

# Your environmental management control panel

Environmental performance indicators

Management and communications tools



Innovative applied research



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This brochure will help you to:

- Understand the usefulness of environmental performance indicators;
- Establish an environmental management control panel, and:
- Make you aware of systematic environmental management methods

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# Environmental management control panels

## Environmental management and information tools

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The upheaval in the economy attributable to information technology and market globalisation is changing management methods. Inter-company initiatives and gestures are becoming more and more standardised. The use of marketing tools such as EMAS or ISO 14001 is also challenging new sectors such as services, small and microbusinesses and public-sector institutions. It is necessary to develop simpler, more appropriate management tools in order to be ready for this development.

Within this context, the scientific, technical and cultural departments of the [Belgian] federal government (SSTC) have sponsored a two-year applied research project. This project includes two approaches for the use of environmental performance indicators:

- As a management tool, and;
- As a concise environmental information tool.

### The GERMAINE applied research project

The GERMAINE applied research project, financed by the SSTC, allows participating businesses to benefit from environmental consultancy services to establish environmental management control panels. The project should permit:

- The development of generic environmental indicators;
- The development of sectoral indicators;
- Benchmarking, i.e. the comparison indicators, and;
- The most suitable experimentation with environmental information.

Throughout the project, opportunities for exchanging information will be organised in the form of seminars and a web site. The technical group will establish a link with analogous activities at European level.

### Which sectors are involved?

The project is targeting businesses in the service sector, including very small businesses and public-sector institutions.

Services	Institutional catering Large-scale retailing Banks
SMEs	Textiles (production) Plastic injection moulding
Microbusinesses	Mechanical workshops Garages
Public sector	Local government Public institutions Cultural establishments (theatre, opera, events) Non-governmental, environmental organisations

### Businesses and organisations participating in the project must:

- Commit themselves to a systematic environmental management approach;
- Define specific performance indicators for their structure;
- Establish environmental management control panels and ensure that they are used;
- Ensure that important data is gathered;
- Pass on the results in a transparent manner;
- Ensure that their staff support the project.

### Finance and parallel measures

Participation in the project is entirely free of charge for the businesses and organisations selected. Every organisation or business participating in the project is entitled to one day's eco-counsellor per month throughout the period of establishment of its environmental management control panel and its application.

### Parallel technical measures

The Eco-Counsellors Training Institute and the Belgian Association of Eco-Counsellors (ABECE) will be responsible for in-company monitoring, organising seminars, operating a web site and contributing technical skills. The Belgian Business Federation will be responsible for ensuring the exchange of information between businesses participating in the project.

## The context :

# The development of markets and management tools

## 4 Towards integrated environmental management

The integration of environmental protection into the day-to-day management of an organisation may have multiple aspects. Sometimes it takes the form of complex management systems, such as ISO 14001 or EMAS and sometimes it is informal, with individual and ad hoc initiatives.

Frequently, it is also systematic and based in other areas, such as quality and health and safety. However, at the commencement of the new millennium, the systematic environmental management method primarily remains a stylistic exercise reserved for industrial players and SMEs. Moreover, the concept of environmental management is broadening out into a sustainable development concept and demanding a complex social, economic, environmental and even ethical approach. All the players on the economic level are, without exception, now invited to adopt specific measures and suitable strategies. The public sector, service sector and microbusinesses must now follow this trend with immediate effect, with innovative management thrown in.

### A world of perpetual change

This movement is influenced by three major factors: the method of management of multinational companies, the Internet and information technology, and the horizontal integration of environmental policies by governmental authorities.

1. The increasing tendency of multinational companies to use sub-contracting and procurement on a global market has been facilitated by the development of use of information technology. The method of management of multinational companies and the Internet are leading to greater control and particularly greater pressure on the improvement in quality of products and services in supply chains. This means that SMEs the world over must be capable of providing accurate, relevant information on their performance, particularly their environmental performance, in real time.
2. The Internet is now making businesses on every continent compete with each other and ideas of geography and protected markets are disintegrating.
3. The horizontal integration of the idea of sustainable development into regional government is finding its expression in public "green procurement" programmes. The public sector is bringing pressure to bear on its traditional suppliers. The use of market tools such as EMAS or eco-labelling in public management will accelerate this trend. This tendency will collide head on with microbusinesses (less than 10 employees).

