ENVIRONMENT, HEALTH & SAFETY REPORT 2008
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>3</td>
</tr>
<tr>
<td>Summary</td>
<td>4</td>
</tr>
<tr>
<td>Sustainable Development Programme</td>
<td>6</td>
</tr>
<tr>
<td>EHS Investments</td>
<td>11</td>
</tr>
<tr>
<td>EHS Expenses</td>
<td>11</td>
</tr>
<tr>
<td>Safety</td>
<td>13</td>
</tr>
<tr>
<td>Energy</td>
<td>15</td>
</tr>
<tr>
<td>CO₂ Emissions</td>
<td>17</td>
</tr>
<tr>
<td>Inorganic Gas Emissions</td>
<td>17</td>
</tr>
<tr>
<td>CFC</td>
<td>19</td>
</tr>
<tr>
<td>Water</td>
<td>21</td>
</tr>
<tr>
<td>Waste Water Quality</td>
<td>21</td>
</tr>
<tr>
<td>Hazardous Waste</td>
<td>23</td>
</tr>
<tr>
<td>Non-Hazardous Waste</td>
<td>23</td>
</tr>
<tr>
<td>Audits</td>
<td>25</td>
</tr>
<tr>
<td>Sites</td>
<td>26</td>
</tr>
</tbody>
</table>
Welcome to our report on environmental, health and safety performance for 2008.
As stated last year, 2008 was a transition year for Givaudan. This is also particularly true for the many changes which occurred in the Environment, Health and Safety (EHS) organisation.

During 2008, a new structure of the EHS function was put in place. Givaudan is now organised on two levels – each small location has at least one EHS manager, while larger locations have a group of professionals and experts. At the global level, we have put in place a decentralised organisation to establish the standards and procedures and support faster implementation of specific group-wide programmes within the regions.

At the same time, 2008 was the first year since the acquisition of Quest International when all locations worked together on a common EHS platform, which included the reporting of key performance indicators with the same definitions.

Since its independent listing on the Swiss stock exchange in 2000, Givaudan has been operating a sustainable business model through its combined focus on innovation, customers and operational excellence.

Over the past eight years, the company has shown it is able to combine the creation of shareholder value with business principles that promote sustainable development. The Executive Committee feels that an overarching framework needs to be put in place to coordinate current activities and better drive sustainability principles throughout the business. The company believes that, particularly in times of economic downturn, it is right to maintain and expand a full Sustainable Development programme in 2009.

In this report, we introduce the main concepts of Givaudan’s Sustainable Development programme, its science-based framework, the guiding principles and the five pillars of the programme. We look forward to reporting on our progress.

Apart from numerous benefits in many areas, from the safety of employees to decreasing waste, the sustainability programme will give Givaudan a significant further edge in the industry and greatly improve the ability of long-term value generation, corporate governance excellence and enhanced business success in an increasingly challenging world.

Gilles Andrier
CEO
In defining its sustainability vision, strategy and goals during 2008, Givaudan worked with international experts from TNSI (The Natural Step International, a not-for-profit organisation), using their science-based approach in defining sustainability and developing Givaudan’s sustainability framework. As a result, we have developed a Sustainability Vision which is based on five ambitious strategic pillars, underpinned by core values that include a focus on passion, transparency and partnership. Within each of the five pillars, Givaudan has defined long-term goals and strategies, and is working on corresponding key performance indicators on which it will start to report. Further communication and consultation with employees, customers, suppliers and other stakeholders will begin in the first half of 2009.

The new EHS organisation has also introduced a web-based reporting tool which should allow us to respond to potential negative trends more quickly and set our priorities. A platform on the intranet was started to promote and share best practice and ideas from and among our locations on a worldwide basis. This will be an important tool in educating employees who are interested in EHS and sustainability questions and is an indispensable connecting tool between the EHS professionals around the globe.

