2 Indicators

Economics, Compliance, Employees, Environment, Society

The figures presented below pertain to the entire Merck Group, unless otherwise indicated.
The following indicators have undergone a limited assurance audit by KPMG AG Wirtschaftsprüfungsgesellschaft.

Indicators: Economics

Total revenues, sales, operating result (EBIT) and R&D costs, by division (€ million)

	Merck Serono	Consumer Health	Performance Materials	Merck Millipore	Group*
2012					
Total revenues	6,405.2	475.2	1,675.6	2,616.9	**11,172.9**
Sales	5,995.8	472.6	1,674.2	2,598.2	**10,740.8**
Operating result (EBIT)**	547.7	7.6	609.7	251.7	**963.6**
R&D costs	1,187.3	19.4	137.4	166.1	**1,511.3**
2013					
Total revenues	6,325.8	479.6	1,644.4	2,645.3	**11,095.1**
Sales	5,953.6	476.9	1,642.1	2,627.5	**10,700.1**
Operating result (EBIT)**	893.0	62.2	653.3	262.0	**1,610.8**
R&D costs	1,182.8	17.1	143.0	159.8	**1,504.3**

* As a non-operating segment, Corporate and Other is not shown here (see Annual Report 2013, Segment Reporting).
** The previous year's figures have been adjusted (see Annual Report 2013, Notes on Segment Reporting).

Merck achieved strong full-year results, meeting its objectives for 2013 despite a challenging market environment. The company, which offers top-quality high-tech products in the pharmaceutical and chemical sectors, reported solid organic sales growth of 4.2% to € 10.7 billion. Thanks to the accelerated implementation of efficiency measures, EBITDA pre one-time items increased by 9.7% to a record € 3.25 billion. The EBITDA pre margin increased by nearly three percentage points from 27.6% to 30.4%.

Merck posted a considerable increase of 67.2% in the operating result (EBIT), which amounted to € 1.61 billion (2012: € 964 million). This was due on the one hand to the good performance of operating business and on the other to the sharp decline in the very high level of one-time items incurred in 2012 due to restructuring measures.

At € 1,504 million, R&D costs in 2013 remained at the 2012 level.

See Annual Report 2013, Development of total revenues and sales as well as results of operations

Indicators: Compliance

Internal audits on corruption and Social Charter

	2009	2010	2011	2012	2013
Number of audits relating to corruption	32	34	28	40	30
Number of audits relating to Social Charter	–	26	26	40	27

Compliance violations reported via the SpeakUp Line

	2009	2010	2011	2012	2013
Number of reported compliance incidents	14	21	29	20	22
Number of confirmed cases	3	3	5	5	9

Compliance training seminars

	2009	2010	2011	2012	2013
Number of employees trained in anti-corruption policies and procedures in the respective year*	6,400	8,600	13,399	22,890	24,168
% of employees trained on the topic of anti-corruption in the respective year	19	21	33	59	63
Number of employees Global Grade 10 or higher trained on the topic of anti-corruption in the respective year	Not recorded	Not recorded	7,540	10,164	12,390
% of employees Global Grade 10 or higher trained on the topic of anti-corruption in the respective year	Not recorded	Not recorded	53	60	69
% of employees Global Grade 9 or lower trained on the topic of anti-corruption in the respective year	Not recorded	Not recorded	22	58	51

* Until 2010, anti-corruption training was part of Code of Conduct training seminars.

In order to address the special responsibility held by employees of a certain management level, as well as by employees with HR responsibility, these employees are increasingly receiving anti-corruption training. This includes all employees rated Global Grade (GG) 10 or higher.

Indicators: Employees

Workforce structure

Number of total employees

As of Dec. 31	2009	2010	2011	2012	2013
Total employees	**33,062**	**40,562**	**40,676**	**38,847**	**38,154**
Men	19,097	23,171	23,347	22,505	22,253
Women	13,965	17,391	17,329	16,342	15,901

The "Fit for 2018" transformation and growth program impacted HR work in 2013 as well. In 2013, at the majority of Merck's sites the structural prerequisites were put in place and agreements were reached with the respective social partners in order to implement the socially responsible approach to workforce reduction necessary as part of the transformation process. For example, in Germany, around 1,200 employees chose to participate in a partial retirement program or a voluntary leaver program. By the end of 2013, we had completed the process of moving Merck Serono's headquarters from Geneva to Darmstadt. In comparison to 2012, the total number of employees in 2013 decreased by 693.

