Ansvar & Omsorg

Progress report 2013

The report shows results up to 2012

IKEM
Innovations- och kemiindustrierna i Sverige

Annual follow-up

Each year IKEM – Innovation and Chemical Industries in Sweden (formerly the Swedish Plastics & Chemicals Federation, P&K) compiles a progress report over the chemical industry's commitment in the area of Responsible Care in Sweden. The progress report covers members that are manufacturers of chemicals. Responsible Care is the chemical industry's commitment for continuous improvements in the areas of health, safety and the environment. The commitment is based on openness and trustworthiness.
The programme was introduced in Sweden in 1991. Through various publications, seminars, etc, IKEM works for active Responsible Care efforts at the companies. However, it is important to note that the work is conducted individually at each company. The companies have also formed regional networks in order to exchange experiences in this area. To obtain an idea of the impact of the Responsible Care work on a national basis, a nationwide follow-up shall be carried out annually. This reflects the aim of openly reporting the results achieved.
The first report was published in 1996. It showed how some key indicators had developed between 1990 and 1994. From the survey concerning 1995 and onwards, the Key Performance Indicators (KPI) questionnaire has been sent to all companies committed to Responsible Care. To get a better basis for comparison we now compare data in a 10 year perspective. In this report we therefore compare the data from 2003 and onwards.

New indicators
During the years, a number of new indicators have been included. Examples are the companies' intentions concerning environmental management systems, if they actively inform their customers in safe handling of their products (a part of Product Stewardship) and about the distribution of men and women at the company. Other new indicators are the policies for child labour and human rights.

Data changes
The summary has no claim to be complete. This is due to a number of factors. In some cases, for example, a company's operations changed so that comparisons between the years are impossible to make. In other cases information is lacking. Together, this means that comparisons between 2003 and the following years are sometimes based on a greater number of companies, and sometimes on only a small number of companies. It shall be emphasized that a direct comparison between reports from different years is not possible since the companies included are not always the same. Also, the quality of the data might have improved during the period which could lead to misguiding comparisons between years.

Reporting companies 2013
A total of 40 companies sent in KPI questionnaires for 2013. This is an decrease from previous years. Many companies are unfortunately reporting much later then the set date and only after reoccurring reminders. These companies are therefore not included in this compilation. It should be made clear that for membership in the Responsible Care-programme, the company is required to report the key indicators.
The reporting companies have 8 118 employees and an annual production of approximately 10 million tonnes. Companies of all sizes have reported but a majority of the companies, about 90%, have less than 500 employees. When it comes to production, 37% of the companies have a production of less than 10 000 tonnes, approximately 30% have a production between 10 000 and 100 000 tonnes and about 33% produce 100 000 tonnes or more per year.

.....Report content

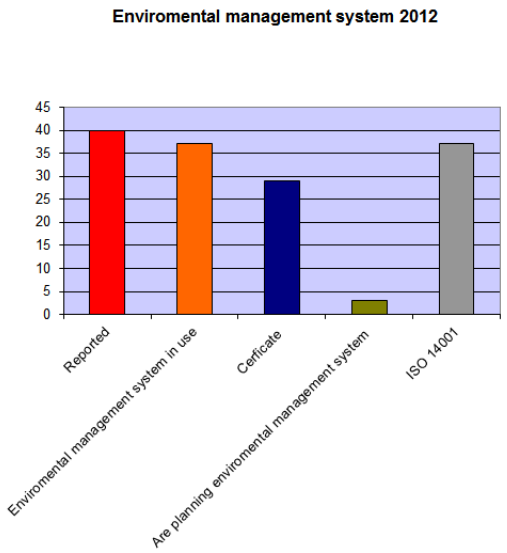
The summary is given under different headings in the form of descriptive text and diagrams. For some indicators the emissions are also compared to production. The presentation is done in two different ways. One shows the trends for companies where we have information for the years 2003 and onwards. We also give a summary concerning 2013 for all companies. For each section, there is also a description of the indicators in a national perspective, compared to the official figures that are available.

The following areas are reported in 2012:
Enviromental management systems
Emission to air
Emission to water
Energy
Working environment and education
Product Stewardship
Waste
Water consumption
Women and men
Social responsibility

.....Environmental management systems

As a consequence of the Responsible Care work, many companies within the chemical industry were well prepared and had already introduced management systems before the formalized systems such as ISO 14001 and EMAS were introduced. Of the 40 companies reporting for 2013, 37 companies state that a system already is in place. 28 companies are certified according to ISO 14001 and one company is also certified according to EMAS.

The remaining 3 companies state that they are planing to introduce an environmental management system.



