REGIONAL ACTIVITY CENTRE FOR CLEANER PRODUCTION (RAC/CP)

Director
Virgínia Alzina

Editorial Board:
RAC/CP National Focal Points

Editorial Staff:
Esther Monfà
Mar Santacana

UNEP

Regional Activity Centre for Cleaner Production

Ministry of the Environment Spain

Government of Catalonia Ministry of the Environment and Housing

Regional Activity Centre for Cleaner Production (RAC/CP)
C/ París, 184 - 3r
08036 Barcelona (Spain)
Tel.: (+34) 93 415 11 12
Fax: (+34) 93 237 02 86
e-mail: cleanpro@cema-sa.org
http://www.cema-sa.org

Printed by ALTÉS arts gràfiques, s.l.
Cobalt, 160. 08907 L'Hospitalet de Llobregat
D.L.: B. 29.514-2001

Printed on chlorine-free paper

RAC/CP ANNUAL TECHNICAL PUBLICATION

Mediterranean Enterprises and Sustainability • December 2005 • N.v

This is an annual technical publication of the Regional Activity Centre for Cleaner Production (RAC/CP).

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Articles are published in the original language of the author (English or French) and abstracts are also included in Spanish.

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Summary

Presentation

This fifth issue of *RAC/CP Annual Technical Publication – Mediterranean Enterprises and Sustainability* encounters what might be a turning point in human history. As globalisation expands, and with it increasingly intensive capitalism, companies gain a more powerful role in the shaping of intricate global relations. It is widely known that capitalism is based on continuous profit growth, and this is too generally achieved at the expense of the environment and people. This has lead to increasing social unrest, which is now challenging some of the foundational pillars of the status quo.

Hence, it is crucial that companies, as well as consumers, become aware of their increasing power and start championing environmental and social issues - if we really care about human beings and our survival as a non-isolated species. In this regard, eco-capitalist approaches include concepts such as Corporate Social Responsibility, which is slowly beginning to take off, in order for businesses to take the environment and society into account while performing their activities. You can learn about Corporate Social Responsibility in Malta in the first article of this magazine.

In light of today's state of affairs, it might never have appeared so clear how closely economy, environment and society are linked. In other words, the three pillars of the fashionable term on everyone's lips: sustainable development. A term that is now used without restriction, from the street environmental activist to the top polluter. It is a term that has entered our daily coffee-break conversations, and is indeed so indiscriminately used that it has ended up deprived of all meaning. Therefore, we welcome initiatives taken by the media to prevent greenwashing that companies might be —consciously or unconsciously— using in their advertising campaigns. In this magazine, you will find an article about one such initiative carried out in France.

But the fifth issue of this technical publication covers other topics as well. Ecodesign, a new field of work for RAC/CP as it had been proposed in the evaluation of the Centre, is shown for Catalonia; a tool developed by France for assessing CO_2 emissions in any type of installation, enabling action to reduce climate change is presented; and a couple of international efforts, focusing on Persistent Organic Pollutants and pollutant inventories, are included.

Finally, after several years working on the ground, we would not like to forget a successful project. We are proud to present in this magazine the results of the project conducted in Bosnia and Herzegovina for implementing cleaner production in industries. Our congratulations!

Our deepest gratitude goes to the individuals, companies and organisations that have voluntarily contributed to making this publication possible. But as there will be new issues of this magazine, we will still need your full involvement. Therefore, we warmly invite anyone willing to participate in this Mediterranean project to submit an article.

Finally, thanks to you for reading us!

Présentation

Cette cinquième édition de *RAC/CP Annual Technical Publication – Mediterranean Enterprises and Sustainability,* la publication technique annuelle du CAR/PP, coïncide avec ce qui pourrait devenir un tournant dans l'histoire de l'humanité. Plus la mondialisation se développe, parallèlement à un capitalisme galopant, plus les entreprises jouent un rôle important dans le modelage de relations mondiales complexes. Il est bien connu que le capitalisme se base sur la croissance continue des bénéfices, chose qui, trop souvent, se fait aux dépends de l'environnement et de la société. Cette politique a conduit à un malaise social toujours plus important qui commence à ébranler certains piliers fondamentaux du *statu quo*.

Il est donc très important que les entreprises, tout comme les consommateurs, prennent conscience de leur puissance grandissante et qu'ils se décident à défendre les questions environnementales et sociales, si effectivement ils se sentent concernés par le devenir des êtres humains et notre survie en tant qu'espèce non isolée. À cet égard, les approches éco-capitalistes incluent des concepts tels que la responsabilité sociale des entreprises, qui émergent doucement, afin que les entreprises tiennent compte de l'environnement et de la société dans leurs activités. Pour en savoir plus sur la responsabilité sociale des entreprises à Malte, lisez le premier article de cette publication.

Au vu de la situation actuelle, le lien entre économie, environnement et société n'a probablement jamais été aussi clair. En d'autres termes, il s'agit des trois piliers de l'expression à la mode actuellement sur toutes les lèvres : développement durable. Une expression utilisé maintenant sans restriction, du militant écologiste lambda au plus grand pollueur. Ce terme, entré dans les conversations de café, est tellement utilisé à tort et à travers qu'il est désormais dénué de tout sens. Nous félicitons donc les initiatives qui ont été prises par les medias afin de prévenir la désinformation verte qui pourrait être utilisée, consciemment ou non, par les entreprises lors de leurs campagnes publicitaires. Vous trouverez dans cette publication un article relatif à une initiative de ce type qui a été menée en France.

Néanmoins, la cinquième édition de cette publication technique couvre également d'autres questions. L'éco-conception, un nouveau secteur de travail pour le CAR/PP comme proposé dans l'évaluation du Centre, est montrée en Catalogne. Un outil développé par la France pour évaluer les émissions de CO_2 dans tous les types d'installations est présenté, il permettra d'agir en vue de réduire le changements climatiques. Enfin, quelques efforts internationaux en matière de polluants organiques persistants et d'inventaires de polluants sont exposés.