Number of employees by hierarchical level

As of Dec. 31	2009	2010	2011	2012	2013
Total employees	**33,062**	**40,562**	**40,676**	**38,847**	**38,154**
Senior Management (Global Grade above 17)	Not recorded	51*	49*	54	63
Low and middle management (Global Grade 14-17)	Not recorded	1,354*	1,355*	1,719	1,949
Other employees (Global Grade below 14)	Not recorded	39,157*	39,272*	37,074	36,142

* Figures do not entirely include the employees of the Millipore Corporation, which was acquired in July 2010. The Global Grading System was instituted there incrementally.

Average number of employees by functional area

Average number of employees	2009	2010	2011	2012	2013
Group	**32,850**	**36,347**	**40,570**	**39,939**	**38,282**
Production	6,956	8,327	9,317	9,486	9,985
Logistics	1,773	1,927	2,054	1,665	1,779
Marketing and Sales	10,582	11,541	12,322	12,353	12,214
Administration	3,750	4,378	4,696	4,416	5,106
Research and Development	3,627	4,116	4,632	4,558	4,433
Infrastructure and Other	6,162	6,058	7,549	7,461	4,765

Number of employees by region

As of Dec. 31	2009	2010	2011	2012	2013
Total	**33,062**	**40,562**	**40,676**	**38,847**	**38,154**
Employees in Europe	*	*	21,830	20,777	20,013
thereof women	*	*	9,832	9,261	8,755
Employees in North America	*	*	4,964	4,848	4,911
thereof women	*	*	2,314	2,225	2,246
Employees in Emerging Markets**	*	*	12,229	11,642	11,688
thereof women	*	*	4,565	4,274	4,335
Employees in Rest of World	*	*	1,653	1,580	1,542
thereof women	*	*	618	582	565

* No retroactive calculation based on the new regional structure.
** Latin America and Asia excluding Japan.

Full-time and part-time employees

As of Dec. 31	2009	2010	2011	2012	2013
% of full-time employees	94	94	94	94	95
% of part-time employees	6	6	6	6	5

In 2013, 39% of employees working full-time in the Merck Group were women (2012: 39%), with women representing 92% of employees working part-time (2011: 90%). In 2012, 13% of employees worked part-time at the Darmstadt, Gernsheim and Grafing sites in Germany, with 11% working part-time there in 2013.

In 2013, 8% of our part-time employees were men.

Temporary and permanent contracts

As of Dec. 31	2009	2010	2011	2012	2013
Total employees	**33,062**	**40,562**	**40,676**	**38,847**	**38,154**
Number of employees with permanent contracts	Not recorded	Not recorded	39,261	37,732	36,908
Number of employees with temporary contracts	Not recorded	Not recorded	1,415	1,115	1,246

Only 3% of Merck Group employees have temporary contracts.

In 2013, 42% of Merck employees with permanent contracts were women (2012: 42%); 43% of the employees with temporary contracts were women (2012: 46%).

Staff turnover

	2009	2010	2011*	2012*	2013
Total turnover rate	**Not recorded**	**Not recorded**	**13.37**	**13.71**	**14.61**
Turnover rate by gender					
Men	Not recorded	Not recorded	10.98	13.17	14.08
Women	Not recorded	Not recorded	12.07	14.45	15.34
Turnover rate by age group					
Up to 29 years old	Not recorded	Not recorded	22.40	23.77	21.55
30 to 49 years old	Not recorded	Not recorded	11.58	12.48	13.44
50 or older	Not recorded	Not recorded	11.40	9.91	13.01
Turnover rate by region					
Europe	Not recorded	Not recorded	8.57	9.52	11.83
North America	Not recorded	Not recorded	14.48	12.75	10.51
Emerging Markets	Not recorded	Not recorded	21.00	21.46	21.15
Rest of World	Not recorded	Not recorded	17.00	14.68	14.14

* The figures for 2011 and 2012 have been recalculated based on the reporting date and therefore now differ from the figures reported in prior years.