Many companies submit environmental reports to the authorities. These reports are intended for those authorities in particular and are therefore drawn up in a way that makes them not particularly suitable as general information on the company's environmental work. Moreover, these environmental reports comprise only issues relating to the external environment. One of the basic elements in Responsible Care is that a company should keep open accounts of its operations. The companies have therefore, to an ever increasing extent, drawn up special environmental reports, either as a part of their annual report or as a separate report. Several companies have shared reports. For 2012 there are 26 companies that reported either separate or shared report. 22 of the companies had a shared environmental report, 16 had separate report and 9 companies had both shared and separate reports. The trend is at the moment an increase in shared reports.

Emissions to air

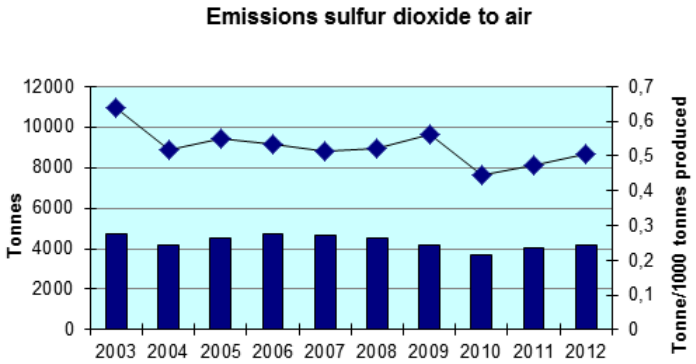
Under this heading the emissions of sulphur dioxide, nitrogen oxides, carbon dioxide and Volatile Organic Compound (VOC) to air are reported. These are also the emissions you will find in the official statistics. In order to give a picture over the progress in this area on a national basis, a comparison between 2003 and the following years will be made. The reported volumes show the total emissions for the reporting companies. In the diagrams we also show how the emission relates to production volumes (the connected dots).

Sulphur dioxide

Sulphur dioxide emissions contributes to the acidification of soil and water. 31 companies have reported data from 2003 to 2012. During this period the emissions of sulphur dioxide from these companies decreased by 11,6%. The emission/ production decreased with 20,8 %. Total emissions in 2003 was 4 732 tonnes and 4 183 tonnes in 2012.

In 2003 the total emissions in Sweden were 40 460 tonnes and amounted to 27 730 tonnes in 2012. The total emissions in Sweden has decreased with 33% during the period.

For all companies reporting their emissions of sulphur dioxide for 2012, the total emissions were approximately 4 363 tonnes.

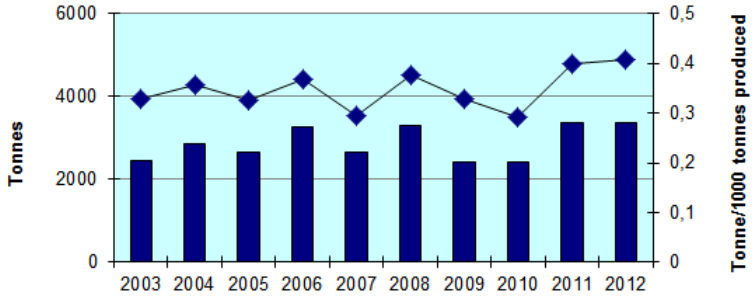


Nitrogen oxides
Also nitrogen oxides contribute to acidification. They also contribute to the eutrophication of soil. 31 companies reported data for 2003 to 2012. In 2003 the emissions amounted to around 2 444 tonnes and 3 359 tonnes in 2012.

For all companies reporting their emissions of nitrogen oxides for 2012, the total emissions were approximately 3 681 tonnes.

In 2003 the total emission was 186 240 tonnes and in 2012 the total emission was 131 110 tonnes. Total emissions in Sweden decreased during 2003 and 2012 by more then 30%. It should be noted that 2/3 of the emissions come from transportation and machinery.

Emissions nitrogen oxides to air



Carbon dioxide
Carbon dioxide is the most important greenhouse gas and combustion of fossil fuels gives the major contribution to the carbon dioxide increase in the atmosphere. Increased concentrations of greenhouse gases in the atmosphere are considered to contribute to increasing temperatures at the earth's surface.

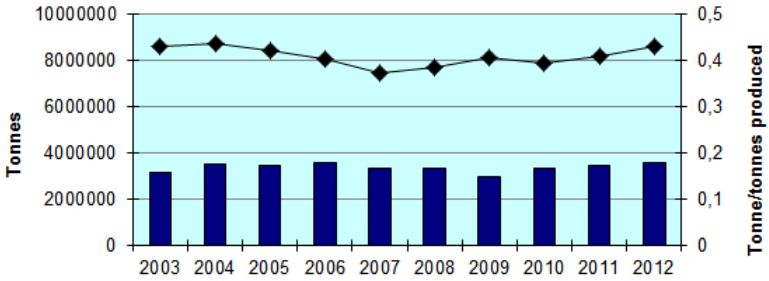
31 companies reported emissions of carbon dioxide for 2003 to 2012.

