



HSE Report 2012

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How we report

The HSE data management system, data collection process and transparent reporting are important elements of corporate responsibility at Novartis.

Novartis reports its HSE performance following Global Reporting Initiative (GRI) guidelines for sustainability reporting. We publish a stand-alone GRI report each year. The Novartis GRI report uses the GRI G3 sustainability reporting guidelines at an application level of A+, checked and confirmed by the GRI.

[Download the 2011 Novartis GRI report >](#)

Novartis sets HSE targets covering at least three years to allow better analysis, planning and implementation. Divisions are involved in target-setting, based on recommendations by functional experts. Progress is reviewed annually with each division.

[Learn more about HSE targets >](#)

Performance of operating units is monitored on a monthly basis. HSE performance data is collected, validated and consolidated with the Novartis HSE data management system. This system provides all management levels throughout the Group with necessary information to take early action if deviations from targets occur. Systems and processes are reviewed by third parties – in addition to corporate and divisional HSE audits – to ensure compliance with legal and Novartis HSE standards.

The 2012 environmental and resource data published in the Novartis Annual Report are actual data for the period from January through September and best estimates for the period from October through December; 2012 data on employees and health/safety are actual from January through December. This section will be updated with finalized data for 2012 in the first quarter of 2013 and significant deviations from the Annual Report will be explained.

The 2012 HSE figures are summarized in the table below and are published in the 2012 Annual Report.

[Access the summarized 2012 HSE performance data >](#)

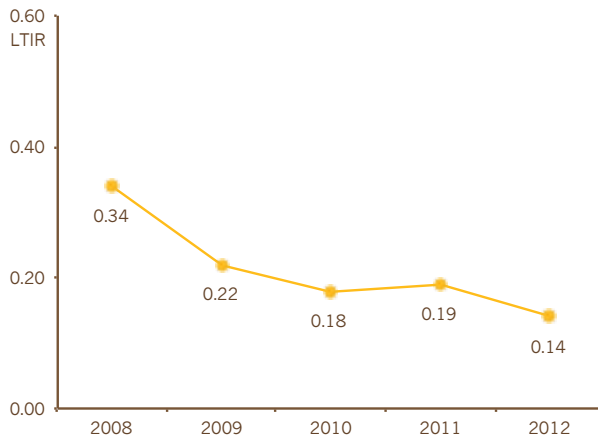
Reporting entity and scope

HSE performance data for 2012 was collected from 283 reporting units owned and managed by Novartis Group companies and includes 28 Alcon reporting units. This covers all sites with relevant HSE impacts – including all production, formulation and research and development sites, as well as major headquarters offices. Our HSE data reporting covers nearly all Novartis employees, third party personnel and contractors, i.e., staff who regularly work on a Novartis site, such as cleaning, catering, security, engineering and maintenance personnel, and a minimum of one month per year for Novartis. Cumulative HSE data for Novartis includes Alcon from 2011 onwards. Novartis believes the performance data presented in its Annual Report and on its website represents a fair and balanced picture of the company's HSE performance. Performance indicators follow GRI requirements for core environmental and social indicators and for selected additional indicators that we deem relevant.

Reported data describe our major material flows within company boundaries and environmental impacts originating from our own operations (Scope 1), as well as greenhouse gas emissions from the generation of purchased energy (Scope 2). With the exception of specific products (where life-cycle analyses have been carried out) and of dedicated parameters, we do not monitor environmental impacts linked to the manufacturing and delivery of purchased goods and services, or the use of resources and other related emissions for activities outside company boundaries (Scope 3).

Health and safety performance

Lost Time Injury and Illness Rate



0.34	0.22	0.18	0.19	0.14	Novartis Group
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HSE data reflects continuing operations, including Alcon from 2011

Novartis reports work-related injuries or illnesses among its Group company associates that have occurred during the year. The Novartis Lost Time Injury and Illness Rate (LTIR) is a key performance indicator, enabling direct comparison between the performance of our units and on a country-by-country basis.

In 2012, the LTIR for continuing operations at Novartis (including Alcon) was further reduced to 0.14 per 200,000 hours, from 0.19 the previous year; this represents a 25% reduction.

	Target 2011	Achievement 2011	Target 2012	Achievement 2012
Novartis Group	≤ 0.18*	0.15*	≤ 0.19	0.14
Pharmaceuticals	≤ 0.18	0.13	≤ 0.15	0.12
Vaccines & Diagnostics	≤ 0.18	0.17	≤ 0.15	0.09
Sandoz	≤ 0.18	0.18	≤ 0.15	0.15
Alcon	-	0.33	≤ 0.30	0.17
Novartis Research	≤ 0.18	0.09	≤ 0.15	0.01
Animal Health	≤ 0.18	0.18	≤ 0.15	0.30
OTC	≤ 0.18	0.22	≤ 0.15	0.26

*2011 LTIR excluded Alcon

Basis of achievement

Continuing management commitment and rigorous application of safety systems and procedures, combined with ongoing training for Group company associates, have driven progress in injury and illness reduction. Several activities to promote safety awareness, including four key measures, are used by local management and reviewed by divisional HSE teams:

- Walk-through inspections with senior managers on site
- HSE training targeted at 0.1–0.5% of total hours worked yearly, depending on the work area
- Percentage of completed items on incident investigation related to total number of recommendations
- Near misses reported at least 5–10 to 1 versus actual incidents

A significant number of units have introduced safety culture initiatives (behavior-based safety programs) to complement existing measures that provide the backbone for ongoing safety management at sites.

Tailored safety initiatives have been introduced where relevant, e.g., driver safety for fleet or sales organizations and laboratory safety for research and development.

All significant incidents without lost time, accidents with lost time and relevant near misses are investigated. The level and extent of the investigation reflect the seriousness or potential impact of the event. Suitable processes and criteria (e.g., risk/potential consequences, learning potential) are put in place to ensure that investigations are carried out adequately. A systematic method (e.g., TapRoot®) is applied to guarantee a thorough investigation. In 2012, more than 80 Group company associates from sites across the world were trained in the TapRoot® methodology.

In-depth risk analysis – in accordance with the Zurich Hazard Analysis (ZHA) methodology – is fundamental to Novartis operations and contributes substantially to process safety, including the prevention of fires, explosions, releases and spills.

We provide regular training courses globally in hazard analysis, process safety management and systematic incident investigations. In 2012, 60 associates from sites across the world were trained. Tailor-made Laboratory Process Safety Training courses were delivered for more than 250 laboratory associates. In addition, extensive on-the-job HSE training is carried out at all sites.

Fatalities

Since 2005 there have been a total of 10 fatalities of Novartis Group company associates, of which 9 have are related to traffic incidents while traveling on public roads for business. In 2005, two road fatalities occurred in Indonesia and the Czech Republic; in 2006, two fatalities occurred in Indonesia; in 2008 one fatality occurred in Pakistan; in 2010, two fatalities occurred in Germany and China; and in 2011 two fatalities occurred in Ukraine and in the U.S. In 2007, 2009, and 2012 there were no work-related road fatalities of Novartis associates. However, in 2012, we recorded one road fatality for a third party sales representative in Finland. Also in 2012 we recorded the first fatal industrial accident at Novartis, in India.

We recognize the importance of safety at work and when an associate is on the road for Novartis. A comprehensive driver safety campaign with guidance on how to reduce the number of traffic-related accidents, as well as increased level of driver safety training is being rolled out worldwide.

Total Recordable Case Rate

Many injury and illness cases without lost time have the potential to lead to lost time. Identifying and managing the circumstances in which these incidents occur ultimately reduces the overall risk of having a serious accident, lost time injuries and illnesses, or even fatalities.

A recordable case includes the following:

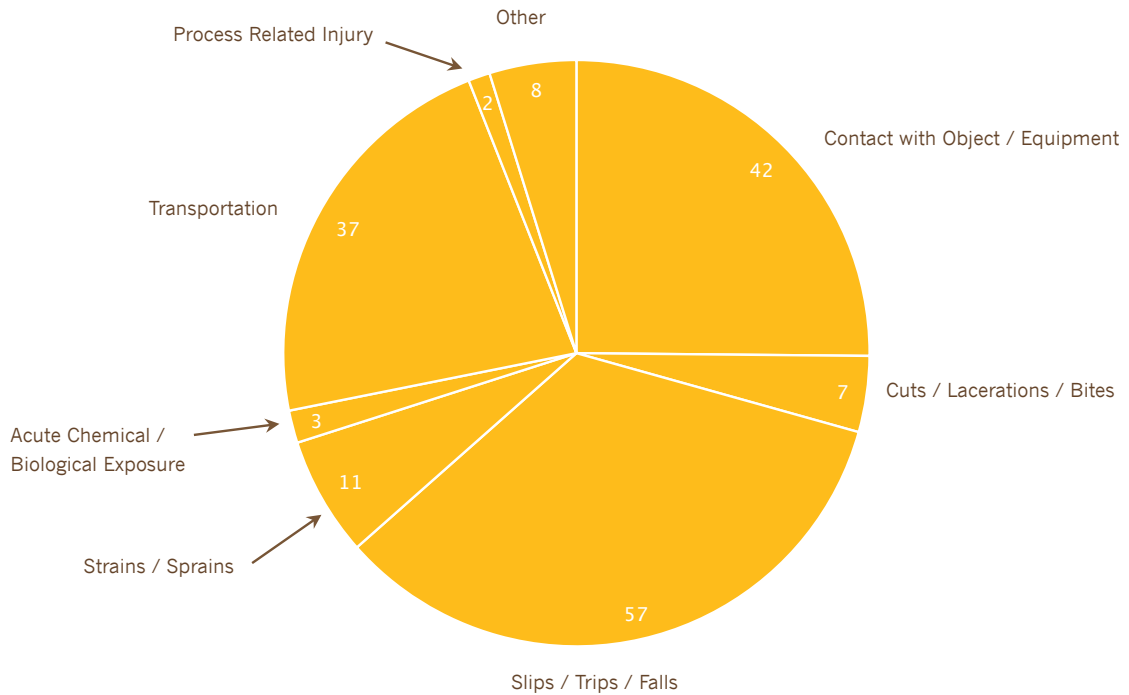
- Work-related injury with or without lost time
- Work-related illness with or without lost time
- Work-related loss of consciousness
- Work-related fatality

The Total Recordable Case Rate (TRCR) equals the division of all recordable cases by the hours worked, multiplied by 200,000 for standardization. In 2012, the Novartis Group TRCR (including Alcon) was 0.45; down from 0.61 in 2011.