The table contains unadjusted turnover rates, calculated as follows: number of separations*100/number of employees as of Dec. 31.

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

Staff turnover

	2009	2010	2011	2012	2013
Turnover rate of employees who were hired during the 18 months preceding Dec. 31 of the respective year	**Not recorded**	**Not recorded**	**12.23**	**14.07**	**12.77**
Turnover rate by gender					
Men	Not recorded	Not recorded	13.49	15.20	13.74
Women	Not recorded	Not recorded	10.42	12.34	11.34
Turnover rate by age group					
Up to 29 years old	Not recorded	Not recorded	16.25	16.20	15.55
30 to 49 years old	Not recorded	Not recorded	9.18	12.73	10.76
50 or older	Not recorded	Not recorded	8.51	9.69	10.64
Turnover rate by region					
Europe	Not recorded	Not recorded	7.16	8.16	8.71
North America	Not recorded	Not recorded	7.30	7.91	6.42
Emerging Markets	Not recorded	Not recorded	17.11	19.06	16.10
Rest of World	Not recorded	Not recorded	5.67	11.90	15.77

Merck records the new employee turnover rate over the course of 18 months because 12 months is too short a time to become truly familiar with a new position, especially when it comes to management positions.

The turnover rate is calculated as follows: (Number of newly hired employees within the preceding 18 months that left Merck within the same period)/(average number of employees in the preceding 18 months)*100

The figures exclude employees who leave due to parental leave or a long-term illness, as well as employees who are transitioning to the non-working phase of partial retirement.

Core labor standards of the International Labour Organization (ILO)

As of Dec. 31	2009	2010	2011	2012	2013
% of full-time employees (standard contract, excluding exempts) with contractually stipulated working hours of maximally 48 hours/week[1]	99	99	99	99	99
% of full-time employees (standard contract) with at least 15 vacation days/year[2]	95	94	96	95	98
% of female employees with access to maternity leave programs[3]	97	100	100	100	100
% of employees with the right to collective bargaining[4]	76	96	96	97	97
% of employees working at companies where collective agreements apply	Not recorded	Not recorded*	Not recorded*	Not recorded*	68
% of sites that rule out complicity in child labor as described in ILO Convention 138	100	100	100	100	100
Age of youngest employees, excluding apprentices	17	17	18	18	16

1 ILO: Hours of Work (Commerce and Offices) Convention, 1930 (No. 30).
2 ILO: Holidays with Pay Convention (Revised), 1970 (No. 132).
3 ILO: Maternity Protection Convention (Revised), 1952 (No. 103).
4 ILO: Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87).
* In the years 2010, 2011 and 2012 Merck recorded the percentage of employees who have a right to collective bargaining.

Local minimum wage

	2009	2010	2011	2012	2013
% of sites that guarantee a salary above the local minimum wage*	94	100	99	100	100

* Minimum wage as stipulated by law, or derived from other provisions such as collective agreements.

The Global Rewards Policy applies to all Merck legal entities worldwide and guarantees a systematic compensation structure. Base pay is oriented to the median base pay, and short-term variable compensation is based on the third quartile of the relevant reference market. The overall compensation package thus exceeds the market median.

Occupational health and safety

Work-related accidents

	2009	2010	2011	2012**	2013
Lost Time Injury Rate (LTIR)	3.5	3.0	2.1*	2.3	2.2*
Europe	4.3	4.5	3.1	3.9	3.7
North America	0.7	1.9	1.5	1.2	0.9
Emerging Markets	3.1	1.9	0.9	0.7	0.8
ROW	0.7	0.4	2.1	1.0	1.0
Number of deaths	0	1	0	0	0

* 2011: Figures retroactively adjusted. In Merck's Annual Report an LTIR of 2.1 was reported for 2013. Due to new data provided from one site the LTIR has been increased to 2.2.

** Incl. temps.

Merck employees have been included in the calculation of the indicators as well as supervised employees of external companies. Independent contractors have not been taken into account.

Using the LTIR, we record work-related accidents of Merck employees 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 (cumulative trauma). Work-related accidents are considered relevant if they occur on the premises, on business trips, during a transport accident, in the course 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.

We have set ourselves the goal of reducing the LTIR rate to 2.5 by 2015. In 2013, by means of targeted accident prevention measures we again outperformed this goal as we did in the previous two years, achieving an LTIR of 2.2.

