

CIP-EIP
EuropeINNOVA-ENT-CIP-09-C-N01S00

REMake

**Recycling and Resource Efficiency driving innovation in
European Manufacturing SMEs**

Agreement No. SI2.24 56 39

EuropeINNOVA2 Strand 4

Deliverable No. 7.1: Guidebook on standards

Due date of deliverable: 31.08.2010
Actual submission date: 06.04.2011

Start date of project: 01/09/2009

Duration: 36 Months

Organisation name of lead contractor for this deliverable:
CETIM

Project co-funded by the European Commission within the CIP Framework (2007-2013)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the	
RE	Restricted to a group specified by the consortium (including the	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Executive summary

This document aims to identify the standards which could be used by the REMake consortium to promote the widest use and market uptake of innovation-enabling standards and regulations in the field of RRE (Recycling and Resource Efficiency).

The document aims to present a global overview of standards, regulations that can conduct to eco-innovation (based on ressource, recycling efficiency, safety for worker).

This document also aims to help SMEs find a first help level in starting an eco-innovation approach by identifying existing tools, technical and financial supports in each country.

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1 INTRODUCTION

This guidebook is dedicated to SMEs who want to eco-innovate.

Starting from the following facts that SMEs :

- are not enough informed about profits of the eco-innovation,
- do not know how to deal with eco-innovation,
- do not know the regulations and the standards applicable in relation to eco-innovation

The guidebook is a roadmap in the complex field of eco-innovation

It gives a concise overview on :

- relevant standards and regulations to their products and processes
- existing tools and methodologies to help SMEs implement an eco-innovation approach
- technical support to accompany their project
- grants supporting these initiatives

It is a first level help for SMEs who need to be convinced of the interest of eco-innovation and want more information on how to implement it in their company.

2 CONTENT OF THE GUIDEBOOK

The guidebook can be used by different ways:

- by product lifecycle (production, packaging, transport, use, end of life)
- by environmental & safety topics (waste, energy, emissions, materials/substances, worker, equipments)
- by sector of activities (fabricated metal products, plastic products, mechanical engineering, surface finishing, electric and electronic equipment)
- by keywords (reduction, carbon footprint,...)

3 IMPACT OF ECO-INNOVATION

Eco-innovation helps to deal with the tradeoffs between economic growth and environmental protection.

The economic effects, in terms of the impact of eco-innovation on growth and employment, are not straightforward and likely to vary, depending on the type of innovation and the context in which it is used.

Eco-innovation creates jobs and wealth in the manufacturing sector, but if innovation increases costs for users, jobs in the eco-technology sector may be insufficient to compensate for the loss of jobs elsewhere.

Germany has a flourishing solar and wind power industry, thanks to feed-in law establishing high prices for green electricity fed into the grid, but as a result, German consumers and industry pay more for electricity than they otherwise would. The higher electricity costs could hamper the competitiveness of other sectors that are intensive users of electricity.

4 DRIVERS

Six drivers for eco-innovation have been put in evidence:

- regulations : complying with regulations
- standards : achieving an accreditation
- demand from users :
- capturing new markets : securing existing markets and increasing market share
- cost reduction : reducing environmental costs
- image : improving the firm's image

Compliance with environmental regulations was more important for pollution control innovations than for the other types of eco-innovation, especially service, distribution, and product innovations.

Process innovations and recycling were often introduced in response to the need to comply with regulations, but many of them were also introduced to obtain cost savings (not environment-related) or to improve the environmental image of the firm.

5 BARRIERS

ETAP (the European Commission's Environmental Technologies Action Plan) identifies the following barriers to environmental technologies:

⑤ **economic barriers**, ranging from market prices which do not reflect the external costs of products or services (such as health care costs due to urban air pollution) to the higher cost of investments in environmental technologies because of their perceived risk, the size of the

initial investment, or the complexity of switching from traditional to environmental technologies;

⑤ **regulations and standards** can also act as barriers to innovation when they are unclear or too detailed, while good legislation can stimulate environmental technologies;

⑤ **insufficient research efforts**, coupled with inappropriate functioning of the research system and weaknesses in information and training;

⑤ **inadequate availability of risk capital** to move from the drawing board to the production line;

⑤ **lack of market demand** from the public sector, as well as from consumers.

A more elaborate list of barriers is offered by Ashford (1993), making a distinction between the following types of barriers:

1. Technological barriers:

- Availability of technology for specific applications.
- Performance capability of technology under certain economic requirements and process design standards.
- Lack of (some) alternative substances to substitute for the hazardous components.
- Higher degree of sophistication with operation of some waste reduction technologies.
- Skepticism in performance of certain technologies and therefore a reluctance to invest.
- Process inflexibilities.

2. Financial barriers:

- Research and development costs of technology.
- Costs related to risk of process changes with regard to consumer acceptance and product quality.
- Noncomprehensive cost evaluations and cost-benefit analysis as well as cost calculation method.

- Lack of understanding and difficulty in predicting future liability costs (e.g., of waste disposal).
- Short-term profitability calculations resulting in low tolerance for longer payback periods of equipment investment.
- Alleged drawback in competitiveness as other companies are not investing in waste reduction technologies.
- Lack of capital investment flexibility due to low profit margin.
- Economies of scale preventing smaller companies from investing in waste reduction options (e.g., in-plant recovery technologies).
- Possibilities that investment in process modification can be inefficient for old companies.
- Company financially (and even technically) tied up due to recent investment in wastewater treatment plant.
- Actual cost of current technologies masked in operating costs.

3. Labor force-related barriers:

- Lack of person(s) in charge of management, control, and implementation of waste reduction technology.
- Reluctance to employ trained engineers for the alleged time-consuming design of waste reduction technologies.
- Inability to manage an additional program within the company and, therefore, reluctance to deal with a waste reduction program.
- Increased management requirements with implementation of waste reduction technologies.

