



## Facts and Trends

### Greening industry

**Industry is an immense source of wealth and comfort for modern society, but it is also responsible for much pollution that threatens our health and environment. There is an urgent need nowadays to add an ecological dimension to economic development and to reconcile competition with respect for the environment. Although this is an immense challenge, it is one that can and must be met.**

#### Portrait

The EU's annual industrial output is worth around ECU 2,600 billion, putting it alongside the United States and Japan as one of the world's leading industrial powers. European manufacturing is currently growing at a rate of 2% a year, compared to a 1993 forecast of 2.6% annual growth until the year 2000. Some 80% of the industrial sector is made up of small and medium-sized firms and it is directly responsible for around 25% of Europe's wealth.

#### Environment alert

By definition, all industrial activity uses up natural resources

energy, generates waste and releases pollution. If the environment is not to be damaged irreversibly, it is crucial that we continue to reduce this damage at a rapid pace. Current levels are downright alarming (see table). What's more, our raw materials are running out.

#### Production up, pollution down

Recent technological advances, the decline of heavy industry and the growth of the service sector have helped reduce consumption per unit produced of energy and raw materials significantly. In many cases, however, these advances have been ac-

companied by increased production. In the chemical industry, for instance, unit energy consumption fell 30% between 1980 and 1989, but production rose 50% over the same period.

#### Cleaner technology

Prior to the 1980s, virtually no account was taken of environmental concerns when it came to shaping industrial processes. Stricter environmental legislation and demand on the part of consumers for greener products are, however, obliging industrial companies to take more and more notice of the environment in their business plans. This is best illustrated by the development of 'clean technology' and eco-efficiency throughout industry. The purpose of such technology is to **prevent** pollution rather than **curing** it. It means that fewer raw materials are used to manufacture the same finished product and that less pollution is generated in the process.



### Industry's contribution to the main environmental issues (1995, list not exhaustive)

#### ENVIRONMENTAL ISSUE

#### INDUSTRY'S SHARE

• Climate change	• 27 % of CO <sub>2</sub> emissions • 24 % of N <sub>2</sub> O emissions
• Destruction of the ozone layer	• 80 % of CFC emissions
• Acidification of the environment	• 29 % of SO <sub>2</sub> emissions, • 13 % of NO <sub>x</sub> emissions
• Air pollution	• 30 % of VOC emissions
• Waste materials	• 29 % of waste production
• Water resources	• 53 % of water consumption • 7 % of phosphorous discharges • 10 % of nitrogen discharges
• Urban environment	• 10 % of noise emissions



## Europe in action

### Environment and competitiveness

**It was once widely believed that economic development was incompatible with ecological concerns. Nowadays, it has become clear that we both can and must create and recreate industries that are compatible with the protection of the environment. European policy sets out to encourage ecologically friendly production, stressing that ‘as far as the environment is concerned, industry is not only part of the problem, it is also one of the keys to its solution’.**

#### Objectives

Europe’s strategic goal is for ecological concerns to be steadily integrated in industrial policy. Recently, the European Commission published a Communication on the competitiveness of European enterprises facing globalisation in which it argued that the capacity of European enterprises to anticipate the use of ambitious environmental standards is an advantage on world markets. The concepts of eco-efficiency and eco-innovation help companies to both reduce their costs and protect the environment.

#### Measures

A collection of measures and support instruments have been adopted in this regard. Whilst fiscal and financial incentives like eco-taxes are considered important they have proven difficult in practice (for example the CO<sub>2</sub>/energy tax project — see ‘Climate’). Therefore, a number of important new requirements have also been introduced on a purely legislative level, including:

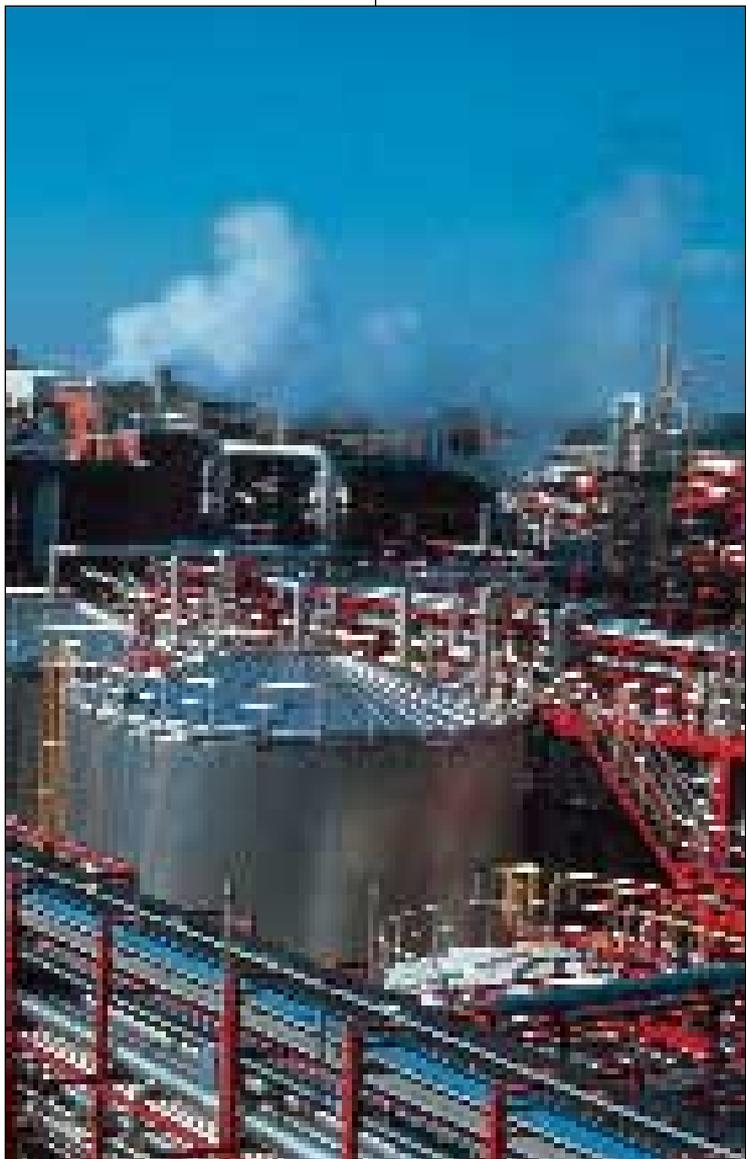
- Regulations for **chemical products** which set out packaging, labelling, transport and marketing standards for all hazardous substances.
- A directive on **major accident risks** associated with certain industrial activities (‘Seveso’ Directive).
- A **system for assessing the environmental impact** of certain public or private pro-

jects. Permission to go ahead with these projects is now based on a compulsory environmental impact assessment. The latter is available to the public who can submit opinions, which must be taken into account by the regu-

lating authority when deciding whether or not to grant permission for the project.

- Rules to reward environmentally friendly products by allowing them to display an ecolabel as a major element of an integrated product policy.
- An **eco-management and audit Scheme** to encourage firms to evaluate and steadily improve their environmental performance, in return for use of the ‘EMAS’ symbol and an enhanced image in the relationship with the public and their stakeholders (‘EMAS’ regulation).

Industry, essential and sometimes aggressive.  
(Polyurethane industry, Germany)





- A directive on **packaging** setting out recycling standards for waste packaging.
- A directive on **integrated pollution prevention and control**, which introduces a new approach to emission prevention through the control of pollution from air, water and soil in large industrial and agricultural installations. The Directive replaces the old 'end-of-pipe' solution that tried to control final discharges with an approach which uses technology to minimise emissions at every stage of the industrial process. ('IPPC' Directive).