Their emissions have shown an increasing trend by approximately 11 % during this period. The emissions went from 3.1 million tonnes in 2003 and are now almost 3.6 million tonnes. In the last 6 years there has been an increase in emission/produced tonnes.

For all companies reporting their carbon dioxide emissions for 2012 the total emissions amounted to some 4,01 million tonnes. 93 % is reported to come from fossil fuels.

In 2003 the total emissions of carbon dioxide (bio fuels excluded) in Sweden were 67 million tonnes and in 2012 the emissions amounted to 60.4 million. The emissions har during the period decreased by 10%.

Emissions carbon dioxide to air



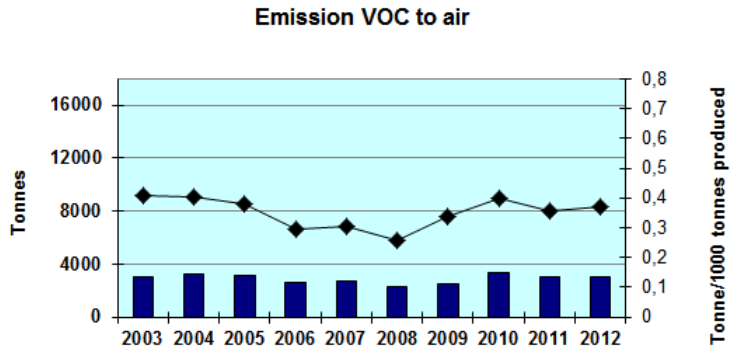
VOC, Volatile Organic Compounds
Emissions of VOCs contribute to increased concentrations of ozone. Ozone can be harmful to plants.

For the 31 companies reporting emissions of VOCs (excluding methane) for 2003 and onwards a slight increase of 1% can be noted. In 2003 the emissons amounted to 3019 tonnes and under 2012 the emissions of VOC amounted to almost 3049 tonnes.

Since 2003 the emissions related to the production volume have (tonnes VOC/1000 tonnes produced) decreased with about 10%

For all companies reporting their VOC emissions for 2012 the total emissions were about 3 207 tonnes.

In 2012 the total emissions in Sweden amounted to 179 392. The emissons have during the period decreased by 15%.



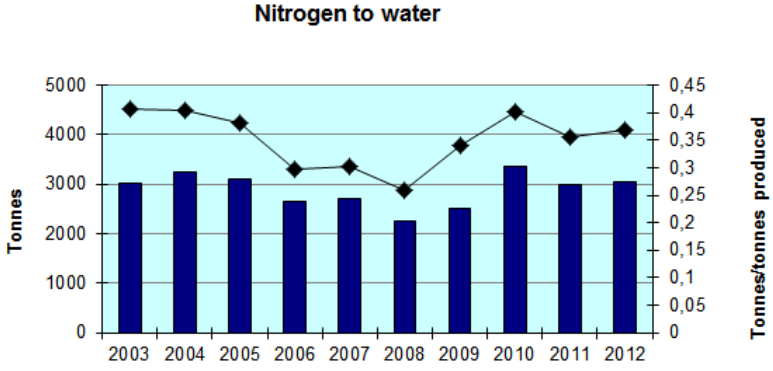
..... Emissions to water

Under this heading the emissions of nitrogen, phosphorus, COD, BOD and metals are reported.

Discharges of nitrogen
Discharges of nitrogen contribute to the eutrophication of rivers, lakes and the sea. Discharges of nitrogen were reported by 31 companies for 2003 and onwards. The discharges amounted 301 tonnes 2012. The total emission has decreased with 7% and the tonnes nitrogen/1000 tonnes produced have decreased with almost 17%.

For all reporting companies the total emissions for 2012 were about 350 tonnes.

In 2012 the total emissions in Sweden amounted to 17 400 tonnes.