4. Regulatory barriers:

- Disincentives to invest in reuse and recovery technologies due to RCRA permit application requirements for recycling facilities in addition to compliance requirements, application costs, and so forth (work-intensive).
- Depreciation tax laws.
- RCRA waivers available only for hazardous waste treatment technology or process.

- Uncertainty about future environmental regulation.
- Regulatory focus on compliance by use of conventional end-of-pipe treatment technology (may result in investment in those treatment technologies rather than waste reduction technologies).
- Compliance with discharge standards, thus having "EPA off your back" provides no incentive to invest in waste reduction.

5. Consumer-related barriers:

- Tight product specifications (e.g., military purposes).
- Risk of customer loss if output properties change slightly or if product cannot be delivered for a certain period.

6. Supplier-related barriers:

- Lack of supplier support in terms of product advertising, good maintenance service, expertise of process adjustments, and so forth.

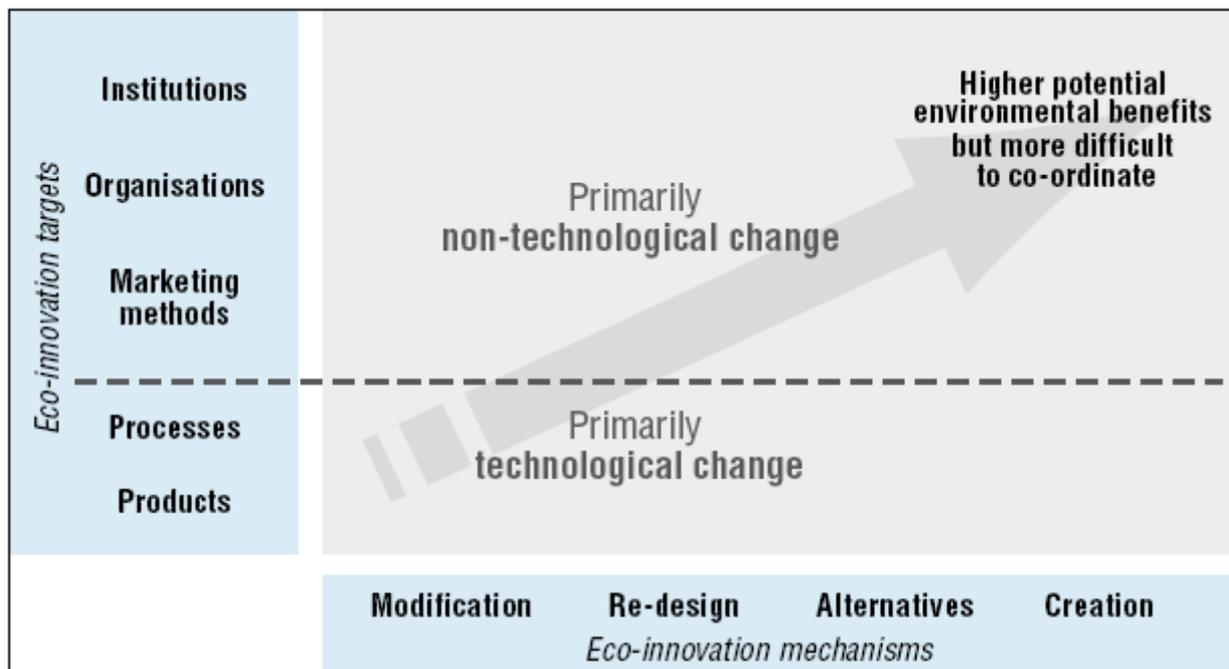
7. Managerial barriers:

- Lack of top management commitment.
- Lack of engineering cooperation to break hierarchical separation of areas of responsibility (e.g., production engineers do not cooperate with environmental engineers in charge of the treatment and disposal of hazardous substances).
- Reluctance on principle to initiate change in the company ("Uncle John did it this way; therefore we are doing it the same way!").
- Lack of education, training, and motivation of employees (e.g., in good housekeeping methods or operation and maintenance of recovery technologies).
- Lack of expertise of supervisors.

The barriers are interrelated. For instance a lack of top management commitment might be caused by various factors: (1) lack of information from the financial department to top management concerning the profitability of waste reduction technologies in general; (2) lack