	Achievement 2011	Achievement 2012
Novartis Group	0.54	0.45
Pharmaceuticals	0.53	0.43
Vaccines & Diagnostics	0.48	0.34
Sandoz	0.52	0.36
Alcon	0.88	0.57
Novartis Research	0.57	0.45
Animal Health	0.71	0.67
OTC	0.57	0.40

Occupational injury and illness

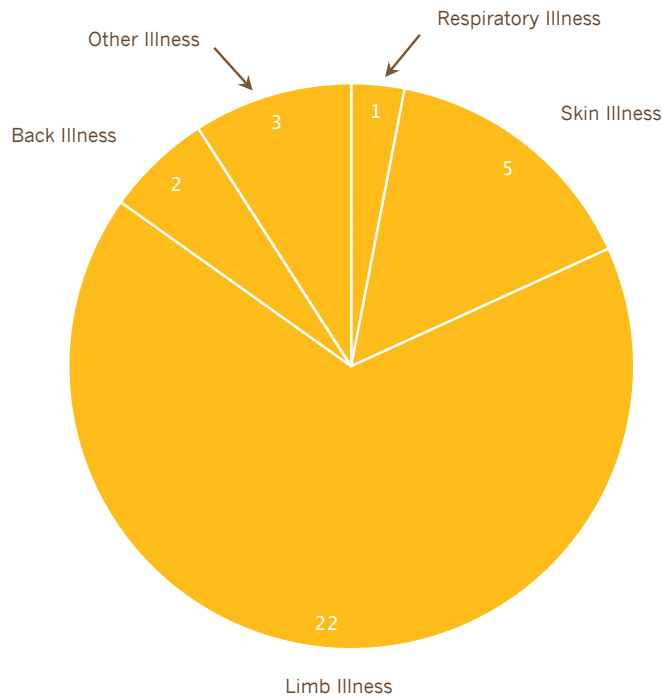
Injury with Lost Time Total: 167 associates



During 2012, a total of 534 Group company associates suffered work-related injuries. Of these, 167 (2011: 211) led to days off work (integrated into the LTIR).

The distribution of injuries by immediate cause indicates that the most prominent safety issues are related to non-operational activities, such as slips, trips and falls at offices and sites, and transport accidents within the sales force, which together account for 56% of occupational injuries with lost time.

Illness Total: 33 associates



Novartis sites reported a total of 33 occupational illnesses in 2012 (2011: 61). Of these, 9 (2011: 13) led to days off work (integrated into the LTIR; representing 5% of the total lost time cases). There were no recorded chronic poisonings, as a result of the existing preventative health protection strategy of Novartis with regards to handling of potentially hazardous substances.

The most prominent work-related health issue remains musculoskeletal disease, accounting for 73% of the cases in 2012 (2011: 91%). Six cases led to time off. We also had five accounts of occupational skin disease with one person having to have time off due to an allergic reaction (2011: 3 cases, 1 with lost time). There were also three cases of occupational mental ill health, two of which resulted in lost time (2011: 2 cases, 1 with lost time).

Be Healthy workplace health and well-being promotion

Launched in 2011, Be Healthy is the first Novartis company-wide health and well-being initiative for the benefit of Novartis Group associates. This initiative builds upon a tradition of providing health and well-being programs for Group company associates at Novartis. The health and well-being of associates is a top priority for the Novartis Group and a natural extension of the company purpose to “care and cure.”

At Novartis a particular focus is placed on prevention because statistics from the World Economic Forum (WEF) show that workplace health and well-being programs addressing lifestyle changes can help prevent up to 40% of non-communicable diseases (NCDs) such as cardiovascular disease, cancer and lung disorders.

Be Healthy aims to help Group company associates around the world embrace healthy lifestyles by providing opportunities for them to take control of their personal health and help prevent future health issues in each of four main pillars:

- Move – Exercise
- Choose – Healthy eating
- Know – Importance of knowing your basic health numbers
- Manage – Support to help associates manage their health at work

Novartis Group Company associates also participate in Be Healthy Celebration Week in September of each year. This is a week-long celebration of health and well-being that includes key aspects of Be Healthy such as free exercise classes and health screenings. In 2012, Celebration Week was September 10–14.

Be Healthy has a broad reach within Novartis. In 2011, 76 of the largest Novartis sites across 32 countries were involved which means that the initiative reached 80% of affiliates’ associates. In 2012, the initiative was expanded to 100 additional sites and reached 95% of associates across more than 50 countries.

[Learn more about Be Healthy >](#)

Occupational injury to third party personnel

Beyond its Group company associates, Novartis recognizes its responsibility to promote the health and safety of third party personnel.

Third party personnel are those individuals employed by a third party that invoices Novartis for hours completed. They work regularly on Novartis premises and receive day-to-day work assignments from Novartis Group company associates. Some companies refer to these individuals, including sub-contracted workers, as contractors.

Novartis employed nearly 12,500 people as third party personnel during 2012. There were 145 occupational injuries among this group. Of these, 46 resulted in lost time. There was one fatality among third party personnel in 2012 caused by a traffic accident.

Since 2011, Novartis also records the hours worked for third party personnel in order to calculate an LTIR and a TRCR for this population. This allows comparisons with Novartis associates. As for our own Group company associates, any accident is rigorously investigated in order to reduce the total number of work-related accidents. Please refer to the table below to see third party personnel health and safety performance in previous years.

Year	Number of TPP	Number of Injury Cases w/wo Lost time
2006	7,500	124
2007	7,700	111
2008	7,400	103
2009	7,000	117
2010	8,000	123
2011	11,400	90
2012	12,500	145

Occupational injury to contractors

Beyond its Group company associates and third party personnel, Novartis recognizes its responsibility to promote the health and safety of contractors.

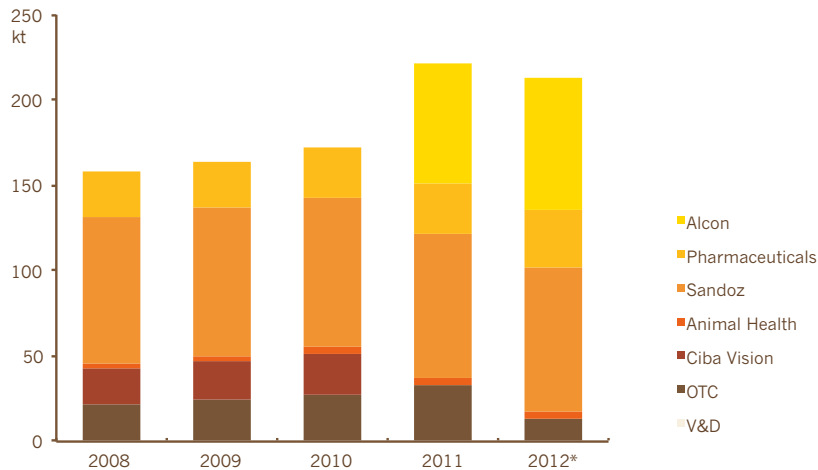
Contractors are those individuals employed by companies undertaking work for Novartis within the terms of a contract or service agreement. As opposed to third party personnel, contractors receive day-to-day work assignments from their companies' management and are hired to complete a job on their own. Novartis only reports health and safety data from contractors who regularly work at a Novartis site, such as cleaning, catering, security, engineering and maintenance personnel. These contractors, known as "fixed" or "nested" contractors, work a minimum of 1 month per year for Novartis.

As of 2011, Novartis reports the Lost Time Incident Rate for contractors, but not the Total Recordable Case Rate for this group. Because we cannot precisely determine the number of cases without lost time for this group on a global level, the rate would be inaccurate and unreliable.

Novartis employed approximately 21,500 contractors during 2012. There were 98 occupational injuries with lost time and no fatalities among this group in 2012.

Resources and environment performance

Production



-	-	-	69.38	77.60	Alcon
27.72	26.97	29.35	29.35	33.34	Pharmaceuticals
84.52	87.69	86.97	85.17	84.95	Sandoz
2.84	2.94	4.04	4.44	4.43	Animal Health
21.90	22.02	24.69	-	-	Ciba Vision
21.34	24.09	26.87	32.28	12.92	OTC
0.22	0.36	0.26	0.25	0.23	V&D
158.54	164.07	172.18	220.88	213.48	Production total [kt]

HSE data reflects continuing operations, including Alcon from 2011

Ciba Vision included under Alcon from 2011

* Forecast data for 2012

Novartis monitors and reports total production as the total weight of all products delivered from all Novartis Group companies manufacturing facilities. Total production covers all types of products, including chemical and fermentation products, active pharmaceutical ingredients (APIs) and finished dosage forms, as well as eye care products.

Total production for 2012 (including Alcon) was 213kt (2011: 221kt). The biggest contributors to total weight of products are: Sandoz 85kt, Alcon 78kt, Pharmaceuticals 33kt and Consumer Health 17kt.

Certified management systems

A total of 46 Novartis Group company facilities have ISO 14001 or EMAS certification for their environmental management systems: Sandoz 16, Alcon 12, Pharmaceuticals 12, Vaccines and Diagnostics 4, NIBR 1, and Consumer Health 1.

In addition, 29 sites have OHSAS 18001 certification: Sandoz 12, Pharmaceuticals 10, Alcon 3, Vaccines and Diagnostics 3, and Consumer Health 1.

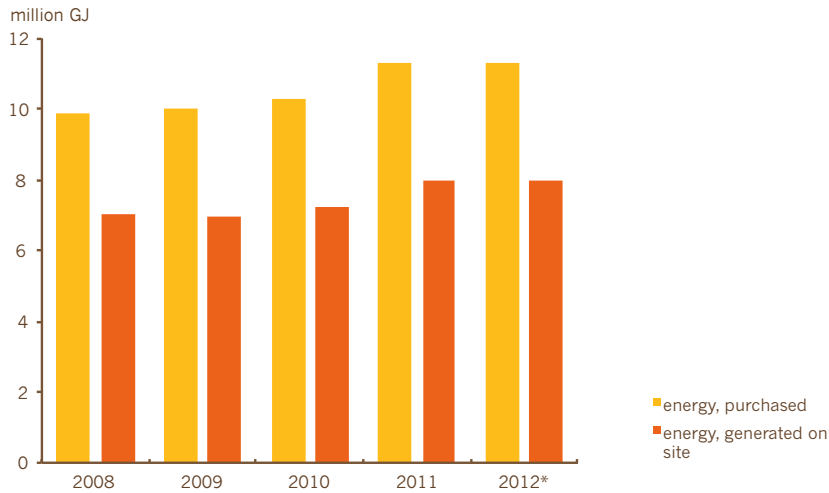
ISO/EMAS certifications cover 90% of the Vaccines and Diagnostics, 83% of the Pharmaceuticals, 82% of Sandoz and 70% of the Alcon production. OHSAS certifications cover 87% of the Vaccines and Diagnostics, 61% of Pharmaceuticals and 59% of Sandoz production (in terms of production amounts from certified sites).

Fines

Novartis Group companies around the world paid a total of USD 20,363 in fines for minor HSE violations in 2012.