Occupational safety remains a top priority. Every incident is fundamentally avoidable and it is our clear vision that all employees should go home after work in the same – or even better – condition than when they arrived. To make safety more visible and tangible within Givaudan, we changed the way of reporting incidents to benchmark ourselves against other companies with global operations. Based on the number of incidents during the reporting period, we saw a positive trend. However, each accident should have been prevented. As a result, we have decided to launch and implement a company-wide behavioural-based safety programme in the coming years. Challenging targets have been agreed to drive the company to its goal of zero incidents.

It is a long-standing tradition for Givaudan to continuously improve its EHS performance. EHS represents a large portion of our sustainability programme. We analysed the need to enlarge our current list of operational key performance indicators with the aim of working on effective solutions to minimise the carbon footprint of our processes and products. We also continue to work on an optimisation programme which should help to decrease energy consumption and promote renewable energies.

Givaudan supports and participates in external initiatives such as the CDP (Carbon Disclosure Project), in which we share our performance on what is the largest database in the world of corporate information on climate change. In addition, we became “B-members” of the SEDEX (Supplier Ethical Data Exchange) initiative, covering key sustainable development areas as labour standards, health, safety and environmental management as well as business integrity.

We also continuously monitor the impact of our activities in our neighbourhoods. We continued our programmes to upgrade or install odour emission control systems at sites close to these neighbours to further minimise the release of harmless odours generated by large-volume production of fragrance and flavour compounds.
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<tr>
<th>Category</th>
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</tr>
</thead>
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<td>Lost time injury rate</td>
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<td>Total recordable injury rate</td>
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<td>Light fuel</td>
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<td><strong>Inorganic gases</strong></td>
<td>Nitrogen oxides</td>
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<td>Sulphur oxide</td>
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<td><strong>CFC</strong></td>
<td>Consumption</td>
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<td>Inventory</td>
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Givaudan has been operating a sustainable business model since its spin-off in 2000. Its goal is to generate long-term, sustainable growth whilst being responsive to the expectations of its stakeholders. Over the past eight years, the company has proven its ability to combine the creation of shareholder value with business principles that promote sustainable development. In 2008, the company’s leadership felt that a Givaudan-wide framework needed to be developed and implemented to coordinate current activities and expand these to better combine the sustainability principles with all operations and activities.

The shaping of an overall, encompassing Sustainable Development programme for Givaudan began in July 2008. Particularly during the difficult times of an economic downturn Givaudan believes it is crucial to maintain and expand a comprehensive Sustainable Development programme. Over time this will provide Givaudan – in addition to being a good corporate citizen – with a further strengthened base for expanding its leadership in the industry. Moreover, it will further improve the foundation for long-term performance, corporate governance excellence and enhanced business success in an increasingly challenging world.

The work of cross-functional, company-wide operating teams underlined the importance of recognising the dual pressures on the planet and its people.

The trend of declining natural resources, coupled with an increasing population and per capita consumption, must be addressed, halted and possibly reversed. Givaudan, as an innovator and market pioneer, has a key responsibility to lead this process in the fragrance and flavour industry.

**Givaudan’s Sustainability Vision** is based on the four following founding principles

1. **Nature** is not subject to systematically increasing concentrations of substances from the Earth’s crust
2. **Nature** is not subject to systematically increasing concentrations of substances produced by society
3. **Nature** is not subject to systematically increasing degradation by physical means
4. **People** are not subject to conditions that systematically undermine their capacity to meet their needs

These four principles show that it won’t be possible to continue indefinitely to make business as today. Givaudan will prepare itself by taking measures to minimize the risks, avoiding unnecessary costs and benefit from new opportunities only left to sustainable companies.

The funnel is used as metaphor to help visualize the growing economic, social and environmental pressure on society.
In defining its own sustainability vision, strategy and goals, Givaudan has been working in partnership with international experts from TNSI (The Natural Step International, a not-for-profit organisation), using their science-based approach to develop Givaudan’s sustainability concept.