For Merck KGaA (24% of the employees of the Merck Group) we report work-related illnesses if these have been diagnosed and certified by a physician. In the reporting period, one case of work-induced illness was recorded. We do not keep track of the number of work-related illnesses throughout the entire Merck Group.

Continuing education and training

Spending on advanced training for employees (€)

	2009	2010	2011	2012	2013
Average continuing education spending per employee	1,102	1,152	982	699	679

Besides savings measures within the scope of the "Fit for 2018" transformation program, the increased use of online training has also contributed to a reduction in training costs.

Apprentices*

As of Dec. 31	2009	2010	2011	2012	2013
Number of apprentices	520	513	523	528	516
% of apprentices	5.7	5.9	5.6	5.7	5.6

* Only pertains to the Darmstadt, Gernsheim and Grafing sites in Germany (which accounted for around 24% of Merck Group employees in 2013).

Employees who regularly receive a performance and development evaluation

As of Dec. 31	2009	2010	2011	2012	2013
% of employees who regularly receive a performance and development evaluation	Not recorded	88	98	98	97

Our globally uniform Performance Management process requires annual feedback discussions and performance assessments for all employees that are rated above Global Grade 10 in our position assessment system. Apart from evaluating employee performance, it helps us to identify individual development opportunities. To date, around 27,400 employees worldwide have been involved in the process (2012: around 23,800 employees).

For all other employees that do not participate online in this globally uniform process, other methods of performance assessment are available. In 2012, 97% of employees took part in a performance and development evaluation.

Diversity and inclusion

Percentage of women

As of Dec. 31	2009	2010	2011	2012	2013
% of women in the entire workforce	43	43	43	42	42
% of management positions held by women (Global Grade 14 or above)*	17	22*	23*	24	25
% of women in the Merck Serono and Consumer Health divisions	Not recorded	47	47	46	46
% of women in the Performance Materials and Merck Millipore divisions	Not recorded	33	38	37	37

* These figures do not entirely include the employees of the Millipore Corporation, which was acquired in July 2010. The Global Grading System was instituted there incrementally.

Since 2009, we have been continually increasing the percentage of management positions held by women. In 2013, with 25% of management positions (Global Grade 14 or above) held by women, we reached our goal of increasing this percentage to at least 25%–30%.

Internationality of employees

	2009	2010*	2011*	2012	2013
Number of nationalities	111	128	125	121	114
Number of nationalities in management positions (Global Grade 14 or above)	56	55	54	57	64
% of non-Germans in management positions (Global Grade 14 or above)	58	57	56	61	60

* These figures do not entirely include the employees of the Millipore Corporation, which was acquired in July 2010. The Global Grading System was instituted there incrementally.

Employee age by region

Number of employees	Worldwide	North America	Europe (including Germany)	Germany	Emerging Markets	Rest of World
2012						
Up to 29 years old	5,957	508	2,354	1,466	2,878	217
thereof women	2,476	226	1,104	593	1,067	79
30 to 49 years old	25,329	2,843	13,592	6,361	7,835	1,059
thereof women	11,027	1,339	6,290	2,478	2,976	422
50 or older	7,561	1,497	4,831	2,961	929	304
thereof women	2,839	660	1,867	1,022	231	81
Average age	**40.2**	**43.6**	**41.8**	**42.3**	**36.0**	**40.3**
Total employees	**38,847**	**4,848**	**20,777**	**10,788**	**11,642**	**1,580**
2013						
Up to 29 years old	5,906	462	2,362	1,494	2,883	199
thereof women	2,411	204	1,071	587	1,059	77
30 to 49 years old	24,562	2,867	12,774	6,221	7,882	1,039
thereof women	10,666	1,359	5,851	2,447	3,044	412
50 or older	7,686	1,582	4,877	3,153	923	304
thereof women	2,824	683	1,833	1,074	232	76
Average age	**40.4**	**44.1**	**41.9**	**42.6**	**36.0**	**40.5**
Total employees	**38,154**	**4,911**	**20,013**	**10,868**	**11,688**	**1,542**

Employees with disabilities* (%)

As of Dec. 31	2009	2010	2011	2012	2013
Employees with disabilities*	4.1	4.1	4.2	4.9	5.0

* Only pertains to the Darmstadt, Gernsheim and Grafing sites in Germany (which accounted for around 24% of Merck Group employees in 2013). The figures for 2009-2011 have been retroactively adjusted (calculations based on the German Social Code IX – SGB IX).

