

# SUSTAINABILITY REPORT 2013

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# FOREWORD



## Dear Readers,

In the foreword of our first sustainability report, we highlighted the huge importance of the subject of “social responsibility” for Witzenmann. Throughout the almost 160-year history of our company, it has always been our desire to play a part in improving the economic performance and living conditions at our corporate sites. Our willingness to want to accomplish something in a special way for the community beyond our economic activities continues to this day. In times of globalisation, this responsibility is based on our corporate sites in the various continents and countries.

By embracing “Corporate Social Responsibility (CSR)”, we are following the central theme of “sustainability”. By joining the United Nations Global Compact, we are pledging ourselves to its 10 principles, which formulate clear requirements on the subjects of human rights, labour standards, environmental protection and fighting corruption.

In accordance with the prescribed statutes, we have promised to publish an annual report on our progress with respect to implementing these principles and supporting the UN objectives for sustainable development. The 2013 progress report documents the current status of our activities.

The 10 principles of the United Nations Global Compact relate to a broad spectrum of social themes. In the interests of sustainable development, we intend to address these as a whole, rather than in isolation. In our company, we have assigned the responsibility for devising an action plan and managing and controlling individual measures to the newly established sustainability steering committee.

With the analysis of the subject areas and definition of focal points for our approach, the first key steps have been taken and are documented in this progress report.

Dr. Hans-Eberhard Koch  
CEO

Dr. Gerhard Flöck  
Managing Director

Dr. Andreas Kämpfe  
Managing Director



# ECONOMIC DEVELOPMENT

## Turnover record for the Witzemann Group in 2012 – growth in America and Asia

The Witzemann Group is the world's leading manufacturer of flexible metal hoses, expansion joints, metal bellows and automotive components. Over 3,500 employees in 23 companies in 18 countries develop and produce tailor-made solutions for customers from all branches of industry. Witzemann is a global technological leader within its sector and offers the most extensive product range and the widest spectrum of expertise in the field of flexible metallic pipeline elements.

### At a glance

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More than **3500** employees

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Over **470** million in turnover

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More than **2500** patents in the company's history

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“We are anticipating a moderate increase in turnover to over EUR 490 million for 2013. We are also seeing growth outside Europe this year.”

Dr. Hans-Eberhard Koch, CEO

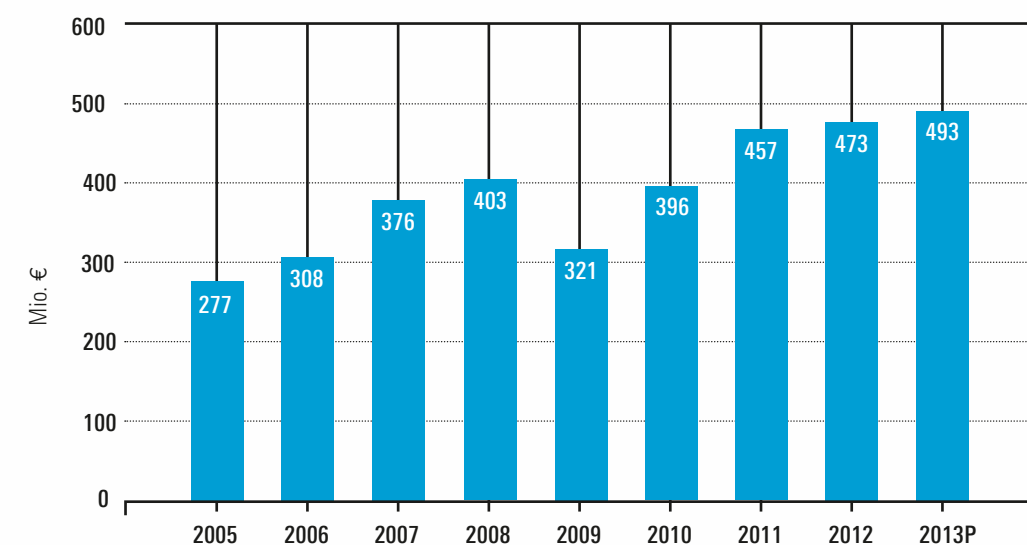


“Investment volume continues to be high and is still above amortizations. We are using this to invest in our future and secure our leading market position globally in the long term.”

Dr. Gerhard Flöck, Managing Director

### Moderate growth in turnover

After strong growth in turnover in the 2011 financial year, further growth was also able to be achieved in 2012. Turnover increased by EUR 15.4 million or 3.4% to EUR 472.9 million. The trend with respect to turnover varied according to the regions: in Germany, Witzenmann recorded stable progression, whereas companies in other European countries saw slight declines. The largest growth was generated in America and Asia. Alongside the headquarters, the companies in the USA, China and Russia made significant contributions to growth. The overseas share of the total turnover is 65% for 2012, once again representing an increase of 1.5 percent in relation to the previous year. What is striking is the share of turnover from outside Europe, which has increased to almost 31% (2011: 27.0%) and was still below 10% ten years ago.



Witzenmann's growth is driven by the vehicle industry (cars, trucks and commercial vehicles). Growth in the industry in general is limited. The employment trend is also positive. At the end of 2012, just short of 3,500 people were employed by the Group, more than half of them in German companies. Similarly to the growth in turnover, the employment figures are increasing in America and Asia in particular.

The Witzenmann Group is on track for the current year. Planned growth is supported with targeted investments. For 2013, investments amounting to more than EUR 34 million are planned, following on from those of almost EUR 33 million in the previous year. The Witzenmann Group considers itself to be well placed and is setting ambitious objectives. Turnover of EUR 800 million is to be achieved in 2020. Continued globalisation, systematic innovation management and focusing on high-growth business fields are key strategic core themes.

# SUSTAINABILITY STEERING COMMITTEE

agree on  
common goals

give  
confidence

After joining the Global Compact, Witzenmann’s conceptional processes and numerous measures, initiatives and efforts on sustainable business and trading were brought together and put into practice throughout the company. In spring 2013, the sustainability steering committee was founded and held its inaugural meeting on 12.04.2013. The steering committee is led by the company’s sustainability officer, Mr. Philipp Paschen, and is an interdisciplinary team that meets to discuss the relevant themes. It is made up of employees from the Personnel Management, Environmental Protection and Quality Assurance departments as well as from Public Relations and Corporate Communication.

## Key changes to the corporate principles

Social responsibility has traditionally been of great importance to Witzenmann. As a family company, the Witzenmann Group is committed to the concept of sustainability and continuity and longevity are key guiding principles of our corporate strategy. This is reflected in the Witzenmann Group’s guiding corporate principles.

Amongst other things, the guiding corporate principles provide information about our corporate vision. They describe the corporate objectives and strategies that we wish to use to achieve our vision. The mission, objectives and strategies should determine how we act. In particular, this means continually monitoring strategies and adapting them if necessary to enable the vision and objectives to be achieved even under changing conditions (including political, legal, economic, technological and socio-cultural circumstances).

In 2013, the Witzenmann guiding principles were expanded, enhanced and made more specific, particular with respect to the sustainable development of the company.