Finalement, après plusieurs années de travail sur le terrain, nous ne voulons pas oublier un projet couronné de succès. Nous sommes fiers de présenter dans cette publication les résultats du projet mené en Bosnie-et-Herzégovine pour la mise en place de la production plus propre dans les industries. Toutes nos félicitations !

Notre plus grande reconnaissance revient aux personnes, aux entreprises et aux organisations qui ont contribué volontairement à cette publication afin de la rendre possible. Mais de nouveaux numéros de cette publication vont suivre et nous aurons toujours besoin de votre participation. Nous invitons donc toute personne voulant contribuer à ce projet méditerranéen à nous présenter un article.

Un grand merci à vous, cher lecteur !

Presentación

Este quinto número de *RAC/CP Annual Technical Publication - Mediterranean Enterprises and Sustainability,* la publicación técnica anual del CAR/PL, coincide con lo que podría ser un punto de inflexión en la historia de la humanidad. A medida que la globalización se extiende y, con ella, un capitalismo intensivo cada vez mayor, las empresas adquieren un papel más poderoso en la conformación de las complejas relaciones mundiales. Es bien sabido que el capitalismo se basa en un crecimiento continuo de los beneficios y, demasiado habitualmente, esto se consigue a expensas del medio ambiente y de las personas. Esto ha conducido a una creciente inquietud social que actualmente cuestiona algunos principios fundamentales del *statu quo*.

Por consiguiente, es crucial que, además de los consumidores, las empresas tomen consciencia de su poder creciente y empiecen a abogar por causas ambientales y sociales —si realmente nos importan los seres humanos y nuestra supervivencia como especie que no existe de forma aislada. En este aspecto, los enfoques ecocapitalistas incluyen conceptos como «responsabilidad social corporativa», que empieza a ponerse en práctica lentamente, para que las empresas integren el medio ambiente y la sociedad en el desarrollo de su actividad. El primer artículo de esta revista se centra en la responsabilidad social corporativa en Malta.

A la vista de la situación actual, probablemente nunca había estado tan claro cuán estrechamente se relacionan la economía, el medio ambiente y la sociedad; es decir, los tres pilares del término de moda en boca de todos: el desarrollo sostenible. Término que se utiliza ahora de forma ilimitada, desde el activista ambiental de la calle hasta el mayor contaminador. Es una expresión que ha entrado en nuestras conversaciones de sobremesa y realmente se utiliza de forma tan indiscriminada que ha acabado desprovisto de significado. Por ello damos la bienvenida a iniciativas llevadas a cabo por los medios de comunicación con el fin de evitar el «lavado verde de imagen» que algunas empresas podrían estar utilizando (consciente o inconscientemente) en sus campañas publicitarias. Esta revista incluye un artículo sobre una iniciativa de este tipo que se está llevando a cabo en Francia.

El quinto número de esta publicación técnica también trata otros temas: se muestra, para Cataluña, el ecodiseño, un nuevo campo de trabajo para el CAR/PL, tal como se propuso en la evaluación del Centro; se presenta una herramienta desarrollada en Francia para estimar las emisiones de CO_2 en cualquier tipo de instalación, lo que permite poner en práctica acciones para reducir el cambio climático; finalmente, se incluyen dos esfuerzos internacionales en el campo de los contaminantes orgánicos persistentes y los inventarios de contaminantes.

Para terminar, tras varios años de trabajo sobre el terreno, no deberíamos olvidar un proyecto que ha tenido un gran éxito: nos complace presentar en esta revista los resultados del proyecto llevado a cabo en Bosnia y Hercegovina para poner en marcha una producción más limpia en las industrias. ¡Nuestras más sinceras felicitaciones!

Agradecemos sinceramente a los particulares, empresas y organismos que, con sus esfuerzos voluntarios, han hecho posible esta revista. Pero como habrá nuevos números de esta publicación en el futuro, seguiremos necesitando su implicación. Así pues, invitamos a todos aquellos que deseen participar en este proyecto mediterráneo a que nos envíen sus artículos.

¡Gracias por leernos!

CORPORATE SOCIAL RESPONSIBILITY

INDUSTRY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

Anton Pizzuto
Director

Alison Abela
Environmental Scientist

CLEANER TECHNOLOGY CENTRE
University Campus, Msida MSD06 – Malta
Tel.: (+356) 21 31 34 16/7, 21 33 17 34 / Fax: (+356) 21 34 48 79
e-mail: ctc@mus.com.mt

The article explains what is generally understood by the concept of Corporate Social Responsibility (CSR). It also highlights the advantages of adopting CSR. The results of a survey carried out amongst Maltese Small and Medium Sized Enterprises (SMEs) querying their level of understanding of CSR are also presented. A brief analysis of the survey results concludes that, at least amongst Maltese Industrialists, there is a lack of appreciation of the term CSR and the benefits that can be derived from its implementation.

"I have always recognized that the object of business is to make money in an honourable manner. I have endeavoured to remember that the object of life is to do good." - Peter Cooper, 1874

SOURCE: INTERNATIONAL BUSINESS ETHICS INSTITUTE

Key words: Corporate Social Responsibility (CSR), business ethics, environment, sustainable development, Small and Medium Sized Enterprises (SMEs), survey.

Introduction

Understanding the landscape of business ethics can be problematic. The field is vast, often encompassing such concerns as corporate governance, reputation management, accurate accounting and audits, fair labour practices and environmental stewardships to name but a few. In fact, the field addresses the entire scope of responsibilities —or obligations— that a company has to each of its stakeholders.

Corporate Social Responsibility is an expression used to describe what some see as a company's obligation to be sensitive to the needs of "all" of its stakeholders in its business operations. It can be understood in terms of corporate responsibility, but with greater stress laid upon the obligations a company has to the community, particularly with respect to charitable activities and environmental stewardship.