### Management standards are affecting the whole world

The global market is leaving a trail of increasing standardisation in its wake and the easy way is the promotion of ISO 14001 or EMAS to SMEs and other subcontractors. However, at the same time, the standardisation forum and European authorities are refusing, for various reasons, to develop lighter, more suitable versions of their tools to cover the service sector, microbusinesses and the non-commercial sector. Large businesses and small manufacturing businesses with five workers are subject to the same assessment criteria, procedures, red tape, interlocutors and market forces.



## A lot of players need simple tools

Why should microbusinesses and other players in the economy invest in cumbersome, expensive environmental management tools when other and innovative management tools may be quite adequate for their purposes? After all, it's the results which count, i.e. the improvement in environmental performance.

Some environmental performance and operational indicators can be used to navigate, manage and communicate significant aspects, and to reflect quite an accurate image of good environmental practice. Environmental management tools and systems must be adequate, simple and credible. The international standard ISO 14031 (assessment of environmental performance) and step-by-step approaches (such as eco-maps, the five-stage Irish eco-label or the three-star Brussels eco-dynamic business label go in this direction.

A philosophy is evident behind these programmes: simplicity and suitability for the needs of the players. It is simple but sufficiently credible to be accepted by governmental authorities, institutional or multinational purchasers and pressure groups. Such tools must provide relevant information for all the players. Environmental information is thus another key element. Nowadays, a vast amount of information on corporate environmental performance is available on the European market, but no one is satisfied.

More than 3000 environmental reports are available on paper, in several languages, not to mention the profusion of information available on the Internet. Future trends will lead to more specific, concentrated, made-to-measure information, in the form of groups of indicators for the attention of banks, public authorities, pressure groups, management, etc.

## A modern environmental management tool box contains:

- EMAS
- ISO 14001
- Eco-efficiency
- ISO 14031 (EPE)
- Label and regional chart

## The European environmental management and audit system (EMAS)

On 29 June 1993, the Council of Ministers adopted regulation 1836/93 (EEC), facilitating voluntary participation by industrial businesses in an environmental management and audit system. This regulation, in force since April 1995 is known as EMAS. The voluntary approach is based on pressure and acknowledgment from other businesses on the market and by the general public. This market tool modernises European environmental policy, as EMAS is intended to encourage businesses to participate voluntarily in environmental performance.

Once companies have decided to participate in EMAS, they must meet all the demands of the regulation. This ensures a credible, rigorous approach to environmental management. The objectives of EMAS are to improve environmental performance, substantiate conformity with environmental legislation and to make the public aware of efforts being made in the field of the environment. More than 3000 EMAS sites were registered in Europe in December 2000.

### EMAS in brief

- Voluntary marketing tool for the European Union
- European regulation containing specific stipulations
- Valid throughout Europe
- Obligatory external auditing
- Obligatory publicly verified reporting
- Legal conformity demanded
- Continuous improvement of environmental performance demanded
- Applicable to an industrial production site
- *A la carte* internal management system
- Continuous improvement and prevention of pollution
- Maximum audit cycle of three years
- Initial exhaustive ecological balance sheet according to pre-established criteria
- Focus on environmental impact
- Reference to the use of the best-possible technologies

## 6 International environmental management standard ISO 14001

ISO 14001 is the environmental management standard created by the International Organisation for Standardisation and published in September 1996. It specifies that the demands for an environmental management system on a global scale, for the purposes of certification and/or statements. ISO 14001 shares certain management principles with the standards in the ISO 9000 series, particularly the "Plan-Do- Check-Act" (PDCA) scheme.

It is organised into 17 points copied from quality management, which has been well established in industrial world for ten years. Among the chapter headings are policy, planning initiatives, implementation, auditing and corrective action, management review and the principle of continuous improvement. The standard makes no absolute demands in respect of environmental performance with the exception of conformity with legislation and the principle of continuous improvement in commitment to the environmental policy. More than 8500 companies in Europe obtained ISO 14001 in July 2000.

### ISO 14001 in brief

- International environmental management standard
- Technical specifications
- Internationally recognised
- Optional external certification
- Voluntary environmental report
- Commitment to conform to legislation
- Regular improvement of the management system
- Applicable to all forms of organisation: industry, transport, financial sector, services etc.
- Standardised system of management (17 points of ISO 14001)
- System oriented towards prevention of pollution
- One-year audit cycle
- Freedom to choose the method of environmental impact analysis
- Focus on the management system

## From clean technology to eco-efficiency

Eco-efficiency is a concept which introduces environmental and macro-economic ideas into daily corporate management. This concept has been developed by the WBCSD (World Business Council for Sustainable Development). Products and services must progressively reduce their environmental impact and rate of use of raw materials throughout the entire life of the product. Environmental performance indicators are instigated by this concept.