Energy use

Energy use (in million GJ)



9.88	10.03	10.28	11.30	11.32	Energy, purchased
7.00	6.95	7.26	7.97	7.99	Energy, generated on site
16.88	16.98	17.54	19.27	19.31	Total Energy Consumption [mio GJ]

HSE data reflects continuing operations, including Alcon from 2011

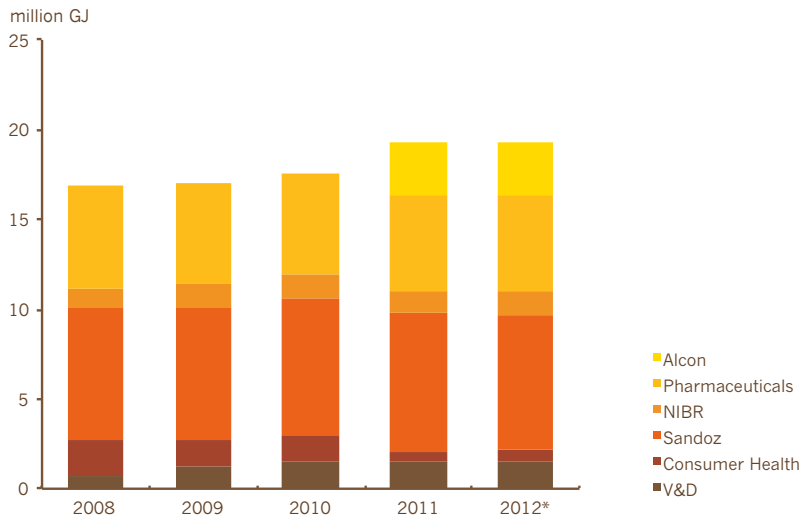
* Forecast data for 2012

In 2012, total energy use increased by 0.2% from 19.27 million GJ in 2011 to 19.31 million GJ.

Total on-site energy (fuels) increased marginally from 7.97 million GJ to 7.99 million GJ (up 0.2%). Total purchased energy also increased slightly from 11.30 million GJ in 2011 to 11.32 million GJ (up 0.2%).

Novartis has maintained a high level of less carbon-intensive and renewable energy resources; 91% of on-site energy came from the combustion of natural gas and 2.3% from renewable sources (decreased compared to 2.5% in 2011). Renewable sources account for approximately 40% of purchased energy, including conventional hydroelectric power. Excluding hydroelectric power, the renewable energy portion amounts to 4.3% (same as in 2011).

Energy use by division (in million GJ)



-	-	-	2.88	2.97	Alcon
5.71	5.51	5.60	5.37	5.37	Pharmaceuticals
1.16	1.35	1.33	1.27	1.27	NIBR
7.36	7.38	7.64	7.66	7.54	Sandoz
2.00	1.52	1.52	0.61	0.59	Consumer Health
0.65	1.22	1.44	1.48	1.57	Vaccines & Diagnostics
16.88	16.98	17.54	19.27	19.31	Total Energy Consumption [mio GJ]

HSE data reflects continuing operations, including Alcon from 2011

Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

Sandoz (7.54 million GJ) was the largest energy user in the Novartis Group in 2012, followed by Pharmaceuticals (5.37 million GJ) and Alcon (2.97 million GJ).

Total energy costs for the Novartis Group were USD 420 million for 2012 (USD 422 million in 2011), of which USD 269 million were spent on electricity.

Energy efficiency target achievement and outlook

Since 2003, the Novartis Group has successfully introduced energy efficiency targets in all its divisions. In 2006, a 10% improvement target was set for the period 2007–2010 (based on 2006 performance). With a performance improvement of 26% in energy efficiency per sales between 2006–2010, this target was overachieved. A new target of 15% improvement of energy efficiency was set for 2011–2015, based on 2010 levels. In 2012, energy efficiency per constant currency sales improved by 11% compared to 2010, which is 5% above the improvement target for the two years.

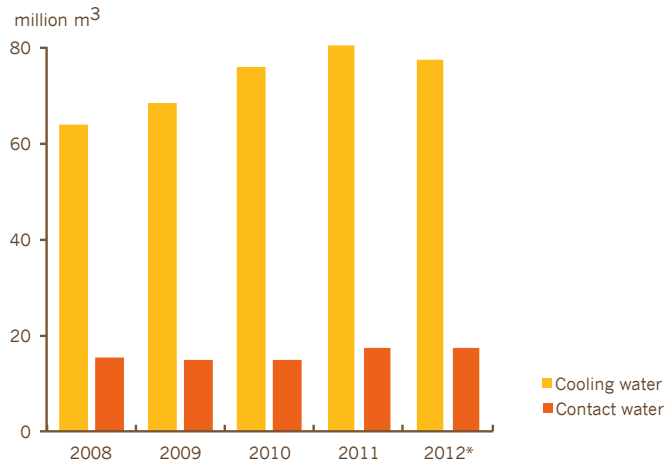
In 2008, Novartis started to report energy savings achieved with energy projects and use this criterion to set energy performance targets for divisions. Each division is expected to implement energy projects for 10% of its 2008 energy consumption by 2015. As of 2012, total energy savings achieved with energy projects amount to USD 56 million in terms of energy costs and 2.15 million GJ in terms of energy. This accounts for 11.8% of the 2008 energy consumption. In view of the good progress made, Novartis has strengthened the target to implement energy saving projects for 14% of the 2008 energy consumption by 2015, i.e. 2% per year.

We believe these significant achievements result from our ongoing comprehensive energy management programs. We continue our efforts to further improve our energy performance and therewith support the related greenhouse gas emission reduction targets. We expect the trend in improved energy efficiency to continue in future years as a result of our energy efficiency programs spreading throughout the organization.

[Learn more about our GHG emission reduction target >](#)

Water use

Water use (in million m³)



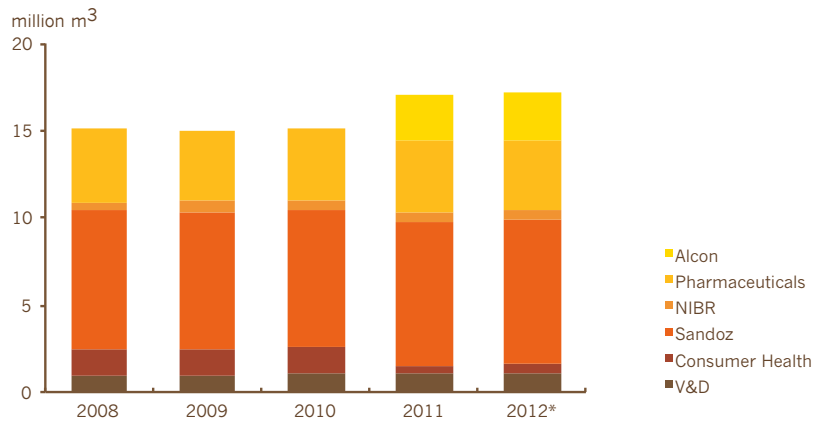
64.03	68.15	75.84	80.23	77.50	Cooling water
15.1	15.0	15.1	17.1	17.2	Contact water
79.15	83.19	90.92	97.35	94.71	Total Water Use [mio m ³]

HSE data reflects continuing operations, including Alcon from 2011

* Forecast data for 2012

In 2012, total water use decreased from 97.3 in 2011 to 94.7 million cubic meters. A total of 30.5 million cubic meters (32%) of the total quantity of water (contact and non-contact cooling water) that Novartis uses is purchased from water suppliers, and 64.4 million cubic meters (68%) is abstracted from groundwater wells or surface water bodies (directly from the environment), mainly for cooling purposes.

Contact water use by division (in million m³)



-	-	-	2.74	2.79	Alcon
4.19	4.09	4.05	4.07	3.95	Pharmaceuticals
0.52	0.60	0.55	0.55	0.56	NIBR
7.98	7.84	7.82	8.32	8.25	Sandoz
1.56	1.58	1.63	0.42	0.54	Consumer Health
0.87	0.93	1.02	1.01	1.12	Vaccines & Diagnostics
15.11	15.04	15.08	17.12	17.21	Total contact water use [mio m ³]

HSE data reflects continuing operations, including Alcon from 2011

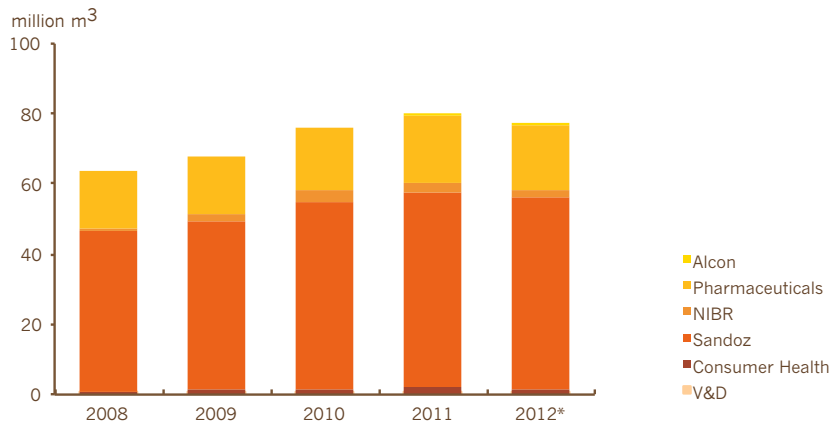
Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

The use of contact water slightly increased in 2012 to 17.2 million cubic meters (up from 17.1 million cubic meters in 2011). Major users of contact water were Sandoz (48%), Pharmaceuticals (23%) and Alcon (16%). During 2012, Sandoz decreased contact water use by approximately 0.7 million cubic meters or by 0.9%.

Cooling water use by division (in million m³)



-	-	-	0.67	0.56	Alcon
16.35	17.07	17.89	18.99	18.43	Pharmaceuticals
0.87	1.73	3.10	2.85	2.33	NIBR
45.74	47.98	53.04	55.80	54.44	Sandoz
0.86	1.20	1.67	1.71	1.44	Consumer Health
0.15	0.17	0.13	0.21	0.30	Vaccines & Diagnostics
64.03	68.15	75.84	80.23	77.50	Total cooling water use [mio m ³]

HSE data reflects continuing operations, including Alcon from 2011

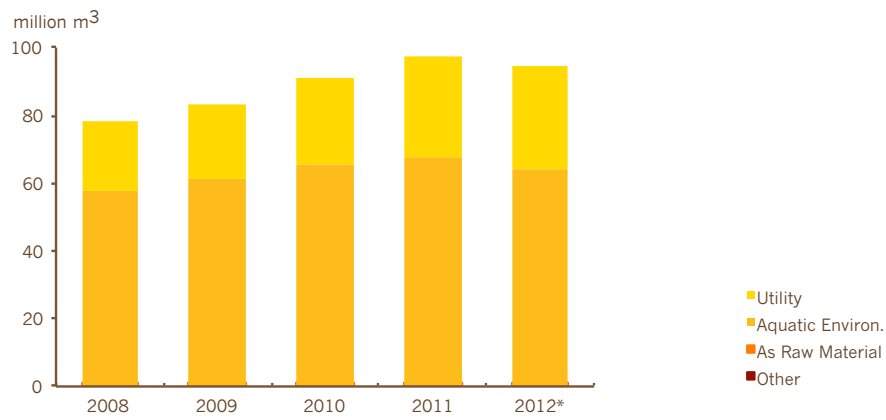
Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

Consumption of non-contact water (mainly for cooling purposes) decreased by 3.4% from 80.2 million cubic meters in 2011 to 77.5 million cubic meters in 2012. The main use of cooling water was for the control of fermentation processes and for comfort cooling of office buildings with water instead of energy-consuming mechanical chilling. For these two purposes, Novartis uses water drawn from groundwater sources next to rivers or directly from rivers in areas where large sources of naturally-cold water are available.

