believe that the qualitative and quantitative disclosures on sustainability for the business year 2017 included in the scope of this engagement and published in the Report are in all material respects not prepared in accordance with the Reporting Criteria.

Restriction of use / AAB clause

This report is issued for purposes of the Executive Board of Merck KGaA, Darmstadt, only. We assume no responsibility with regard to any third parties.

Our assignment for the Executive Board of Merck KGaA, Darmstadt, and professional liability is governed by the General Conditions of Assignment for Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften (Allgemeine Auftragsbedingungen für Wirtschaftsprüfer und Wirtschaftsprüfungsgesellschaften) in the version dated January 1, 2017 (https://www.kpmg.de/bescheinigungen/lib/aab_english.pdf). By reading and using the information contained in this report, each recipient confirms notice of provisions of the General Conditions of Assignment (including the limitation of our liability for negligence to EUR 4 Mio as stipulated in No. 9) and accepts the validity of the General Conditions of Assignment with respect to us.

Frankfurt am Main, March 20, 2018

KPMG AG
Wirtschaftsprüfungsgesellschaft
[Original German version signed by:]

Laue
Wirtschaftsprüfer
[German Public Auditor]

Glöckner
Wirtschaftsprüfer
[German Public Auditor]