### Eco-efficiency is based on seven principles:

- The reduction in the rate of use of material by goods and services;
- The reduction in energy consumption by goods and services;
- The reduction in the spread of toxins;
- The reduction of potential risks for the user and environment;
- The improvement in material recycling;
- The improvement in sustainable use of renewable resources;
- The extension of management in goods and services.



## Evaluation of environmental performance (EPE)

ISO 14031 specifies how to identify environmental indicators which will give a clear impression of the performance of an environmental management system, production activities and the state of the environment with which the business interacts. The process includes a dialogue with all the interested parties and transparent communication. However, the standard does not establish any level of performance.



ISO 14031 recommends the use of three types of indicator:

*Environmental management performance indicators (IPM)*, e.g.:

- The number of hours of staff environmental training, and:
- The percentage of environmental objectives attained.

*Environmental performance indicators (IPE)* e.g.:

- kg of toxic waste per unit produced, and:
- kWh/unit produced.

*Environmental condition indicators (ICE)* e.g.:

- mg of heavy metal/cubic metres of water, and:
- kg CO<sub>2</sub> emitted/hour of work.

## The Brussels corporate eco-dynamism label and charter

The Brussels corporate eco-dynamism label and charter are voluntary agreements concluded between the Brussels regional environmental authority and proactive businesses. The company undertakes to implement good eco-managerial practice progressively. The IBGE undertakes to make a series of supporting measures available to companies (training, information, etc.) and to publicise the results obtained. This system is flexible and accessible to every type of business. It consists of three levels of labelling, corresponding to successive stages in eco-management.



Some environmental criteria of eco-dynamic corporate labelling

- Making staff aware of environmental practices;
- Good management of energy use, raw materials, semi-finished products, water, the accumulation of refuse, transport and emissions of pollutants into water, air and the soil, and:
- The appointment of an environmental coordinator by the business.

Environmental performance indicators are used for

EMAS:

- Measuring environmental performance, and:
- Information for issuing the environmental statement.

ISO 14001:

- Measuring the integration of the environmental management system, and:
- Measuring continuous improvement.

Regional eco-labels:

- Measuring progress towards the three levels of labelling.

ISO 14031:

- Concise substantiation of the assessment of corporate environmental performance.

The concept of eco-efficiency:

- Measurement and substantiation of the disengagement of the use of resources and the creation of added value.

Environmental management control panel:

- Codified, simple management of environmental performance.