Water input by source (in million m³)



20.97	22.23	25.68	30.29	30.48	Utility
57.33	61.02	65.29	67.29	64.39	Aquatic Environ.
0.00	0.00	0.00	0.00	0.00	As Raw Material
0.09	0.19	0.15	0.16	0.02	Other
78.39	83.44	91.12	97.74	94.90	Water input by source [mio m ³]

HSE data reflects continuing operations, including Alcon from 2011

* Forecast data for 2012

Water efficiency target achievement and outlook

While strategies on water abstraction and the use of cooling water vary from site to site, we have made concerted efforts to further reduce the use of contact water that requires treatment, both in order to reduce pollutant loads, and because this is a growing environmental and cost factor.

Novartis set an efficiency improvement target on contact water of 10% for the period 2006 to 2010 (based on 2005 performance), translating to an average 2% annual improvement. Novartis defines contact water efficiency as contact water use per sales in constant currencies. This target was extended until 2012 with an additional 4% contact water efficiency improvement for the two additional years (2011 and 2012). Contact water efficiency increased by 6.4% between 2010 and 2012.

As an example, at its production facility on the island of Batam in Indonesia, where fresh water is a scarce resource, the Alcon Division's contact lens facility achieved considerable water savings during 2011 and 2012. The use of city water for sanitary purposes has been reduced and the reject water from reverse osmosis is now being recycled for use in flushing systems. The condensate recovered from the product sterilization process is being reused as preheated supply water for the steam boiler, saving both water and energy. Over the past two years, this program has enabled the site to reduce its annual purchase of water and other water related costs by USD 37,000 or almost 20% of total water cost. Total water consumption was reduced by 23,000 m³ (17%). The investment needed for the program were around USD 32,000, which was paid back within less than a year.

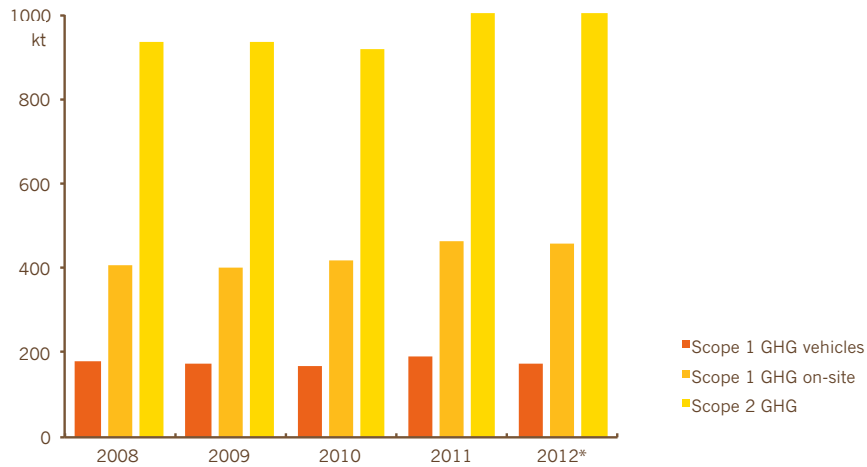
At the Sandoz site in Kalwe near Mumbai, India 25% of the total water used or about 30,000 m³ is needed in the cooling tower as make-up water. All incoming water must be firstly treated at the site to match potable water quality. The procedure has now been changed to use recycled waste water for the cooling tower. The waste water is processed by reverse osmosis in the site-owned wastewater treatment plant to meet local government norms for drainage. This water is ideally suited to be recycled in the cooling tower. The site's need for water intake was reduced by 21%, accounting for a water cost saving of USD 13,000 per year. Capital investment for the changes was only USD 2 000, which was paid back within two months. In the Mumbai metropolitan area, clean fresh water is scarce and expensive. So although this is a small project in terms of dollars, it has a very big impact on water savings at the site.

Water scarcity

Novartis determines the level of water scarcity at all its industrial locations globally based on the World Business Council for Sustainable Development (WBCSD) Global Water Tool, and the availability of water based on estimates by the World Resources Institute (WRI). Sites located in areas where water is highly scarce or scarce are identified, and their specific risks considered in a risk portfolio. Sites with high level of water scarcity and high water usage are included in a corporate water saving program.

Greenhouse gas emissions

GHG emissions (in kt)



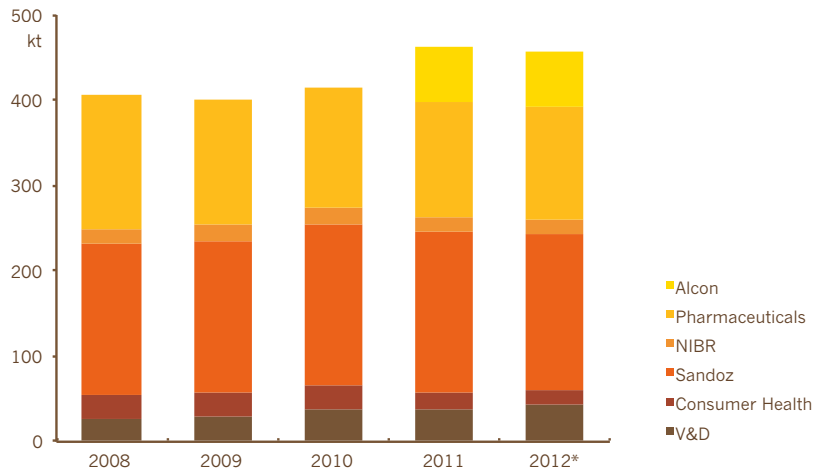
180.0	174.4	166.1	191.7	174.2	Scope 1 GHG Vehicles [kt]
405.5	399.8	416.3	462.0	457.5	Scope 1 GHG on site [kt]
937.6	934.4	921.7	1'048.9	1'018.9	Scope 2 GHG total [kt]
1'523.2	1'508.6	1'504.0	1'702.5	1'650.7	Total GHG total [kt]

HSE data reflects continuing operations, including Alcon from 2011

* Forecast data for 2012

For the fourth consecutive year, the Novartis Group achieved a reduction in total greenhouse gas (GHG) emissions in 2012 from 1,703kt in 2011 to 1,651kt (down 3.0%).

GHG emissions, Scope 1, combustion and process by division (in kt)



-	-	-	63.16	66.43	Alcon
157.52	145.32	142.90	135.93	129.73	Pharmaceuticals
14.69	19.56	18.47	16.56	18.89	NIBR
179.43	177.26	188.29	189.40	182.74	Sandoz
28.04	28.83	28.25	18.33	16.93	Consumer Health
25.81	28.87	38.38	38.57	42.83	Vaccines & Diagnostics
405.49	399.84	416.30	461.96	457.55	On Site Scope 1 GHG [kt]

HSE data reflects continuing operations, including Alcon from 2011

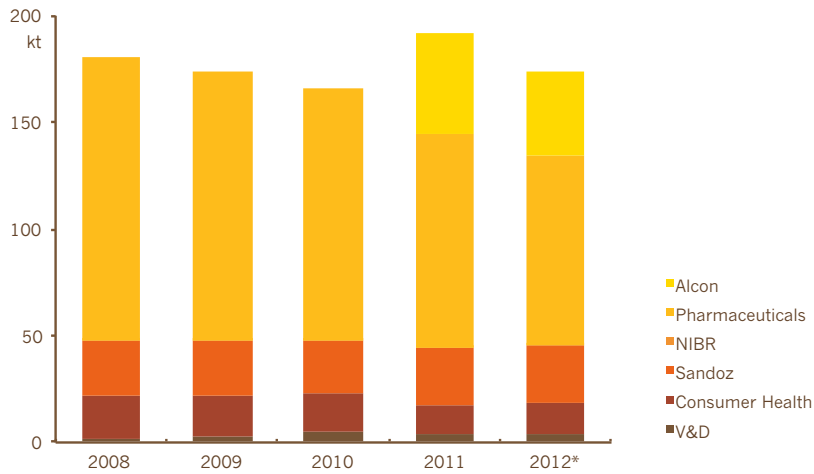
Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

The total amount of Scope 1 GHGs, mainly carbon dioxide (CO₂) emitted from on-site combustion of fossil fuels in 2012 was 458kt, a 1.0% decrease compared to 2011 (462kt). Emission of other GHGs (hydrofluorocarbons from refrigeration systems), included in the above amount, totaled 6kt. GHG emissions from production processes, also included in the Scope 1 GHG total, amounted to approximately 3kt. GHG emissions of non-Kyoto gases, such as hydrochlorofluorocarbons (HCFCs) totaled approximately 30kt, primarily HCFC124 which is used as a purging gas at an Alcon facility in the US.

GHG emissions, Scope 1 from vehicles (in kt)



-	-	-	46.72	40.08	Alcon
132.13	126.78	118.26	100.58	88.50	Pharmaceuticals
0.12	0.16	0.15	0.14	0.14	NIBR
26.01	25.29	24.78	26.79	27.27	Sandoz
20.10	19.08	18.25	13.27	13.99	Consumer Health
1.68	3.06	4.64	4.21	4.25	Vaccines & Diagnostics
180.04	174.36	166.08	191.72	174.22	Vehicle Scope 1 GHG [kt]

HSE data reflects continuing operations, including Alcon from 2011

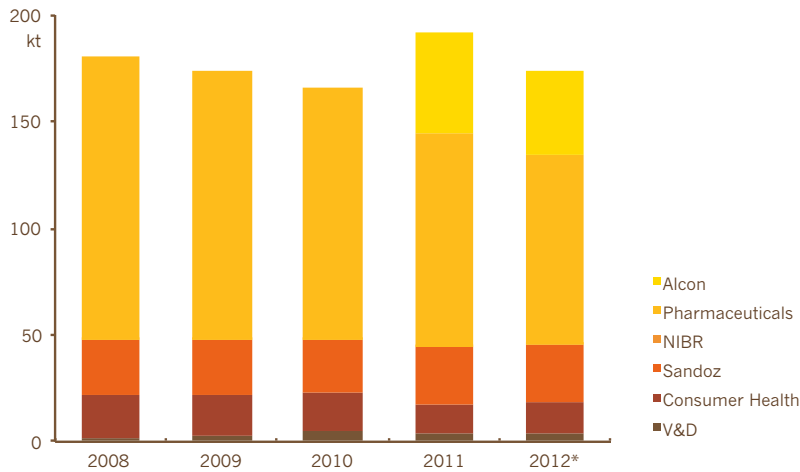
Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

Scope 1 GHG emissions from the use of company-owned or leased vehicles are reported separately. In 2012, this totaled 174kt, compared to 192kt in 2011 (a 9.1% decrease). When including Alcon data in the 2010 baseline for the current target, Scope 1 GHG emissions from vehicles have decreased by 19.4%. This decrease is due to the use of more efficient fleet vehicles. Scope 2 GHG emissions (mainly from electricity generation) in 2012 totaled 1,019kt, which represents a reduction of about 2.9% from 1,049kt in 2011.

