

ENVIRONMENTAL INFORMATION FOR OUR CUSTOMERS

1.

The global ecological system of the Earth has been developing for millions of years. New more complex patterns have come into being and individual less successful ones have died out, new niches are colonised, the adaptation to changing conditions is continuously optimised, so evolution takes its course. However, nature is always in a flowing balance - without anthropogenic influence.

As long as man has lived on Earth his interference with nature has intensified. The initial activities - still mainly in harmony with nature - were no disturbing factor. As industrialisation and intensive agriculture progress, we are in a position to completely unbalance our natural environment. But we have the choice to decide for irreparable damage or peaceful co-existence of economy and ecology.

ifm electronic is a leading manufacturer in the automation industry worldwide.

So our actions are not only determined by legal regulations but also by the ecological awareness to assume responsibility for the consequences of our actions. According to our corporate principles we are seeking a qualitative growth, i.e. achieving increases in production without an intensified utilization of environment. The set-up and implementation of a comprehensive environment management system defined as "THINK GLOBALLY, ACT LOCALLY" is part of securing the future of our company. We want to produce environmentally friendly and be successful with this approach.

Environmental policy

The environmental policy of ifm electronic gmbh is based on our corporate philosophy. It is the vision on which our environmental management system is based and forms the framework for the environment-related targets and principles.

The environmental policy is revised at regular intervals and is updated, if required.

1. Laws

We are committed to complying with the applicable environment-related legal regulations and obligations by the authorities and to continuously improving the environmental protection within an economically justifiable scope.

2. Resources

We want to carefully and economically handle existing resources.

3. Products

High product quality and accurate technical data are unimpeachable values of ifm. The development and production of durable products have a high priority for us. We want at all times to keep our production as suited to the environment as is technically possible by continuously adapting to the state of the art in technology.

4. Processes

ifm intends to work exclusively in product areas which are technically comprehensible and seem manageable with our level of knowledge this ensuring that negative effects on the environment are avoided.

5. Employees

ifm demands and promotes ecologically conscious decisions and conduct.

6. Communication

Environmental protection extends beyond the confines of our company. For this reason ifm is striving for an active information policy to our customers, suppliers, authorities and the interested public.

7. Improvements

ifm wants to and will contribute its share in all technical developments for creating and maintaining a clean world worth living in, not only from its corporate point of view, but also from its general social responsibility.

Use of ifm products in environmental technology

For ifm environmental protection also means to supply products which enable an improvement of the quality of environment in other areas. Our evaluation systems and controllers as well as our sensors are more and more often used for environmental technology. The use of flow sensors in the sewage plants of Bitterfeld, Magdeburg and Bremen Seehausen as well as in the waterworks of Muldenberg and Sellendorf are just a few examples.

Environmental protection has not only been lately in the centre of our endeavours but has been practised for years.