This concept was used to analyse the complex and systemic issues associated with sustainable development. As a result, Givaudan has developed a Sustainability Vision which is based on five ambitious strategic pillars, underpinned by core values that include a focus on passion, transparency and partnership. Within each of the five pillars, Givaudan has defined goals and strategies, and is working on corresponding key performance indicators on which it will start to report. Further emphasised communication and consultation with employees, customers, suppliers and other organisations will begin in the first half of 2009.

### THE FIVE PILLARS OF GIVAUDAN’S SUSTAINABILITY PROGRAMME

**Care for people and the planet will drive all that we do**

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<th>Raw Materials - Responsibility in Supply</th>
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<td>We source all materials in ways that preserve our environment, stimulate the development and well-being of communities and safeguard an efficient use of resources.</td>
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<th>Employees - Passion with Purpose</th>
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<td>We attract, develop and retain talented, creative professionals who feel passionate and proud of the work done in our company and who are empowered to contribute to a sustainable society.</td>
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<tr>
<th>Innovation &amp; Development - Delivering Sustainable Creations</th>
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<td>Givaudan leads in creating consumer preferred flavours and fragrances that are designed and developed in line with sustainability principles in order to satisfy current and future needs.</td>
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<th>Operations - Driving Operational Excellence</th>
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<td>We continuously drive to improve operational excellence without compromising the environment as well as the health and wellbeing of our employees and the communities in which we operate.</td>
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<th>Customers &amp; Markets - Product Impact</th>
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<td>We actively engage our customers to ensure that all of our products promote the health and well being of people and preserve our planet. We do this by encouraging our business partners to support our goals throughout the complete life cycle of their products.</td>
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From 2010 onward, Givaudan will present in detail the progress of its Sustainability programme in a separate document. The report will cover all aspects of the pillars and will report on the journey towards achieving its goals, from responsible resource management to sustainable new technologies and supportive partnerships with suppliers, customers and communities.
CARE FOR EMPLOYEES AND THE ENVIRONMENT

Each year our site at Cimanggis, Depok in Indonesia organises a day of activities dedicated to promoting environment, health and safety awareness. The events focus on reinforcing employees’ awareness and commitment, and all employees are obliged to take part.

The day starts with a meeting to define the programme and its goals, and the site also invites external speakers to teach in specific areas. There are poster sessions as well as practical exercises such as the use of fire extinguishers and emergency response exercises. The day finishes with a voluntary blood donation session for the Red Cross.

In addition during 2008, the site
• donated scholarships for more than 60 poor children who live locally;
• managed a local health centre each month for local residents, and
• supported the local government’s environmental programme by donating plant pots and waste bins.

Certified sustainable

In 2008, our headquarters site and largest ingredient production site at Vernier in Switzerland received a “Parc naturel de l’économie” label from the country’s La Fondation Nature & Economie, a certification that is granted to industrial sites demonstrating sustainable behaviour.

One criterion for certification is that the site has at least 30% of its total of 22 hectares land maintained naturally. This means pesticides are not used, local plants and flowers are planted, and green areas are maintained in a sympathetic way, for example by mowing less.

The certification was received after an audit that will be repeated every three years.
MEADOW BIODIVERSITY

Initiatives to improve the biodiversity of the surroundings of the site and encourage better links with the local community continued during the year at our Ashford site in the UK. The main area of activity was around a meadow which forms part of the site and is bordered by the River Great Stour. Previous initiatives in the meadow had involved the construction of two ponds, river bays, owl nest boxes, kingfisher perches and an artificial otter holt. In 2008 volunteer employees established a work programme to enhance the area further, and these “Great Stour Meadow Project” activities included:

• The construction of an all-weather path to gain access to the large pond.
• The construction of a “dipping platform” to allow visitors to see wildlife in the large pond. This work, which involved contractors and employees, is a key part of the site’s project to work with local primary schools.
• The planting by employees of a small copse of native woodland trees to provide shade around the large pond.
• The construction of a hibernaculum for reptiles, including frogs, lizards and newts, to hibernate over the winter.
• The preparation of seed beds and planting of wild flower seed mixes to enhance the colour and display of flowers in spring.