GHG emissions, Scope 2, by divisions (in kt)



-	-	-	264.99	262.88	Alcon
247.83	229.69	234.96	219.76	213.15	Pharmaceuticals
75.84	83.12	84.05	78.78	79.50	NIBR
390.20	390.76	380.99	352.55	330.02	Sandoz
151.02	148.41	140.24	41.39	38.05	Consumer Health
72.39	82.02	80.87	90.98	95.00	Vaccines & Diagnostics
937.64	934.36	921.67	1'048.9	1'018.9	Scope 2 GHG total [kt]

HSE data reflects continuing operations, including Alcon from 2011

Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

Novartis reduced its GHG emission intensity (in terms of GHG emissions per sales) by 14% for Scope 1 on-site emissions and by 20% for Scope 2 compared to 2008. On an annual basis, compared to 2011, the GHG emission intensities remained approximately constant. Scope 3 GHG emissions from our global business flights in 2012 totaled an estimated 313kt compared to 274kt the year before. This number is based on detailed information from our worldwide travel agent. GHG emissions from the five company-owned or leased aircrafts, totaling 7kt, have been included in the Scope 1 company vehicle fleet reporting. Scope 3 GHG emissions from the disposal of waste for 2012 sum up to 98kt, down from 113kt the year before.

An estimate has been established for other Scope 3 GHG emissions, e.g. from raw material generation, transports, waste water treatment, creation of company infrastructure and employee commuting.

GHG emission target achievement and outlook

In 2005, Novartis made a voluntary commitment to reduce Scope 1 on-site GHG emissions to the global average level prescribed in the Kyoto Protocol, i.e. 5% below the 1990 level by 2012. This commitment forms a major part of the Novartis Group environmental targets and programs enacted in 2005. It strongly correlates with the targets that were already in place on energy efficiency improvement and on energy projects.

In relation to the above GHG target, emissions (excluding Alcon acquired in 2010) have been assessed for the 1990 reference year, based on the level of Novartis business activities in 1990. Global direct on-site GHG emissions in 1990 have been calculated at 308kt. Taking the continued growth of business as well as energy efficiency and emission reduction initiatives into account, emissions were expected to rise on average by some 2% per year. While this was the case between 1990 and 2005, Scope 1 GHG emissions remained more or less constant since 2005 despite the growth of the business.

With 404kt Scope 1 on-site GHG emissions for 2012, Novartis on-site emissions are about 30% above the Kyoto target of 5% below the 1990 levels, i.e. 293kt. In 2012 Novartis closed this gap with carbon offsets of 114kt from its own afforestation projects in Argentina and with 2kt with the *Jatropha* agro-forestry project in Mali.

Between 2006 and 2010, Novartis has reduced Scope 1 GHG emissions from its owned or leased vehicle fleet by 17%, well above the 10% reduction target set for this period. In 2010, a new 10% reduction target on fleet GHG emissions was set for 2015. Reductions were achieved thanks to more fuel-efficient vehicles through the introduction of hybrid gasoline-electric cars, increased use of diesel engines fitted with particulate filters, and other emission-reduction options such as liquid natural gas or bio-fuels. The 2015 target has been adjusted to 20% reduction compared to 2010 emissions.

In 2010, Novartis set new targets on total GHG emissions for 2015 and 2020, respectively a 15% and 20% reduction compared to 2008. These are in line with targets set by leading countries. We intend to compensate part of our total GHG emissions with carbon offsets in order to achieve our 2015 and 2020 targets.

When including Alcon data for 2008, total GHG emissions for Novartis have decreased by 6.8% between 2008 and 2012. This good performance results from increased energy efficiency and use of renewable energy, as well as other GHG emission reduction measures. We continue to strengthen our efforts and investments in more energy-efficient technology and the use of renewable sources in order to further reduce total GHG emissions in the coming years.

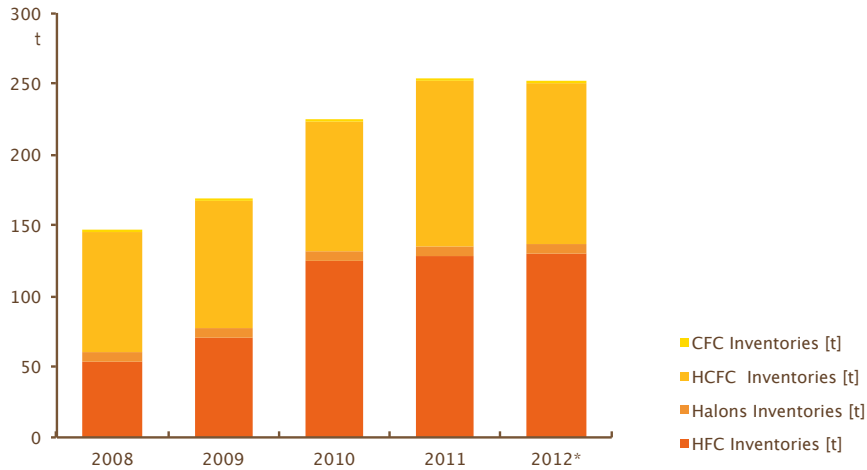
While our main focus is to lower GHG emissions through internal improvement programs, the Novartis Group is also taking advantage of carbon-offset options included in the Kyoto Protocol, such as the United Nations Clean Development Mechanism (CDM) and voluntary offset schemes. These schemes are designed to offset the amount of carbon released into the atmosphere by removing GHGs elsewhere through the use of renewable energy, energy conservation or carbon sequestration into biomass.

We believe carefully selected carbon-offset projects can help to foster long-term economic growth for local populations in developing economies, while also supporting Novartis in meeting its Group GHG reduction target. Novartis has established its own carbon-offset projects in Latin America, Africa and China.

[Learn more about our carbon-offset projects >](#)

Ozone depleting substances

Priority gas inventories (in t)



2.37	1.91	1.92	1.76	0.08	CFC Inventories [t]
83.81	89.55	92.23	116.62	113.37	HCFC Inventories [t]
7.16	7.31	6.19	7.08	6.37	Halons Inventories [t]
53.71	70.10	124.84	128.58	130.31	HFC Inventories [t]

HSE data reflects continuing operations, including Alcon from 2011

* Forecast data for 2012

In accordance with the guidelines for sustainability reporting of the Global Reporting Initiative (GRI), Novartis reports on the inventory and emission of ozone depleting substances (ODS).

Ozone depleting substances inventory and emissions

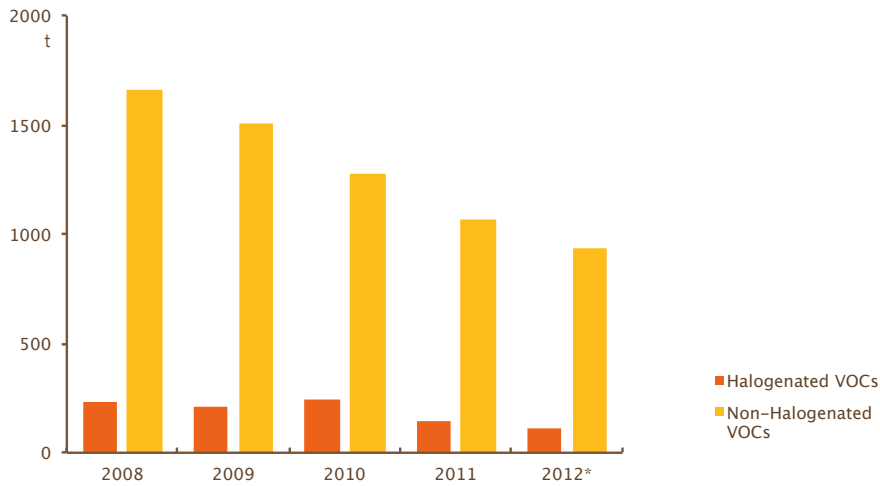
For 2012, Novartis sites globally reported a total inventory of 119.8t of ozone depleting substances (ODS), compared to 125.5t in 2011. The 2012 figure includes 0.08t of chlorofluorocarbon (CFC), 113.4t of hydrochlorofluorocarbon (HCFC) refrigerants, and 6.4t of halons. Additionally, HCFC inventories are continually replaced with chlorine-free hydrofluorocarbons (HFCs) or with natural refrigerants. In 2012, HFCs – which have an ODS factor of zero – amounted to 130.3t for Novartis.

Emissions caused by ODS losses in 2012, reported in tons of R11-equivalents, were calculated for the Group at 942kg (1,075kg in 2011). The largest ODS emissions by Novartis Division were: 769kg R11e from Alcon, 102kg Pharmaceuticals and 46kg Sandoz. Ozone depleting substances are not included in any Novartis product.

Novartis intends to minimize the use of synthetic refrigerant materials. Natural refrigerant materials are the preferred alternative in new equipment. Novartis had set the target to eliminate CFCs from its global operations by the end of 2012. The target was not fully achieved, with only 95.5% of the inventory being eliminated. The remaining 79.6kg will be eliminated during 2013. Remaining Halons will also be eliminated in 2013. HCFCs in existing equipment are being replaced when refilling becomes necessary.

Volatile organic compounds emissions

VOC emissions (in t)

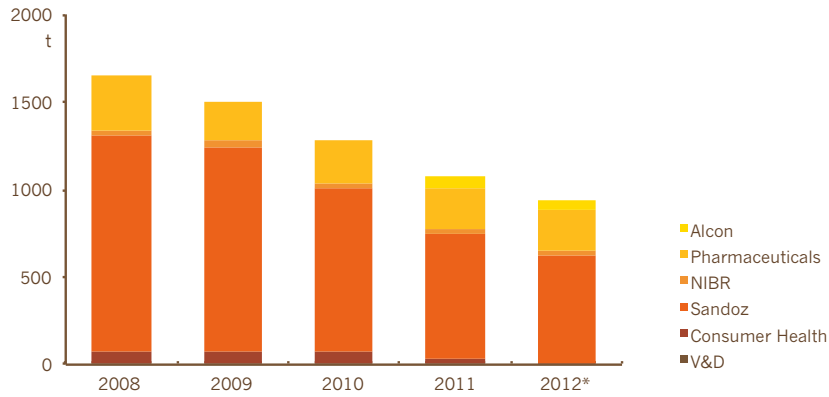


231.23	215.01	244.14	146.97	109.73	Halogenated VOCs [t]
1'655.17	1'507.22	1'276.87	1'070.76	933.71	Non-Halogenated VOCs [t]
1'886.40	1'722.23	1'521.00	1'217.73	1'043.45	VOCs total [t]

HSE data reflects continuing operations, including Alcon from 2011

* Forecast data for 2012

Non-halogenated VOC emissions by division (in t)



-	-	-	65.40	51.19	Alcon
312.56	230.05	246.75	232.58	226.71	Pharmaceuticals
31.60	33.88	25.58	24.98	26.72	NIBR
1'234.62	1'170.26	924.70	717.73	617.04	Sandoz
74.27	70.97	77.98	28.97	10.93	Consumer Health
2.13	2.07	1.86	1.09	1.13	Vaccines & Diagnostics
1'655.17	1'507.22	1'276.87	1'070.76	933.71	Non-Halogenated VOCs [t]