A Green Paper *"Promoting a European Framework for Corporate Social Responsibility"* presented by the EU Commission in July 2001, defined CSR as *"a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a VOLUNTARY basis"* as they are increasingly aware that responsible behaviour leads to sustainable business success.

Corporate Social Responsibility is a term that is gaining increasing importance and recognition amongst today's leading companies. A company's main priority is to avoid being in the red and be profitable; nevertheless this is no longer the sole priority or concern. Other aspects such as transparency, transmitting solid values and good ethics, and leading the example, are nowadays also a vital part and this is where the corporate social responsibility concept comes in.

CSR IN BUSINESS ENTERPRISES

Today there is a growing perception among enterprises that sustainable business success and shareholder value cannot be achieved solely through the maximisation of short-term profits but rather through market-oriented yet responsible behaviour. Companies are increasingly becoming aware that they can contribute to sustainable development by managing their operations in a sustainable manner. In this context, an increasing number of firms have embraced a culture of CSR.

Despite the wide spectrum of approaches to CSR, there is a large consensus on its main features:

- CSR is behaviour by business over and above legal requirements, voluntarily adopted because businesses deem it to be in their long-term interest;
- CSR is intrinsically linked to the concept of sustainable development: businesses need to integrate the economic, social and environmental impact in their operations;
- CSR is not an optional "add-on" to business core activities – but is about the way in which businesses are managed.

Communication from the Commission Concerning Corporate Social Responsibility: A Business Contribution To Sustainable Development Brussels, 2nd July 2002

When implementing a CSR policy a company is recognizing that its activities have a wider impact on the society in which it operates, and that developments in society in turn impact on its ability to pursue its business sustainably. It is an approach by which the company actively manages the economic, social, environmental, and human rights impact of its activities both locally and across the world, basing these on principles which reflect both international values and the organisation's own values (ethics), reaping benefits for both its own operations and reputation as well as the communities in which it operates. It seeks to achieve these benefits by working closely with other groups, other businesses and home and host governments.

Corporate Social Responsibility can help companies:

- Improve financial performance and access to capital;
- Enhance brand image and sales;
- Attract and retain a quality workforce with superior employee performance; companies with sound business practices and established values report improved employee morale, reduced employee turnover and increased productivity;
- Improve decision making on critical issues;
- Manage risk more efficiently;
- Reduce long-term costs; and
- Preserve a company's reputation which once damaged by scandal or unethical behaviour, may never recover. A change in reputation can lead to a number of negative impacts such as a drop in share value of the business, a decrease in profitability as customer and staff loyalty drops, a decrease in business opportunities (as potential partners question the trust and integrity), a decrease in new investment as the business is seen as a greater risk and even increased insurance premiums.

THE ROLE OF HUMAN RESOURCES (HR)

HR has a crucial role to play in the development and implementation of CSR within an organisation. As CSR is all about values and accountability, it is also about the behaviour of the employer and employee and the behaviour of suppliers. In this sense virtually everything that is found within the HR remit, from training, recruitment, staff retention, policies, procedures, and strategy, involves CSR.

HR practices are heavily underpinned by ethical beliefs so good HR is the obvious basis for building trust levels across the organisation and providing a solid foundation for CSR.

Effective implementation of HR policies on employee consultation, diversity, fair treatment and work life balance are fundamental to projecting the image of a responsible employer. CSR must start with getting the relationship with employees right (Emmott M., 2003). Without this, it is unlikely that the organisation will be able to discharge convincingly its obligation to the wider community. If employees do not see the point of CSR initiatives, or understand the message, initiatives are unlikely to be effective.

More effort needs to go into internally communicating details of any CSR activity a company is carrying out so employees can spread the word and promote the good their company is doing (Wilkinson A., 2004). This is of utmost importance since studies indicate that many employees are not even aware what CSR stands for (http://forums.monster.co.uk/poll.asp?pollid=7417); this despite the emergence of CSR indices such as the FTSE4Good, the Dow Jones Sustainability Index and Business in the Community's Corporate Responsibility Index.

CSR is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis

CORPORATE SOCIAL RESPONSIBILITY IN MALTA

In Malta, a growing number of firms have also chosen to go above and beyond legal requirements by engaging in sustainable business behaviour. Corporate Social Responsibility has manifested itself in several forms. Many firms have even adopted voluntary environmental management systems such as EMAS and ISO 14001 (Micallef G., 2005). However, though larger firms in Malta are taking up the initiative to adopt a CSR policy, the culture and management systems of Small and Medium Enterprises [SME] have hardly changed at all (ibid).

Since the Maltese business community is, in its majority, made up of SMEs it is therefore of utmost importance to learn in what ways are these SMEs managing their business. The importance of encouraging sustainable business behaviour amongst SMEs should be recognised for a number of reasons. As a general rule, the smaller the firm, the less the attention to environmental issues. Therefore, as a result, SMEs tend to be a significant source of pollution (Micallef G., 2005).