## Results

Despite some pollution prevention and the conservation of natural resources (especially water) have yet to be adequately integrated in either industrial policy or practice. Important progress has been achieved where the following conditions apply:

- The source of the pollution is well defined;
- Anti-pollution techniques are available at the beginning of the chain;
- The measures in question only entail a low level of costs (im-



## Developments

### The Good...

### ...the Bad

- New economic instruments that encourage industry to add an environmental dimension to their production and management policies.
- Development of less polluting processes and products.
- The availability of relatively inexpensive technical solutions for reducing certain types of pollution;
- Improved management and control of production processes.
- The closure of heavy industries and the development of the service sector (which is less voracious in its consumption of raw materials and energy).
- Growing interest of banks and insurers in cleaner industries.
- Growth in production and consumption.
- Increasing demand for energy (despite improved energy efficiency in some industrial processes).
- The low price of certain products (especially fossil fuels), which discourages real savings.
- The cost of introducing clean technology.
- Development of an integrated product policy.

proving energy efficiency, for instance, or reducing waste). Progress in other fields, however, has been **very modest or inadequate**:

- Controlling emissions;

- Developing clean technology;
- Reducing packaging waste;
- Integrated pollution prevention.

## The growing cost of caring for the environment

It has been calculated that by the year 2000, industry will have taken most of the measures that require only a relatively modest investment. Consequently, as economic and demographic growth continues, the measures needed to keep emissions at or below current levels will become increasingly complex and onerous.

Water is generally necessary to industry, for better or worse.  
(Petrol industry – The Port of Antwerp, Belgium)



# INDUSTRIAL ACTIVITY

## Taking responsibility

### Member state level

Member States can, with EU support, promote 'eco-industries' and encourage traditional industry to make a 'green breakthrough'. This entails the following measures (some countries have, of course, already begun to act in this field):

- Improving the spread of clean technology and promoting ecological best practice especially eco-efficiency and eco-innovation;
- Stressing the benefits of a positive attitude towards environmental problems;
- Launching support programmes for SMEs to encourage them to switch to less polluting technologies by means of practical and financial assistance;
- Providing information and raising awareness to encourage changes in consumer behaviour.

As far as preventing industrial pollution is concerned, the directive on environmental impact assessments has proved very effective and is now beginning to bear fruit.

### Big business quicker to respond

Industrial companies wishing to reduce their environmental

costs and improve their brand image have been steadily incorporating environmental concerns in their business plans. For many of them, a more environmentally friendly approach has become an important marketing tool. Industries increasingly publish environmental reports. These need to be improved, however, in order to play a role similar to that of the 'normal' annual report. Some have signed 'sustainable development charters', while others have opted for voluntary codes drawn up by Europe, such as the eco-label and eco-audit (EMAS) schemes. Others still have signed voluntary agreements with their respective governments, committing themselves to go further than existing standards require. Many industries have also turned towards the concept of eco-efficiency and the opportunity offered by technology to reduce inputs and power consumption in the production process. This has a dual effect, lower costs and better competitiveness for industry and less waste and lower emissions for our environment.

### What about SMEs?

It is at the level of small and medium-sized enterprises that progress towards greater envi-

ronmental protection has been weakest, in spite of the fact that both the EU and individual Member States provide expert technical and financial assistance to support SMEs in their environmental efforts. Because of their size, companies in this category ought to be flexible and adaptable, giving them a potential advantage in certain new and existing markets (environmental services, product recycling, etc.). Their development is often held back, however, by restrictive administrative, financial or legal requirements.

### The citizen's role

Europe's citizens can play an important part in persuading industry to take fuller account of the environment. They can support cleaner companies by preferring environmentally-sound products (phosphate-free washing powder, CFC-free aerosols, recycled paper, reusable products, etc.). Citizens can also urge industrial firms to take part in the European eco-management and audit Scheme (EMAS) or to sign an environmental charter.

Environmental impact assessments, meanwhile, offer local residents greater involvement in the authorising or rejection of certain categories of public or private project.

## HISTORICAL ENVIRONMENTAL MANAGEMENT TRENDS.

	Pre-1970s	1970s-80s	1990s
<b>General approach</b>	Few regulations/ limited focus – air/water	Compliance/ reactive	Prevention/ proactive
<b>Management</b>	Hazardous waste not an issue	'End-of-pipe' control	Life-cycle approach
<b>Organisational structure</b>	Limited corporate environmental presence	Corporate environmental presence functionally isolated	Environmental audit
<b>Costs</b>	Environmental costs low	Environment is a cost to be minimised	The environment is a strategic opportunity to be seized

Source : ERM.