Insurance and retirement benefits for employees

Insurance and pension systems for employees

	2009	2010	2011	2012	2013
% of employees who are obliged to contribute to a statutory pension system	90	95*	98	99	99
% of employees in a company pension plan (also in addition to the statutory pension plan)	67	68	68	68	70
% of family members who are entitled to a statutory surviving dependent's pension	Not recorded	Not recorded	Not recorded	Not recorded	67
% of family members who are covered by a company pension plan in addition to the statutory surviving dependent's pension	Not recorded	Not recorded	Not recorded	Not recorded	47
% of employees with company accident insurance	97	100	100	100	100
% of employees with statutory health insurance	78	88	88	87	85
% of employees with employer-funded health insurance	82	88	88	93	95

* Due to new data provided these figures have been retroactively adjusted.

Long-term pension obligations and post-employment benefits

€ million	2009	2010	2011	2012	2013
Present value of all pension obligations as of Dec. 31	1,878	2,356	2,490	2,830	2,737
Pension expenses	98	132	168	159	147

Depending on the legal, economic and fiscal circumstances prevailing in each country, differing retirement benefit systems are provided for the employees of the Merck Group. As a rule, these systems are based on length of service and salary 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. These provisions also contain other post-employment benefits, such as accrued future health care costs for retirees in the United States (see Annual Report 2013, Note on Provisions for pensions and other post-employment benefits).

Reconciling the demands of a career and family

Flexible working hours

	2009	2010	2011	2012	2013
% of employees with the option of working flexible hours	Not recorded	57	58	69	75

Parental leave in Germany*

As of Dec. 31	2009	2010	2011	2012	2013
Number of employees with a right to parental leave	Not recorded	Not recorded	237	299	254
thereof women (recorded via maternity leave in the respective year)	Not recorded	Not recorded	82	139	120
thereof men (recorded via special paternity leave in the respective year)	Not recorded	Not recorded	155	160	134
Number of employees who took parental leave	162	368	401	434	433
thereof women	Not recorded	Not recorded	283	303	292
thereof men	Not recorded	Not recorded	118	131	141
Number of employees on parental leave who worked part time during their leave	Not recorded	Not recorded	123	137	81
thereof women	Not recorded	Not recorded	117	135	77
thereof men	Not recorded	Not recorded	6	2	4
Number of employees who returned from parental leave	Not recorded	Not recorded	144	162	151
thereof women	Not recorded	Not recorded	58	62	60
thereof men	Not recorded	Not recorded	86	100	91
Number of employees still working for Merck one year after their return from parental leave	Not recorded	Not recorded	140	130	***
thereof women	Not recorded	Not recorded	55	34	***
thereof men	Not recorded	Not recorded	85	96	***

* Figures only pertain to the Darmstadt, Gernsheim and Grafing sites in Germany (which accounted for around 24% of Merck Group employees in 2013). For 2009, the figures were calculated based on the data as of Dec. 31 of the respective year; since 2010, the data from the entire year has provided the basis for the calculation, which also includes those employees who took parental leave during the calendar year, but who had returned by Dec. 31.

** 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.

*** Figure will be available on Dec. 31, 2014.

Indicators: Environment

Environmental management

Spending on environmental protection, safety and health (€ million)

	2009	2010	2011	2012	2013
Spending	131	140	141	146	142

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 protection, and energy efficiency.

Greenhouse gas emissions

Total greenhouse gas emissions (metric kilotons) (Scope 1 and 2 of the GHG Protocol)*

in kt	2006	2007	2008	2009	2010	2011	2012	2013
Total CO_2eq emissions	**528**	**583**	**497**	**474**	**537**	**502**	**502**	**524**
Thereof								
direct CO_2eq emissions	314	367	299	299	348	315	317	343
indirect CO_2eq emissions	214	216	198	175	189	187	185	181

* 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 or divestments of (parts of) companies, or for changes in emission factors (portfolio-adjusted).

eq = equivalents.