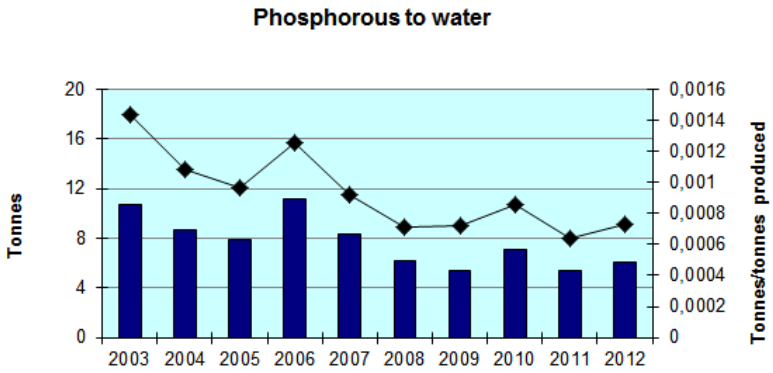
Discharges of phosphorus
Also phosphorous contributes to the eutrophication of rivers, lakes and the sea.

31 companies reported discharges of phosphorus from 2003 and onwards. The discharges decreased during this period from 10.7 tonnes to 6 tonnes, corresponding to a reduction of approximately 57%. Some companies have had malfunctions that have affected the results (2010 among others).

The discharge for 2012 were 6 tonnes.

The total discharge for all reporting companies in 2012 amounts to 6.47 tonnes.

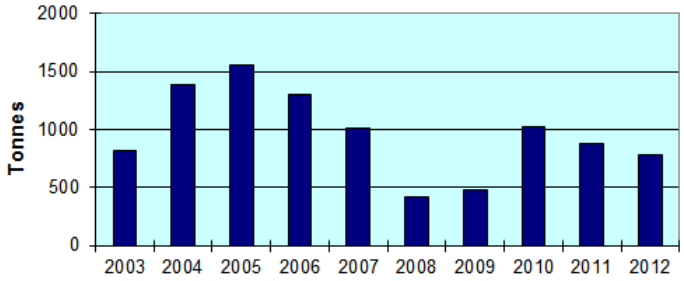
In 2010 the discharge of phosphorous from municipal sewage treatment plants in Sweden amounted to roughly 270 tonnes.



COD (Chemical Oxygen Demand)
COD is a measure of the amount of oxygen consumed to oxidize organic material in waste water. A high COD value will reduce the oxygen concentration in rivers, lakes and the sea.

31 companies reported discharges of COD for 2003 until 2012. During 2003 these companies discharges were approximately 824 tonnes, Between 2003 and 2005 the amount has fluctuated with a peak in 2005, 1551 tonnes. Thereafter the discharges seem to follow a downward trend until 2010. After 2010 the discharges have decreased. During 2012 the COD value was 780 tonnes.

In 2010 the discharges from municipal sewage treatment plants in Sweden amounted to roughly 169 241 tonnes.

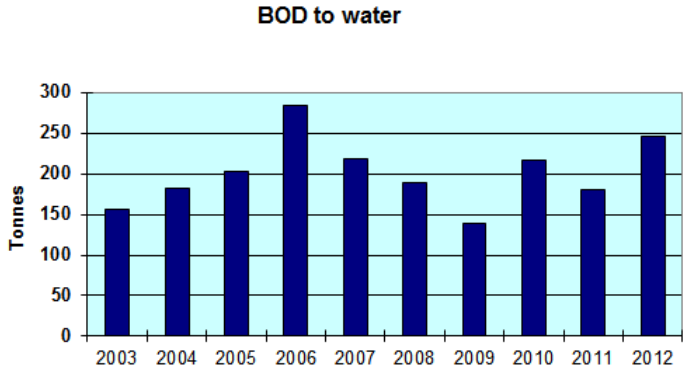


BOD (Biological Oxygen Demand)
BOD is a measure of the amount of oxygen consumed when decomposing organic material in waste water. A high BOD value will reduce the oxygen concentration in rivers, lakes and the sea.

31 companies have reported in 2003 to 2012. 2012 the total discharge was approximately 245.7 tonnes.

For all reporting companies the total emissions for 2012 were about 248.8 tonnes. Some companies stand for large parts of the total emission and the amount from these companies also fluctuates from year to year.

In 2010 the total discharges from the municipal sewage treatment plants amounted to 7 908 tonnes.

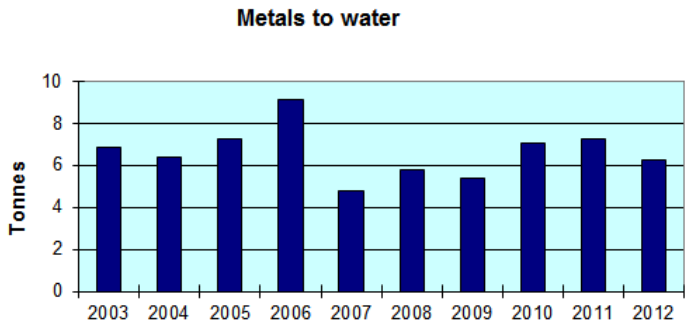


Discharges of metals
Metals can be harmful to plants and animals. If accumulated they can also be harmful to man.