Corporate Vision			
"By 2025, we will reinforce our global presence through market leadership in America and Asia. The annual turnover of the Witzenmann Group will exceed one billion Euros by this point."			
<b>Corporate Guidelines</b>  Social responsibility and responsibility to society  Reliable Partner  Independent family-run company  Long-term business planning / philosophy  Knowledge and learning  Equality of opportunity and cultural variety	<b>Corporate Objectives</b>  ■ Profitable Growth ■ Global Supplier ■ Technology and Innovation Leadership ■ Quality Leadership ■ Excellence in Personnel ■ Financial Independence ■ Sustainability	<b>Corporate Mission</b>  The Witzenmann Group is the worldwide recognized corporation for solving sophisticated engineering problems in the field of vibration decoupling, compensation of expansions, media guidance, and compensation of mounting tolerances in piping systems. With more than 160 years of engineering experience in the field of flexible metal elements we are able to provide our customers intelligent and second-to-none engineering solutions. Our corporate mission is summed up in our company motto – "managing flexibility".	<b>Leadership Principles</b>  Entrepreneurship  Orientation Performance  Responsibility and Encouragement  Integrity and Cooperation  Shaping change  Health oriented management
<b>Corporate Strategies</b>  ■ Growth strategy ■ Technology strategy ■ Financial strategy		■ Internationalisation & Group strategy ■ Quality strategy ■ Personnel strategy ■ Sustainability strategy	
<b>Business Divisions</b>		<b>Central Departments</b>	

The next section will provide more details on the guiding corporate principles of the Witzenmann Group, where there is a particular reference to the principles of the UN Global Compact, as well as the corporate objective of "sustainability" which is now included in the guiding corporate principles. The principles relating to environmental protection are discussed separately in this report.



**Corporate principles**

The guiding principles comprise the fundamental values, beliefs, policies and obligations that apply to our company. They serve as a guide on how to act as a company and when working with colleagues.



**Social responsibility (extract)**

As a family company, Witzenmann is particularly committed to continuously improving scope for combining work and family for men and women alike. We offer more mature employees working conditions which enable them to enjoy a satisfying working environment even at an advanced stage of their career. We encourage and support non-native staff in their training and professional development.



**Responsibility to society (extract)**

In line with the UN's Global Compact, we uphold all international human rights and reject all forms of corruption, bribery, and enforced and child labour. All our staff abide by the law as a matter of course. We enjoy a close and trusting relationship with employee representatives. We respect the rights of employees to the freedom of association and collective bargaining.



**Equality of opportunity and cultural variety**

As an employer, Witzenmann offers all its staff the same opportunities regardless of age, sex, religion, ethnic origin, sexual orientation or disability. The cultural diversity of our workforce enriches our company and is key to the success of the group of companies.



**Sustainability**

Sustainability has recently been incorporated into the canon of corporate objectives. In doing so, we are underlining our commitment to sustainable business and acting, respecting the environment and employee welfare. For us, sustainable business means that we need to preserve the natural world and environment for future generations and that our way of doing business needs to provide a long-term basis for maintaining prosperity. We pursue the precautionary principle when faced with environmental problems. We take initiatives to create a greater awareness of the environment within the company in terms of use of resources and energy. We support and help speed up the development and spread of environmentally friendly technologies. To ensure a safe and healthy working environment for our staff, we are continually working on improving the health and safety of our workforce.







# STRATEGIES

Sustainable business is a type of management that embraces ecological, economic and social aspects:

- Ecological in the sense that nature and the environment are preserved for future generations
- Economic in the sense that the economy provides a strong foundation for long-term employment and prosperity
- Social in the sense that people find appropriate and meaningful employment.

In keeping with this, sustainable business is characterised by considering the individual aspects as a whole. Making changes to and interfering with one part of the system or another generally affects other, often all, areas of social, economic and natural life. When evaluating future developments, considering what are known as megatrends can help us. These are trends that we currently believe will be highly significant in and have a key influence on the future. In addition to potentially altering specific areas of our lives, they are also expected to cause a fundamental change. The most important megatrends include:

- Demographic change
- New ecology
- Health awareness
- Globalisation
- Individualisation
- Cultural diversity
- Mobility
- Sustainability
- Resource efficiency
- Urbanisation
- Willingness to learn

These megatrends provide us with a basis for discussion on which we have defined the areas of action that are relevant to and must be dealt with by the group of companies. The subjects of environmental protection, energy and resource efficiency, and health are addressed jointly in the Witzenmann Group by the sustainability steering committee.



# ENVIRONMENTAL PROTECTION

Sustainable business

Sustainable acting

Sustainable reporting

Appendix

The tasks of the Witzenmann Group's environmental management system concern

- Taking special responsibility for the protection and conservation of natural resources
- Ensuring careful use of resources
- Avoiding or reducing damage to and stress on the environment and
- Complying with legal standards and other requirements.

Witzenmann GmbH has been certified in accordance with ISO 14001 since 2003 and regularly provides evidence. The ISO 14001:2004 standard is applied effectively. The current certificate is valid until April 2015. Witzenmann do Brasil, Witzenmann Korea and Witzenmann USA are also certified in accordance with ISO 14001.

Witzenmann GmbH regularly publishes an environmental report, which has formed part of the sustainability report since 2012. For further details, please refer to the corresponding section of this sustainability report.

## Carbon footprint

Working closely with Pforzheim University, Witzenmann GmbH has participated for the second time in a research project to determine the greenhouse gases produced by our company.

In cooperation with Prof. Dr. Mario Schmidt (Head of Institute for Industrial Ecology, Pforzheim University), the carbon footprint of Witzenmann's Pforzheim and Remchingen sites was determined.

The carbon footprint balances the total CO<sub>2</sub> emissions and considers both the direct and indirect emissions that, for example, arise from the production of preliminary products or the provision of services. Prof. Dr. Mario Schmidt is regarded as one of the most experienced experts in this field. A numerical model developed by Prof. Dr. Mario Schmidt forms the basis of the research project and is used to determine the exchange of pollutant emissions from the widest range of production facilities in their entirety and to allow them to be compared. By participating in this research project, Witzenmann is taking on a leading role among medium-sized industrial companies.

This year's results can be found in the environment section of this report.





# ENERGY AND RESOURCE EFFICIENCY

In our opinion, sustainable business involves an integrated approach that links the subjects of the environment and energy with resource efficiency and lean management methods.

“The term 'resource' is used in various ways and is generally understood to be a natural resource, [...]. But there are of course other views on what resource efficiency means. The economic perspective in particular is often dismissed or even regarded as being in competition with the ecological view. Yet, the economy affects broad sections of our society and is even crucial when it comes to managing scarce resources.”

Prof. Dr. Mario Schmidt, Pforzheim University

#### **Witzenmann Production System (WPS)**

In the Witzenmann Group, as in many industrial companies, “lean production” is a key guiding theme for improving production processes. When it comes to continuous process optimisation (“Kaizen”), measures such as those that enhance productivity and product quality or that increase production flexibility are at the forefront. The most important motivation for the WPS analyses of production processes is the avoidance of “waste”. Superfluous production procedures are to be avoided and “non-productive” activities are to be organised intelligently. When it comes to tackling waste, there is a key crossover between the lean management methods and efforts regarding resource efficiency. In our company, the Witzenmann production system (WPS) was defined and launched in 2008. The aim of the WPS is to generate as little waste as possible in our production and to firmly establish a system of continuous improvement within the company. Within this framework, regular value stream analyses take place, for instance, which aim to promote resource-efficient processes.