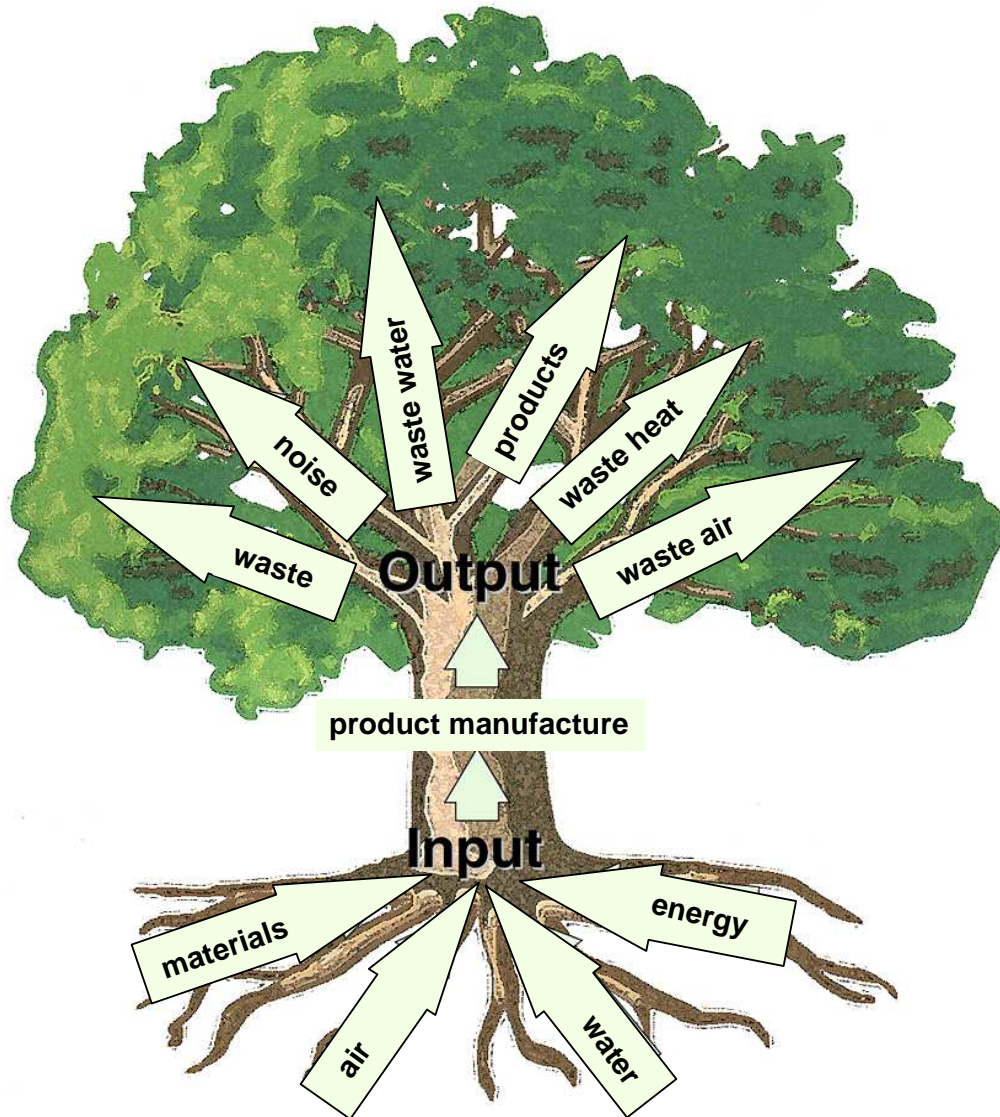
Environmental protection measures since 1984:

- 1984 Waste separation in industrial and special waste
- 1987 General changeover to cadmium-free plastics
- 1989 Use (no exception) of cables and housing parts made without CFC
Use of cables without brominated flameproofing agents
Introduction of a granulating crusher for injection moulding. (Reuse of regenerated materials)
- 1991 Changeover to environmentally friendly office stationery.
Creation of the department "Occupational safety and environmental protection"
- 1992 Replacement of CFC and chlorinated hydrocarbons including halon fire extinguishers
- 1993 Setting up a hazardous materials store and disposal centre by taking strict environmental regulations into account
Appointment of an authorised person for waste
Installation of a state-of-the-art circulation system to the cascade principle for the cooling water of the injection moulding machines and laser systems
Setting up the building services control system with the goal of monitoring and controlling environment-relevant processes
Preparing the first ecological report for the main production site Tettngang to be annually updated
- 1994 Appointment of an authorised person for hazardous goods
- 1995 Elimination of the energy source fuel oil and complete changeover of the heating system to environmentally friendly natural gas. The location Essen also uses only natural gas for heating purposes.
Installation of a valve in the waste water drain at the point of transition between ifm and the public sewer system which in case of danger prevents contaminated waste water from getting into the public sewer system
- 1997 Commissioning of a waste water treatment system (vacuum evaporator) for the contaminated waste water of film technology

Use of generated waste heat (**heat recovery**) in different areas.