BUILDING COMMUNITY LINKS

Building links with local communities is an essential part of being a responsible business. At the Jaguaré site in São Paulo, Brazil, employees organised and sponsored a wide range of activities in 2008, including:

• An entrepreneurship course for young people, provided by an international education non-government organisation, for a total of 125 students of the 5th and 8th grades at a local school.
• An English course for employees and outsourced professionals.
• The formation of a choir with more than 100 children from two schools.
• The donation of 55 packages of children’s clothes to a teenage reference centre and 130 items of clothing to other institutions, and the donation of blankets, toys and food to communities in the city outskirts.
• A chocolate candies workshop, with employees preparing hundreds of packs of candies for donations to various schools.
Givaudan’s new Consumer Products Fragrance Creative Centre in East Hanover, New Jersey - USA is a state-of-the-art facility. It utilises the latest in green building technology and is second to none in terms of technological infrastructure in the North American fragrance industry. Here are some of the major energy conservation and recovery initiatives used to ensure that we act in such a manner in conserving and maintaining our environment responsibly:

- **Heat Wheels** – an energy recovery device that uses the exhaust (spent) air to conditioned the incoming supply air of the HVAC (Heating, Ventilation and Air-Conditioning) units.

- **Low-e Glass Curtain walls** – replaced the existing dark tint exterior building glass facade with a low-e (emissivity) clear glass panels

- **Clear Glass interior room partition** – by using clear glass front interior partition for the entire facility, it allows the natural light to shine through the building interior. This reduces the overall number of electrical lighting fixtures used hence reduces the electrical lighting energy usages.

- **Lighting system** – installed a high efficiency, high lumen, low energy usage and long life T5 fluorescent lamp and electronic ballast as a general lighting system for the entire facility. This lighting system reduces electrical consumption by 25-30%.
EHS INVESTMENTS

EHS investments are capital expenditures to install, upgrade and renovate EHS installations such as equipment for fire protection and security installations. They can also be for the installation of air or waste water treatment systems for the abatement of residual emissions to protect our employees, the neighbourhood, the environment as well as our assets.

In 2008, total EHS investments decreased by 40% compared to the previous year and reached again an “average” level. 2007 was exceptionally high due to investments in relation to the integration of acquisitions as well as the construction of a new logistics centre in the Zurich area, Switzerland. We continued to invest in air abatement systems to strip odour molecules (bio-filters, air incineration units) and upgraded older systems. We also invested in safety measures for storage areas and warehouses, or for improvements of safety and environmental systems following internal EHS audits.

EHS EXPENSES

EHS expenses cover the maintenance of EHS equipment (fire extinguishing systems, air filter systems, waste water treatment installations) as well as the treatment and elimination of any kind of waste. It also includes the labour costs of all our EHS professionals but also medical services (internal or external), consultant fees as well as the costs for EHS training of employees.

Total EHS expenses increased by 5.5% compared to the previous year. The larger part of these expenses were made up of environmental operating costs for the management of the waste generated through our processes, and air treatment and waste water treatment installation costs. People costs also increased as a consequence of a restructuring of the EHS organisation and the strengthening of the global EHS organisation.
CREATING A SAFETY CULTURE

The facility at Carthage, Cincinnati, Ohio in the US has refocused its safety strategy and created an EHS steering team to drive initiatives at the site.

The team rewrote the site’s EHS Vision and Mission, launching it along with the concept of STEP – Safety Takes Every Person. This principle fosters a safety culture in which every person is responsible for their own and the safety of the workers around them.

The steering team created four sub-teams to develop and implement programmes for: Safe Work Practices, Physical Hazards, Behavioural Safety, and Reward and Recognition. These teams are made up of representatives from each department across the site in an effort to ensure participation from all levels and areas of the organisation.

Although this new approach is still in the initial stages, there is clearly a renewed sense of safety across the site. In the last quarter of 2008, the site had just one OSHA recordable injury – an insect bite.