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

These figures do not include emissions from using biomass to create energy. In 2013, emissions totaled 5.8 metric kilotons (2012: 5.1 metric kilotons).

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

	2009	2010	2011	2012	2013
From air travel (metric kilotons)*	34	29	47	48	63
From rail travel (metric tons)**	138	160	121	122	45
From rental car travel (metric tons)***	Not recorded	Not recorded	Not recorded	848	1,292

* 2009-2012 approx. 70-80% of Merck Group air travel; in 2013, approx. 90-95% of Merck Group air travel. Air travel-related CO_2 emissions recorded in this way are calculated via atmosfair (exception: 2010).

** Recorded Germany-wide. Data is provided by Deutsche Bahn AG.

*** Emissions from rental car use in Europe and North America.

eq = equivalents.

Other air emissions

Emissions of ozone-depleting substances (metric tons)

	2009	2010	2011	2012	2013
Total emissions of ozone-depleting substances	0.8	0.7	1.0	1.9	1.5
CFC-11eq*	Not recorded	0.04	0.06	0.10	0.08

* 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.

Other air emissions (metric kilotons)

	2009	2010	2011	2012	2013
VOC (Volatile organic compounds)*	0.2	0.2	0.2	0.2	0.2
Nitrogen oxide	0.1	0.2	0.1	0.2	0.2
Sulfur dioxide	0.03	0.03	0.02	0.02	0.02
Dust	0.02	0.02	0.03	0.03	0.01

* Volatile organic compounds

The VOC, nitrogen oxide, sulfur dioxide and dust emissions reported here are production-related. 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

Transport of finished goods, by means of transportation*

	2009	2010	2011	2012	2013
% Truck	60	58	58	58	56
% Boat	35	36	36	36	37
% Airplane	5	6	6	6	7

* Pertains to goods shipped by Merck Group sites in Germany. These figures pertain to the total weight of the transported products. Indicated here is the primary means of transport.

In shipping finished goods from production sites to local warehouses of the legal entities, we are working to reduce the use of air shipping in favor of sea shipping. In doing so, we cut costs and reduce the CO_2 emissions incurred by transporting goods.

Resource consumption

Energy consumption (in GWh)*

	2009	2010	2011	2012	2013
Total energy consumption	**1,275**	**1,395**	**1,391**	**1,388**	**1,431**
Direct energy consumption	823	905	906	920	968
Natural gas	742	794	798	818	864
Liquid fossil fuels*	66	96	95	89	89
Biomass and other self-generated renewable energy	15	15	13	13	15
Indirect energy consumption	452	490	485	468	463
Electricity	443	480	481	464	458
Steam	9	10	4	4	5

Energy consumption (in TJ)*

	2009	2010	2011	2012	2013
Total energy consumption	**4,590**	**5,022**	**5,008**	**4,997**	**5,152**
Direct energy consumption	2,963	3,258	3,262	3,312	3,485
Natural gas	2,671	2,858	2,873	2,945	3,110
Liquid fossil fuels**	238	346	342	320	320
Biomass and other self-generated renewable energy	54	54	47	47	54
Indirect energy consumption	1,627	1,764	1,746	1,685	1,667
Electricity	1,595	1,728	1,732	1,670	1,649
Steam	32	36	14	14	18

* 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).

** Light and heavy fuel oil, liquified petroleum gas (LPG), diesel and unleaded gas.

At our sites in Billerica, Massachusetts (USA), Bedford, Massachusetts (USA), Molsheim (France),Tel Aviv (Israel), and Rome (Italy), we use photovoltaics to produce power.

Water consumption (in millions of m³)

	2009	2010	2011	2012	2013
Total water consumption	**16.2**	**18.0**	**17.6**	**16.3***	**10.0**
Surface water (rivers, lakes)	7.6	8.7	8.3	7.0	0.0
Groundwater	5.7	5.5	5.7	5.3	5.8
Drinking water (from local suppliers)	2.9	3.8	3.6	4.0*	4.2
Rain water and other sources	0.02	0.02	0.02	0.01	0.01

* Figures retroactively adjusted.