- 1998** Complete **substitution of nickeliferous coatings** of brass turned parts by the new material Optalloy.
Replacement of a CFC refrigerant in our cooling room by a chlorine-free agent.
 The **polyimide and plastic wastes** from film technology are no longer disposed of as domestic refuse, but **are recycled**.
- 2000** The requirements of the **self-inspection regulation** were met. Following a sewer inspection via camera, classification of the damages and preparation of a repair plan, repairs of the sewage pipes concerned were finished in spring 2000.
 The management decides on **the introduction of an ifm-internal environmental management system**.
- 2001** Installation of a 180 m² **collection tank coated in accordance with the German overspill standard WHG** for the wastewater treatment plant
 Installation of an **overspill protection** for the hydrochloric acid washer
 Purchase of a **leakage detector** for compressed air and vacuum leakages to minimise compressed air and vacuum losses
- 2003** Installation of a **neutralising tank for our waste water from the cleaning system**
Various environmental protection measures taken in the new ecomatic building, such as light control and heating control of individual rooms via the building services management system, installation of a cabinet for hazardous substances with exhaust ventilation
- 2006** The ventilation system of the production in Tett nang was fitted with a modern **heat recovery system**.
 Use of a **Quantum refrigerator** with turbine technology in the new building (building 15) and at ifm flexpro. This allows huge power savings in comparison to other technologies.
 Due to the relocation of wet technology to Wasserburg, the **vacuum evaporator** could be switched off. So, only the waste water of the purification plant is still treated by means of neutralisation in Tett nang.
- 2007** To achieve a higher energy efficiency the uncontrolled pumps of the heating system in Tett nang were replaced by frequency-controlled pumps.
- 2008** At the end of 2008 ifm received the award *energy-efficient company* as the most successful participant in the project "EnBW Netzwerk Energieeffizienz Ravensburg".

2.
Annual preparation of the ecological report



OVERVIEW ECOLOGY

In 1992 the first ecological report was written for the production site Tettngang. Since then it has been updated every year.

The purpose of the ecological report is a comprehensive and systematic analysis and assessment of the weak points of a company with the goal to achieve a lasting reduction of environmental impact. The ecological report provides an overall picture of the company (see above figure). It is an input/output analysis with the manufacturing process itself not being considered.

All substances and energies which go into the company as well as the products, waste and emission which go out of the operation are looked at by means of the criteria "quantities" and "cost".