EXTENDING NATIONAL SAFETY DAY

Our sites in India take part each year in National Safety Day, and the Jigani site goes further by extending its activities and declaring the period as EHS week, during which time multiple activities involving all employees are organised.

The week starts with a ceremony centred on the safety oath. Multiple activities and contests then take place with employees covering a wide range of environment, health and safety matters.

Discussions strengthen the importance of good safety behaviour and the need to act as teams.

It is also the occasion to familiarise and strengthen knowledge about the safe handling of tools and devices.
Safety figures are reported along OSHA\(^1\) reporting rules for work-related injuries. The lost time injury rate (LTIR) is the number of lost time injuries (work-related accidents) per 200,000 worked hours. The total recordable injury rate (TRIR) is the number of total recordable injuries per 200,000 worked hours.

The reporting rules changed for the reporting year to enable our future benchmarking with other companies or industries. Safety is a top priority for us, and our goal is zero accidents. Because the definitions changed we are not able to state the progress made last year. However, the trend is in the right direction, the number of incident is decreasing, and the number of lost working days is also falling. We have locations which have had no lost working day incidents for more than 11 years – and we will continue building on these milestones. In 2009, we will start a long-term behavioural-based safety programme in all our locations worldwide.

\(^{1}\) Occupational Safety & Health Administration of the United States Department of Labor

### Celebrating a safety milestone

In November, our Ashford site in the UK achieved four years without a Givaudan employee lost-time incident, reflecting a genuine commitment by employees to their own safety and to the safety of others.

Paul Chatters, who is charge of the site, says he wants staff to continue coming to work knowing they will return home safely. “If we keep safety as our number one priority then there is no reason why we cannot improve on this record,” says Paul.

“Having achieved this excellent result we must continue to work safely and help ensure the safety of others, whether they are Givaudan employees, contractors or visitors.”
One of the major focuses in 2008 of our site at Zhang Jiang in Shanghai, China, was an energy consumption reduction programme. During the year energy consumption increased overall by 1.1% with a product output increase of 13%, enabling the site to report an energy efficiency increase of 10.5% per ton of product. This improvement was the result of:

**A change of behaviour by:**
- banning unreasonable energy consumption, using mobile dehumidifiers in technical labs to decrease humidity instead of simultaneously running a hot pump and a cooling pump.
- taking care to switching off lamps, air conditioners, air exhausters in the offices or workshops when not needed.

**An adoption of energy-saving equipments by:**
- installing electricity frequency transducers on fresh-air handling units and water pumps to adjust the rotation speed of electric motors to economic modes (these air conditioners consume today about 50% of the total electricity consumption).
- adding double glazing in all exterior windows of the office buildings (405 m²), resulting in a reduction of 23,000 KWh per year in the energy used for air conditioning.
- installing an automatic washing machine for barrels. By optimising and automating the daily time to wash 60 barrels, the consumption of public water used was cut by 1600 m³ and 98 tons of steam. A heat exchanger was also added to the ventilation system, helping to warm or cool the air generated by air conditioners, resulting in 5,200 KWh of energy savings.
Our energy indicators primarily cover the consumption of electricity, fuel and natural gas to produce ingredients and to manufacture mixtures of liquid and powder compounds.

The global energy consumption of all energy sources (electricity, natural gas and fuels) increased by 1%. Despite the different energy saving projects, the energy efficiency of our processes could not be improved. This is almost certainly due in part to fluctuations in our product mix, an inherent part of our business. One positive aspect in this area was the consumption of heavy fuel at one of our Mexican plants was cut by 20% after it substituted a part of the energy produced by burning waste solvent instead of using heavy fuel. We will continue our search for adequate and economical alternatives to heavy fuel.
CO$_2$ reduction: agreement for progress

At our Jaguaré site in São Paulo, Brazil, we have reduced carbon dioxide (CO$_2$) emissions in the logistics area after working closely with a customer.

The successful programme illustrated the benefits of having both parties agree goals and commit to achieving them. In particular, Givaudan and the customer agreed actions in areas where there were direct impacts on CO$_2$ emission, for example maximising the dimensions of raw material packaging and decreasing the frequency of trucks delivering raw materials from three to one per week.