Water reused (in millions of m³)

	2009	2010	2011	2012	2013
Water reused	not recorded	not recorded	not recorded	17.8	16.6

The sharp decrease in total water consumption is attributable to the closure of the Merck Serono site in Geneva (Switzerland). The site utilized surface water from Lake Geneva for cooling and heating purposes. The lake water covered a large portion of the site's energy requirements.

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

Wastewater

Wastewater volume and quality

	2009	2010	2011	2012	2013
Total wastewater volume (millions of m³)	**9.3**	**8.8**	**11.1**	**8.5***	**8.6**
Chemical oxygen demand (metric tons of O_2)	745	967	911	929	756
Phosphorous (metric tons)	6	9	8	7	7
Nitrogen (metric tons)	48	61	73	76	77
Zinc (kg)	808	283	248	267	293
Chromium (kg)	18	20	21	21	23
Copper (kg)	38	40	34	37	36
Nickel (kg)	38	39	101	101	110
Lead (kg)	32	38	40	35	42
Cadmium (kg)	8	10	10	10	10
Mercury (kg)	1	1	1	1	1
Arsenic (kg)	8	7	6	3	4

* Figures retroactively adjusted. Unlike previous years, the wastewater figures from 2012 on do not include groundwater that we utilize for safety measures at the site in Gernsheim, Germany, which is fed back directly into natural circulation. In addition, the figures likewise exclude rainwater at the Gernsheim site.

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).

Wastewater from the neighboring municipality of Biebesheim is also treated at the wastewater treatment plant at the Gernsheim site in Germany. 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.

Waste

Hazardous and non-hazardous waste (metric kilotons)

	2009	2010	2011	2012	2013
Total waste	**162**	**194**	**200***	**189**	**158**
Hazardous waste disposed	45	47	43	62*	37
Non-hazardous waste disposed	21	27	36	36*	30
Hazardous waste recycled	29*	32*	45*	48*	48
Non-hazardous waste recycled	67*	88*	76*	43*	43

* Figures retroactively adjusted.

Exported/Imported hazardous waste (metric kilotons)

	2009	2010	2011	2012	2013
Export*	Not reported	Not reported	Not reported	Not reported	7
Import**	Not reported	Not reported	Not reported	Not reported	0.01

* Disposal within the EU.

** Within the scope of the return system for our cell tests, these tests are brought to our Gernsheim site in Germany for their proper disposal.

Waste by disposal method

	2009	2010	2011	2012	2013
Total waste (metric kilotons)	**162**	**194**	**200***	**189**	**158**
Waste for disposal (metric kilotons)	**66**	**74**	**79**	**98***	**67**
Landfill waste (metric kilotons)	12	13	14	19	13
Incinerated waste (metric kilotons)	54	61	65	79*	54
Recycled waste (metric kilotons)	**96**	**120**	**121***	**91***	**91**
Recycled solid waste (metric kilotons)	79	100	97	67*	67
Recycled energy (metric kilotons)	17	20	24*	24	24
Recycling rate (%)	**59**	**62**	**61***	**48***	**58**

* Figures retroactively adjusted.

In previous years, there was an increase particularly in the quantities of waste to be disposed of due to extensive construction and renovation projects. After completion of these projects, total waste decreased by 16% in 2013.

Indicators: Society

Spending on social engagement (€ million)

	2009	2010	2011	2012	2013
Total spending	**6.2**	**6.9**	**7.9**	**11.8**	**46.2**

For spending on social engagement, we calculate product donations at their fair value, except for the praziquantel donated within the Merck Praziquantel Donation Program, whose value is calculated according to the WHO Guidelines for Medicine Donations.

The sharp increase in our spending on social engagement is attributable to three factors:

- → Expansion of the Merck Praziquantel Donation Program.
- → Expansion of the ECPAP – Erbitux® China Patients Aid Program launched in 2011, in which we work with the Beijing Red Cross Foundation to provide Erbitux® free-of-charge to low-income patients with colorectal cancer. Merck Serono has established registration centers in 35 cities in China.
- → First inclusion of contributions to the Serono Symposia International Foundation. This is a charitable organization that works to promote advanced medical training for scientists, physicians, nurses, pharmacists, and other health care professionals.