#### **Resource efficiency and climate protection initiative**

Witzenmann GmbH has joined the “Initiative Ressourceneffizienz und Klimaschutz” (resource efficiency and climate protection initiative) founded by the government in the German state of Baden-Württemberg. In close cooperation with the ministries concerned with this subject, the initiative is driving forward support for environmental engineering and resource efficiency in Baden-Württemberg. It serves as an interface between industry, science and politics. The main focuses of the work are consultation and support between science and industry and the launching of projects. The initiative also conducts the sector and location marketing for the expertise and economic strength of environmental engineering and resource efficiency in Baden-Württemberg.





# HEALTH AT WITZENMANN

**Health is an investment in the future.**

Challenges such as

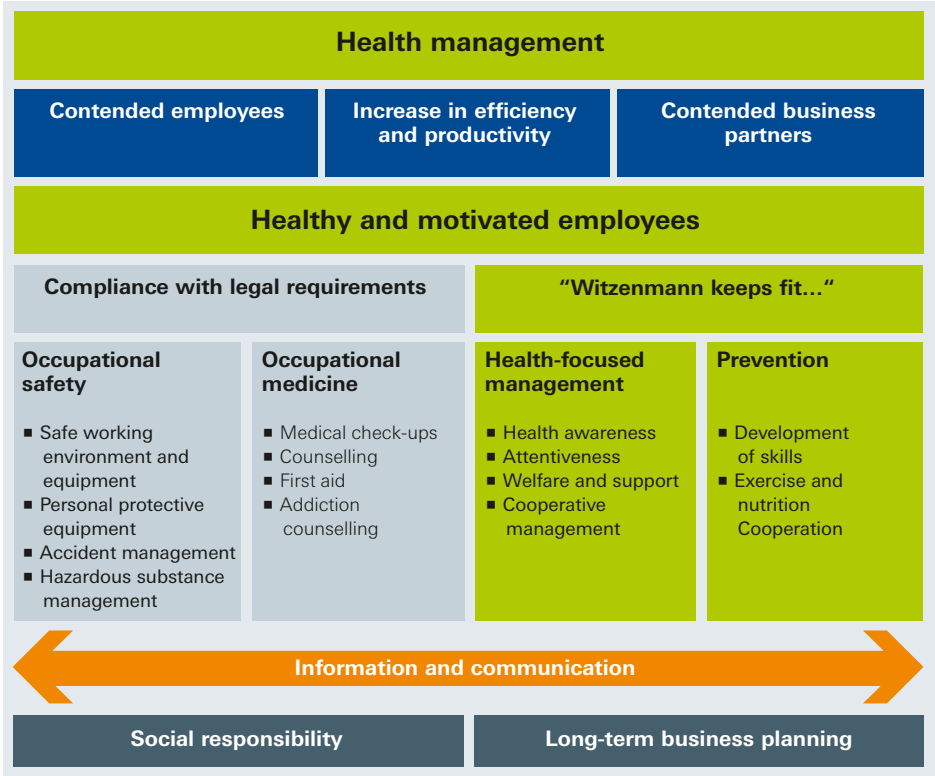
- global competitive pressure (pressure to innovate and adapt)
- demographic change and the ageing workforce
- changes in the working environment (trend: from manual worker to “knowledge” worker)
- competition for qualified young talent (“war for talent”)
- change in values within society (changed attitude towards work)

can still only be mastered with healthy, qualified, motivated and efficient employees. Protecting and promoting the health of our employees is therefore not simply evidence of us assuming social responsibility, but is also a economic consequence.

**Health management is socially and economically relevant**

Occupational health management is an important part of Witzenmann’s personnel strategy. It improves the health of our employees and makes a key contribution to the sustainable success of the company. Our understanding of protecting and promoting the health of our employees goes beyond the objective of preventing accidents and work-related illnesses. We support employees in improving their health and well-being in a number of ways. We aim to create healthy conditions that promote productivity and motivation.

Structure of Witzenmann’s health management



It is the job of occupational health management to create structures and processes systematically and sustainably within the company that benefit the health of our employees. This involves combining existing structures and established measures with new approaches or giving them a new emphasis. The focus is on empowering all employees to be conscious of and take responsibility for their health. In addition, occupational health management is entrusted with all duties relating to social accident insurance institutions and legal requirements. These are to be linked to the voluntary measures as constructively as possible. The following specific tasks are derived from this:

- shaping and optimising processes in the organisation of occupational health
- creating healthy working conditions
- empowering individuals to adopt behaviour that promotes health



Manager Human Resources for Occupational Health

Sven Lükermann will in future be responsible for focusing and if necessary redirecting or expanding the various initiatives and measures relating to health in the Witzenmann Group. By way of example, key measures and initiatives are presented below that were initiated as part of occupational health management during 2012/13.



Hand protection initiative

When we compared the reportable accidents with the entries of past periods, we noticed a relatively large number of hand injuries. The majority of these concerned minor cuts, which, for the most part, occurred as a result of the improper handling of sharp-edged sheet metal or workpieces. Cuts continue to account for the largest share of accidents in the statistics. Preventing such injuries, for example by correctly wearing protective gloves, is an important objective in the company’s occupational safety policy.

Under the leadership of the Personnel Management department and with the support of Heiko Kikillus (occupational safety specialist) and the German Social Accident Insurance Institution for the woodworking and metalworking industries (BGHM), a hand protection initiative was implemented in the last quarter of 2012, which made employees in production aware of the dangers and reminded them of the codes of conduct for preventing hand injuries. In addition to accident prevention, precautionary measures such as applying skincare and protective creams or the targeted use of appropriate cleaning agents, for example after coming into contact with corrosive liquids, were also introduced.



Accident-free days

The launch of the company’s accident-free days initiative in January 2013 elicited an extremely positive response. Since then, every production department at the headquarters has been documenting the number of work days where no accidents have occurred. Each department that can demonstrate 365 accident-free days will be rewarded with a small present for every employee. This long-term initiative is helping to make the production workforce aware of the issue of occupational safety and risk prevention. Its competitive aspect has also motivated employees. By putting accident-free days on the agenda in the regular departmental meetings that take place as part of the Witzenmann production system (WPS), the subject of accident prevention is now firmly established.



Leadership and health workshop

Since 2013, the subject of “Leadership and health” has been part of the Witzenmann Academy qualification programme. With seminars and workshops tailored to specific target groups, the academy covers an extremely wide range of subject areas relating to employee training and development. The health-related seminar is a module on the leadership training course and is directed at managers both in production and in the offices. In terms of content, it presents the various voluntary and compulsory health measures in the Witzenmann Group. In addition, the managers should also be made aware of health aspects at work and come to understand the great importance of employee welfare.



Drinking water dispenser

Water is the most important nutrient for humans. The minimum recommended daily intake is between one-and-a-half and two litres. In high temperatures and/or when the body is under physical strain, the daily requirement is much higher. With the installation of drinking water dispensers, employees of Witzenmann GmbH are able to enjoy this health-promoting commodity with little effort and free of charge. The dispensers are serviced regularly and provide water that is perfectly safe to drink. On request, the drinking water can be supplied at different temperatures and either still or sparkling. 0.7-litre bottles are available to allow employees to take the water to their workstations.