## Environmental performance indicators

Air



Refuse



Electricity



Diesel, fuel oil

Gas



Water and sewage



Odours



Noise



Complaints



Training

Transport



Environmental costs

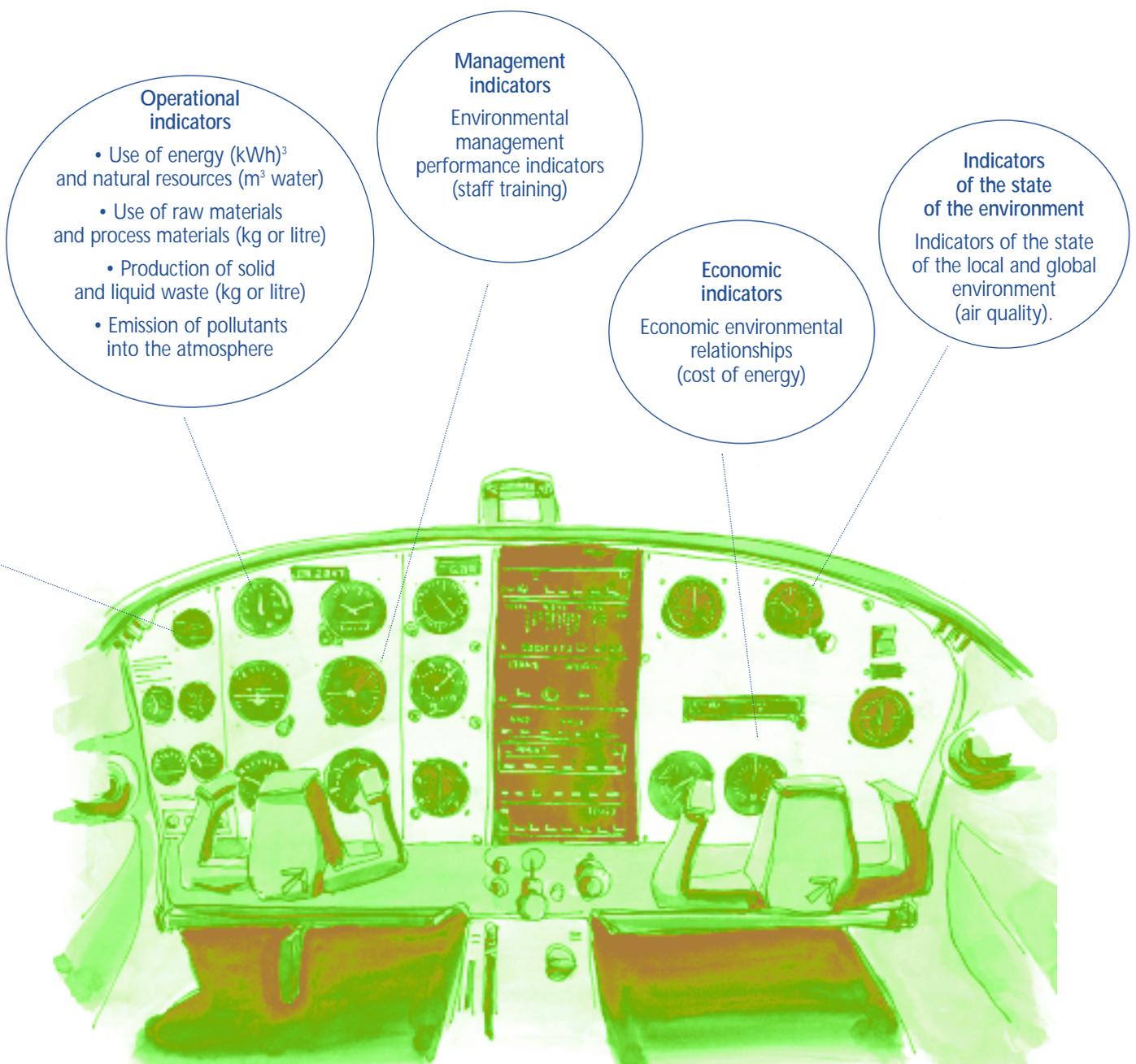


# Environmental management control panels

Environmental management control panels allow good environmental practice to be expressed in the form of figures, shown in the form of performance indicators. Environmental performance indicators provide specific, accurate information on an environmentally-relevant segment of business activity,

forming a concise unit of environmental reality which is taking its place as a management and communication tool.

The environmental management control panel takes the form of a variety of indicators:



## 10 Your environmental management control panel:

### As a management tool

Environmental performance indicators represent the continuous improvement in the business's environmental performance in a more concise, visible form and facilitate awareness, planning and auditing of environmental management. The indicators are based on a precise account of corporate flows.

The indicators may substantiate a standardised system of environmental management, but can also function in isolation as environmental control panels for the business. They have already proved their managerial value as decision-making tools, by facilitating:

- The growth and monitoring of the level of eco-efficiency in the business;
- Expression of the standard of good practice;
- Calculation of the economic repercussions following the application of FOST Plus and VAL-I-PAC;
- Better control of the potential flow of refuse;
- Measurement of the specific impact of changes in management;
- Establishment of environmental performance relationships for EMAS statements;
- Management of the availability and updating of environmental data relevant within the business, and;
- Setting of specific environmental targets to be attained.

Performance indicators improve the display and interpretation of environmental costs. They thus provide monitoring and interpretation of environmental initiatives implemented and the economic benefits usually associated with them.

The need for and flow of environmental information will fluctuate highly with the size of the business, its management or its field of activity. The number of environmental performance indicators used will differ with the size of the business, from complex systems for multinational companies down to "light" systems for small businesses.

### As a communications tool

Environmental performance indicators fulfil a permanent information requirement by those involved:

- internally, such as production, the purchasing department, the marketing department, the management, the parent company and the employees, and;
- externally, such as the shareholders, governmental authorities, non-governmental organisations, trade unions, audit bodies, banks and insurance companies, residents, clients and consumers.