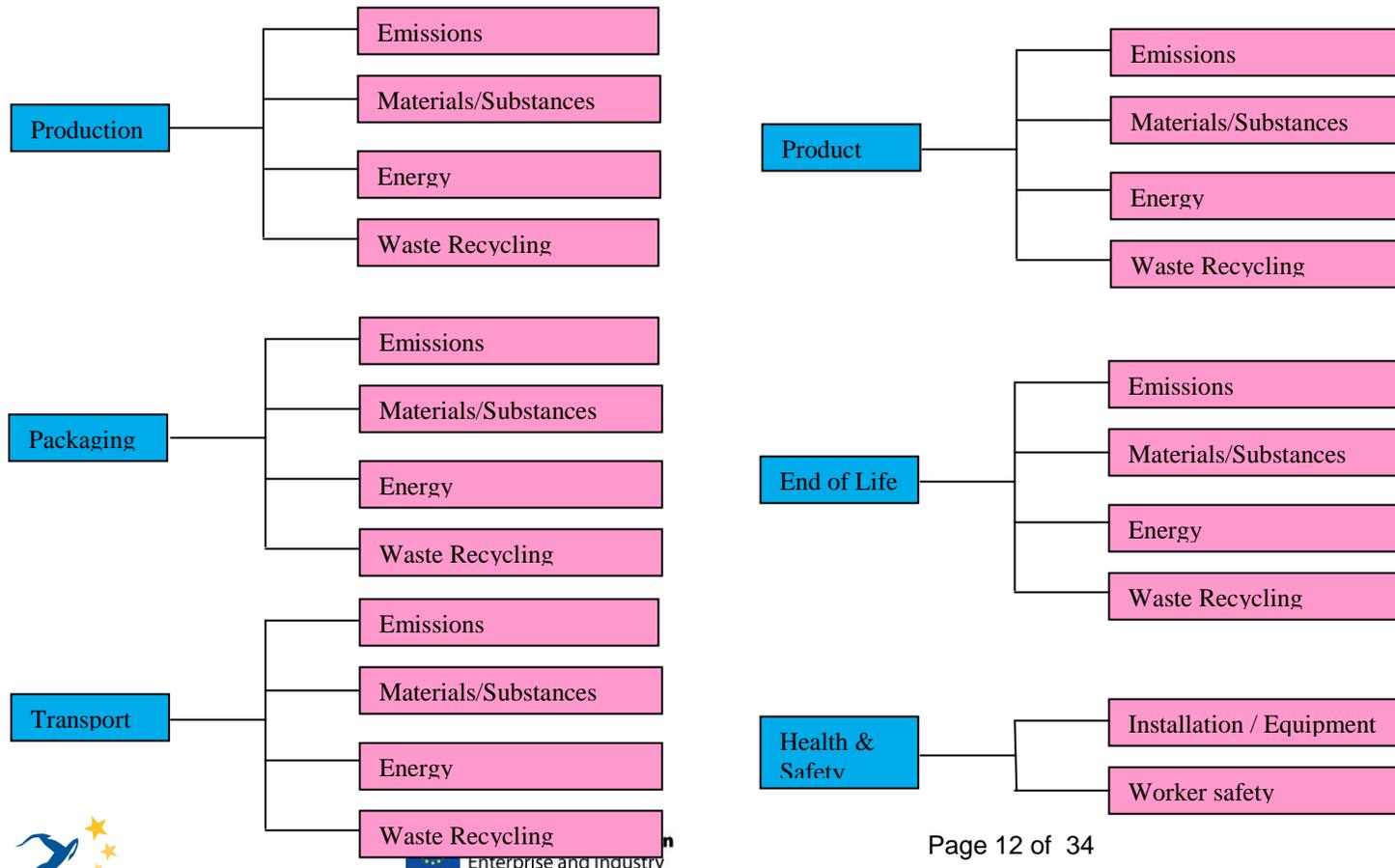
of confidence in performance of new technologies; (3) lack of managerial capacity and capital to deal with the transition costs of reorganizing the production process, educational programs, consumer demands, or discharge waivers; (4) lack of awareness of long-term benefits of waste reduction approach, resulting in waste reduction being a low-priority issue (Ashford, 1993).

6 LEVELS OF ECO-INNOVATION

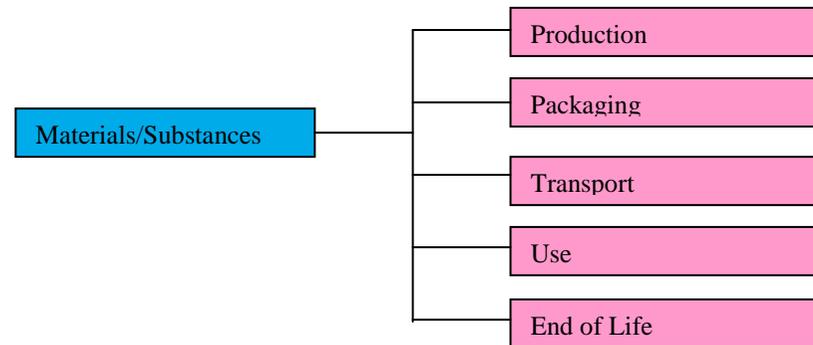
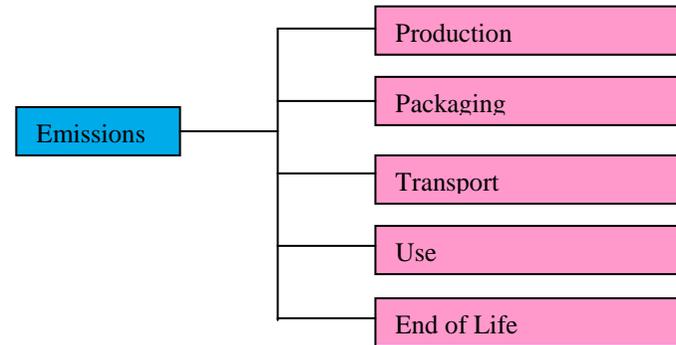
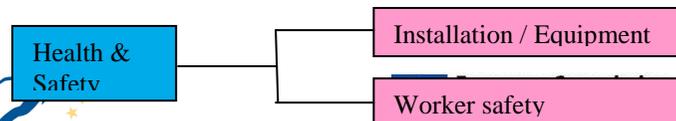
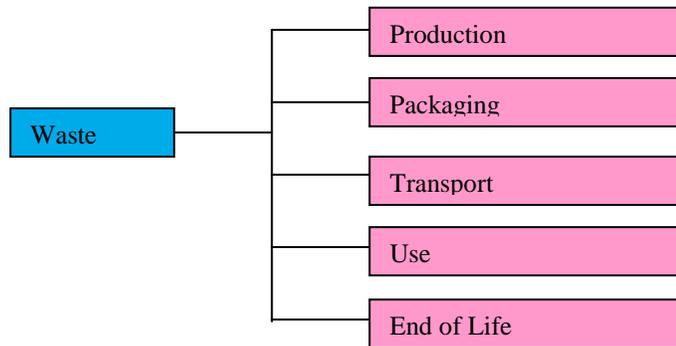
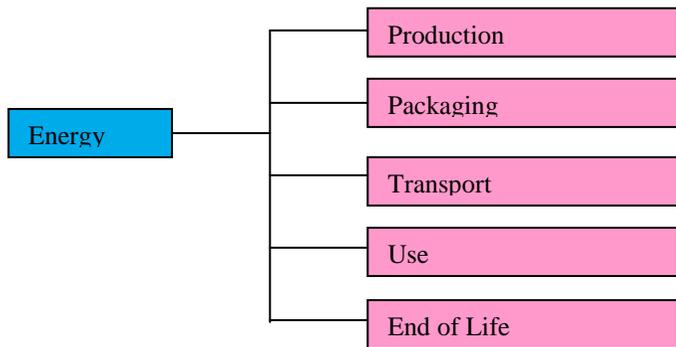