ODOUR REDUCTION: “TOO GOOD TO BE TRUE”

“Too good to be true” goes some way to describe the almost complete elimination of odours from the waste water treatment plant (WWTP) at our Naarden site in the Netherlands.

The site had faced odour complaints from neighbours for some time, and the Dutch government was pressuring Givaudan to cover the WWTP basin, an area of 2,000 sq m. Our site engineers contacted colleagues at other locations with WWTPs and found that the Vernier site in Switzerland had implemented a simple, effective and robust solution.

The Vernier WWTP is equipped with a “contact tank” in which the sludge is mixed with the effluent water in an anaerobic environment with a defined ‘residence’ time before it flows into the aeration basin. This process has a strong odour reduction effect.

The Dutch engineering team found an elegant way to replicate this solution, designing a metal plate to isolate a small portion of the basin. Today, the effluent is first directed into the small portion of the basin. Smooth stirring of the solution over a specific time – “residence” time is 30 minutes – allows the “odour components” to be absorbed in the sludge. The solution is then directed into the aeration basin where the separation process continues, as happened previously. The result is that instead of the odour components being stripped off in the aerator basin, they are already absorbed in the sludge.

Odour reduction was noted immediately on installation of the “barrier”. Since then, the site has not received any odour complaints related to the WWTP. The installation is not only an effective solution, but also represents significant savings in costs – constructing a complete basin cover would have cost about 20 times that of the “barrier” installation.
The CO₂ (carbon dioxide) emissions reported are those defined as “scope 1” emissions in the GHG protocol (an initiative of the WRI/WBCSD), these emissions come from sources ranging from our own stationary combustion installations and production processes.

The CO₂ emission from our emission sources under scope 1 of the GHG protocol moved only a little compared to the previous year. Emission levels are of course directly proportional to the energy production of our stationary combustion units, however the carbon impact of heavy fuel is bigger than the impact of light fuel or natural gas. Carbon abatement strategy must therefore be multilateral: a) less consumption of energy (optimisation programmes at the level of the installations as well as the level of the processes/operations); b) focus on the use of renewable energies and lowest carbon alternatives. In 2009 we will work on an inventory of installations and their efficiency. Only then will we be able to set the right priorities.

1. GreenHouse Gas
2. World Resource Institute
3. World Business Council for Sustainable Development

Inorganic gases reported are sulphur dioxide (SO₂) and nitrogen oxides (NOₓ). These emissions occur during the combustion of fossil fuel.

Emissions of inorganic gases are directly dependent on the type and quality of fuel used. Heavy fuel contains a lot of SO₂. This is the reason why the percentage drop in SO₂ emissions is directly proportional to the quantity of heavy fuel used. We aim to find an economical solution for our Mexican site to substitute its heavy fuel by another fuel source.
Measuring carbon footprints

A new standard on the measurement of the carbon footprint of products and services is being implemented at our Bromborough site in the UK.

The standard, PAS 2050, was launched in the UK in 2008. It is being applied at the site as part of its sustainability programme and will measure the carbon footprint of products. Opportunities are being identified for further sustainability improvements.

CUTTING BUILDING ENERGY COSTS

Significant savings were achieved at our San Celoni site at Barcelona in Spain after actions were taken in one building to reduce electricity consumption of air conditioning and CFC gases (chlorofluorocarbons).

These actions included installing solar filters in windows. The filters, which are almost imperceptible visually and do not reduce light, cut infrared solar radiation by 60%. Windows are now fresher, and the filters increase comfort and reduce the need for cool air. In winter, the filters cut heat loss by 30%. Air conditioning machines were also replaced by heating pumps with high energy efficiency. This new equipment uses HFC gases (hexachlorofluorocarbons) instead of CFC.