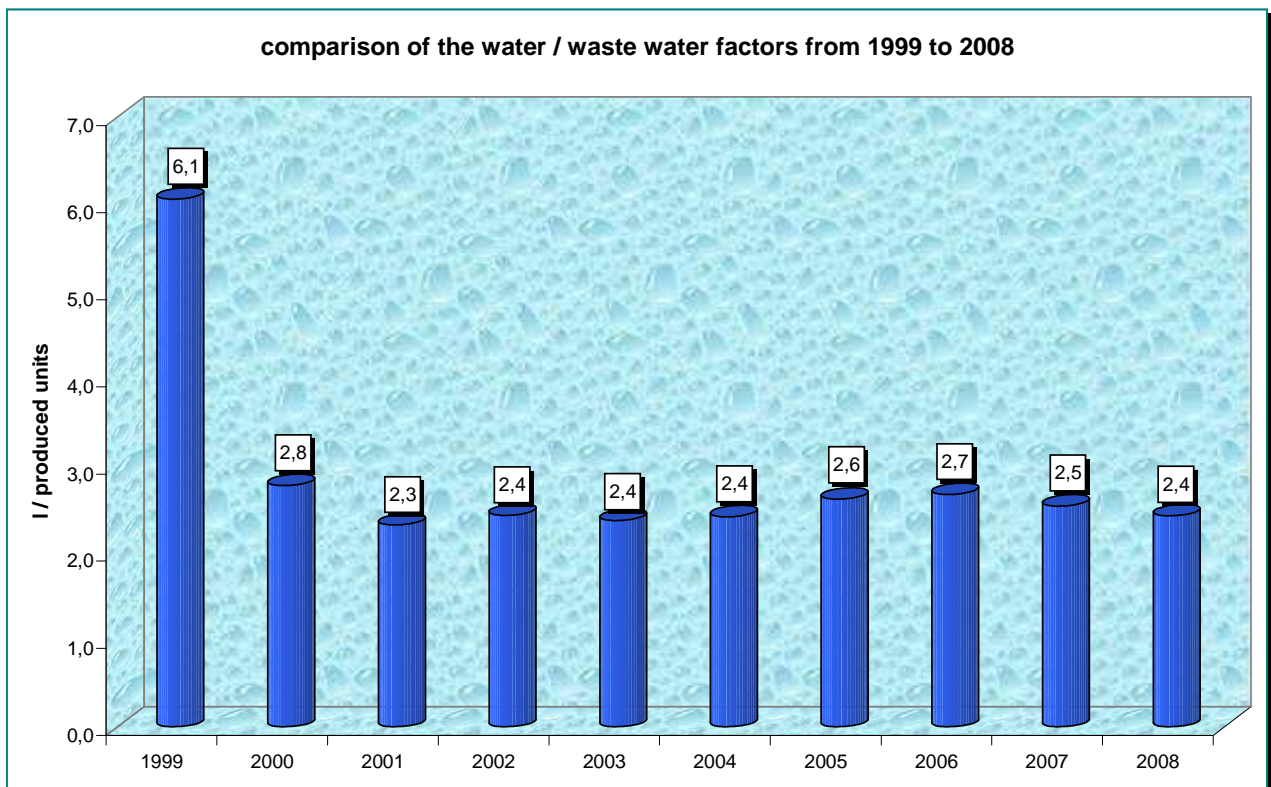
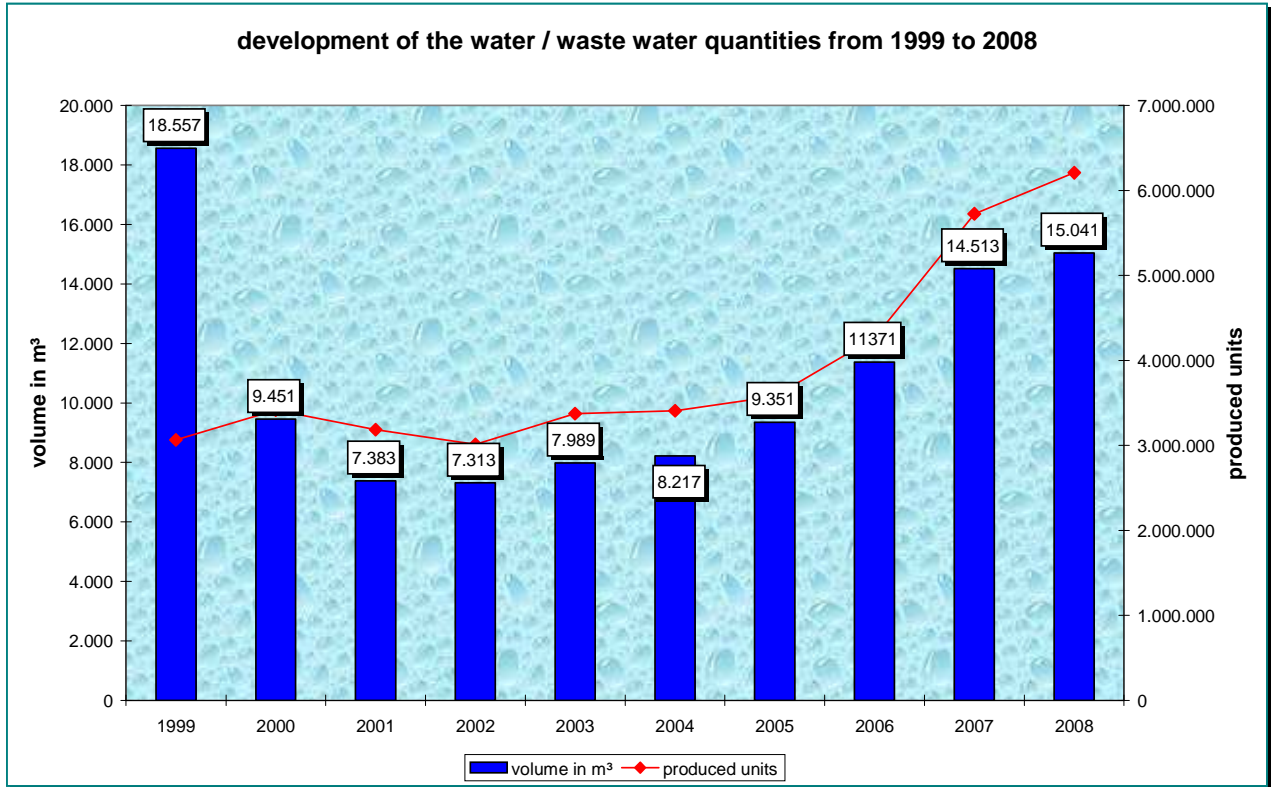
The environmental importance of the input/output substances is assessed by means of an ABC/XYZ classification. With this method important and less important environmental data are separated. The following five criteria are assessed.