7 ENTRY POINTS

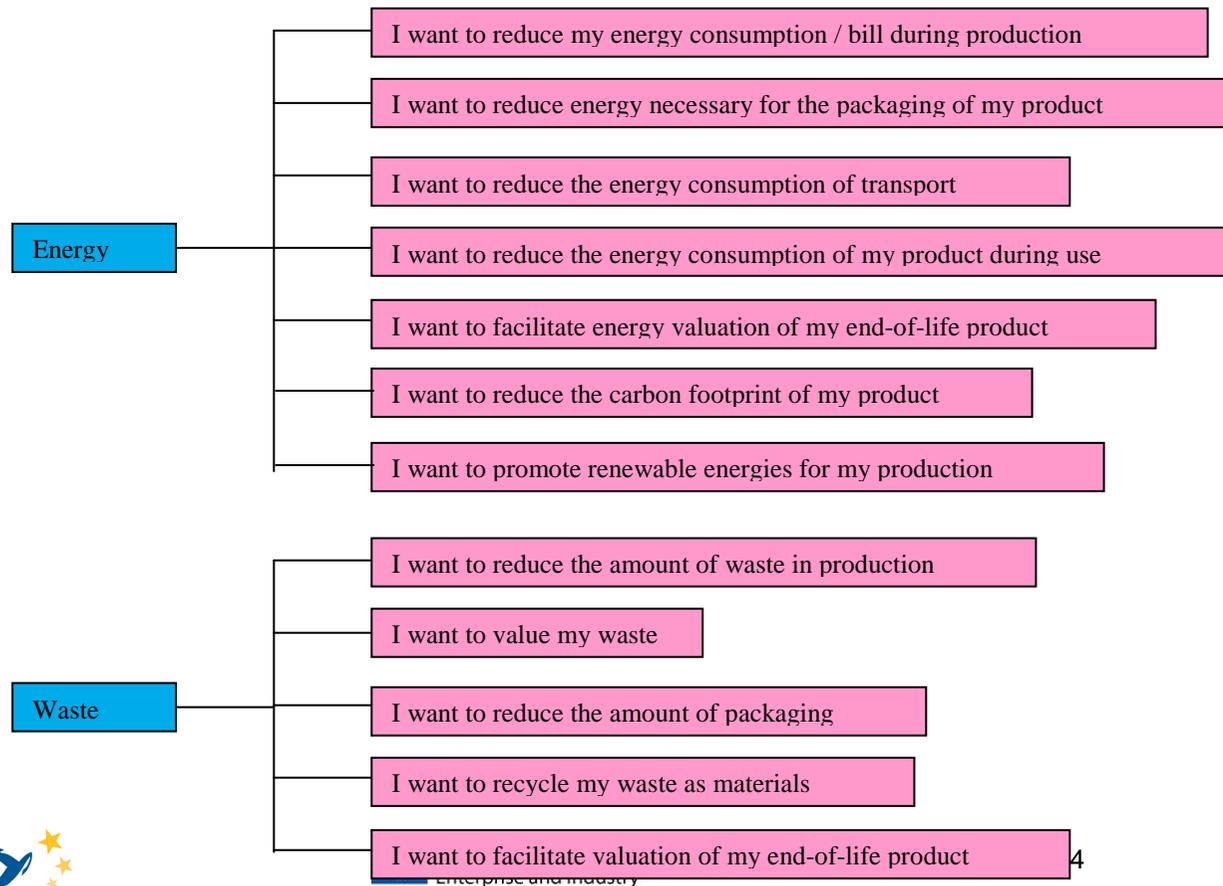
7.1 By life-cycle steps

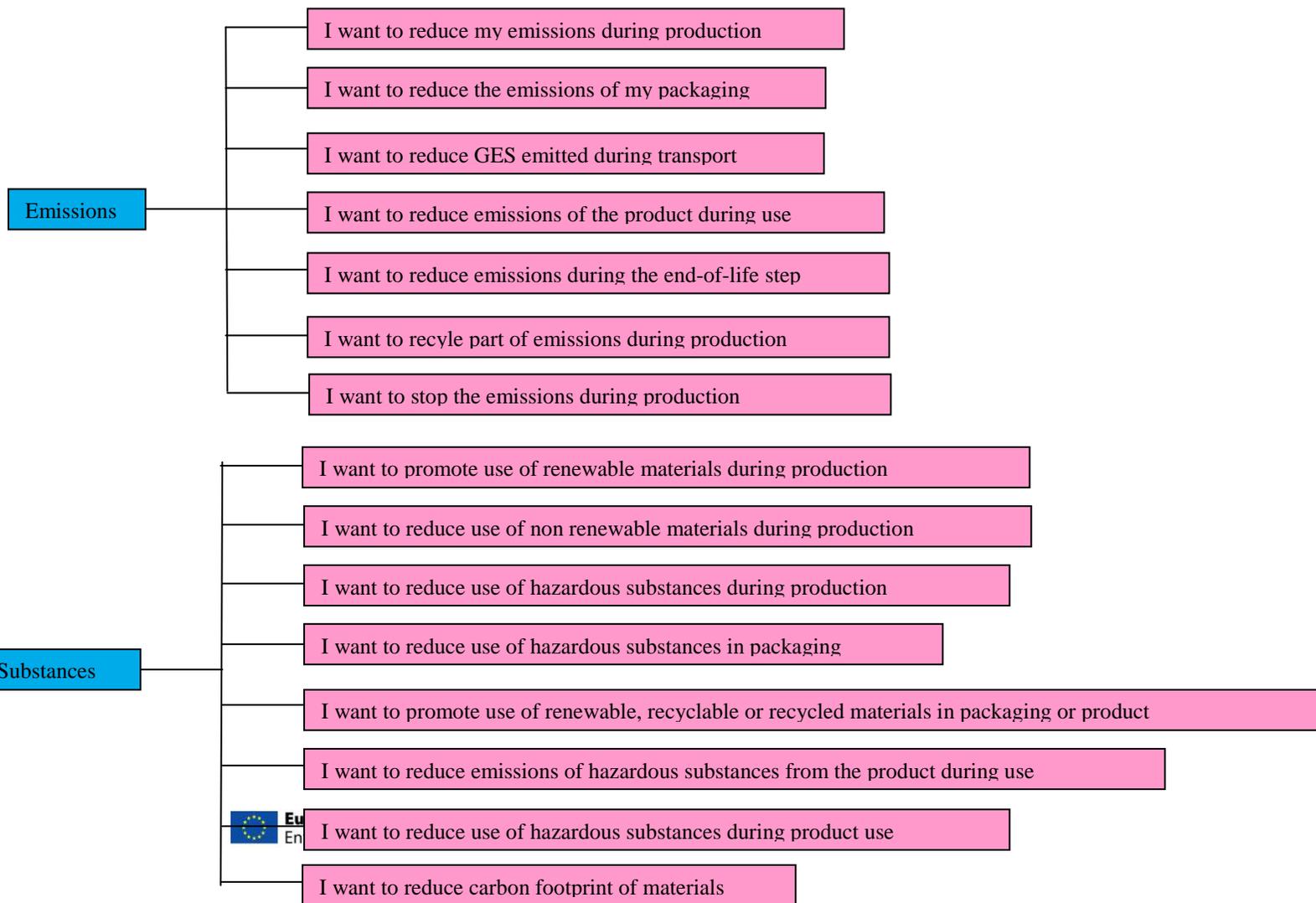


7.2 By environmental and health and safety topics



7.3 By questions or keywords







8 INTRODUCTIONS FOR THE DATA

8.1 REGULATIONS

It has to be noted that the transposition of Directives depends on the legal background of the legislative act.

For instance, Directives taken on the grounds of Article 114 of the Treaty (previously Article 95), shall be transposed without alteration of the text (no addition nor deletion).

This means that the content of the National Law transposing a Directive has equivalent effects when compared to the Directive itself. The purpose of Article 114 is to harmonize legislations.

This is different for Directives taken on the grounds of Article 153 (previously Article 137) – “social directives” – and of Article 192 (previously Article 175) – “environmental directives” where these directives give minimum requirements.

In these fields, Member States may adopt more stringent protective measures (see Articles 153.4 and 193).

8.2 COUNTRY SPECIFIC DATA

Country specific data in order to eco-innovate are classified in 5 categories :

- regulations
- standards
- tools
- technical support
- financial support

8.2.1 FRANCE (see [France data.xls](#))

8.2.1.1 Regulations

The French regulations in the field of environment are generally codified in the “Code de l’environnement”, which contains different provisions in the following domains, relevant to this guidebook:

- Book II : Physical environment
 - 1st Title : Water and aquatic environment (Art L210-1 and R211-1 to R218-15)
 - 2nd Title : Air and atmosphere (Art L220-1 to L229-24 and R221-1 to R229-44)
- Book V : Prevention of pollutions, hazards and nuisances
 - 1st Title: Classified facilities for the protection of the environment (Art L511-1 to L517-2 and D511-1 to D517-10)
 - 4th Title: Wastes (Art L541-1 to L542-14 and D541-1 to R543-224)
 - 5th Title : Specific requirements for installations (Art L551-1 to L553-4 and R551-1 to R551-14)
 - 7th Title : Prevention of nuisance related to noise (Art L571-1 to L572-11 and R571-1 to R572-11)

All environmental regulations and legislations can be found on AIDA INERIS institutional website (<http://www.ineris.fr/aida/>), including those not codified.