Savings gained by these actions included:

- High energy efficiency equipment – 45,000 kWh/year (17 tonnes CO₂/year).
- Solar filters on the windows – 20,500 kWh/year (8 tonnes CO₂/year).
- Reduction of CFC gases – 80 kg (33% of the site’s total CFCs).
CFCs (chlorofluorocarbons) reported are chemicals used in cooling and fire extinguishing devices.

CFCs are exclusively used in cooling systems. Because these gases contribute to the greenhouse gas effect, we continue to look for alternative solutions. CFC gases have the advantage of being inert, stable, non-flammable and non-toxic and unfortunately it is still difficult to find economical replacement systems which have the same properties. We continue to decommission certain equipment and this is reflected in the inventory. Regrettably, consumption has increased by 36% in the reporting year mainly due to leaks or replacements of refrigerant gas in four locations.
SAVING CITY WATER

At the start of 2008, an average of over 1,400 cubic meters gallons of water was used each day at our Carthage manufacturing facility at Cincinnati, Ohio in the US.

Half of this water was used to operate the air emission scrubber systems. These scrubbers are needed as part of the facility’s air permits and are responsible for minimising the release of particulates to the atmosphere from each of the spray driers and powder blending operations.

To operate this equipment effectively and within the terms of the site’s air permit, each of the 11 scrubbers must use about 40 liters per minute of city water. This equates to over 600 cubic meters of water per day. In other areas of the plant, city water is used as non-contact cooling water for reactor jackets, vent condensers and vacuum pumps. Before the 2008 water recirculation project, this water was used once and discharged to the waste water treatment system.

Following the implementation of the water recirculation system, the water is now captured and used to supply the scrubbers. The project reuses and saves about 400 cubic meters (30%) of city water used per day. This is about two-thirds of the total water needed to operate the scrubbers and just under one-third of the total water used at the facility. In addition to saving the use of city water, we have saved costs associated with discharging to the waste water system. At the current usage and billing rates, savings from this project are more than $300,000 per year.

LIFE-SAVING TRAINING

Our employees in Japan continue to take part in an annual life-saving training programme conducted by the Fukuroi Fire Department. Launched in 1997, the training takes place four times a year under the auspices of the Fukuroi Security Management Association, an extra-governmental body of the Fukuroi Fire Department. Givaudan’s site has served as the director of the Fukuroi Security Management Association since 2004. In 2008, eight employees took part in the programme.
The total water consumption decreased 4%. The main water consumer in the Givaudan group is our multipurpose site at Vernier in Switzerland. Its consumption represents 60% (4.46 mio m³) of total water consumption – 98% is taken from the nearby river and the remaining 2% is city water. Little water is used for our production processes. About 80% of the water is used for cooling purposes and so is not in contact with products. This water is returned to the river after having gone through an online quality (conductivity, turbidity) and temperature check (the intake temperature is between 4°C and 27°C depending on the season, and the outlet cannot exceed 30°C). The remaining 20% of the water used by the Vernier site is mainly cleaning vessels; this is then treated in the waste water plant before being released back into the river Rhône.

Givaudan is recognizing water as our most basic resource and its global scarcity and will strive for exemplary water stewardship.

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1. Water data for 2007 was corrected due to a double counting at our biggest contributing site.

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**WASTE WATER QUALITY**

Waste water quality is measured in TOC (total organic carbon) and relates only to those sites which have their own waste water treatment plant (WWTP).

TOC is the amount of carbon bound in an organic compound and is often used as a non-specific indicator of water quality or cleanliness of waste water. Only five of our production locations have their own full WWTP. The rest of our locations pre-treat waste water before sending it to the public systems. It is therefore difficult to have a common basis to compare the water quality. TOC measurement for sites sending their waste water to the public system is only done on a spot basis, if at all. To use an average TOC value of an external WWTP is not representative of the quality of our waste water and so is not considered in this report. Asking the sites to occasionally measure their TOC would not be representative because our product mix can change on a daily basis – thus changing the waste water mix. We therefore limit the comparison of TOC to the five WWTP locations.
MODELLING ODOUR EMISSIONS

Working with flavours in high concentration can create odour issues. These odours have a potentially negative impact on local residents and can damage the reputation of our company.