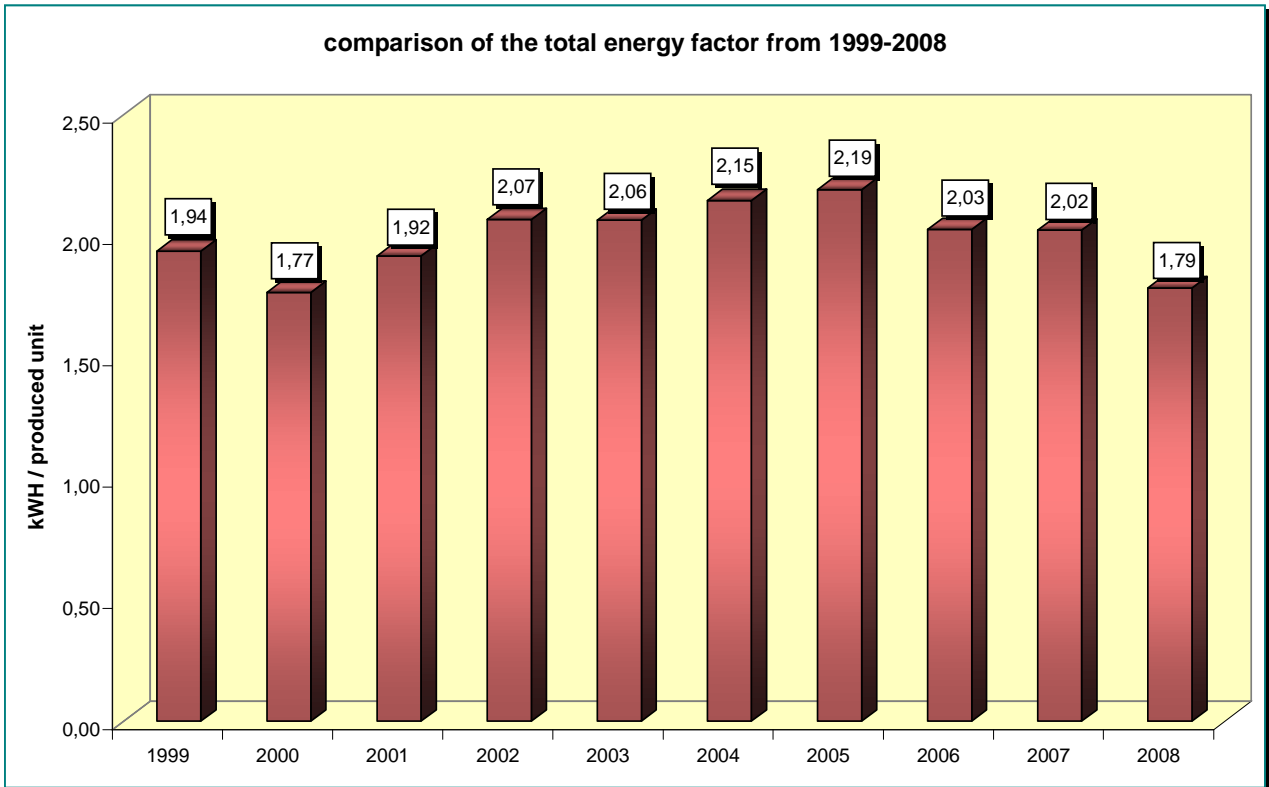
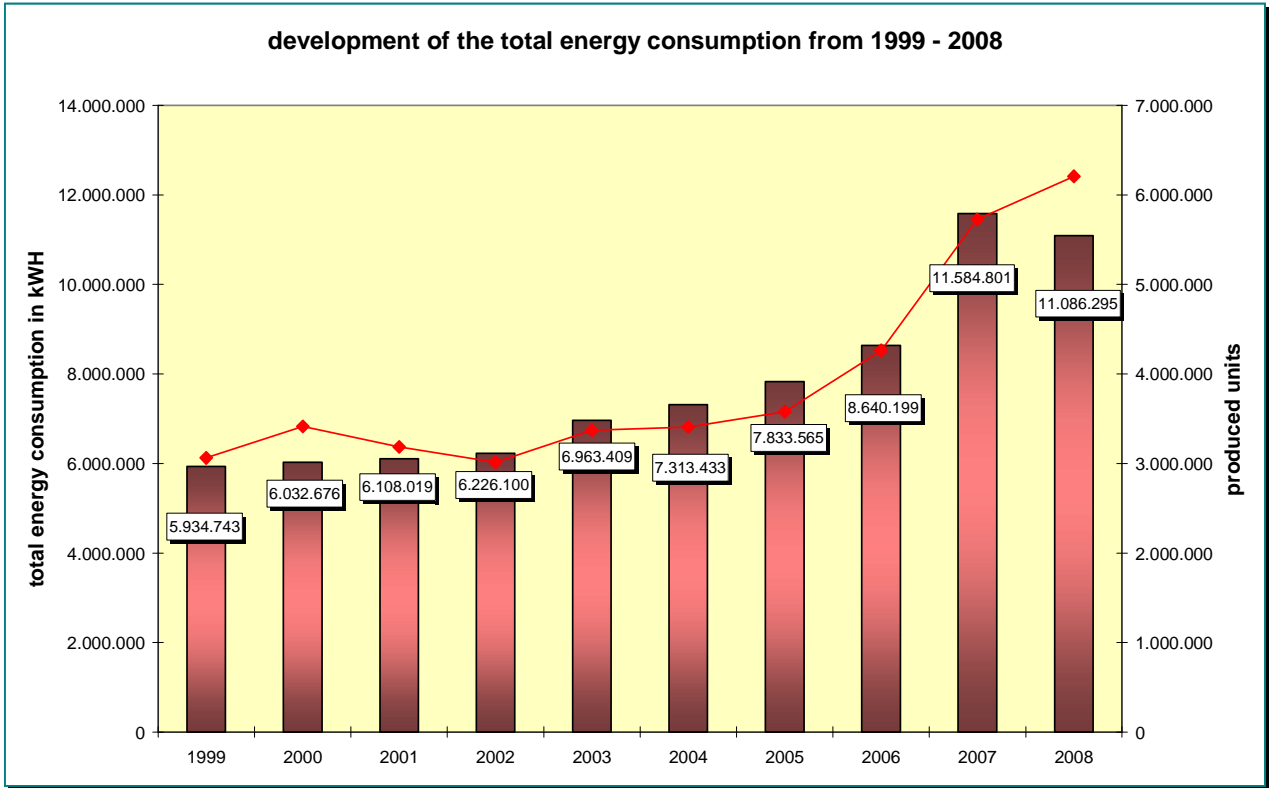
1. **Legal requirements for environment** (compliance with laws, regulations)
2. **Acceptance by society** (requirements of ecological groups, goal: avoidance of image loss)
3. **Potential of hazards and accidents** (classification of the ecological risk potential by normal risk and risk of accidents)
4. **Additional environmental cost** (determination of additional cost)
5. **Exhaustion of regenerative resources** (consideration of how long raw material reserves last)