For this set of environmental regulations, generally taken on the grounds of article 192 of the Treaty, Member States may strengthen these minimum requirements, depending on local conditions. For instance, for a classified facility, the “arrêté préfectoral” specifies the emissions allocated to the plant.

The regulations related to the workplace (health and safety) are codified in the “Code du travail”. They originate from:

European Directives under article 114 of the Treaty (harmonisation of legislation), which regulate the putting on the market of equipments (CE marking)

European Directives under article 153 of the Treaty (Social Policy), which give minimum requirements to Member States at the workplace

Information on health and safety regulations and legislation can be found on INRS institutional website ([http://www.inrs.fr/inrs-pub/inrs01.nsf/IntranetObject-accesParReference/INRS-FR/\\$FILE/fset.html](http://www.inrs.fr/inrs-pub/inrs01.nsf/IntranetObject-accesParReference/INRS-FR/$FILE/fset.html)).

8.2.1.2 Standards

AFNOR is the French operator for standards in France (http://www.boutique.afnor.org/NEL1AccueilNormeEnLigne.aspx?&nivCtx=BGRZBGRZ1&ts=5567157&utm_source=google&utm_medium=cpc&utm_term=normes&utm_campaign=AFNOR+BOUTIQUE&ectrans=1). AFNOR coordinates the actions of 25 sector-based offices of standardisation (UNM for the mechanical sector, BNA for the automotive industry, BNPé for the oil sector, UTE for the electric/electronic field...).

Companies may also have free access to draft standards, when they are submitted to public inquiry (<http://www.enquetes-publiques.afnor.org/accueil.html>). Companies can also contact their sector-specific office of standardisation in order to identify the applicable standards.

The fields covered by these standards are very wide. Some deal with Environmental management, like ISO 14001, while others deal with Ecodesign of products or measurement methods.

8.2.1.3 Tools

Many tools exist in the sector of the environment:

- Guidance (Best Available Technologies in the field of IPPC,...)
- Guidebooks
- Software (Self-assessment tools, simplified LCA,...)

Some are free of charge, other are for commercial purpose.

All domains (water, waste, noise, emissions, management,...) and all sectors are dealt with. An initial training or a support from a specialized consulting company is often recommended.