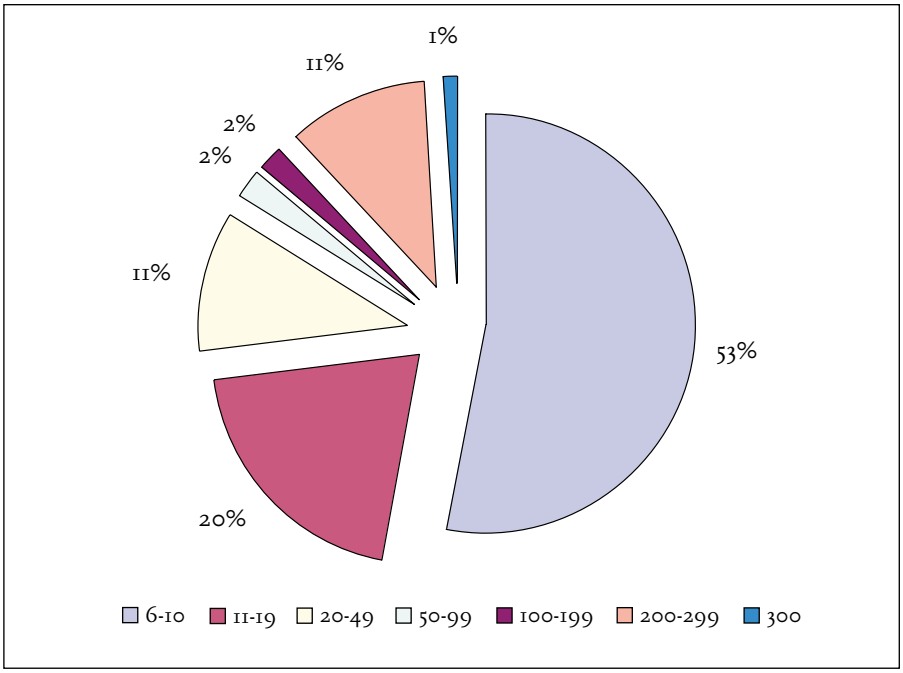
For this reason, a survey on CSR has been carried out by the Cleaner Technology Centre (CTC) amongst the Maltese business community, in order to enable the CTC to be in a position to provide assistance in managing businesses in a more sustainable manner when and if the need arises.

The aims of the survey were to get an insight into whether Maltese firms are adopting a CSR policy within their business organisation or not; and, if a CSR policy is incorporated within their business strategies to understand what has led the business entity to implement one in the first place, and in what ways the business organisation is gaining with sustainable business behaviour.

A growing number of firms have chosen to go above and beyond legal requirements by engaging in sustainable business behaviour

A hundred companies were selected randomly from the "**Made in Malta 2005 - International Business Directory**" to participate in a short telephone survey, which was carried out between the 3rd and 14th October 2005. A response rate of 90% was attained. To have a good representation of the business community in Malta, ten companies were randomly selected from each individual sector listed below, making up the Maltese business community.

1. Food and Beverages
2. Building and Construction
3. Electrical and Electronics
4. Chemical and Related Products
5. Clothing and Textiles
6. Industrial and Domestic Equipment
7. Metal Products
8. Plastic and Allied Products
9. Furniture
10. Health Care and Hygiene Products



Graph 1. Respondent Enterprise Size by Number of Employees

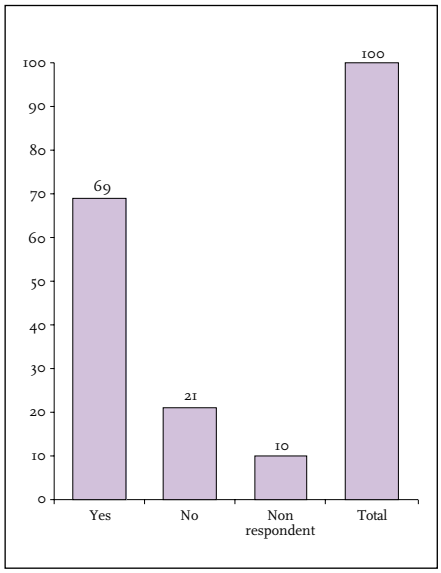
RESULTS AND ANALYSIS

Table 1. Analysis of Enterprises by Size of Employment
(Adapted from "Malta in Figures 2000" - DOI publication)

	Enterprises			
	1995	1996	1997	1998
Total	5856	5431	4975	4756
Range				
1 - 5	5171	4738	4298	4079
6 - 10	255	259	259	269
11 - 19	155	170	157	169
20 - 49	162	152	158	135
50 - 99	53	57	53	49
100 - 199	38	36	30	36
200 - 299	6	3	4	5
300 & over	16	16	16	14

The relative size of the firms interviewed, is a true reflection of the small size of Maltese enterprises. Of the companies interviewed, 53% provide work for fewer than 10 employees (see Graph 1). This can easily be compared to the national figures whereby an analysis of enterprises by size of employment indicates that the majority of enterprises provide work for fewer than 5 people. It is however likely that change in this trend will continue to occur in the future (see Table 1).

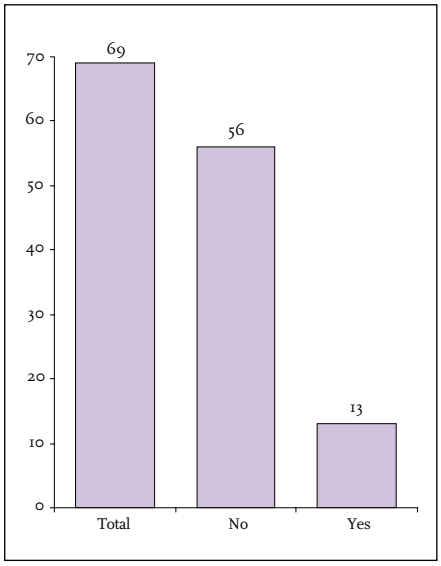
The first issue to be tackled in the survey was the actual familiarisation of the term Corporate Social Responsibility amongst the respondents. Most of the business representatives interviewed were already familiar with the term, whilst 21% were unfamiliar with the concept of Corporate Social Responsibility, at the time of the survey (Graph 2). This was anticipated since the term is still relatively new in Malta. It should, however, be noted that the survey was carried out amongst the managerial staff of the business enterprises. It is therefore expected, that the number of respondents who have never actually heard of the term CSR, would greatly increase if the survey, were to be carried out amongst the non-managerial personnel.



Graph 2. Enumerated Response to Question 1 "Have you ever heard of the term CSR?"

Although the number of respondents familiar with CSR is encouraging, the number of enterprises who have actually implemented a CSR policy within their business strategy remains relatively low (see Graph 3). The most important motivations for those firms which implemented a CSR policy were corporate values and environmental responsibility (see Table 2). It is however important to note that none of these firms have a person directly responsible in the implementation of CSR.