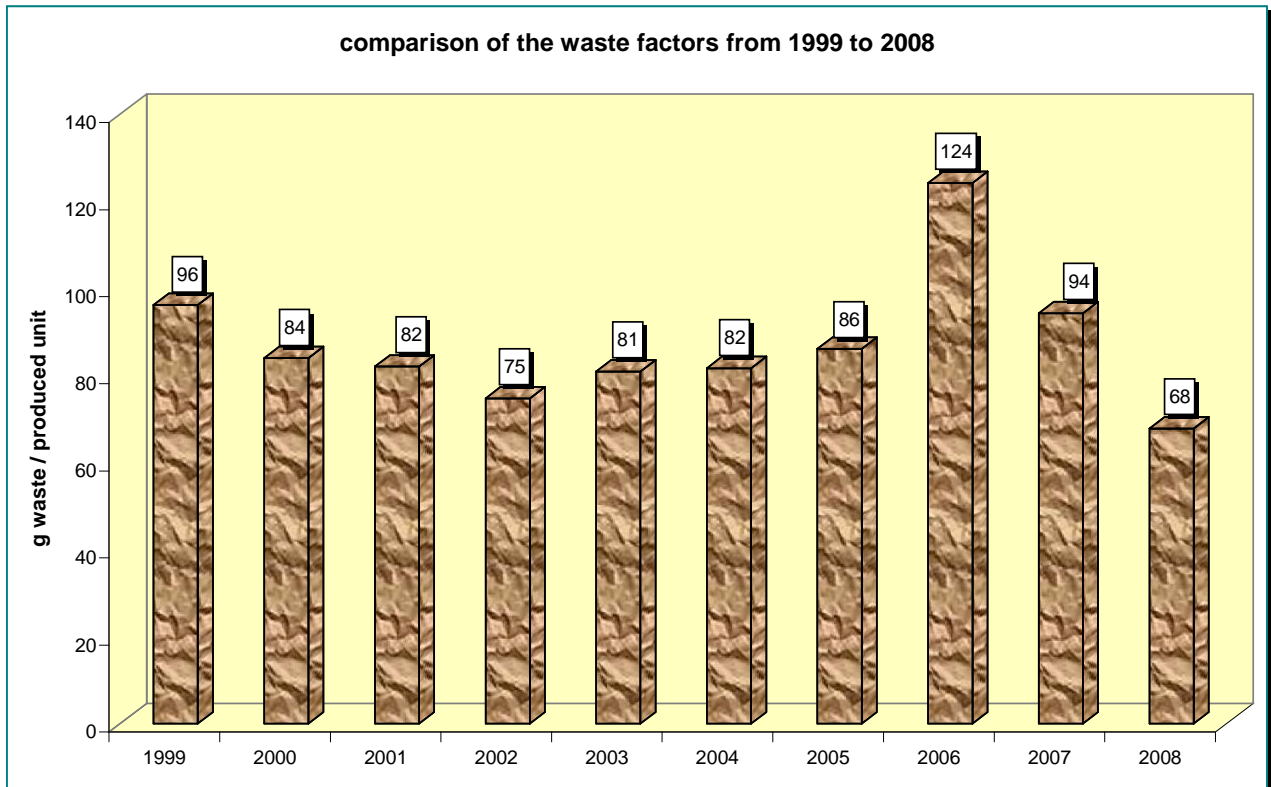
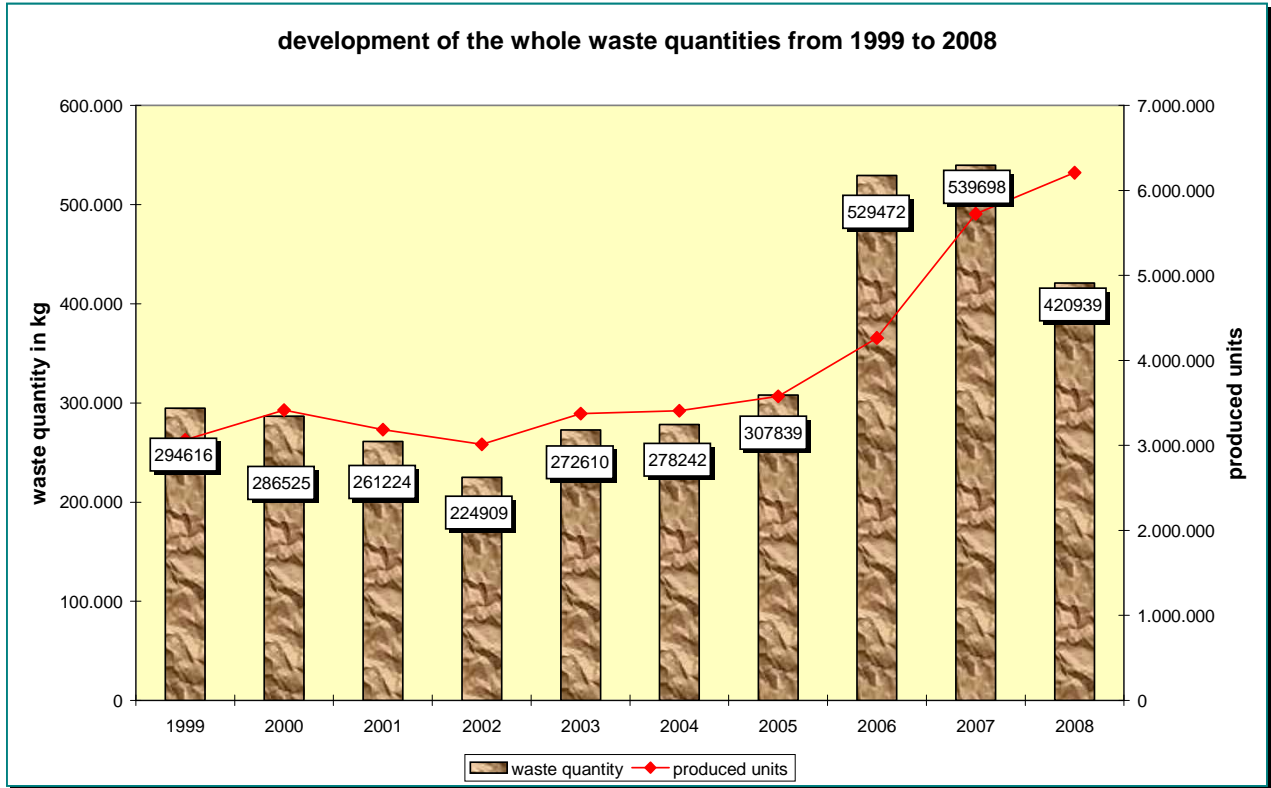
This evaluation shows for which substances alternatives are needed most urgently and which substances can be used without problem. Input substances which cause high additional cost (because of measures in the warehouse and production area or expensive disposal) can be seen at first glance. Looking for substitutes for the used hazardous materials in good time avoids to act under pressure as a result of stricter legislation.