Occupational medicine

Providing medical care to our employees is a core element of our health management system. Thanks to a high-quality and requirements-based occupational medicine service, our employees are protected in terms of their health and, if necessary, provided with care in the event of a medical emergency. In particular, the duties of occupational medicine include offering employees counselling and examinations, advising the employer on any issues relating to occupational health and measures to promote health, working in the occupational safety committee, carrying out regular inspections and participating in the drawing-up of risk assessments.



At a glance

80 participants in the 2012 “Health” managers’ forum

1000 medical check-ups in 2012

3 specially trained company medical officers in 2012

140 trained company first-aiders in 2012

# ENVIRONMENTAL REPORT



## Sustainable environmental policy

As a leading company in the industry of flexible metallic elements, we feel a particular degree of responsibility to stand up for the protection and conservation of natural resources. Early on, we committed to corporate management based on the careful use of resources. We continuously strive to avoid or reduce to a minimum damage to and stress on the environment through the production and use of our products. We comply with all relevant legal standards and other requirements as a matter of course. The following environmental guidelines apply to implementation of the environmental policy in all divisions of the company:

- We see the conservation of natural resources for future generations as an important part of our social responsibility.
- We regard environmental protection as an important component of corporate management and formulate concrete goals and rules of conduct for its implementation.
- We recognise the importance of each employee in the implementation of environmental protection measures and create corresponding training opportunities and appropriate working conditions.
- We identify and assess the environmental impact of our business processes through continuous analysis. New processes and materials are examined for their environmental compatibility before use.
- We are committed to continuously improving our performance with respect to the environment and take all necessary measures to prevent, eliminate or at least reduce environmental impact to a minimum.
- We publish a regular sustainability report to keep our employees, customers, the general public and the relevant authorities informed about our social and ecological commitment.



Organisation and structure of environmental protection at Witzenmann GmbH

Executive Management bears the primary responsibility for environmental protection. They define the environmental policy and subsequent objectives. They decide on measures for realisation, identify responsibilities and provide funding. Responsibility within Executive Management lies with the Managing Director for technology and quality, Dr. Andreas Kämpfe. He is the environmental management officer and carries out the responsibilities of the operator. The environmental protection and waste management officer, René Pflittner, is an employee of the Quality Assurance central department that reports to Executive Management directly. He carries out the statutory obligations of the waste management officer:

- Responsibility to supervise
- Responsibility to advocate
- Responsibility to inform
- Responsibility to report

Regarding the handling of hazardous materials, he supports the safety officer. He works with the occupational safety committee. The technology and production managers are responsible for compliance with and implementation of environmental regulations in their area. They are supported technically by production engineering. Development and operation of the organisation are defined in the environmental management manual. Cross-departmental workflows are described in environmental process and work instructions. For environmentally relevant equipment and hazardous materials, there are operating instructions at the workplace.

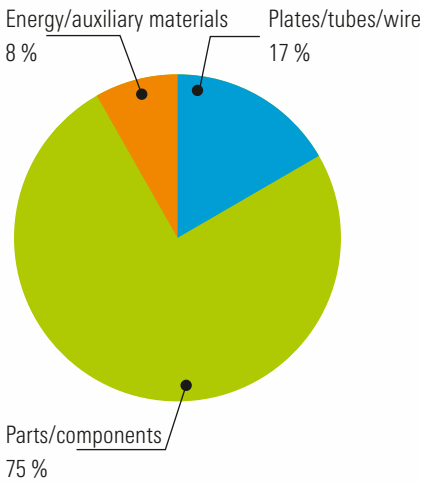
They also serve to instruct employees. Overall, the idea of environmental protection is not only pursued at headquarters. The subsidiaries are also committed to compliance with the corresponding standards. The subsidiaries in Brazil, Korea and the USA are certified in accordance with DIN ISO 14001.



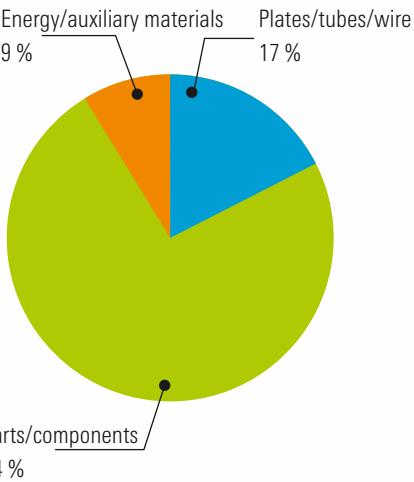
Material consumption

Production material, merchandise, energy, services, etc. are procured by central purchasing as a matter of priority. Framework agreements are requested and convenience goods are procured by decentralised purchasing.

Procurement turnover 2011



Procurement turnover 2012



The purchasing volume has grown continuously between 2010 and 2012. The percentage increase for energy/auxiliary materials is due to the increase in energy prices. The slight decline in the proportion of parts/components can be attributed to the shift in demand as a result of changes in the product portfolio.

About 90% of the materials used are made of metal. This material can be easily recycled and is often reused. For other materials and bought-in products, ecological criteria for the selection of suppliers are also used in addition to the costs and quality. Starting points are manufacturing processes (e.g. chlorine-free paper production), transport costs, as well as the usability or reusability of the packaging material. Regularly conducted supplier surveys form the basis for discussion with suppliers.

For auxiliary and operating materials, the use of hazardous substances is kept to a minimum. Witzenmann GmbH pays attention to a low solvent content and water hazard class. According to the environmental protection instructions “Procurement of substances/mixtures, services and systems and evaluation of the environmental performance of suppliers”, specialists for occupational safety and environmental protection officers assess the substances.

In production, processes are constantly evolving to reduce environmental impact and optimise material utilisation and quality. The use of auxiliary materials is reduced, for example, by the use of tool coatings or procedural changes eliminated by channels in roll form. Excessive greasing before material forming (bands, wires, etc.), which normally requires additional cleaning operations, is thus excluded. When shipping, products are packaged to protect against damage. Either the customer’s own container systems and lattice boxes are used or cardboard boxes on Euro pallets. The cardboard boxes generally bear the RESY symbol, a label which guarantees disposal and recycling.



Interim storage and padding consist of paper products. For all packaging components, complete usability is ensured by waste management companies. With some customers, there are agreements about the use and return of plastic linings from lattice boxes. In the use phase, our products also have ecological benefits. They withstand extreme conditions and thus have a long service life. After use, 100% of the products can be returned to the reusable material cycle. Because they consist mostly of only one material, costly disassembly or separation processes are also not required.



Waste

To ensure sustainable protection of the environment and efficient use of resources, Witzenmann GmbH endeavours to minimize the total volume of waste and to achieve a high recycling rate. The generated waste is divided into two types, which differ significantly in regards to their environmental impact. To ensure high-quality recycling and that waste is disposed of with as low emissions as possible, it is collected separately in different fractions in the production plants of Witzenmann GmbH at Pforzheim, Pforzheim North, Brötzingen and Remchingen.