As part of efforts to reduce odours at our Dübendorf production site in Switzerland, the air leaving the facility is channelled through biological air treatment units and two incinerators.

In 2008, another approach to further reduce potential odour emissions was explored with computer models of current emissions and meteorological data (figure 1).

Using this modelling, emissions were simulated by taking the same output parameters but setting the exhaust chimney of the emissions source five metres higher than the current height. The results (figure 2) show significant odour reductions in the site’s immediate surroundings.

The findings of this study form a valuable model for possible applications aimed at enhancing the site’s sustainable development.
Hazardous wastes reported are the wastes classified as such in different regulations. It is mainly flammable solvents, distillation residues and mineral sludge from internal waste water treatment plants.

The avoidance of waste has always been a high priority for Givaudan. In particular, there is a focus on hazardous waste avoidance, with priority given to landfilling and then to incineration. Our total hazardous waste decreased 12% in 2008. There are only six locations landfilling hazardous waste, not having found alternative solutions. One location, in Spain, accounted for 92% of all our landfilled hazardous waste. This was sludge from its waste water treatment plant. Spain considers sludge as a hazardous waste while other countries handle it as non-hazardous waste.

Non-hazardous waste are all waste not classified as hazardous waste. These are mainly construction materials, sludge, packaging materials and vegetable materials.

The total amount of non-hazardous waste slightly increased in 2008. We face challenges in finding alternatives to substantially decrease the amount of non-hazardous waste. A positive sign is that the landfilled non-hazardous waste decreased by 8% compared with an increase of incinerated waste of 28%.

The amount of recycled waste decreased by 28%. Fluctuations in ingredient numbers and the product mix make it difficult to establish if the change is, overall, positive or negative. It may have contributed to the increase of waste on the one hand but on the other may indicate reduced use of solvent in our processes.
MAINTAINING LINKS IN A FARMING REGION

Our production site at Pedro Escobedo in the state of Queretaro in Mexico is in a mainly agricultural area with 21 villages. The site undertakes a programme of community activities to strengthen its ties with local people, and activities during 2008 included:

- Funding environmental campaigns with some authorities and local schools.
- Planting 500 trees in the local area.
- Cultivating sorghum and alfalfa in fields around the site.
- Funding the purchase of materials to help some villages in the renovation of old utilities and buildings.
- Promoting sports events on the site’s football field, which is also available for use by sports clubs in the area.
- Donating 200 rubbish/trash containers that were placed in schools and parks, and next to churches and municipal offices.
- Providing medical consultations in coordination with state health authorities twice per month in the village of Quintanares. This free service helped more than 20 patients each month. Givaudan medical staff also provided services for vaccination campaigns against measles and tetanus (the vaccines are provided by the health authorities).
- Providing handcraft courses. More than 50 women from the community and relatives of employees took part.
Our global EHS team carries out audits at our production facilities.

Due to the changes in the EHS organisation and the many ongoing and new initiatives, the audits performed during 2008 focused on key and the newly acquired sites. They were again done jointly with the risk engineering group of our property insurer. Findings or improvements are documented in a separate report. Local management has then to establish an action plan to close any gaps.

In addition to these audits, global EHS group members regularly visit sites to, for example, provide support in critical projects, carry out training sessions and discuss improvement areas.
ARGENTINA

Buenos Aires (Munroe)
Buenos Aires (Malvinas)

BRAZIL

Sao Paulo (Jaguaré)
Sao Paulo (Vinhedo)

US

Lakeland FL
Hoffman Estates IL
Itasca IL
Devon (Florence) KY
Owings Mills MD
East Hanover NJ
Mount Olive West NJ
Mount Olive East NJ
Ridgedale NJ
New York NY
Cincinnati (Carthage) OH
Cincinnati (Edison) OH

MEXICO

Cuernavaca
Pedro Escobedo

ARGENTINA

Buenos Aires (Munroe)
Buenos Aires (Malvinas)