8.2.1.4 Technical support

Many companies or institutions provide technical support in France: technical centres, chambers of commerce, trade associations, consulting companies,...

In addition, national institutions like ADEME, AGENCE DE L'EAU, INERIS, INRS,... also provide a technical support in their respective fields. They generally fund projects.

8.2.1.5 Financial support

Many financial incentives exist in France. The main problem for companies is to find the right incentive that may fund their project. A national website created by chambers of commerce (<http://www.semaphore.cci.fr/>) lists all existing grants.

In general, the following institutions provide for funding:

- ADEME (air, waste, energy, management, Ecodesign) - www.ademe.fr

- AGENCES DE L'EAU (water, waste, soil) - www.lesagencesdeleau.fr
- ANR - www.agence-nationale-recherche.fr
- DGCIS - www.industrie.gouv.fr
- OSEO - www.oseo.fr

8.2.2 GERMANY (see [Germany data.xls](#))

8.2.2.1 Regulations

In Germany the sector of environment is widely regulated. Plenty of the regulations base on EU directives and regulations. The national limits have been kept when European limits had a lower amount

For the realization of the mostly detailed regulations, management rules have been prescript to help the executing authorities to apply the regulations similarly. However there can be different explanation in the countries.

All regulations and legislations can be found on the following website <http://bundesrecht.juris.de/>

8.2.2.2 Standards

In Germany most of the standards are determined by the DIN Institute (www.din.de). The standards can be purchased by Beuth Verlag (www.beuth.de), subsidiary company of the DIN Institute.

Additional standards are elaborated by associations (VDI), professional societies or national organisations (BAuA, UBA).

8.2.2.3 Tools

Many tools exist in the sector of the environment to help the enterprises to realize measurements : guidebooks, templates, software... Some of these tools are free of charge, other are for commercial purpose.

All domains (water, waste, noise, emissions, management,..) and all sectors are treated. For the efficient application of the tools special training and instruction maybe demanded.

8.2.2.4 Technical support

Many agencies or institutions exist in Germany.

8.2.2.5 Financial support

Many financial programs exist in Germany. The main problem for enterprises is to find the right supporting organisations and the right program for the specific problem.

Support is given by the different ministries and agencies of the Federal Republic and the different countries.

8.2.3 SPAIN (see [Spain data.xls](#))

8.2.3.1 Regulations

The article 45 of the Spanish Constitution set out the right to enjoy a suitable environment for human's development and the duty to preserve it. This article also takes into account the rational use of resources, with the main objective of preserving the environment. In addition the article determines criminal or administrative sanctions in case of environmental damage and the obligation of repair it.

Spanish Ministry of Environment has responsibilities of preparing the basic environmental legislation, including transposition of EU directives, setting the minimum levels of compliance.

The 17 Spanish Autonomic Communities (each with its own Parliament and Government) are in charge of developing and enforcing the basic legislation and implementing environmental plans. Municipalities also have environmental responsibility in matters such as waste water, and noise pollution, or granting licenses that authorize the starting point of the operation of industrial activities. Independent agencies; such as Water Basin Authorities, are also competent for the enforcement of the legislation in specific areas (waste water discharge, etc)

Spanish legal system is hierarchical, so laws of lower jurisdiction can't conflict laws of higher rank. The legal system in Spain is organized as follows:

- Organic Law
- Ordinary Law
- Decree-Law
- Legislative decree
- Regulation

This guide consists on a non exhaustive list of basic legislation on environmental issues applicable for industrial companies.

8.2.3.2 Standards

Nowadays, the standards (both compulsory and voluntary), are required for any activity in order to achieve in a successfully way the objectives of the organization. These standards are based in continuous improvement approach that is feedback by periodic assessment.

The standards make easy the management responsibilities of the organization through a systematic treatment of topics such as: environment, quality, design of the product, etc. As a result the organization is able to improve its performance and to generate opportunities for economic benefit.

Any organization that follow these standards, guarantee that their features are going to remain constant over time. Aware companies also assume a precautionary approach to integrate standards into business decision-making mechanisms.

AENOR is the Spanish agency for standards in Spain, www.aenor.es.

8.2.3.3 Tools

Tools are instruments that manage in an effective way the numerous variables to control in the company. A well-designed tool can be useful to identify and solve problems, to facilitate decision-making process, etc. ... and evidently it must be organized in order to suit the needs of the case to be treated.

The main advantage of the tools is that they can establish a logical line, arranged and sequential in order to achieve the objectives sought by the company.

The tools can be shown in different formats and displays; software, guides, handbooks, etc ... can be good examples of such instruments.

8.2.3.4 Technical support

Sometimes companies are immersed in a sea of doubts and that situation prevent them from facing aspects such as legal requirements, changing markets, new processes, etc...

Often by ignorance, or by the complexity of the operations to be performed, companies feel alone in a way that they can't bear so many duties and obligations. At that point, they need urgently a helping hand to guide them in the right direction.

This service, in the form of technical support or technical assistance, is received through countless agencies or institutions such as technology centers, chambers of commerce, research institutes, SMEs agencies, industry associations, etc.

These agencies can provide help in transversal issues or they can be focused on materials, types of business, etc. In Spain every Autonomous Community have Technological Centers specialized in sectors and / or materials that have been created to help and solve companies problems.

8.2.3.5 FINANCIAL SUPPORT

If companies want to improve its technological capabilities and to adequate the supply to the increasing market demand, they need to make huge investments. But sometimes these investments are a big burden and it can't be assumed in an easy way; in these cases, it's

essential to resort to external financial assistance. Economic resources, especially in times of crisis, are vital to business survival.

In Spain there are many funding initiatives. However, surprisingly, this is an inconvenience for businesses, since it implies an additional effort. In this way, companies have to find the best option in order to suit their needs.

Regarding the type of funding, a big variety of them can be found: grants, low interest credits, reduced taxes, etc. Ministries of industry and environment (both national and regional), Chambers of commerce, SMEs agencies, etc are some of the institutions that offer financial support.