Waste for recycling

Such waste includes scrap waste, packaging materials, emulsions, rinse water, wipes, perchloroethylene, construction materials and waste from separators.

Waste for disposal

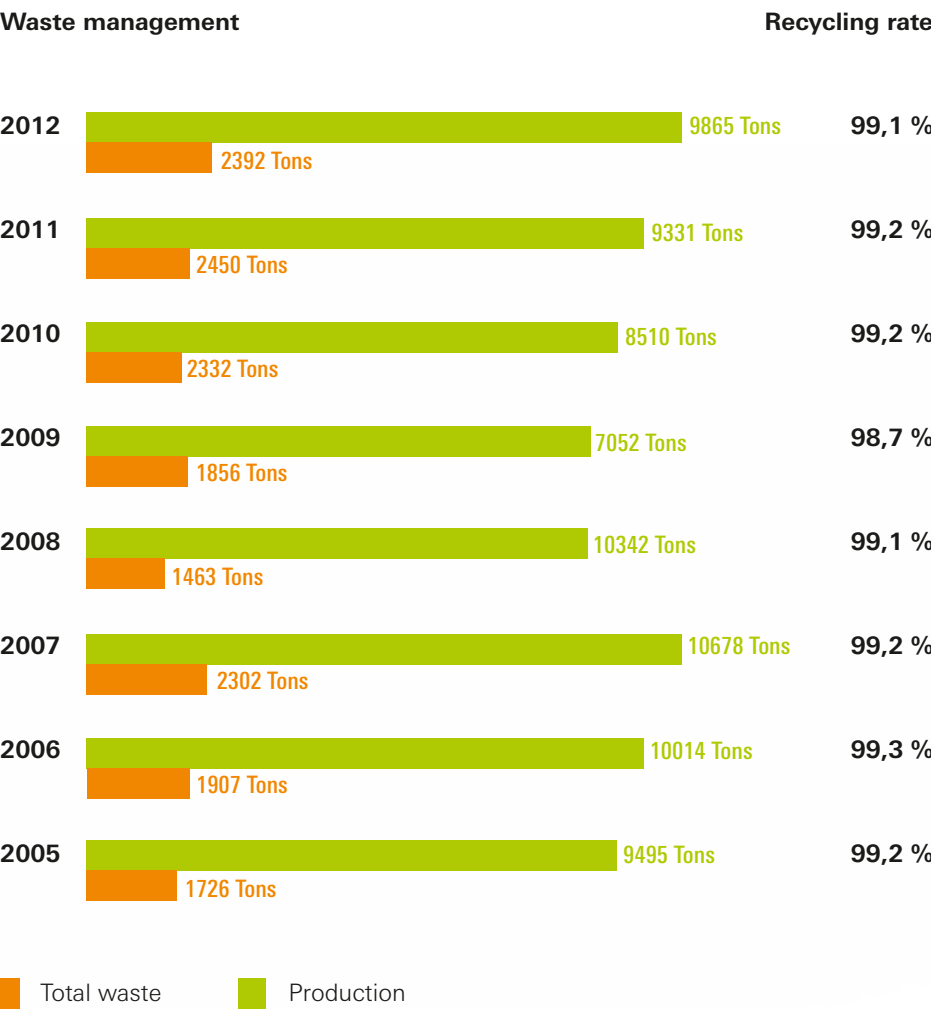
Such waste includes residual waste, paint and varnish waste, developers and fixing baths.

Trending in generated waste

In 2009, the **total volume of waste** declined primarily due to the crisis. With renewed growth after the recession, the total volume of waste has again increased. In relation to the respective production volumes of 2011 and 2012, the volume of waste per ton of manufactured products has decreased.

The **waste for recycling** primarily results from production. Therefore, the volume is primarily dependent on the order situation. Extraordinary circumstances can result from larger construction projects, moves, changes in production and scrapping operations.

The recycling rate of the total volume of waste has been 99.2% for a sustained period leaving little room improve this figure. Through systematic separation of materials and consistent use of recyclable materials, the recycling rate of under 90% in the 90s was increased to its current high value.

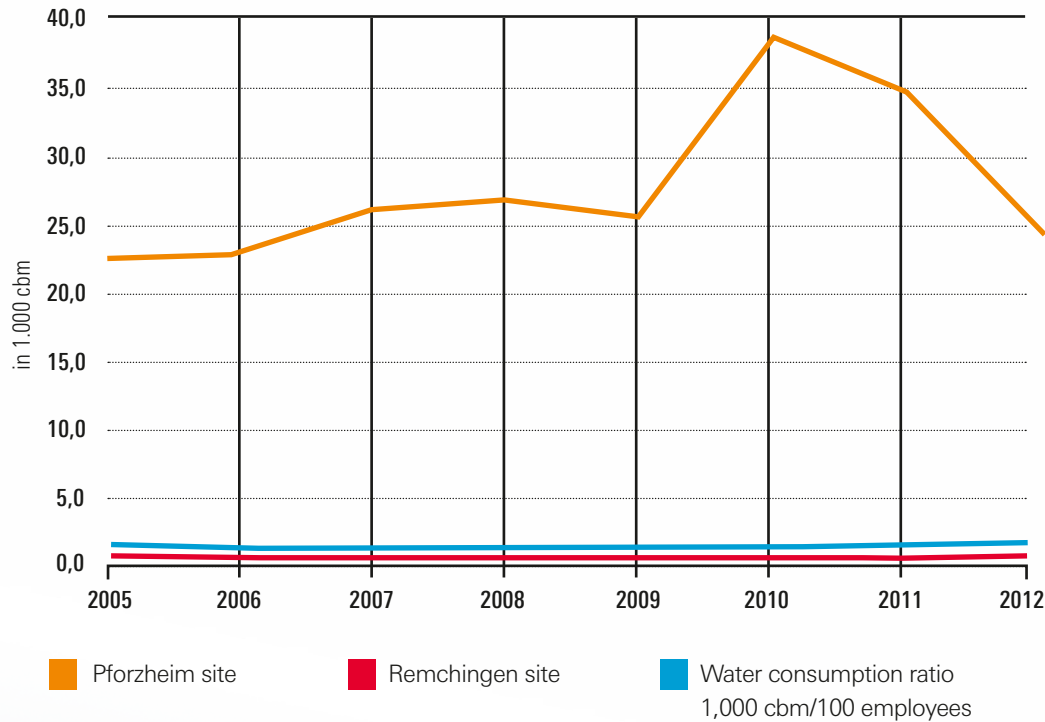


Water

Approx. 90% of water is used for sanitary purposes. With 24 litres per employee per day, consumption is low and thus largely optimised. In production, water is used for product cleaning and testing. Since 1993, cooling equipment with water is the exception since all buildings are equipped with recooling systems.

The jump in water consumption from 2009 to 2010 at the Pforzheim site was a result of the increased use of osmosis water in production. The increased demand could be attributed to customer requirements in terms of surface finish of the end products and was able to be reduced again in 2012 thanks to a new process technology. Renovation of the main freshwater pipeline also contributed to the decrease in water consumption by reducing leaks.