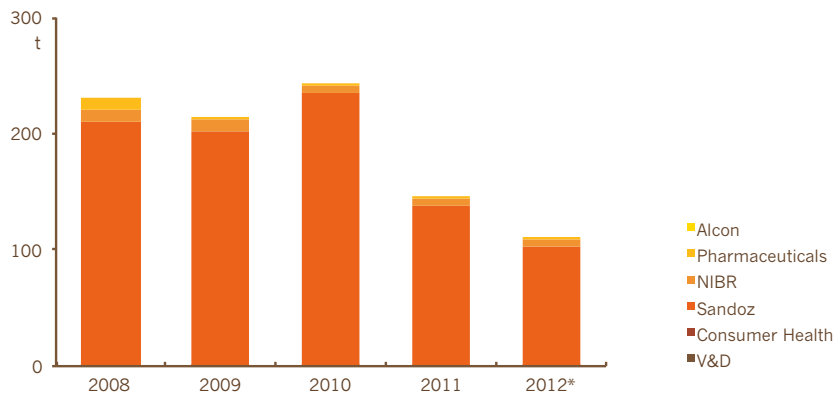
HSE data reflects continuing operations, including Alcon from 2011

Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

Halogenated VOC emissions by division (in t)



-	-	-	0.00	0.00	Alcon
10.32	3.26	2.07	2.13	0.97	Pharmaceuticals
10.85	10.16	6.86	6.82	6.80	NIBR
210.03	201.56	235.19	138.01	101.95	Sandoz
0.03	0.03	0.03	0.01	0.02	Consumer Health
0.00	0.00	0.00	0.00	0.00	Vaccines & Diagnostics
231.23	215.01	244.14	146.97	109.73	Halogenated VOCs [t]

HSE data reflects continuing operations, including Alcon from 2011

Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

Emissions of halogenated Volatile Organic Compounds (VOCs) decreased to 110t, from 147t in 2011; while at the same time non-halogenated VOC emissions were reduced from 1,071t in 2011 to 934t in 2012. Emissions of halogenated VOCs originated predominantly from Sandoz (93%). Emissions of non-halogenated VOCs came from Sandoz (66%), Pharmaceuticals (24%) and Alcon (6%).

VOC emission target achievement and outlook

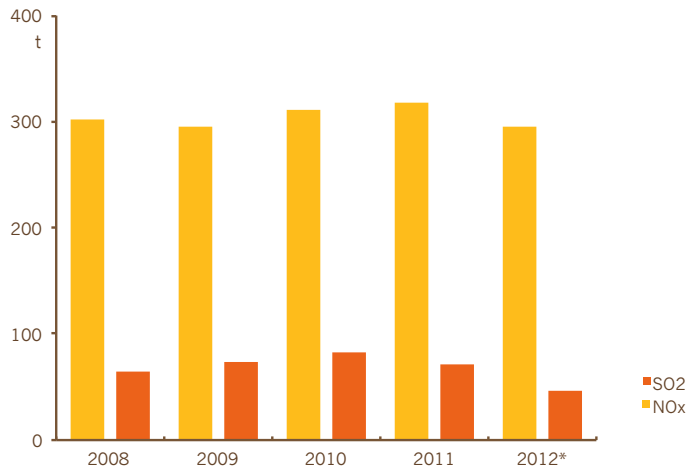
VOCs are the precursors of photochemical (tropospheric) ozone creation that leads to smog and related detrimental effects on health and the environment. Halogenated VOCs can also contribute to emissions of greenhouse gases.

The Novartis Group emphasizes reductions in VOC emissions in operations worldwide and a 15% reduction target was set for both halogenated and non-halogenated VOC emissions for the period 2008–2012. Emissions are strongly influenced by products that require solvents-based production processes and by the significant lead time to change production processes.

Emissions of VOCs overall decreased again strongly in 2012, and both targets for reduction of halogenated and non-halogenated VOCs were met, primarily due to the installation of abatement measures in Sandoz. New targets were set for 2015 to keep non-halogenated VOC emissions 40% and halogenated VOCs 45% below 2008 values.

Inorganic air pollutants

SO₂ and NO_x emissions (in t)

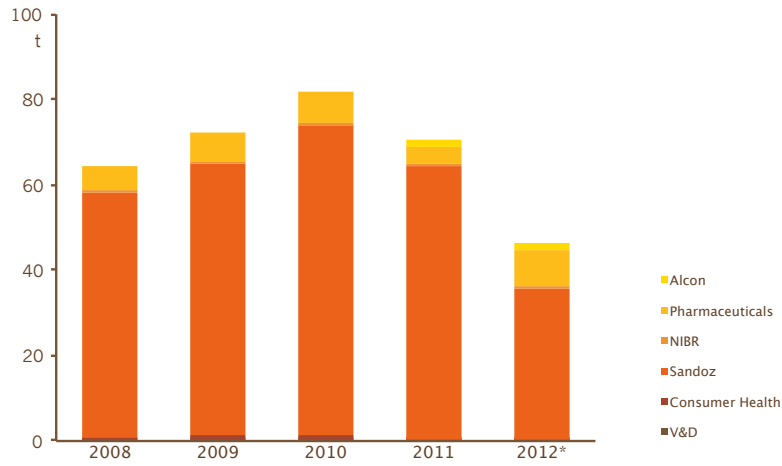


64.42	72.48	81.86	70.86	46.60	SO ₂ total [t]
302.13	294.56	311.57	317.44	294.49	NO _x total [t]

HSE data reflects continuing operations, including Alcon from 2011

* Forecast data for 2012

SO₂ emissions by division (in t)



-	-	-	2.06	2.10	Alcon
5.85	6.69	7.28	3.72	8.26	Pharmaceuticals
0.32	1.04	0.52	0.53	0.40	NIBR
57.18	63.31	72.49	64.23	35.48	Sandoz
0.98	1.31	1.47	0.27	0.29	Consumer Health
0.08	0.12	0.10	0.06	0.06	Vaccines & Diagnostics
64.42	72.48	81.86	70.86	46.60	Total SO ₂ [t]

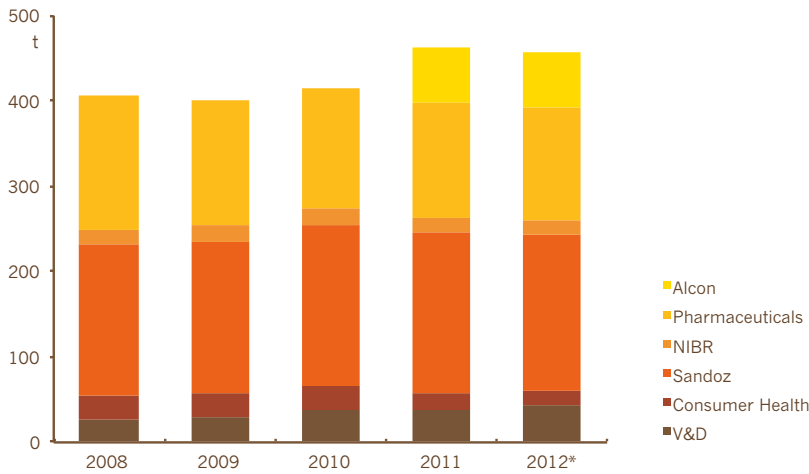
HSE data reflects continuing operations, including Alcon from 2011

Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

NO_x emissions by division (in t)



-	-	-	51.14	50.33	Alcon
118.62	102.59	113.43	101.59	92.80	Pharmaceuticals
8.18	12.68	12.16	11.12	9.84	NIBR
133.89	130.58	139.50	128.91	118.80	Sandoz
22.37	22.86	22.01	11.33	9.99	Consumer Health
19.06	25.86	24.46	13.35	12.72	Vaccines & Diagnostics
302.13	294.56	311.57	317.44	294.49	Total NO _x [t]

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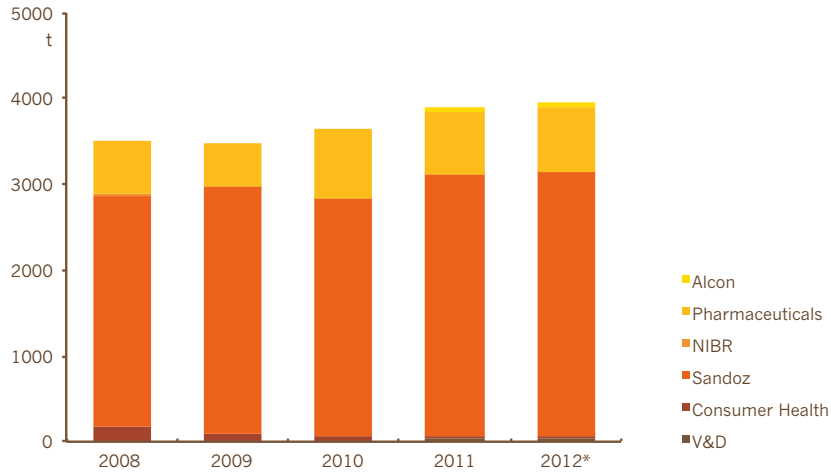
In 2012, inorganic air pollutant emissions for the Novartis Group totaled 47t (71t in 2011) for sulfur dioxide (SO₂) and 294t (317t in 2011) for nitrogen oxide (NO_x). NO_x emission levels from company-owned or leased vehicles are not included in these figures. Major contributors to Group SO₂ emissions were Sandoz (35t) and Pharmaceuticals (8t). The distribution of NO_x emissions is similar to the figure for the consumption of on-site generated energy. The main contributors in 2012 are Sandoz (40%), Pharmaceuticals (32%) and Alcon (17%).

Inorganic pollutants targets and outlook

Inorganic air pollutants have long been a focus of environmental improvement at Novartis. Given the measures we have implemented to increase energy efficiency and fuel switches, we do not anticipate inorganic air pollutants, including SO₂, to increase in the coming years.