8.2.4 HUNGARY (see [Hungary data.xls](#))

8.2.4.1 Regulations

In Hungary, the regulations are ordered by the ministries.

The Updated or changed Hungarian Regulations can be accessed by the code or number at <http://www.magyarorszag.hu/kereses/jogszabalykereso/> :

- Updated EU Regulations can be searched at:

http://eur-lex.europa.eu/RECH_naturel.do?ihmlang=hu

- Proposed EU regulations can be searched at:

<http://eur-lex.europa.eu/hu/index.htm>

Hungarian regulations are all handled by MSZT, the Hungarian Standards Institution.

About the Hungarian Standards Institution

Year of foundation: 1921.

Legal Status: body of public interest
(Law XXVIII of 1995 on national standardization)

Hungary is represented by Hungarian Standards Institution (MSZT) in the following international and European standards organizations :

- International Organization for Standardization (ISO)

- International Electrotechnical Commission (IEC)
- European Committee for Standardization (CEN)
- European Committee for Electrotechnical Standardization (CENELEC)
- European Telecommunication Standards Institute (ETSI)

8.2.4.2 Standards

Information on Hungarian, European and international standards, and national standards of foreign countries.

Hungarian, European and international standards and the national standards of foreign countries are available in the standards library of MSZT; provision, by order, of standards of foreign countries and other documents related to standardization :

https://www.mszt.hu/mszt/portal/user/anon/page/default.psml/js_panename/walcsBrowser?tipus=S;

https://www.mszt.hu/mszt/portal/user/anon/page/default.psml/js_panename/msztKereses?tipus=S

- * Information service on general issues of standardization, and the process, methodology and liaisons of Hungarian, European and international standardization
 - * Implementation of European and international standards as national standards, and development, reconciliation and publication of Hungarian national standards
 - * Advising on standardization issues at enterprise level
 - * Information service on the Technical Committees and standardization programmes for Hungarian, European and international standardization
 - * Information on national and European laws related to standardization
 - * Advising on specific issues concerning the application and interpretation of standards
 - * Dissemination by request of documents and information on Hungarian, European and international standardization and standardization in foreign countries

- * Keeping record of product groups and professional sectors in respect of standardization and legislation; compilation of analyses
- * Direct involvement of market participants in European and/or international standardization via the Hungarian Technical Committees for National Standardization, in order to make possible the promotion of interests and to provide the forwarding of up-to-date information
- * Development of specifications for professional sectors

For further information on general issues apply to:

Mr. József Haba - Chief Advisor

Tel.:456-6914

E-mail: j.haba @mszt.hu

For further information on particular professional sectors

* Environmental management, environmental communication, mechanical engineering, hydraulic and pneumatic systems (fluid power systems), production technology, energetics and heat transmission, road vehicles and railway applications, ships and marine technology, aircraft and space vehicles, industrial trucks and lifting appliances, packaging, mining, petroleum and natural gas industry, metallurgy, timber industry, paper industry, building industry, military engineering, recreational and sport equipment, health care, labour safety, quality management

For further information apply to: Mr. József Szabó - Head of Department

Tel.:+36-1-456-6846 E-mail: j.szabo@mszt.hu

* Electrotechnics, electronics, telecommunication, information technology, household electrical appliances - For further information apply to:

Mr. Zoltán Szabó - Deputy Head of Department Tel.: +36-1-456-6865

E-mail: z.szabo@mszt.hu

8.2.4.3 Tools

Tools are available in a limited types, but the available versions are and will be made accessible for general use.

8.2.4.4 Technical support

Technical support in Hungary is being offered by private small SME-s, and by some specialized centres.

Also, staff members at universities may form an enterprise –like entity to offer support and training.

8.2.4.5 Financial support

In Hungary financial support can be applied for within two channels:

- Asking for loan,
- And asking for grant.

The National Bureau for Technology and Development (NKTH) has had the financial ability to fund innovation and development projects.

Due to the fact, that the national government decided to suspend all types of Calls, and evaluation of former calls, presently no office is in the position to finance.

Probably by the last months of this year, the Hungarian Government will re-open the Calls.

8.2.5 UNITED KINGDOM (see [United Kingdom data.xls](#))

8.2.5.1 Regulations

Much of the environmental law in the UK is based on European Union Directives and Regulations. This means SME's working across Europe will be working under national legislation guided by the same key principles.

Regulations and Directives are slightly different with regard to how they become UK law. Regulations become law in all member states the moment they come into force, without the requirement for any implementation measures by member states. Regulations automatically

override conflicting domestic provisions. Directives require member states to achieve a certain result within a certain time frame but leave member states the discretion as to how to achieve the result using the legislation in their individual countries.

In the UK SME'S therefore need to be aware of the following types of environmental legislation affecting their businesses;

- Acts or Orders (primary legislation)
- Regulations (secondary legislation)

To get a full picture of what effects your business in the UK it is usually best to have knowledge of both.

Legislation in the UK can vary between regions and dependent on the location of your business and where your activities take you, you may need to consider;

- English environmental legislation
- Northern Ireland environmental legislation
- Welsh environmental legislation
- Scottish environmental legislation

NETREGS is the main free environmental legislation guidance site for the UK and covers all of these areas. It provides access to up to date information on legislation, upcoming legislation and how to make sure your business complies.

This REMake guidebook references the key UK legislation effecting SME'S and provides links to the NETREGS site for further, more detailed information.

8.2.5.2 Standards

Standards in the UK fall into various categories. The most well know environmental ISO and BSI standards are coordinated thought the British Standards Institute and information is available online at

<http://www.bsigroup.com/>

Further information on which standards are suitable for your organisation can be found on NETREGS. NETREGS has advice on Environmental Management Systems and how to implement them appropriately in your organisation

<http://www.netregs.gov.uk/netregs/63522.aspx>

The carbon Trust also have their own 'carbon reduction' label and Carbon Trust standard Information is available at

<http://www.carbon-label.com>

8.2.5.3 Tools

There are many tools available in the UK to assist small and medium sized businesses with eco-innovation in all aspects of resource efficiency.