Spending on local social engagement, by region (%)*

	2009	2010	2011	2012	2013
Europe	56	29	39	20	36
North America	11	17	23	13	< 1
Emerging Markets	28	49	37	66	63
Rest of World	5	5	1	1	< 1

* Excluding lighthouse projects.

As a result of the sharp increase in spending on social engagement in Europe and Emerging Markets, the relative share of spending in North America declined.

Focus of local social engagement (%)*

	2009	2010	2011	2012	2013
Health	–	–	28	30	23
Support for culture and sports activities near our sites	15	14	18	28	19
Education	19	21	22	16	23
Environment	–	–	5	9	10
Other**	60	62	17	14	19
Disaster relief	6	3	10	3	6

* Excluding lighthouse projects, based on number of projects.
** 2009 and 2010 include discontinued focus areas.

Motivations for our social engagement (%)*

	2009	2010	2011	2012	2013
Charitable activities	58	56	52	32	20
Community investment	19	20	24	52	59
Commercial initiatives in the community	23	24	24	16	21

* Excluding lighthouse projects, based on total spending.

We assign the motivations for our engagement to categories based on the model of the London Benchmarking Group and the guidelines of the Bertelsmann Foundation for corporate social engagement. Projects that primarily aim to make improvements within the community are classified as "Community investment". Projects that are predominantly aimed at company-relevant factors such as image or personnel recruitment are classified as "Commercial initiatives in the community". "Charitable activities" comprehends any other projects that benefit a charitable organization, but cannot be assigned to either of the other two motivation categories due to missing data or their narrow scope.

Independent Assurance Report[1]

To the Executive Board of Merck KGaA, Darmstadt

We were engaged to provide assurance on the indicators in the chapter 'Facts and figures', including explanatory notes, in the online 'Merck Corporate Responsibility Report – Update 2013' (further 'The Report') for the business year 2013 of Merck KGaA, Darmstadt (further 'Merck'). The Executive Board is responsible for the appropriateness of the determination and presentation of the indicators in The Report in accordance with the reporting criteria, including the identification of material issues. Our responsibility is to issue an assurance report on the selected indicators, including the explanatory notes, published in The Report.

Scope

Our assurance engagement was designed to provide limited assurance on whether the indicators, including the explanatory notes, in the chapter 'Facts and figures' for the business year 2013 of The Report are presented, in all material respects, in accordance with the reporting criteria:

- → Economics
- → Compliance
- → Employees
- → Environment
- → Society

Procedures performed to obtain a limited level of assurance are aimed at determining the plausibility of information and are less extensive than those for a reasonable level of assurance.

Reporting criteria and assurance standards

Merck applies the Sustainability Reporting Guidelines G3.1 of the Global Reporting Initiative, the Corporate Accounting and Reporting Standard (Scope 1 und 2), and the Corporate Value Chain (Scope 3) Standard of World Resources Institute/World Business Council for Sustainable Development, supported by internal guidelines, as described in the section 'About this report ', as reporting criteria.

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000: 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', issued by the International Auditing and Assurance Standards Board. These standards require, amongst others, that the assurance team possesses the specific knowledge, skills and professional competencies needed to provide assurance on sustainability information, and that we comply with the requirements of the Code of Ethics for Professional Accountants of the International Federation of Accountants to ensure our independence.

Work undertaken

Our procedures included:

→ Evaluation of the design and implementation of the systems and processes for the collection, processing and control of the indicators, 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, as well as carrying out internal control procedures on the data including the explanatory notes.

→ Visits to Molsheim (France), Corsier-sur-Vevey (Switzerland) and Aubonne (Switzerland) to assess local data collection and reporting processes and the reliability of the reported data.

→ An analytical review of the data and trend explanations submitted by all sites for consolidation at 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 of Merck KGaA for the business year 2013 with regard to audit procedures on those information and indicators that were derived from those consolidated financial statements.

→ An evaluation of the overall presentation of the selected indicators, including the explanatory notes, within the scope of our engagement.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention to indicate that the selected indicators, including the explanatory notes, in The Report are not, in all material respects, presented in accordance with the reporting criteria.

Frankfurt am Main, May 26, 2014

KPMG AG
Wirtschaftsprüfungsgesellschaft

[Original German version signed by:]

Fischer	**Glöckner**
Wirtschaftsprüferin	Wirtschaftsprüfer

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