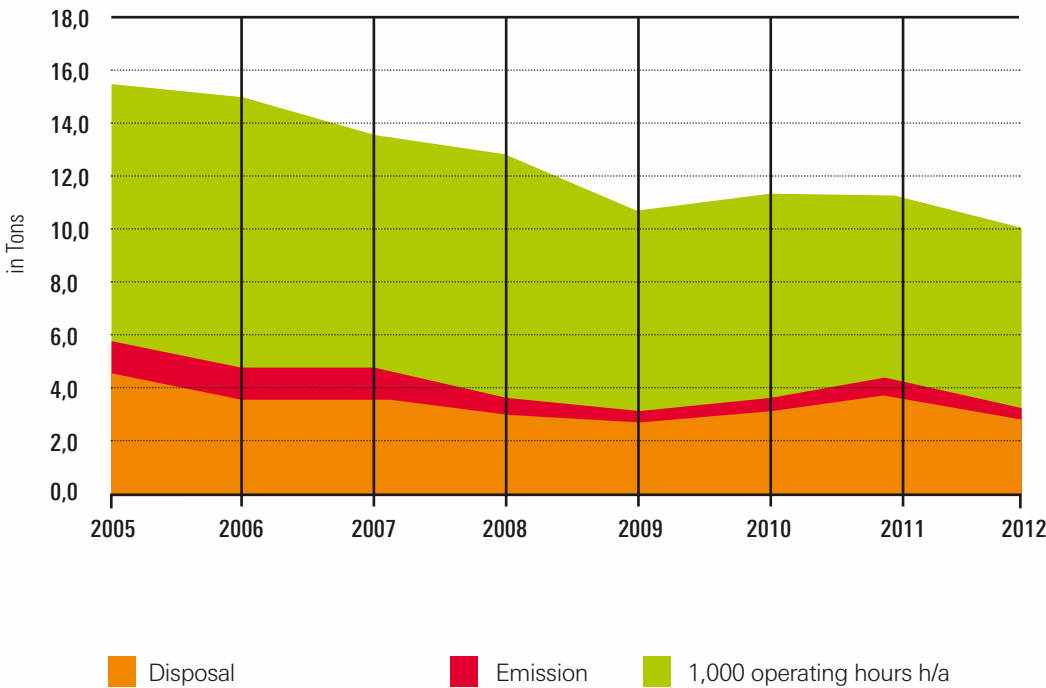
Water consumption



Air

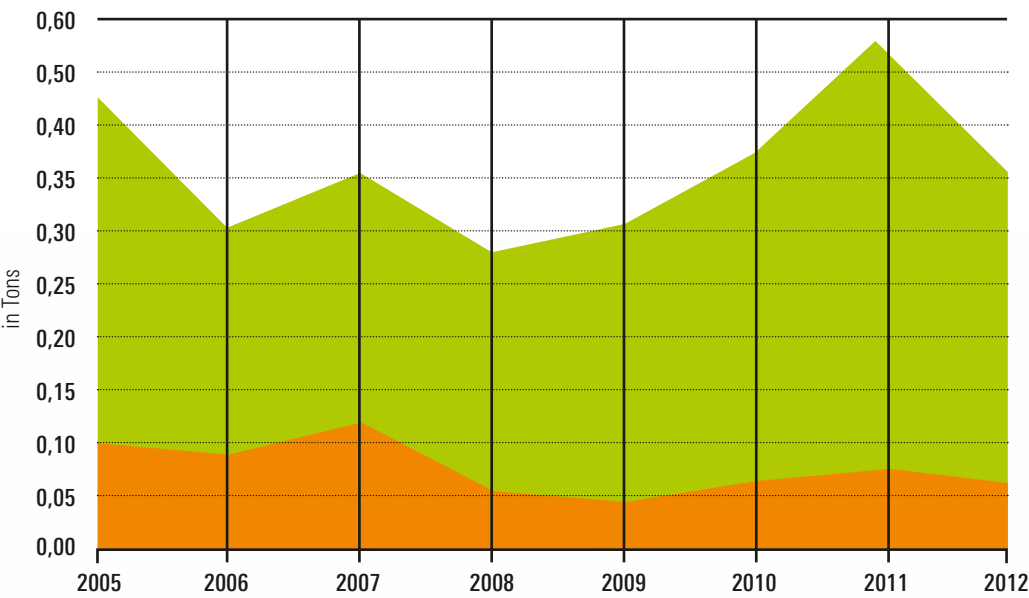
There are few environmentally harmful emissions in the production methods used. Therefore, the focus is on measures for occupational health and safety. Emissions when welding and cutting are drawn off. For large volume flow with the laser systems, for example, highly efficient filters are installed. Measurements in the workplace document compliance with limits for nickel-containing dusts specifically.

HCl solvent balance





HCl solvent balance based on operating hours



- Correctly disposed of after use
- Emission

The halogenated solvent perchloroethylene with the greatest environmental impact is used in two treatment systems due to its good cleaning characteristics. All systems meet the requirements of the 2nd Federal Immission Control Ordinance. Adherence to the prescribed limits is documented by regular measurements by authorised inspection companies.

The solvent is conducted in circulation systems until cleaning efficiency no longer meets quality requirements. The perchloroethylene is then routed for disposal. During cleaning operations, a small portion of the solvent evaporates. This is listed in this report as an emission. The solvent emissions based on the operating hours has a downward trend, which correlates to the fact that cleaning operations have switched to HCl-free cleaning to the extent possible.

**Ground**

In 1999, the main plant in Pforzheim was expanded considerably through the acquisition of an adjacent developed property. The much-needed space requirement could thus be covered.

In addition, the warehouse and sales base for technical building equipment was assigned to the main plant in 2000. Since 2006, other halls of the Pforzheim North plant and, from 2012, also the Pforzheim Brötzingen plant have been expanded for production purposes. With a total area at the Pforzheim and Remchingen sites of approx. 65,000 m², 91% is sealed and 54% occupied by buildings. The multi-storey buildings in Pforzheim mean that the floor space is approx. 97,000 m².