Discharges of metals in 2003 through 2012 have been reported by 31 companies. During this period the discharges vary a lot, and it is hard to see a trend. The discharges are in the size of 4-9 tonnes.

For all reporting companies the total emissions for 2012 were about 6.3 tonnes.

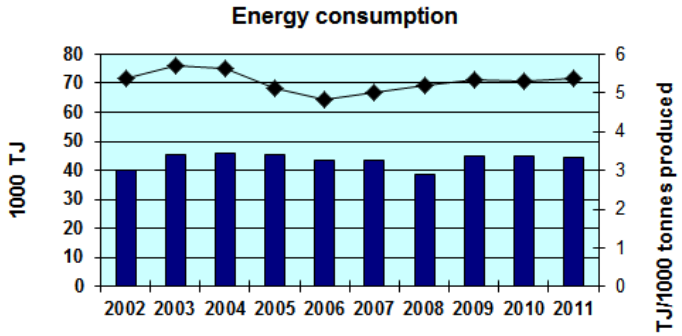
Metals included in the survey are, for example, Hg, Pb, Zn, Cr, As, Cd, Ni and Cu.



Energy

Energy consumption
31 companies have reported their energy consumption for 2003 and onwards. During this time, the energy consumption has increased from approximately 40 000 TJ (11,1 TWh) to about 44 400 TJ (12.3 TWh) that is 18.3%.

For all reporting companies the total consumption for 2012 were about 56 800 TJ (15.8 TWh).



Work environment and training

Staff training
Having a well-trained and skilled workforce is a fundamental requirement for the companies. It is also an important part of the Responsible Care commitment. The average number of days spent on staff training has been between 2 and 5 days and is approximately 3.83 days/employee for 2012 which is an increase from previous years with 0.9 units.

Turnover of staff
Turnover of staff at the reporting companies has been around 0 - 14% during 2003 to 2012. The average turnover of staff has been about 3.2% for the 40 companies that reported in 2012. There is a large difference between the companies. For about 2/3 of the companies the turnover of staff is between 0 - 6% and the rest have less then 20%.

Work injuries
The concept of work injuries includes accidents at work and occupational diseases. The number of work injuries reported fell markedly in Sweden between 1990 and 1998. In the following years the number of injuries increased slightly, but after 2003 the official statistics once more show a decrease in reported injuries. The comparisons in the report below are made with the official statistics regarding ” Manufacture of coke and refined petroleum products”.

Fatal accidents
From 2003 until 2012 there have been 4 fatal accidents, namely in 2003, 2005, 2009 and 2010.

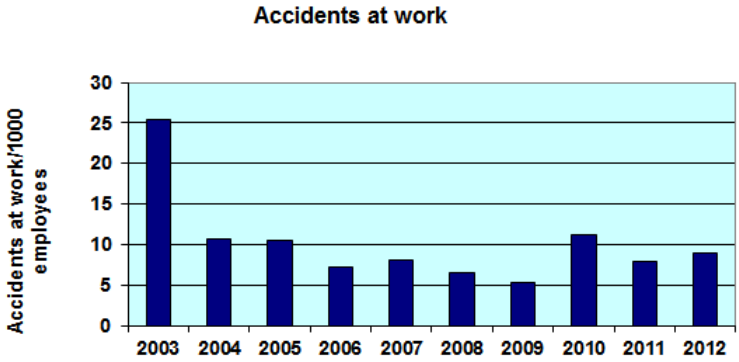
Many companies use contractors. We have also asked the number of fatal accidents among the contractors. During 2004, 2005, 2007, 2009 and 2010 there were one fatal accident/year.

Accidents at work

The companies that have reported their accidents at work during 2012 have 8 118 employees. The average for these companies is 9 reported accidents per 1000

employees. It must be emphasized that this figure includes all accidents reported within the companies, also those not resulting in any absence from work. This is not the case in the official statistics as described below. Almost 60% of the companies stated that they did not have any accidents at work during 2012.

According to the official statistics an average of 5 accidents were reported per 1000 employees in the chemical industry. In general these figures do not include commuting accidents or accidents not leading to absence. Therefore a direct comparison between these figures and the figures above is not possible.