Emissions into water

Chemical oxygen demand (COD) load by division



-	-	-	44.36	45.05	Alcon
633.47	479.73	817.77	742.90	765.90	Pharmaceuticals
1.40	0.61	0.25	0.28	0.26	NIBR
2'711.96	2'904.24	2'766.14	3'045.91	3'078.20	Sandoz
165.38	83.56	65.22	32.44	27.58	Consumer Health
0.00	0.00	0.00	31.30	39.63	Vaccines & Diagnostics
3'512.21	3'468.14	3'649.38	3'897.18	3'956.63	Total COD Load [t]

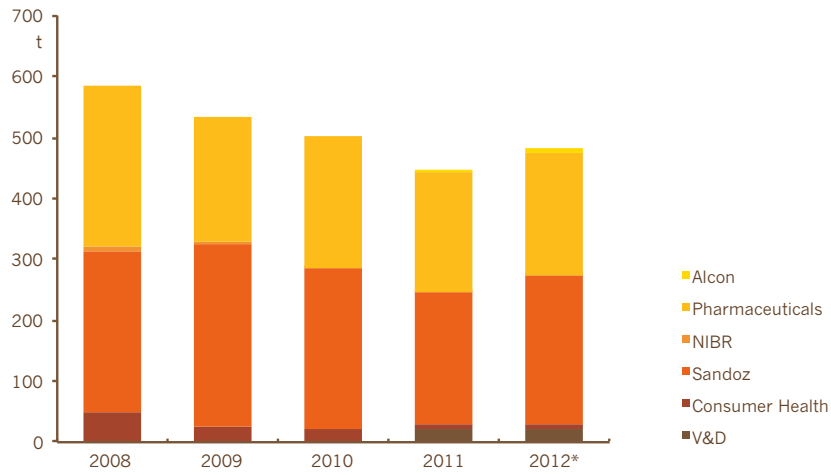
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CV included under Alcon from 2011

* Forecast data for 2012

Total suspended solids (TSS) emissions into water by division (in t)



-	-	-	5.63	5.78	Alcon
262.41	206.62	218.54	195.82	200.34	Pharmaceuticals
7.10	3.67	0.04	0.06	0.05	NIBR
265.44	297.73	263.28	215.75	244.74	Sandoz
48.25	25.61	20.85	7.88	8.52	Consumer Health
0.00	0.00	0.00	21.60	21.04	Vaccines & Diagnostics
583.20	533.63	502.71	446.74	480.48	Total TSS Load [t]

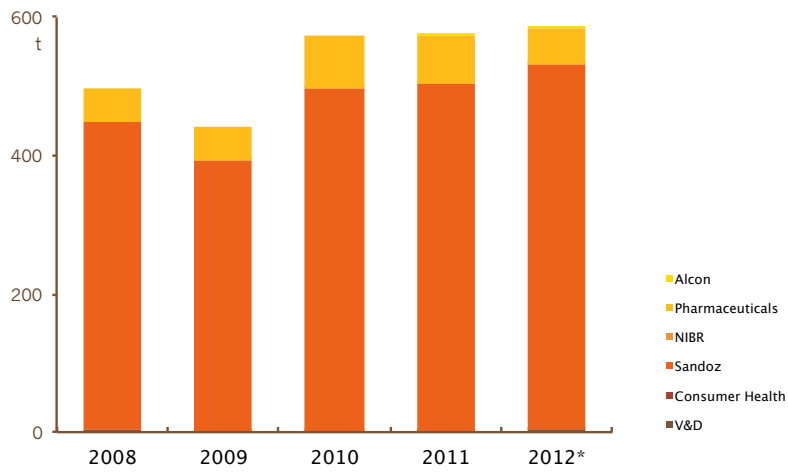
HSE data reflects continuing operations, including Alcon from 2011

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CV included under Alcon from 2011

* Forecast data for 2012

Nitrogen load by division (in t)



-	-	-	0.48	0.73	Alcon
49.25	47.18	77.86	69.62	52.82	Pharmaceuticals
0.00	0.01	0.01	0.01	0.01	NIBR
444.56	394.45	495.95	502.25	527.75	Sandoz
4.98	0.30	0.31	0.13	0.14	Consumer Health
0.00	0.00	0.00	1.10	3.81	Vaccines & Diagnostics
498.79	441.93	574.13	573.60	585.25	Total Nitrogen Load [t]

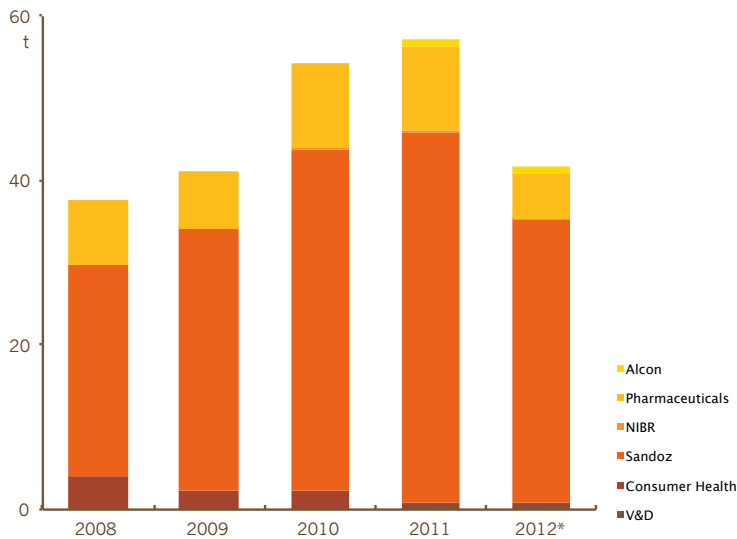
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CV included under Alcon from 2011

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Phosphate load by division (in t)



-	-	-	0.85	0.94	Alcon
7.96	6.90	10.33	10.13	5.43	Pharmaceuticals
0.00	0.19	0.14	0.14	0.13	NIBR
25.78	31.63	41.66	45.18	34.47	Sandoz
4.02	2.41	2.25	0.29	0.20	Consumer Health
0.00	0.00	0.00	0.50	0.62	Vaccines & Diagnostics
37.75	41.12	54.38	57.09	41.80	Total Phosphate Load [t]

HSE data reflects continuing operations, including Alcon from 2011

Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

The chemical oxygen demand (COD) load on the aquatic environment from Novartis Group company operations slightly increased in 2012, from 3.90kt in 2011 to 3.96kt. COD loads for 2012 were attributable to: Sandoz 78%, Pharmaceuticals 19% and other divisions 3%.

Total suspended solids (TSS) increased from 0.45kt in 2011 to 0.48kt in 2012. Total nitrogen load increased from 0.57kt in 2011 to 0.59kt in 2012 and phosphate load decreased from 0.057kt in 2011 to 0.042kt in 2012.

Novartis did not set a Group target on emissions into water. Effluent water is always treated in state-of-the-art facilities and therefore remaining effluent loads on the above-mentioned parameters from Novartis Group company operations have little relevance for the environmental quality of water bodies near our sites. However, we closely monitor specific parameters, such as the release of drug substances into water, and take the appropriate mitigation and risk minimization measures when necessary.

Release of drug substances into water

Since 2001, the Novartis Pharmaceuticals Division has conducted a program to reduce the release of active drug substances from production processes into water.

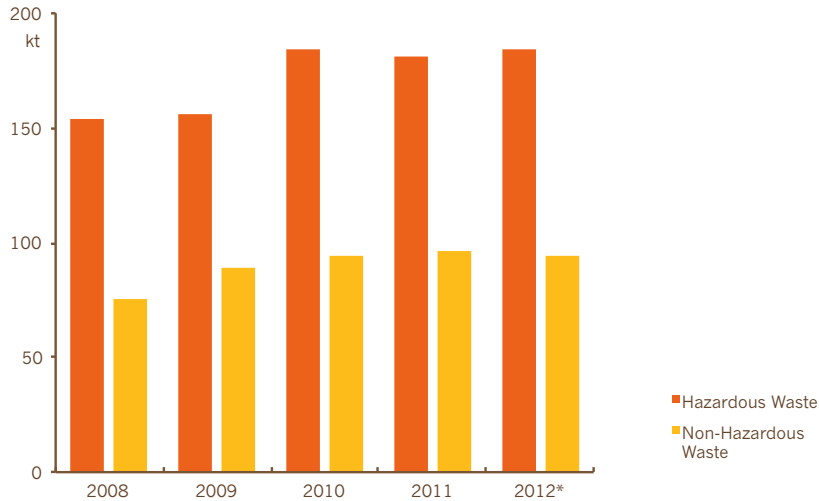
In the past several years, the total amount released to the aquatic environment has been less than 0.05% of the total amount of active pharmaceuticals processed for the Pharmaceuticals Division globally.

Having reached such low release levels overall, efforts are now focused on the potential environmental risks linked to such releases. To this end, the Novartis Divisions apply programs to prevent remaining environmental risks associated with individual active drug substances and with the specific situation at each manufacturing location. The programs, covering all manufacturing sites, combine a science-based, substance-specific risk assessment methodology with an evaluation of process-efficiency improvements and the most stringent international regulatory requirements. Specific targets have been set for sites to achieve further reductions on individual drug substances, if the specific risk assessment indicates a concern, if the release is above 1%, or if effluents from the sites could lead to concentrations in the aquatic environment bigger than 1% of the respective risk limit for the particular substance. At several pharmaceutical production sites, we use advanced wastewater treatment technology to specifically eliminate drug substances from effluents, such as membrane bioreactors, ultra-filtration and activated charcoal filtration.

In 2012, we conducted a Group-wide effort to monitor and reduce effluent loads of diclofenac, the API for the anti-inflammatory drug Voltaren from all our operations worldwide that process diclofenac. The release to waste water was below 0.3%.

Total operational waste

Total operational waste (in kt)



153.73	155.58	184.54	180.63	184.77	Hazardous Waste
75.45	89.31	94.42	96.57	94.23	Non-Hazardous Waste
229.17	244.89	278.96	277.20	279.01	Waste total [kt]

Data excludes construction debris

HSE data reflects continuing operations, including Alcon from 2011

* Forecast data for 2012

For Novartis, operational waste – both hazardous and non-hazardous – is an important area of environmental management for Group company manufacturing facilities, as well as for research and administrative sites.

Group objectives include the proper management of hazardous waste and risks related to disposal, in particular disposal into landfills.

In 2012, the total amount of hazardous waste for the Novartis Group slightly increased to 185kt (from 181kt in 2011); non-hazardous waste totaled 94kt in 2012, which represents a 2.4% decrease compared to 2011 (97kt). This decrease is primarily due to smaller volumes of waste from vaccine production at Vaccines and Diagnostics sites. Hazardous waste was generated primarily by Sandoz (49%) and Pharmaceuticals (45%). Non-hazardous waste was generated by: Sandoz 32%, Pharmaceuticals 21%, Vaccines and Diagnostics 19%, Alcon 19%, Consumer Health 6%, and NIBR 3%.

For reporting purposes, waste is classified by type and according to the disposal routes, recycling, treatment, incineration with and without energy recovery, and landfill.

Sustainable packaging initiative

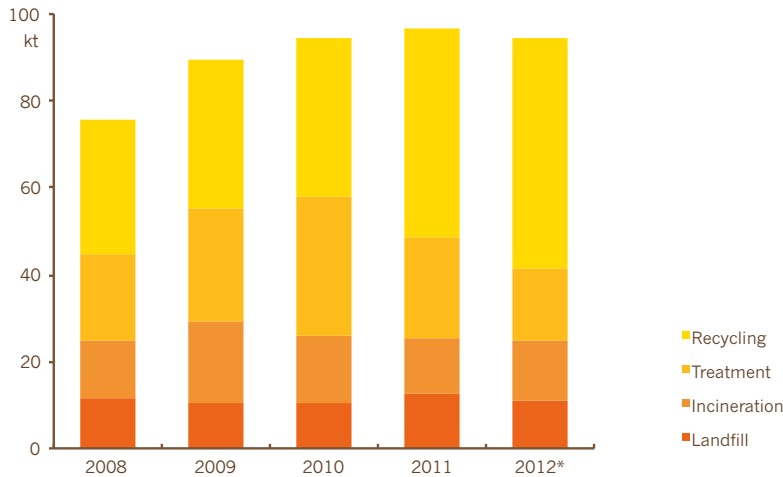
Novartis has launched a group-wide initiative on sustainable packaging, and seeks to design packaging that both minimizes environmental impact and meets all regulatory, quality, functional and design requirements.