About

148%

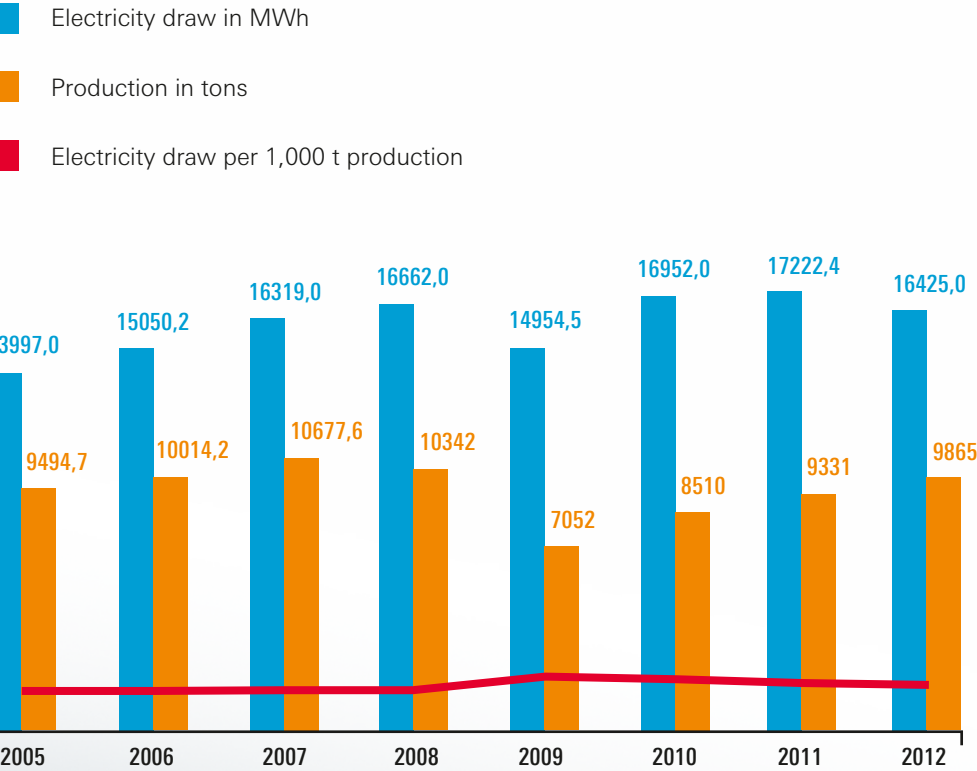
space utilisation

Energy

Electricity is the most important energy source for all production processes. Therefore, changes in the power requirement are strongly dependent on the development of production volume. In 2012, the total power requirement was 16,425 MWh. In relation to production volume, the power requirement is decreasing slightly. This is largely linked to increasing mechanisation and automation in production. The high rates in 2009 and 2010 show the dependence of power consumption on the degree of utilisation. Due to the recession, utilisation in 2009 and in some of 2010 was lower than normal. In these phases, the underlying demand has a significant impact in production facilities and offices accordingly.

Efforts are ongoing to continuously reduce power consumption through measures such as the use of energy-saving servo drives, as well as state-of-the-art control and lighting technology. In general, existing lighting is being replaced with lights with electronic ballast or LED lights. In 2008, the equipment rooms of many buildings were upgraded and by 2010, a new compressed-air management system was installed for optimal compressor control at the main plant in Pforzheim and in Remchingen.

Electricity draw and production



Building heating

In Pforzheim, building heating is run using district heating from the neighbouring combined heat and power plant and in Remchingen using natural gas. The energy requirements are reduced by using the waste heat from machinery. The requirement is dependent on the weather and the building. The higher the outside temperature, the less heating is required. The current analyses of the data show that the specific heating requirement for the various buildings is between 40 and 200 kWh/m² depending on the year of construction and equipment.

The large differences show what potentials could yet be exploited with thermal insulation and other measures. Between 2000 and 2011, the windows in properties acquired at the end of the 90s were gradually replaced by windows with better insulation properties. The varying heating requirement in the form of district heating over the last few years is proportional to the average outside temperature.

Heating oil is used as an energy source for heating external storage areas in Pforzheim and is of marginal importance.

Energy sources for building heating



Most of the heating energy requirement is covered by the use of environmentally friendly district heating.





“At Witzenmann we tackle the topic of noise pollution with great focus. Most effective is a direct reduction of noise emissions, i.e. fighting the source of noise directly.”

Noise

Noise emissions are primarily caused by transport and loading operations in the yard. Our own measurements have shown that the limits of the “Technical Instructions on Noise for Mixed Use Areas” are met. As part of the new compensation system (ERA) where workloads also play a role, all relevant workplaces have been checked for possible noise pollution. If limits are exceeded, measures are taken when possible to reduce the noise. For example, hydraulic equipment today is normally equipped with insulated enclosures and simultaneous presses, as well as automatic welding machines with isolation cabins. In 2006/2007, hydraulic equipment in the Metal Bellows business division was retrofitted with noise control enclosures. In 2011, soundproofing was installed on the automatic assembly machines in the automotive components production facilities.

Environmentally relevant incidents

Incidents that impact on the environment can be avoided if the corresponding requirements regarding plant and process safety are taken into account and environmentally critical, operational aspects are incorporated. In the current reporting period, environmentally relevant incidents were very rare. No fires are to be reported for 2012. In five cases, leaked liquids (oil/coolant) had to be cleaned up with oil binding agents and disposed of in line with the legal requirements. Intervention by the local fire service was not required in any of the cases. Nevertheless, we remain vigilant in order to also be able to identify low levels of risk and reduce the probability of accidents occurring.

CliCCC - Climate & Carbon Calculator for Companies

As part of a research project with Pforzheim University, the carbon footprint of Witzenmann GmbH was determined for the Pforzheim and Remchingen sites. Both direct and indirect emissions from preliminary products and services, so-called “rucksacks”, were taken into account.

The emissions were divided into three categories of observation, scopes 1 to 3. Scope 1 includes direct emissions that are caused by production and operation of the company. Scope 2 weights the emissions resulting from the generation and supply of energy for the company. In scope 3, the CO2 balance of the raw materials and semi-finished products used, but also the emissions caused in the manufacture of tools and machines used, is represented. The total emissions, cumulative emission intensity (CEI) and population equivalent provide a quick overview of the carbon footprint of Witzenmann GmbH in the year 2010.