Environmental performance indicators thus provide information targeted to meet the requirements of one or the other of these parties. The indicators express day-to-day environmental management in figures. They are frequently found in internal quality bulletins, annual reports, training, administrative statements regarding sewage or refuse, etc.

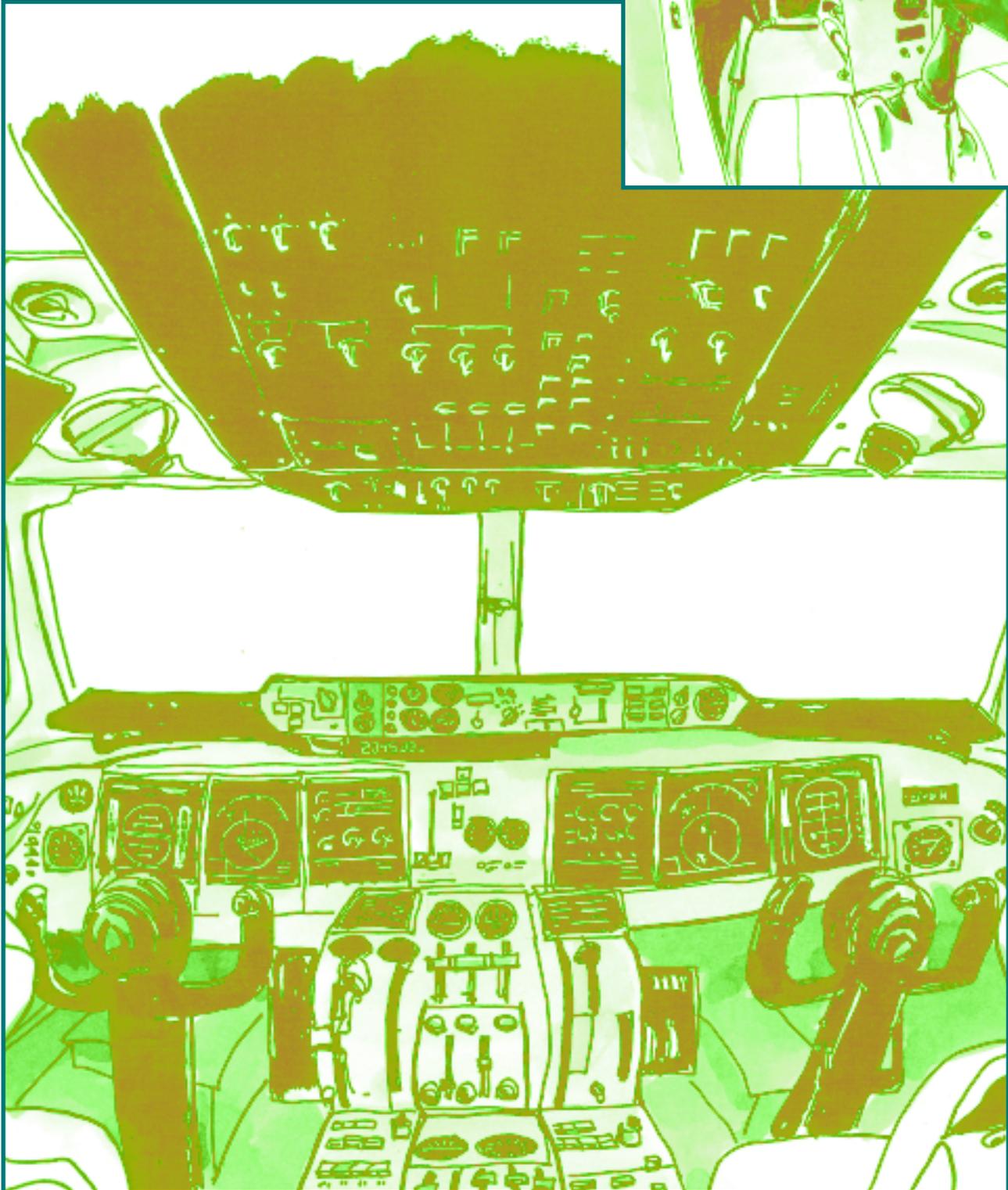
### As a tool for decision-making and continuous improvement by benchmarking

Benchmarking is the comparison of the environmental performance of an organisation with analogous performance. The objective of benchmarking is to improve the environmental management of the business by self-assessment of its performance, in comparison with best industrial practice. It is a useful and demanding tool which can be used in various situations and which facilitates:

- Measurement of the progress of the environmental management system;
- Comparison of the environmental performance of branches or subsidiary companies by financial years;
- Positioning by comparison with other businesses in the same sector;
- Positioning by comparison with the best in its class in terms of good environmental practice, which frequently provides a good incentive for environmental management, and;
- Independent assessment by external audit within the scope of ISO 14001 or EMAS.