A company tends to benefit when it engages in sustainable business behaviour and implements a CSR policy



Graph 3. Enumerated Response to Question 2 "Has your entity implemented a CSR policy?"

More than half of the respondents familiar with the term CSR agree that a company tends to benefit when it engages in sustainable business behaviour and implements a CSR policy. However, they rate the benefits to be gained low, especially when it comes to long-term costs, improved financial performance and enhanced brand image and sales. According to the respondents, the three most important and most highly rated benefits to be gained are preserved company's reputation; improved decision-making and more effective risk management (see Graph 4).

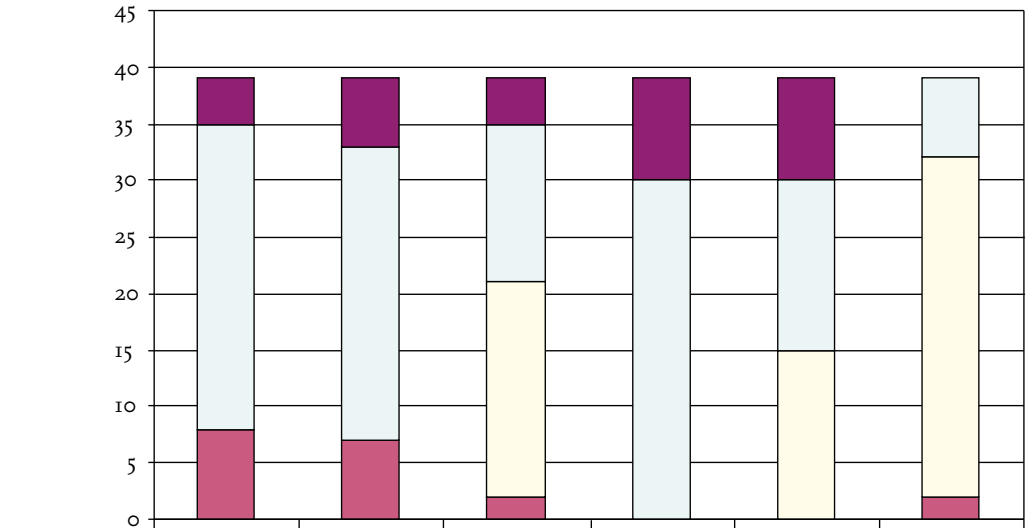
Of 69 respondents, 9 thought that a CSR policy within a firm tends to impinge negatively on business whilst 21 respondents did not, at the time of the survey, have an opinion on whether a company tends to benefit or not, when it implements a CSR strategy.

Lack of knowledge and expertise and the relative small size of the business entity prevent many of the respondent entities from implementing a CSR policy within their business strategy.

One respondent also claimed that "the business climate is such that every effort is channelled into creating new business rather than concentrating on environmental performance".

Table 2. Enumerated Response to Question 3 "What has led your entity to implement a CSR policy?"

Motivation	Number of Firms
Economic Benefit	0
Stake Holder/Consumer Pressures	2
Marketing Strategy	1
Laws and Regulations	1
Reputation Management	0
Corporate Values	6
Environmental Responsibility	3
Total	**13**



	Improved financial performance	Enhanced brand image and sales	Improved decision making	Reduced long-term costs	Managed risk more effectively	Preserved company's reputation
5 (Lowest)	4	6	4	9	9	0
4	27	2	14	30	15	7
3	0	0	19	0	15	30
2	8	7	2	0	0	2
1 (Highest)	0	0	0	0	0	0

Graph 4. Enumerated Response to Question 4 "Please rate the benefits to be gained when implementing a CSR policy"

When it comes to sustainable development, small business owners show either little awareness or lack of interest. All things considered, this is not surprising since, unlike their corporate peers, SME face huge barriers to implementing sustainable strategies due to lack of resources, skilled staff and technical expertise (Micallef G., 2005).

A survey carried out by the National Statistics Office (NSO) and the Quarterly Economic Review 2005:2 issued by the Central Bank of Malta indicate that currently there is a decline in the industry's performance. Respondents of the NSO Survey reported lower turnover in the first quarter of 2005, down by MTL 35.6 million (€ 82,865 million) or 14% compared to the same quarter of 2004. It is therefore quite understandable that small businesses channel all their efforts into the survival of their own business. However the advantages they can reap when managing their business sustainably should never actually be ignored. It is a pity that in their frenetic attempts to survive in an increasingly competitive business world they are unable to appreciate the advantages of adopting CSR.

CONCLUSIONS

The survey indicates that in Malta, Corporate Social Responsibility is still a relatively new term and as such few companies have actually implemented a proper CSR policy. It is also evident that larger companies, especially foreign-owned companies, are more likely to implement a CSR policy within their business organisation whilst smaller businesses find it more difficult to implement one. The lack of knowledge and expertise and the relatively small size of the enterprises hinder most of the companies interviewed from managing their business in a more sustainable manner. It is therefore very important to prove to SMEs that even small companies can make their own contribution towards the environment whilst benefiting when implementing a CSR policy.

In addition it is also evident that companies here in Malta are more likely to first integrate their economic and social impact in their operations whilst neglecting the environmental impact. It is important for companies to realise that to achieve the maximum benefit from the implementation of CSR, a competent person should be made responsible for its proper implementation.

It is manifestly clear that concepts relating to sustainable development need to be gauged in a language that is comprehensible to the business and industrial community, otherwise the benefits accruing are not fully appreciated.