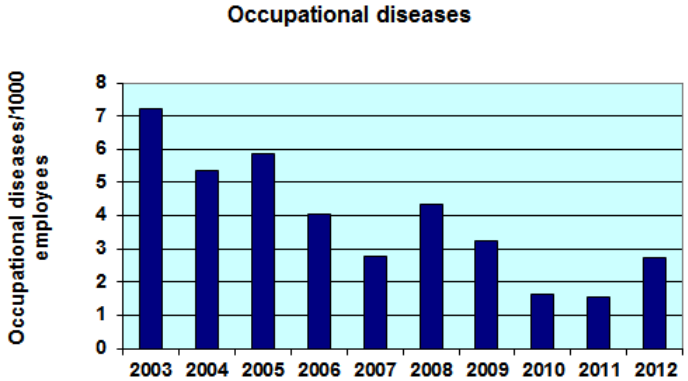


Occupational diseases

40 companies with 8 118 employees have answered the survey concerning their reported occupational diseases during 2012. On average these companies have 2.7 reported occupational diseases per 1000 employees.

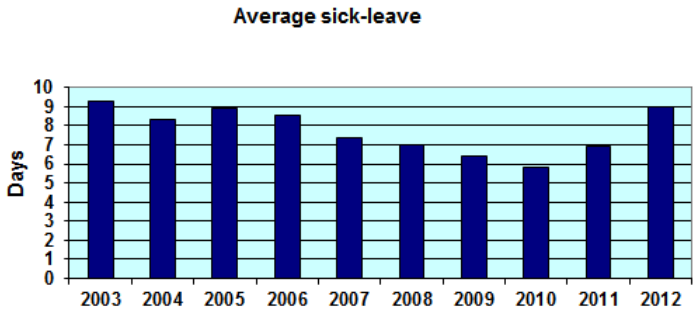
There is mainly a decreasing trend during the period.

According to the official statistics for 2012, the chemical industry as a whole had an average of 3 reported occupational diseases per 1000 employees.



Sick-leave
For the 40 reporting companies the average sick-leave during 2012 was 9 days/employee. This is an increase compared with previous years.

During the period 2003- 2012 the value has been fluctuating between 6 and 9 days.



Transport

To ensure that the companies' products and raw materials are transported in a safe way is also a part of the Responsible Care work. We have looked at two different aspects concerning transport issues. One of them concerns how the companies use SQAS (Safety and Quality Assessment System) and the other concerns to what extent accidents occur during transport.

SQAS – a way to grade transporting companies
During the end of 1997 a pan-European work of compiling a checklist to grade transporting companies was completed. This work resulted in the SQAS. In 2012, 12 companies report that they are using SQAS and another 9 companies have plans to implement it.

Transport related accidents
The companies have also reported how their products are transported and accidents that have occurred related to these transports. In this context, accidents mean that the products get out of the packaging and into the surroundings. A traffic accident that does not involve spillage of the products is not defined as a transport accident. Transports are done by road, by railroad, at sea or by aeroplane. The largest volumes are transported at sea, but the largest number of companies transports their products by road. Below, the transported volume for each kind of transport and the number of transport related accidents is shown.

Kind of transport	Transported weight (tonnes)	Accidents (number)
At sea	3 304 481	0
Road	1 978 273	2
Railroad	842 831	0
Aeroplane	2 418	0

Product Stewardship

Product Stewardship is an important area of Responsible Care. In this report we cover different issues of Product Stewardship.

Training of customers
To train customers in handling the products creates the necessary conditions for safe handling of the companies' products. In 2003 approximately 49% offered this kind of training. This number has been close to 50% during these years and in 2012 the number in 67%. Several companies have natural reasons not to have any training of customers since their products doesn't require it.

Kemiakuten (earlier Emergency Response Centre, ERC)
Kemiakuten is an initiative from the Swedish chemical industry. Kemiakuten started in 1993. The commitment means that the companies give information to Kemiakuten concerning the contents of their chemical products. Should an accident happen, the rescue services or others can call Kemiakuten for information and advice on how to act. This is one example of Product Stewardship as expressed in Responsible Care. Physically Kemiakuten is situated at the Swedish Poison Information Centre. The amount of companies that had joined the Kemiakuten has during the last 10 years been between 51 and 71%. 62% of the companies reported membership to the Kemiakuten for 2012. The partitipation is free of charge for the membersof the IKEM. The reason for the decrease could be that the companies had to renew their "contract" with the "Swedish Poison Information Centre". In the updated "contract" the demand that companies send updates to Poison Information Centre has been emphasized. We can also establish that 90% of the members have updated information to Kemiakuten during 2012.

Waste

Waste from production is one of the indicators inquired for in the questionnaire. This report divides waste into four different categories: Total waste arising, the proportion of hazardous waste, waste deposited in landfills and waste recovery.