The indicators also permit shifts in managerial logic. When management introduces a numerical target into environmental management, laborious substantiation is frequently demanded. If the management is confronted with better practice, it must justify its own practice. This principle of shifting the burden of proof is usually the mother of invention.

An SME (or microbusiness) only needs a small control panel with a few environmental performance indicators to work more ecologically.



A large company needs a much more extensive control panel to manage its environmental impact and control a programme of environmental measures.

# Environmental performance indicators

## The process in five stages

12 The first stage is to obtain information by identifying the various parties concerned

Those whose activities have an impact on the environment must be identified. The environmental performance indicators relevant to their work may thus be determined in conjunction with them. (⇔)

The second stage consists of identifying the most significant environmental aspects of the company's operations

Each party involved must try to identify the types of operation which have an environmental impact, such as:

- consumption and use of natural materials and resources
- pollution (atmospheric pollution, noise, odours)
- solid and liquid waste (↔).

### Who has what knowledge?

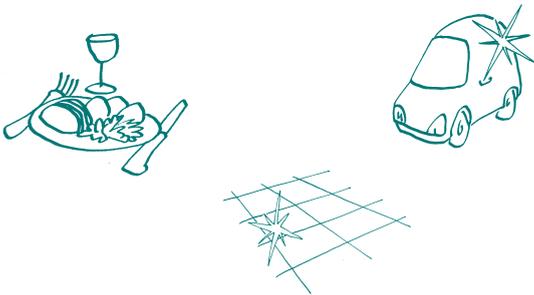
Sector	Parties concerned
<i>Catering</i>	Manager, purchasing managers, chef
<i>Textiles (production)</i>	Production manager, workers, supervisor
<i>Garages</i>	Workers, boss, workshop supervisor, accountant
<i>Local authorities</i>	Environmental officer, works department, town planning department, clerk of works
<i>Cultural establishments</i>	Studios responsible for artistic productions, sub-contractors (cleaning and catering)

### What are the operations and what impact do they have?

Sector	Operations	Emitted substance	Impact
<i>Catering</i>	Cooking of food	CO <sub>2</sub> (energy)	Contributes to the greenhouse effect
<i>Distribution</i>	Refrigeration of food	Gaseous refrigerating fluorides (CFCs and HFCs)	Reduction of the ozone layer
<i>Textiles</i>	Washing of fabrics	Waste water (nutrient salts - phosphates and nitrates)	Eutrophication of the rivers, lakes and marine areas
<i>Garages</i>	Use of solvents for cleaning mechanical parts	Emission of volatile organic substances	Are harmful to health
<i>Cultural bodies</i>	Heating	Particles (less than 10 microns)	Cause local air pollution
<i>Local authorities</i>	Creation of waste	Discharge of waste which emits methane	Contributes to the greenhouse effect

The third stage is to define a relevant unit

Most of the environmental data only makes sense if it relates to a unit of reference. You must try to express the operations of your business as a simple, compact unit. (⇨)



Your operations consist of

Operations of the business

- Large-scale retail premises: Nbr of Clients
- Garage: Cars repaired
- Thermoplastics: Kg of plastic manufactured
- Catering: Meals served
- Textiles: M<sup>2</sup> of fabric produced

Characteristics of the site

- Surface area, m<sup>2</sup>
- Number of employees
- Volume of buildings
- Number of computer terminals
- Shipment
- Seating capacity (cultural establishments)

The fourth stage consists of knowing who collects which data and where to find it

The data relevant to the structure of the indicators is collected from the various departments. (⇨)



Where is the information to be found?