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RESPONSABILITÉ SOCIALE DES ENTREPRISES

Contribution de l'industrie au développement durable

Anton Pizzuto
Directeur

Alison Abela
Spécialiste de l'environnement

CLEANER TECHNOLOGY CENTRE
University Campus, Msida MSD06 - Malte
Tél. : (+356) 21 31 34 16/7, 21 33 17 34 / Fax : (+356) 21 34 48 79
e-mail : ctc@mus.com.mt

L'article explique ce que l'on entend généralement par responsabilité sociale des entreprises (RSE) et souligne les avantages que représentent son adoption. Il présente également les résultats d'une étude réalisée auprès de petites et moyennes entreprises (PME) maltaises, interrogées sur leur niveau de compréhension de la RSE. Une brève analyse des résultats de l'étude conclue que, au moins parmi les industriels maltais, le concept de RSE et les avantages que supposent sa mise en place sont relativement méconnus.

Mots-clés : Responsabilité sociale des entreprises (RSE), étiques des affaires, environnement, développement durable, petites et moyennes entreprises (PME), étude.

RESPONSABILIDAD SOCIAL CORPORATIVA

Contribución de la industria al desarrollo sostenible

Anton Pizzuto
Director

Alison Abela
Experta en medio ambiente

CLEANER TECHNOLOGY CENTRE
University Campus, Msida MSD06 - Malta
Tel. : (+356) 21 31 34 16/7, 21 33 17 34 / Fax : (+356) 21 34 48 79
e-mail : ctc@mus.com.mt

El artículo explica lo que se acostumbra a entender por el concepto de *responsabilidad social corporativa* (RSC) y destaca las ventajas de su adopción. También se presentan los resultados de un estudio llevado a cabo entre pequeñas y medianas empresas (PYME) de Malta, en el que se cuestiona su grado de comprensión de la RSC. Un breve análisis de los resultados de este estudio demuestra que, al menos entre los industriales malteses, se desconoce el concepto de RSC y los beneficios que se pueden derivar de su aplicación.

Palabras clave: Responsabilidad social corporativa (RSC), ética empresarial, medio ambiente, desarrollo sostenible, pequeñas y medianas empresas (PYME), estudio.

STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS (POPs)

Sergio Cuadrado Iglesias
Área de Medio Ambiente Industrial

MINISTERIO DE MEDIO AMBIENTE
c/ Agustín de Betancourt n.º 25 - 28003 Madrid - Spain
Tel.: (+34) 91 453 54 12 / Fax: (+34) 91 534 86 09
E-mail: sgiaprato5@mma.es

Persistent Organic Pollutants (POPs) are chemical compounds resistant to degradation, they are highly toxic, they bioaccumulate in terrestrial and aquatic living organisms and, frequently, they are transported through air, water or by means of migratory species, being deposited at enormous distances from their place of origin, causing irreversible damage to human health and the environment, where they originate and wherever they travel.
This article tries to offer a general view of the main works that have started at an international level to reduce and eliminate the emissions of these types of chemical compounds. Finally, it presents the work developed by Spain to meet the obligations derived from community and international legislation.

Key words: Persistent Organic Pollutants (POPs), Stockholm Convention, precautionary principle, PCBs, DDT, dioxins and furans, BATs, BEPs, National Implementation Plan.

Introduction

Persistent Organic Pollutants (POPs) are chemical compounds resistant to degradation, they are highly toxic, they bioaccumulate in terrestrial and aquatic living organisms and, frequently, they are transported through air, water or by means of migratory species, being deposited at enormous distances from their place of origin, causing irreversible damage to human health and the environment, where they originate and wherever they travel.

Although the name POPs refers to only one of their dangerous characteristics, these substances are identified as persistent, bioaccumulative and toxic organic substances (PBT characteristics) that can be transported long distances. That is the reason they are POPs: highly dangerous substances that pose a serious risk to human health and the environment.

The developing countries, where the local exposure to these POPs has been most intense and in particular women are who suffer its worst consequences. High levels of these substances have been detected in maternal milk, so their effects can be passed on and they can be a threat to future generations.

On the other hand, the arctic ecosystems, mainly in indigenous areas, are registering higher levels of contamination by POPs. That means these populations are especially threatened because their feeding is based on local products. This threat is increased by the "biomagnification" of the effects that these persistent organic pollutants cause.

THE STOCKHOLM CONVENTION

Background

The Governing Council of the United Nations Environment Program (UNEP) (http://www.unep.org), being aware of the need to take global measures on these persistent organic pollutants, by means of Decision 19/13C, requested that their Executive Director prepare for and convene an Intergovernmental Negotiating Committee with the aim of preparing an *international legally binding instrument* to put into practice international measures regarding certain persistent organic pollutants (POPs).

This instrument, the POPs Convention, has been the result of several meetings with the Intergovernmental Negotiating Committee (INC). In its first session (1998 in Montreal) a Criteria Expert Group (CEG) was established to define proposals for science-based criteria and a procedure for identifying additional POPs as candidates for future international action. The CEG carried out this work in two sessions in October 1998 in Bangkok and in June 1999 in Vienna.

The Convention text has been progressively drafted and defined in five sessions of the INC, in Bangkok in 1998, in Nairobi and Geneva in May and September 1999, and in Bonn in March 2000. The fifth and last session of the Intergovernmental Negotiation Committee (INC-5) took place in Johannesburg (South Africa), in December 2000, where the Convention text was agreed and finalised.

During the negotiations, the European Commission presented and defended a common and very consolidated position that was discussed and agreed in European Coordination meetings that took place prior to the INC sessions.

The Diplomatic Conference for the signature of the POPs Convention was held on 22 and 23 May 2001 in Stockholm. The European Commission and all its Member States signed the Con-

vention and its Resolutions, and highlighted its importance and the intention of a prompt ratification that would bring about its entry into force.

The Stockholm Convention (http://www.chem.unep.ch/pops/) came into force on 17 May 2004, when it was ratified by 50 countries. Spain ratified the Convention on 28 May 2004, and it entered into force in this country on 26 August 2004.

Objectives and Scope

The aim of the Convention is to protect human health and the environment from these persistent organic compounds.