The total quantity of waste in Sweden was estimated to 117.5 million tonnes in 2010. The overwhelming share of this, approximately 89 million tonnes, comes from the mining industry. The Production industry stod for approximately 22.4 million tonnes. The same year, waste from households amounted to almost 4 million tonnes.

Observe that the numbers reported under production waste, hazardous waste and waste to landfills are not always gathered from the same company. E.g. a company can have reported waste to landfill for all years but not reported hazardous waste for the same years.

The report also shows in what extent the companies recycle waste.

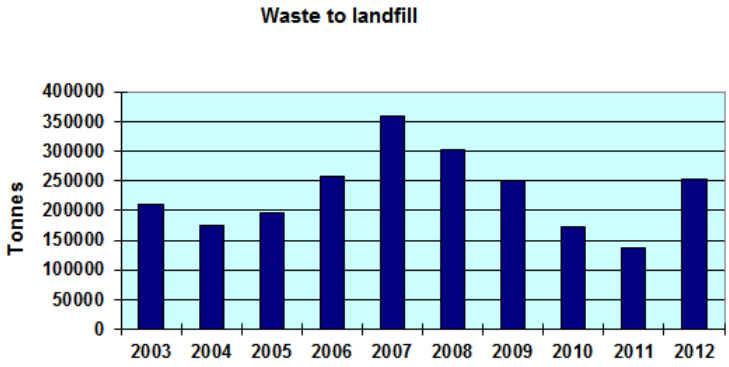
Total waste from production
31 companies reported their waste from production for 2003 and onwards. Typical amount of waste has been around 500 000 tonnes. After 2007 a decreasing trend can be seen. The figures can vary a lot between years and an explanation to this can be that a company can have use of a by-product one year but not another (when it instead is defined as waste). This shows in the report considering waste to landfill.
The reported total waste for 2012 amounted to 443 000 tonnes. This is a decrease of 15% over the period.

Hazardous waste
For the 31 companies that have reported their hazardous waste during 2003 and onwards, the amount has been around 15 000 to 30 000 tonnes. In 2012 the amount was almost 24 200 tonnes.

For all reporting companies the total amount of hazardous waste in 2012 amouted to 31 888 tonnes.

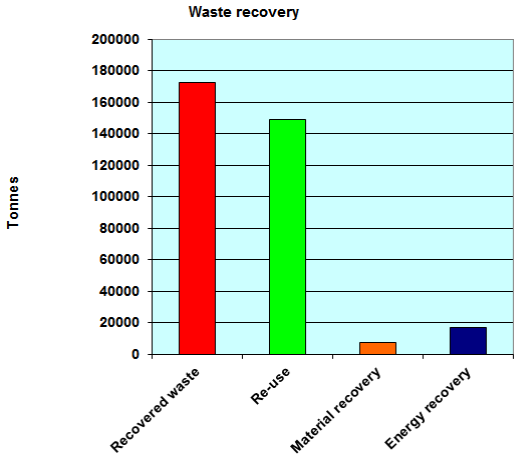
Waste to landfills
The quantity of waste deposited in landfills was reported by 31 companies for 2003 and onwards. A significant increase until 2007 and since then a decreasing trend can be seen. In 2012 a increase can be seen and the total amount is of waste to landfill was around 254 000 tonnes. It should be noted that the the highest value in the whole period (in 2007) was because one company reported landfill first when they moved a landfill from their own land to municipal.

For all reporting companies reporting waste to landfill for 2012 the total amount was about 263 000 tonnes.



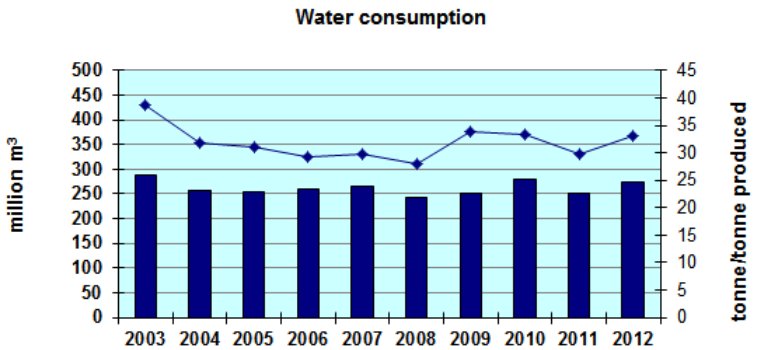
Waste recovery
Waste recovery consists of re-use, recovery of materials and energy production. About 40% of the total amount of waste is recovered in one way or another. 40 companies have given figures of their waste recovery.