The goal and purpose of an ecological report is not only to show and assess ecological weak points but also to eliminate them efficiently. The ecological report also serves as a current source of information. To accomplish these functions in the long term the ecological report must be completed and updated every year. Updating the ecological report by the company conforms to an internal environmental audit according to the EC directive 761/2001 (EMAS II) or to an environmental review to international standard DIN EN ISO 14001.

Development of environmentally important parameters from 1999 to 2008







3.

Corporate principle:

High product quality and accurate technical data are unimpeachable values of ifm.

For ifm's manufacture process **no**

- *carcinogenic substances*
- *substances which endanger reproduction / are harmful to the foetus*
- *substances which cause genetic changes*
- *very toxic substances*

are used.

The following chemicals are **not** used either in our production:

- *asbestos*
- *formaldehyde*
- *polychlorinated biphenyl, polychlorinated triphenyl, polybrominated biphenyl*
- *polycyclic aromatic hydrocarbons*
- *CFC*
- *carbon tetrachloride*
- *dichloromethane*
- *tetrachloroethylene*
- *1.1.1. trichloroethane*
- *halons*

According to state-of-the-art technology the use of certain substances - which have a minor impact on environment - cannot be excluded for the manufacture of electronic units. For their production ifm electronic only uses common electronic components obtained world-wide.

It is known that the following substances can be used for electronic components:

- *Lead and lead compounds* (in solder pastes, soldering tin, the only one of the following substances which is used for ifm's production). We are currently in the process to change to leadfree solder materials and components. The changeover to RoHS compliant production is largely completed
- *Nickel and nickel compounds* (coatings, outside parts made of brass)
- *Zinc, tin, silicon, beryllium, cadmium, arsenic, cobalt oxide, manganese dioxide* can be part of electronic components.
- Traces of *vinyl chloride* in PVC cables (max. 10 ppm)
- *Brominated epoxide resins (tetrabromobisphenol A) and antimony trioxide* were specified as flame retardant agents by some manufacturers of semiconductor elements, printed circuit boards and granules. They are necessary to adhere to the regulations for flame inhibition.
- Unavoidable traces of *formaldehyde* in phenolic resins. Phenolic resins contain polycondensated formaldehyde and are the basic material for the manufacture of printed circuit boards and laminated materials. In case of correct use the maximum concentration values for formaldehyde are complied with with great certainty.

If our products are used correctly, the above-mentioned substances which can be contained in very low quantities per unit are immobile and thus harmless.

Because of the high requirements for technology and quality it is at present not yet possible to do without certain substances which present a potential risk for the manufacture of electronic units. As a result of intensive efforts in research and development hazardous substances in electronic components can be reduced or even eliminated. ifm's objective is to always ensure a production which is as environmentally friendly as technically possible by constantly adapting to state-of-the art technology.