To achieve this objective the Convention intends to carry out an appropriate management of water and possible stockpiles of these products, in order to limit, reduce and eliminate in a progressive way the emissions from the production and its intentional use; as well as unintentional production.

The list of substances of the Convention includes 12 POPs: aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene (HCB), mirex, toxaphene and polychlorinated biphenyls (PCBs), DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl) ethane), dioxins and furans (PCDD/PCDF). All of them are **organochloride** compounds; the first ten are "products", mainly used as pesticides and still produced on an industrial scale in several countries. The most famous is DDT.

The other two POPs (dioxins and furans) are formed and released unintentionally, in thermal processes with the presence of organic matter and chlorine. These "by-products" are produced unintentionally in human activities, generally industrial processes and different forms of intentional or unintentional fires. Two compounds considered as products are: the polychlorinated biphenyls (PCBs) and hexachlorobenzene (HCB), which also appear unintentionally.

This POPs list is an open list, so can be extended with another substances not included in the Convention.

The aim of the Convention is to protect human health and the environment from persistent organic compounds

Main aspects

The Convention consists of a Preamble, 30 articles and 6 annexes, from A to F. Its most prominent aspects are:

- In the preamble, objective and in some articles reference is made to the **Precautionary Principle** in order to have a more effective practical application.

- Article 3 reflects measures to prevent the appearance of new POPs and the applicable measures to the POP compounds with production and intentional use gathered in Annexes A and B:

  Annex A: includes at the moment: aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene (HCB), mirex, toxaphene and polychlorinated biphenyls (PCBs).
  It also includes the prohibition and/or the establishment of the necessary legal and administrative measures to eliminate their production, use, export and import, admitting these only when their destination is destruction in order to ensure the

protection of human health and the environment.

PCBs have a specific section in Annex A, which states that their use (in transformers, etc) is permitted only until 2025. It also explains that measures will be adopted to reduce the exposure and the risk of use of equipment containing PCBs. Each party to the Convention will have to present a fifteen-day report on the progress made in the elimination of PCBs.

Annex B: at the moment it includes only DDT.
For this compound, or others that could be included in this annex in the future, the restriction of their production, import and use is imposed, being limited to acceptable purposes, fundamentally for the control of illnesses, malaria in this case.

- Article 4 establishes a Register identifying the parties that have specific exemptions, listed in Annex A or B, the type of specific exemption, and the date on which it expires.

- Article 5 reflects the applicable measures for POPs, "by-products", generated unintentionally and listed in Appendix C.

Annex C: it includes dioxins and furans, hexachlorobenzene (HCH) and polychlorinated biphenyls (PCBs).
It prescribes the progressive minimization of these POPs releases, focussing on their elimination. To achieve this, it recommends the use of the best available techniques (BATs) and the best environmental practices (BEPs), as well as promoting the use of substitutes.

It also obliges the parties to draw up and apply an Action Plan within 2 years of the entry into force of the Convention. This is to identify, characterize and combat releases of these by-products from Annex C. This Plan will include measures for:
– Reduction of releases or the elimination of sources.
– Promotion the use of the best available techniques (BATs) and the best environmental practices (BEPs), in existent sources as well as new ones.
– Promoting the use of POPs substitutes.

This annex identifies the main sources with a high potential for forming and releasing POPs by-products:

– Waste incinerators, including coincinerators.
– Hazardous waste originated in cement kiln firing.
– Paper production using chlorine.
– Iron and steel industry and secondary production of copper, aluminium and zinc.

Among other sources also identified in this annex as generators of these POPs by-products are the open burnings of waste, including landfill sites, the destruction of animal carcasses, etc.

- Article 6 includes measures to reduce or eliminate releases from POPs stockpiles and wastes containing POPs:

The establishment of strategies to determine stockpiles of products, articles in use and waste that are or contain POPs. Their handling, collection, transport and storage will be environmentally sound manner:
– They will be eliminated by destruction or transformation to non-POPs compounds. When this is not possible or when POPs content is low, they will be eliminated in an environmentally sound manner. These wastes will not be recovered, recycled, regenerated, reused or dedicated to alternative uses.
– Identification of sites contaminated with POPs and, when possible, their remediation.

- Each party shall draw up and communicate, within 2 years of the entry into force of the Convention, a National Plan for the implementation of the obligations derived from the Stockholm Convention.

- Each party shall designate a “national coordination centre" or “focal point” for the exchange of information, facilitate public access to the information on POPs and prepare programs to enhance public awareness as well as scientific, educational and technical guidelines... etc.

- Each party shall promote research, development and monitoring activities regarding POPs, including the use of harmonized methodologies for the realization of inventories and emissions measuring. These parties shall be in charge of the collection and maintenance of inventories, databases or any other information generated, and of making it publicly accessible.

- The Convention establishes the mechanisms for transferring technology and the technical and financial support for developing countries that allow them to carry out a real, quick and effective application of this Convention.

- A financial mechanism that will work under the authority and guidance of the Conference of the Parties is defined. The Global Environment Fund (GEF) will be, provisionally, the main entity.

- In the future, the list of POPs may be extended, and any country considered party to the Convention may carry out a proposal. The Convention establishes the requirements to complete the proposal, the information necessary and the procedure to determine whether the candidates POPs are included or not in Annexes A, B or C.

The procedure for the inclusion of candidate POPs consists of several stages, it being necessary to give information on:
– Scientific approaches for the selection of the substance (Annex D).
– Substance risk profile (Annex E).
– Socioeconomic considerations (Annex F).

Regulation (EC) No 850/2004, of the European Parliament and the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

With the aim of implementing the Stockholm Convention and the POPs Protocol from the Geneva on to POPs (http://europa.eu.int/eur-lex/en/). This Regulation came into force for all the Member States on 20 May 2004, becoming part of the legal instruments that contain obligations under the Convention.