Departments	Information gathered
<i>Production</i>	Monthly statements of production of finished products or waste and technical files on hazardous products
<i>Accounts</i>	Statements of the quantities of water, electricity, gas and heating oil consumption, based on monthly invoices
<i>Management</i>	Financial data
<i>Purchasing</i>	Nature, cost and quantities of raw materials and auxilliary products
<i>Sub-contractors</i>	Nature and quantities of raw materials used (maintenance products, fertilisers, packaging, waste, etc.)
<i>Human resources</i>	Nature and frequency of staff training
<i>Environmental</i>	Analyses, technical reports or administrative declarations of liquid waste, gas (monitoring), waste and noise measurement

The data on consumption and use of resources are absolute figures. Linked with a unit of reference, they constitute indicators and allow environmental performance to be compared.

### A selection of indicators

Examples of sectoral indicators	Use
<i>Large-scale retailing</i>	
Grammes of packaging/kg of product sold	Management of packaging waste Fost +
Litres of maintenance product/Year/ m <sup>2</sup> surface area	Awareness of maintenance staff
Percentage of organic products/Total products	Informing public and clients
<i>Institutional catering - catering</i>	
Grammes of waste/Meal supplied	Waste management
kWh of electricity/Meal prepared	Eco-efficiency
Number of employees with environmental training/Total employees	Informing staff, personnel management
Percentage of healthy meals/Total number of meals	Marketing
<i>Garages/micro-businesses</i>	
Kg of special waste/Car repaired	Health and safety management
Number of HVLP paint sprays/Total number of paint sprays	Communication
Number of complaints from the neighbours/ 100 cars repaired	Population
ppm hydrocarbons/dm <sup>3</sup> soil	Soil contamination
Environmental costs/Invoice for car maintenance	Accounts, marketing
<i>Thermoplastics</i>	
m <sup>3</sup> of cooling water/Tonne of materials used	Eco-efficiency
kWh of electricity used/Injection machine hours	Eco-efficiency
Regulations observed/Total number of regulations to be observed	Compliance with legislation, regulations
Cost of waste removal/Total turnover	Optimisation of waste management
<i>Local authorities</i>	
Volume of recycled paper/Volume of paper used	Informing the staff
Number of products purchased on the basis of environmental criteria	Environmental consumption, purchasing policy
Number of zones with noise levels > 70 dBA	Informing the public
<i>Banks</i>	
kWh of electricity/Surface area of offices in m <sup>2</sup>	Awareness of the staff, eco-efficiency
Number of computers recycled/Total number of decommissioned computers	Accountability, recycling
Km of business travel/Person/Year	Awareness of the staff
Profit from ETHIBEL-certified investment companies	Brand image
Number of environment-related financial products	Marketing
<i>Textile factories</i>	
m <sup>3</sup> of industrial water/m <sup>2</sup> of fabric produced	Eco-efficiency
m <sup>2</sup> of original organic cotton fabric/Total m <sup>2</sup> of fabric	Purchasing policy
Number of open days/Year	Informing the staff and the public
mgr O <sub>2</sub> /litre of water from the neighbouring river	Informing the regional authorities
Number of months of economic return on the ecological investment	Informing the shareholders
<i>Cultural establishments</i>	
kg of environmentally-friendly paint used for decoration/kg of total paint	Accountability, environmental consumption
Number of staff environmental suggestions/Total suggestions	Informing the staff, personnel management
kWh of electricity/Seating capacity	Rational use of energy, environmental efficiency
Volume of hazardous goods used/Artistic production	Health and safety management

The last stage is the announcement of your performance to the various stakeholders

Environmental performance indicators meet a constant need for information by:  
• internal players  
• external stakeholders (as illustrated below):

0,3 g grease/  
litre of waste water



Authorities

30% of purchasing  
on the basis of ecological criteria



WWF

10% of investment  
in clean technology



Bank

25% of packaging  
returned and re-used



Client

Be transparent :  
Announce your  
environmental performance !