A guide was developed and issued for packaging design teams to make product packaging more sustainable. Novartis engages with clients and packaging material suppliers to determine needs and identify more sustainable packaging solutions. Best practice packaging case examples are collected and shared among packaging designers across the company. Improvements are quantified based on a set of packaging indicators. Projects include:

- The Sandoz facility in Cambé, Brazil reduced packaging material and related costs between 5 and 10% by optimizing blister layout for a variety of their products. Total quantities saved with 27 individual projects sum up to 3.3 tons of aluminum and over 20 tons of plastic blister foil.
- The Alcon Vision Care site in Singapore introduced a returnable PP transfer packaging for the polypropylene (PP) blister package of its daily contact lenses. These transfer packages replace 32 tons of cardboard packaging, which was wasted before, going forth and back between Alcon and the supplier now for more than four years.

Non-hazardous waste

Non-hazardous waste by disposal route (in kt)



30.92	34.13	36.35	48.11	52.98	Recycling
19.62	25.84	32.06	23.04	16.22	Treatment
13.27	18.91	15.33	12.54	14.05	Incineration
11.64	10.43	10.68	12.86	10.98	Landfill
75.45	89.31	94.42	96.57	94.23	Non-Haz. Waste total [kt]

Data excludes construction debris

HSE data reflects continuing operations, including Alcon from 2011

* Forecast data for 2012

Non-hazardous waste reported includes mixed or household waste, packaging waste, compostable waste and inert waste.

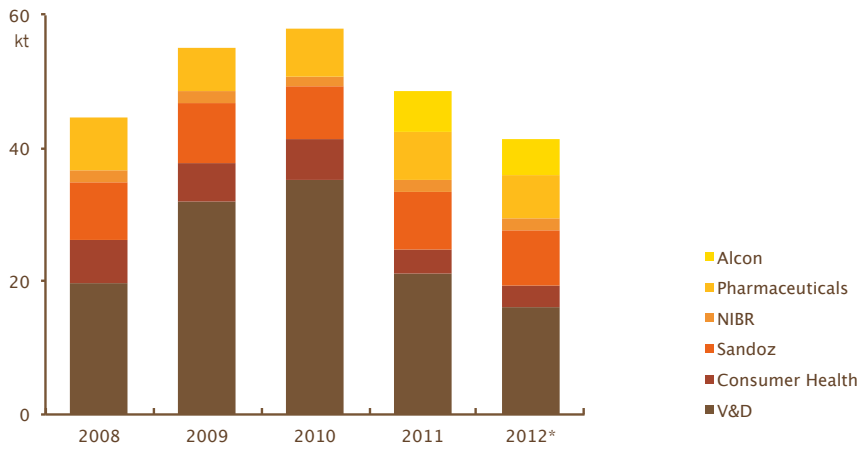
Total amounts of non-hazardous waste not recycled for the Novartis Group in 2012 were 41.2kt (down from 48.5kt in 2011); an additional 53.0kt included materials collected for recycling. Of the non-hazardous waste not being recycled, disposal routes were:

Treatment	39%
Incineration	34%
Landfill	27%

Non-hazardous waste target achievement and outlook

Keeping non-hazardous waste to a minimum and recycling it to a maximum is a constant challenge. Novartis makes ongoing efforts in all areas to minimize non-hazardous waste that cannot be recycled at its operations globally. We are installing waste-segregation programs at many sites that allow better use of recycling routes for materials such as paper, cardboard, glass and plastics – for example from packaging, offices and production processes. Recycling rate of total non-hazardous waste is up from 49.8% to 56.2%.

Non-hazardous waste by division (in kt)



-	-	-	6.06	5.27	Alcon
7.86	6.72	7.11	7.29	6.66	Pharmaceuticals
1.69	1.82	1.79	1.60	1.55	NIBR
8.81	8.90	7.92	8.83	8.43	Sandoz
6.48	5.82	5.83	3.57	3.06	Consumer Health
19.67	31.92	35.43	21.09	16.27	Vaccines & Diagnostics
44.53	55.18	58.07	48.45	41.25	Non-Haz.Waste not Recycled [kt]

Data excludes recycled waste and construction debris

HSE data reflects continuing operations, including Alcon from 2011

Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

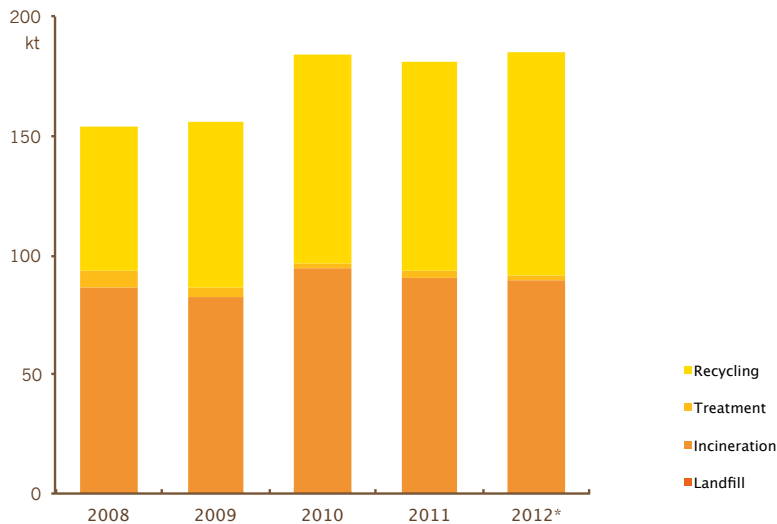
* Forecast data for 2012

A target was set for the Novartis Group, excluding Alcon and Vaccines and Diagnostics Divisions, to reduce the per employee efficiency of non-hazardous waste not being recycled by 20% by 2012, based on 2008 values. In 2012, this intensity indicator was reduced by 23% compared to 2008, achieving the target. The Vaccines and Diagnostics Division reduced its non-hazardous waste not recycled from 21.1kt in 2011 to 16.3kt in 2012, which represents a 49% improvement of intensity by production. Alcon will be included in new waste targets as of 2013.

For 2015 Novartis set a new target to reduce the intensity of non-hazardous waste not recycled per employee by 10% compared to 2010.

Hazardous waste

Hazardous waste by disposal route (in kt)



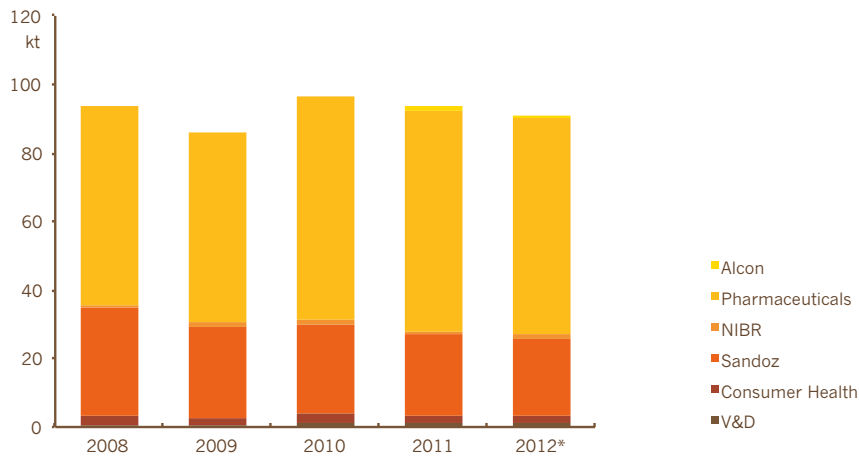
59.91	69.45	88.40	87.13	93.58	Recycling
7.20	3.29	2.12	2.88	1.75	Treatment
86.61	82.83	94.03	90.62	89.44	Incineration
0.00	0.00	0.00	0.00	0.00	Landfill
153.73	155.58	184.54	180.63	184.77	Haz. Waste total [kt]

Data excludes construction debris

HSE data reflects continuing operations, including Alcon from 2011

* Forecast data for 2012

Hazardous waste not recycled by division (in kt)



-	-	-	0.91	0.85	Alcon
58.33	55.82	64.95	64.57	63.08	Pharmaceuticals
0.76	1.37	1.36	1.15	1.20	NIBR
31.36	26.03	26.02	23.40	22.94	Sandoz
2.56	2.11	2.66	2.22	1.95	Consumer Health
0.80	0.79	1.16	1.25	1.17	Vaccines & Diagnostics
93.81	86.13	96.15	93.50	91.19	Haz. Waste not Recycled [kt]

Data excludes recycled waste and construction debris

HSE data reflects continuing operations, including Alcon from 2011

Consumer Health data includes Animal Health, Ciba Vision & OTC until 2011

CV included under Alcon from 2011

* Forecast data for 2012

Hazardous waste originates primarily from chemical and pharmaceutical production processes.

Total amounts of hazardous waste not recycled in 2012 for the Novartis Group were 91.2 (down from 93.5kt in 2011); an additional 93.6kt was subject to recycling.

Of the hazardous waste not being recycled in 2012, disposal routes were incineration (98%) and treatment (2%). The recycling rate for hazardous waste was up from 48.2% in 2011 to 50.2% in 2012.

Novartis has completely eliminated disposal of hazardous waste with organic content to landfills. No such waste has been disposed in landfill sites since 2010. Small amounts of some inorganic residues for which no other disposal route exists, such as incinerator ash, continue to be disposed in accredited landfills.

Hazardous waste target achievement and outlook

Novartis puts a high priority on avoiding hazardous waste. In 2008 a target was set to reduce the per production efficiency of hazardous waste not being recycled for the Novartis Group (excluding Alcon) by 10% by 2012 based on 2008 values. In 2012, the hazardous waste intensity was reduced by 3.8% compared to 2008, not achieving the target set for the period.

For 2015 Novartis set a new target to reduce the intensity of hazardous waste not recycled per production by 10% compared to 2010.

HSE targets 2008–2015

Novartis sets Health, Safety and Environment (HSE) targets covering periods of at least three years to allow better analysis, planning and implementation. For 2008–2015, the following targets have been defined on Group level:

- Halogenated volatile organic compounds (VOCs): decrease to 130 tons in 2015 (-45% compared to 2008)
- Non-halogenated volatile organic compounds (VOCs): decrease to 1,000 tons by 2015 (-40% compared to 2008)
- Initiate water saving programs at the 10 sites with highest water footprint and water scarcity
- Intensity of hazardous waste not recycled: reduce by 10% by 2015, compared to 2010
- Intensity of non-hazardous waste not recycled: reduce by 10% by 2015, compared to 2010
- Organic hazardous waste to landfill: zero
- Carbon dioxide (CO₂) from vehicles: decrease by 20% by 2015, based on 2010 level
- Total GHG emissions: reduce by 15% by 2015 and 20% by 2020, including carbon offsets
- Lost Time Injury and Illness Rate (LTIR): reduce to less than or equal to 0.14 in 2013
- Total Recordable Case Rate (TRCR): improve by 5% compared to divisional performance in 2012

Furthermore, the Group is pursuing the following goals:

- Behavior-based safety programs initiated at all major Novartis sites
- Waste minimization and water efficiency programs active in all divisions
- Business continuity management program fully implemented worldwide
- Risk reduction measures started and business continuity plans established for all remaining risks (according to risk portfolios)
- Novartis emergency management programs implemented at divisional level as well as in all smaller units
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- Implementation of Be Healthy, the Novartis health and well-being initiative, at all sites with more than 100 associates