This guidebook highlights online tools that are free to access provided by public agencies in the UK including WRAP.

The key source of information on support tools in the UK in the 'ENDS environment tools database' a free online directory of global environmental tools it is the largest up-to-date and independent database of environmental software tools.

8.2.5.4 Technical support

There are many sources of technical support available across the UK and in Europe for Small businesses that may be able to provide you with information, help and support.

As the technical support landscape is constantly changing in the UK, NETREGS provides the most up-to-date source of information on support available.

NETREGS has guidance on business support organisations working across the UK broken down into country areas.

As well as more detailed information on available eco-innovation support broken down by sector.

8.2.5.5 Financial support

The funding landscape in the UK is constantly changing. Currently the best source of information on funding for SME'S is the Business Link Funding Directory. This provides information on all UK sources of finance for SME'S. Funding programmes are also run by organisations such as WRAP and the Carbon Trust to assist with resource and environmental efficiency improvements.

8.2.6 EUROPEAN UNION (see [European Union data.xls](#))

8.2.6.1 Regulations

The last legislative evolutions in the different countries of the European Union result from the European level. It is thus important to follow the elaboration of the European texts to anticipate the future legislative evolutions in member states.

Especially in the case of the European Directives, which must be transposed in national rights with deadline fixed in advance.

The point of access to the European legislation is: http://eur-lex.europa.eu/RECH_menu.do?ihmlang=fr

The main European texts published these last years inciting in the ecoinnovation are the following European texts :

- IPPC Directive that should be replaced by IED Directive
- EuP / ErP Directive
- Reach Regulation
- WEEE Directive
- RoHS Directive

8.2.6.2 Standards

The standards listed in the document, are essentially international standards (ISO) derived at the European level.

We distinguish four categories of standards:

- the fundamental standards (which concern the terminology, the metrology,...),
- the standards of methods and essays,
- the standards of specification (which fix the characteristics of a product),
- the standards of organization and service (which describe the functions of the company and the service activities).

8.2.6.3 Tools

The tools listed are also at international level and are among most usually used tools in companies to ecoinnovate, in particular in the field of products (ecodesign, LCA).

Some tools can be found at <http://lct.jrc.ec.europa.eu/assessment/tools>, the European Platform on Life Cycle Assessment

8.2.6.4 Technical support

Several european studies and projects in the field of the ecoinnovation have been done. The web site http://ec.europa.eu/enterprise/policies/innovation/policy/eco-innovation/index_en.htm allows to have a global overview of these works.

8.2.6.5 Financial support

There is an European website allowing to reach the fundings in ecoinnovation:

- [Http: // ec.europa.eu/environment/funding/intro_en.htm](http://ec.europa.eu/environment/funding/intro_en.htm)

We shall quote in particular the Remake funding within the framework of the present project that must be deployed over the period 2010-2012.

9 IMPLEMENTATION IN A "WIKI" WEBSITE

A reflexion is currently led to transfer the data collected within the guidebook to a wiki Website (7.2 Deliverable).

First decision was to integrate the guidebook into the ecomanufacturing website (www.ecomanufacturing.eu).

The content of the guidebook could be accessed by a search engine like what already exists on the website (see below).



The three opportunities of search (sector, technology, keywords) could be replaced by the three entry points indicated : 6 lifecycle steps, 5 environment and Health&Safety topics, keywords/questions.

For information, a first sketch of the results of a research is presented below.

(see [Remake v2a Draft guidebook.pdf](#)).



Emissions

Regulations

■ International Level

IPPC - Directive n° 2008/1/EC of 15/01/08 relating to the prevention and reduction integrated pollution

Waste - Regulations n° 16/06/06 of the European Parliament and the Council of January 18th, 2006 concerning creation of an European register of rejections and transfers of pollutants, and changing directives 91/689 /European Economic Community and 96/61/EC of Council

Air - Directive n° 2008/50/EC of 21/05/08 concerning the quality of the ambient air and a pure air for Europe

Water - Directive n° 2000/60/CE of 23/10/00 establishing a frame for a Community policy in the field of water

Soil - Proposal for a Directive of 22 September

Seveso - Directive n° 96/82 12/09/96 concerning the control of hazards related to major accidents involving dangerous substances

Waste - Directive n° 2008/98/EC of 19/11/08 on waste and repealing some directives

Air VOC - Directive n° 1999/13/CE of 11/03/99 relative to the reduction of the broadcasts (emissions, issues) of volatil organic compounds due to the use of organic solvents in certain activities and installations

Groundwater - Directive n° 2006/118/EC of the European Parliament and of the Council, of 12 December 2006, on the protection of groundwater against pollution and the deterioration

Noise - Directive n° 2002/49/CE of 25/06/02



► Emissions

Technical tools

DIESE (Ademe) Démarche Intégrée Environnement Sécurité dans les Entreprises	http://www2.ademe.fr/servlet/getDoc?cld=96&m=3&ld=51653&p1=30&p2=09&ref=17597
Guide de management SSE (Ineris)	http://www.ineris.fr/guide-sse/index.htm
BREFs (Best References)	http://aida.ineris.fr/bref/index.htm
PGS (Plan de Gestion de Solvants)	http://www.ineris.fr/index.php?module=doc&action=getFile&id=219
SME (Schéma de Maîtrise des Émissions)	http://www.developpement-durable.gouv.fr/Reduction-des-emissions-des.html
Softwares for the management of EHS	http://www.tennaxia.com/public/
Guidebooks for waste management	http://guide.sindra.org/index.php/site/ressourcesdoc/bibliographie http://www.arerpc.com/guide/plan_site.html
Guidebook for water management	http://www.quimper.cci.fr/images/pdf/guide-gestion-eau-complet-v4.pdf
Air emissions reduction	http://www.environnement.cci.fr/Thematique/

This reflexion has to be pursued in partnership with the WP 9.