2 Kg of hazardous products/  
m<sup>2</sup> of storage space

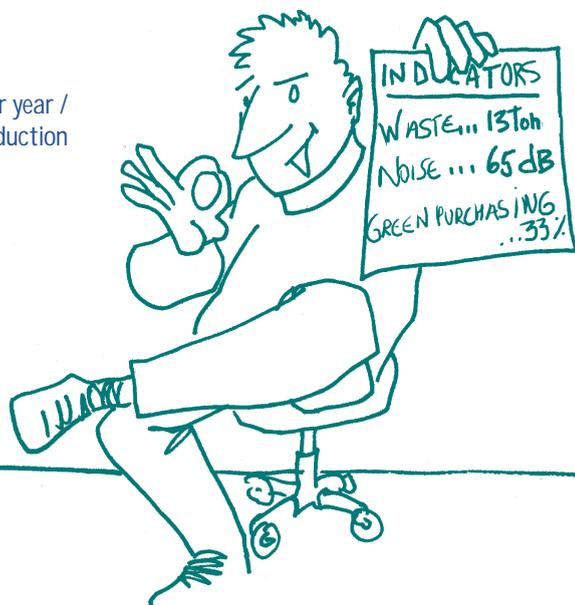


Insurer



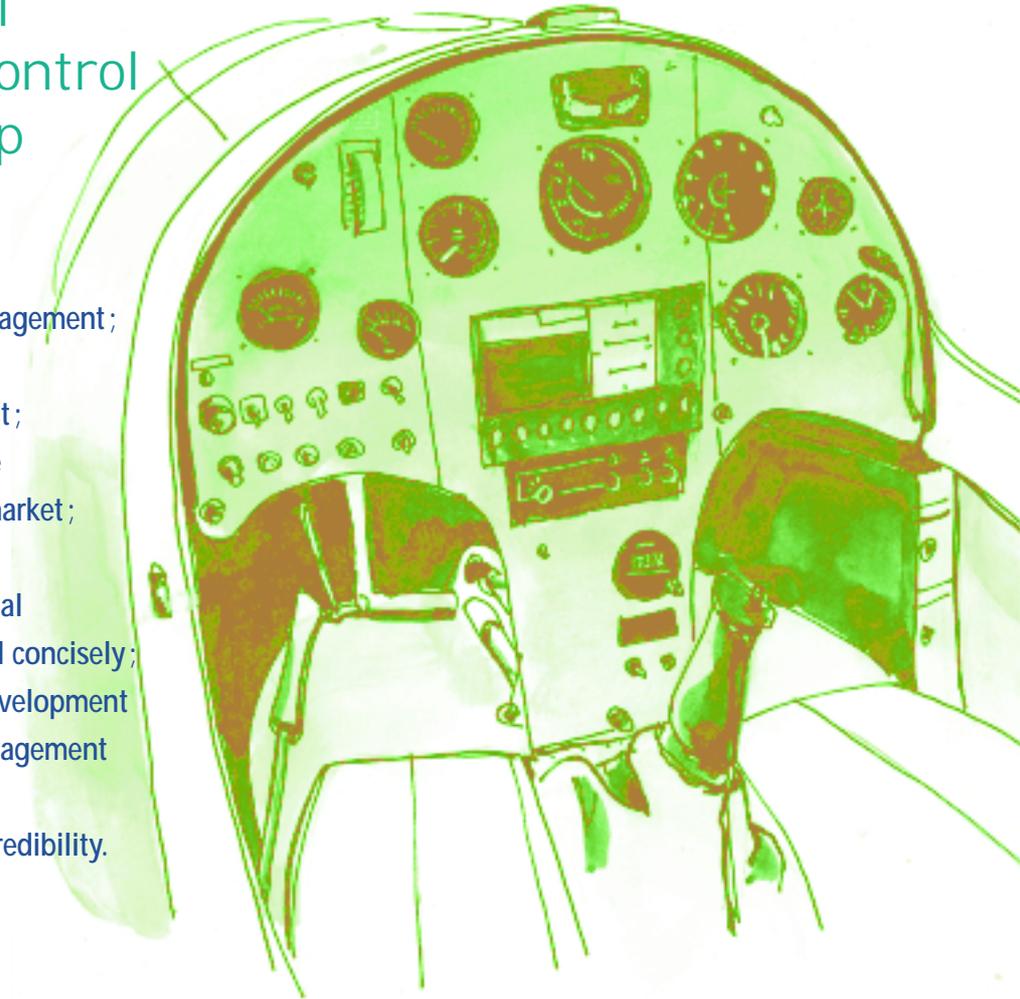
Neighbour

10 complaints from neighbours per year /  
3 legal actions for noise reduction



## Environmental management control panels will help you to :

- Master environmental management ;
- Introduce a system of environmental management ;
- Compare your performance with best practice on the market ;
- Complete official forms ;
- Publicise your environmental performance accurately and concisely ;
- Tell your staff about the development of your environmental management system, and :
- Increase your managerial credibility.



If you want to be part of the project, contact us : :



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