Results

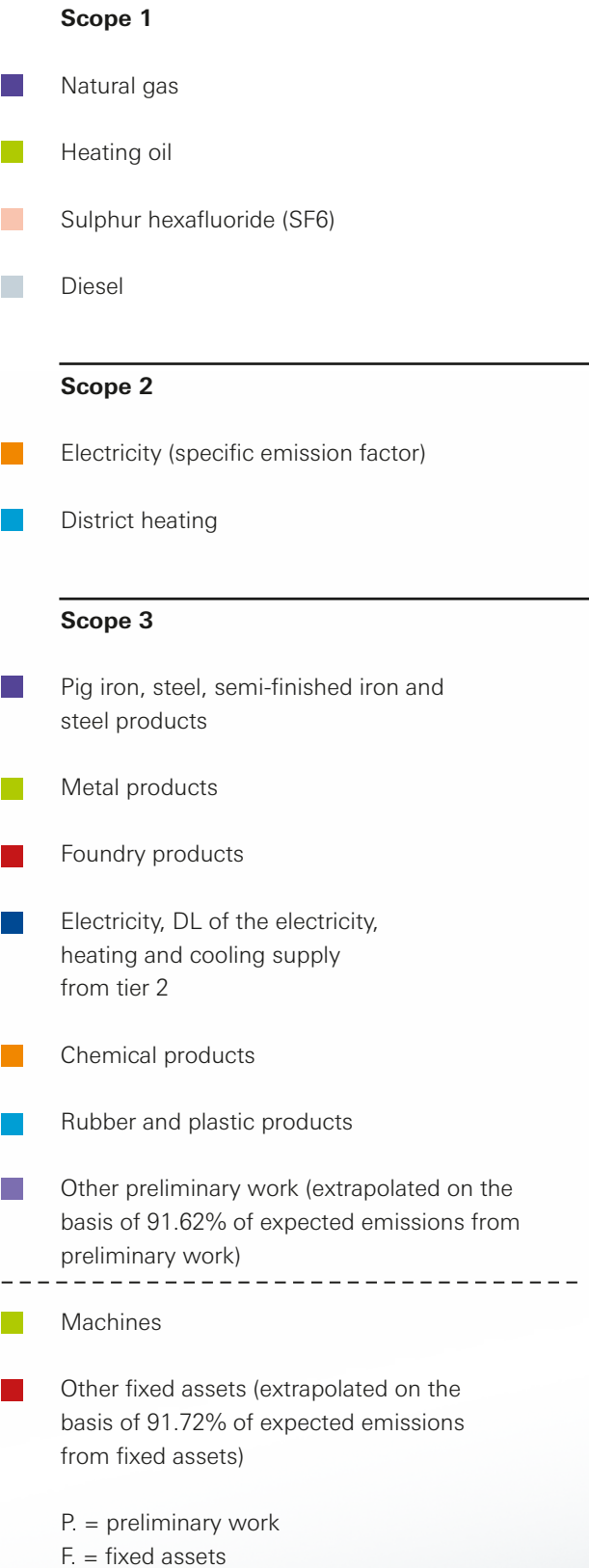
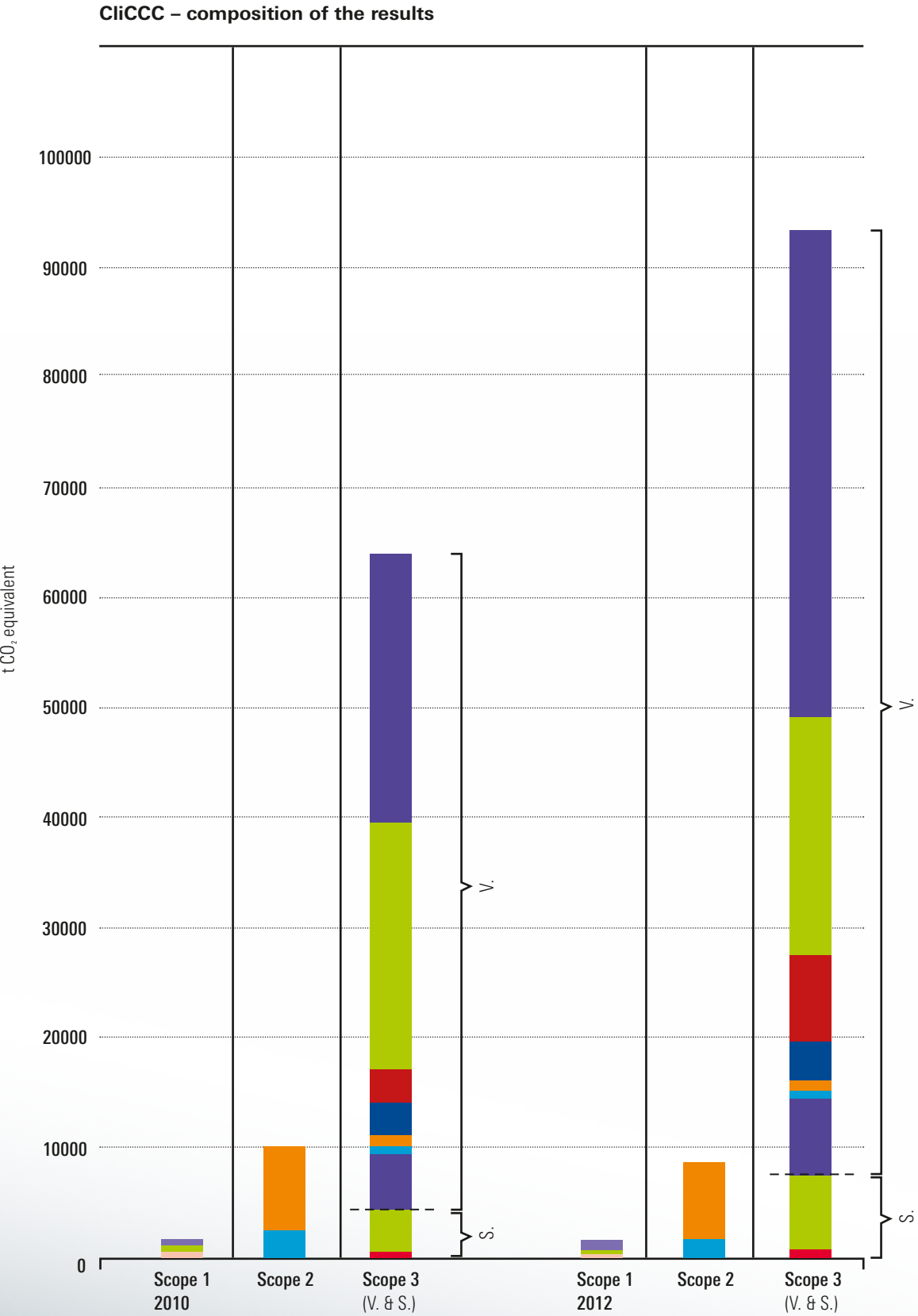
The three selected indicators provide a quick overview of the results:

- recognised total emissions
- cumulative emission intensity (CEI)
- population equivalent.

The recognised total emissions reveal the sum of all emissions from the individual categories. The CEI is the ratio of recognised total emissions to company turnover. To put the rather abstract recognised total emissions indicator in concrete terms, the population equivalent is also indicated and is the ratio of the recognised total emissions to the annual pro capita emissions of Germany.

Recognised total emissions		
2010	2012	Unit
74.754	103.202	t CO <sub>2</sub> equivalent
Cumulative emission intensity (CEI)		
2010	2012	Unit
0,299	0,364	kg CO <sub>2</sub> equivalent/EUR
Population equivalent		
2010	2012	Unit
7.475	10.320	inhabitants







Glossary

Bar	Unit of pressure
CIP	Continuous improvement process
CO <sub>2</sub>	Carbon dioxide
Emission	Broadcast of interference factors such as exhaust, noise, etc. into the environment
ERA	Compensation framework agreement
EVG	Electronic ballast
Halogenated solvents	Solvents that contain halogens, e.g. chlorine
HCl	Hydrogen chloride
Immission	Entry in an environmental medium
ISO 14001	Internationally recognised standard and verification level for environmental management systems
KWh/m2	Kilowatt hours per square metre per year
LED	Light-emitting diode
Materials management	Planned use of substances and preparations
MWh	Megawatt hours
Ordinance on Hazardous Substances	Ordinance on Hazardous Substances, subordinate to the Chemicals Act and Employment Protection Act

Perchloroethylene	Volatile cleaning agent based on chlorinated hydrocarbon
Recycling rate	Percentage of recycling of total waste volume
RESY symbol	Recycling guarantee for transport packaging made of paper and cardboard
Rinse water	Type of waste consisting of soldering quench water and ultrasound water
Servo drives	Electronically controlled drive with position, velocity or torque control (or a combination thereof) for applications in production equipment
Space utilisation	Covered floor space/total area of all properties
Specific heat requirement	Amount of heat to heat an area of 1m <sup>2</sup>
Waste for disposal	Waste that does not meet the criteria for the Closed Substance Cycle Waste Management Act § 6
Waste for recycling	Waste that meets the criteria for the Recycling and Waste Management Act § 6
Water hazard class	Potential of various substances/mixtures for water pollution
WPS	Witzenmann Production System



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