Together they recover around 172 000 tonnes. Approximately 149 000 tonnes are re-used, 7 400 tonnes are recovered as materials and 17 000 tonnes are used for energy production



Water consumption

The consumption of process and cooling water in 2003 and onwards was reported by 31 companies. In 2012 the consumption amounts to some 273 million m^3. If comparing the used water/produced unit there is a decrease of 15% over the years.
A total of 40 companies reported their water consumption during 2012. The total consumption was almost 281 million m^3. It shall be noticed that most of this water is taken from lakes and rivers and is mainly used for cooling.
A very small portion of the water consumption comes from the municipal system of mains. The companies reporting for 2012 consumed 5,9 million m^3, approximately 0,07 % of the total water consumption.
During 2010 was 2,3 billion m^3 of water used in the Swedish industy. 5% of this came from the municipal system of mains.



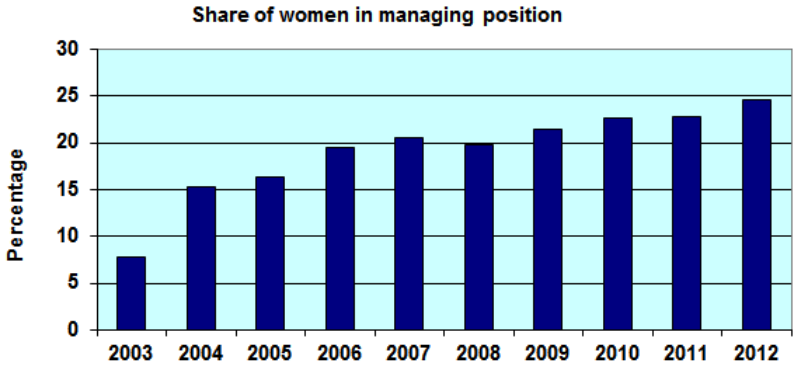
Women and men

The new indicators have been reported since 2003 and it seems that most of them show an increasing trend. It should be noted that both the number of companies reporting differ and that it is not identical companies reporting.

Employees
The distribution women/ men during 2003-2009 vary a little over the years but seem to be around 35 to 40% when it comes to the share of women at the companies. From 2010 there is a decrease of women employees. In 2010 to 2012 the amount of women is around 25-26%. The cause of this is probably due to the low number of reporting companies.

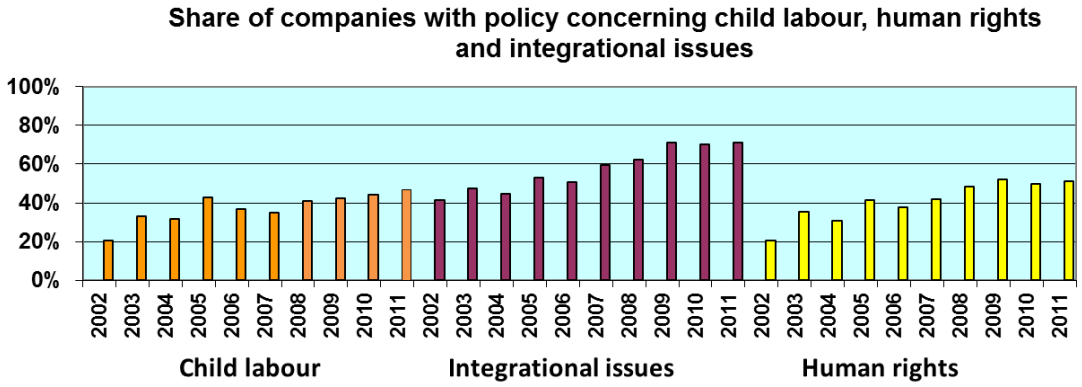
In managing position
The amount of women in managing positions vary between the companies a few percent to over 50%. 78% of the companies had women in managing positionsin 2012. It should also be noted that the average amount of women in managing positions have increased from 8% in 2003 to 24,6% in 2012.

In company boards
30 companies stated that they had women in the company board in 2003 (25,8% of the reporting companies). The corresponding figure for 2012 is 18 companies (45% of the reporting companies).



Social responsibility

Child labour, integration issues and human rights
As with the indicators above (distribution women/ men) it seems that these indicators also have a positive trend. It can be noted that in the companies that have reported between 2003 and 2012 there is an extensive increase in the share of companies that have a policy concerning child labour from about 33% to close to 53% When it comes to human right issues, the increase is from 48% to 78%. And policies about the integration issues has increased from 36% to 60%


Share of companies with policy concerning child labour, human rights and integrational issues
100%
80%
60%
40%
20%
0%
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011
Child labour
Integrational issues
Human rights