The Regulation guarantees the coherent and effective implementation of the community obligations, establishing a common legal framework for all the Member States. The aim of this instrument is reduce POPs to a minimum:
– Prohibiting the production, putting on the market and use of intentionally produced POPs, listed in Annex A of the Convention and three new substances: chlordecone, hexabromobiphenyl and hexachlorocyclohexane (including lindane).
– Prohibiting the production, marketing and use of dangerous substances and restricting exemptions to a minimum.
– Establishing the reduction, minimization and elimination of unintentional POPs by-products, those listed in Annex C and also the polycyclic aromatic hydrocarbons (PAHs).
– Considering as wastes stockpiles of forbidden POPs and products that contain them.

Other important developments regarding the Convention are:

- Article 17 of the Convention states that:

The Conference of the Parties shall, as soon as practicable, develop and approve procedures and institutional mechanisms for determining non-compliance with the provisions of this Convention and for the treatment of Parties found to be in non-compliance.

- Article 13 of the Regulation obliges Member States to lay down the rules on penalties applicable for infringement of the Regulation and adopt all the necessary measures to ensure they are implemented.

- Articles 5 and 12 establish the obligation to carry out inventories and to send to the Commission data on stockpiles, marketing and production of chlordecone, HCH/lindane and hexabromobiphenyl. This same information is required concerning all the substances in Annexes I and II. Furthermore, Member States are required to draw up and maintain inventories of emissions into the air, water or soil of substances included in Annex III: dioxins, furans, PCBs, HCB and PAHs.

- Member States may allow the existing production and use of DDT as a closed-system site_limited intermediate for the production of dicofol until 1 January 2014 This exemption is to reviewed at the end of 2008.

- DDT and HCH (including lindane) will pass from Convention and Protocol Annex II (restriction), to Annex I (elimination).

The following chart contains the main terms for the fulfilment of the obligations derived from the implementation of Regulation (EC) No 850/2004.

The Regulation guarantees the coherent and effective implementation of the community obligations, establishing a common legal framework or all the Member States

Art.	Obligation	Term (following entry into force of the Regulation 20/05/04)
Art. 4.2	Inform the Commission on the existence of substances considered as constituent that were already in use before the effective date of the Regulation.	
Art. 4.3	Convention Secretariat, Commission and Member States must be notified of the intention to authorise the production and use of these substances as a closed-system site-limited intermediate listed in Part A of Annex I, or in Part A of Annex II.	There is no established term.
Art. 5.2	Holders will provide information about the nature and dimensions of the stockpiles of any substance included in Annexes I or II and that meet the conditions established in Art. 5.2	Annually until the period established in Annexes I or II regarding restricted use.
Art. 6.1	Drawing up and maintenance of inventories of emissions into the air, waters and soil regarding substances established in Annex III.	Maximum term for the first inventory (20/05/06).
Art. 6.2	The Commission and other Member States must be informed of the identification, characterization and minimization plan of total emissions.	Included in the National Plan that should be drawn up within the two-year term (20/05/06).
Art. 7.5	Until such time as concentration limits (Part 2 -Annex V), are established, the competent authority may adopt or apply concentration limits or specific technical requirements regarding wastes under paragraph 4(b).	Commission will establish the limits before December 31, 2005.
Art. 8.2	Obligation to inform to the Commission and the other Member States of the adoption of the plan of national application.	Once adopted, within two years. (20/05/06).
Art. 12.1	Every three years the Commission must be informed of the application of the present Regulation, its infractions and sanctions.	3 years maximum for the first report (20/05/07). Subsequently every three years.
Art. 12.2	The Commission must be sent statistical data on the marketing and production levels, actual or estimated, of any substance included in Annex I or II.	Annual.
Art. 12.3	Provide summary information on the stocks pursuant to Article 5(2).	3 years maximum for the first report (20/05/07). Subsequently every three years.
Art. 12.3	Provide summary information on the release inventories drawn up in accordance with Section 1, Article 6.	3 years maximum for the first report (20/05/07). Subsequently every three years.
Art. 12.3	Provide summary information on the presence of dioxins, furans and PCBs as identified in Annex III, in the environment.	3 years maximum for the first report (20/05/07). Subsequently every three years.
Art. 13	Penalties in the event of infringement of the provisions of the Regulation.	1 year maximum.
Art. 15	Designation in each Member State of the competent authority or authorities responsible for the administrative tasks required by the Regulation.	3 months maximum. Executed on 20/08/04.

NATIONAL IMPLEMENTATION PLAN OF THE STOCKHOLM CONVENTION AND OF REGULATION 850/2004

Introduction

As stated previously, the Stockholm Convention (Art. 7) and EU Regulation 850/2004 (Art. 8) prescribe the obligation of drawing up a National Implementation Plan (NIP), for the execution of all the provisions contained in these two legal instruments regulating persistent organic pollutants.

Article 7, Paragraph 2 of the Stockholm Convention: establishes the obligation to consulting national stakeholders in order to facilitate the drawing up, application and updating of their implementation plans. On the other hand, Regulation (EC) No 850/2004 states in its Article 8 that the Member States should offer to the public prompt and effective opportunities to of participate in the drawing up of the National Implementation Plans.

The technical development of NIP should take into account the "Interim guidance for developing a national implementation plan for the Stockholm Convention" (www.pops.int), prepared by the Chemical Products Department of the United Nations Environment Program (UNEP) and the World Bank in order to favour the execution of the Convention provisions.

These Guides expressed that Member States should designate or create a "National Lead Agency" that will be responsible for the development and drawing up of the National Implementation Plan, in order to assure the participation of all the relevant stakeholders. They also establish that, in addition to the obligations, the Plan should contain financial aspects and technical support for developing countries.

The Ministry of the Environment has constituted the POPs National Coordination Committee

National Coordination Committee

As a consequence of the above, in order to assure the participation and responsibility of all the stakeholders in every phase from the beginning of the process, the Ministry of the Environment has constituted the POPs National Coordination Committee.

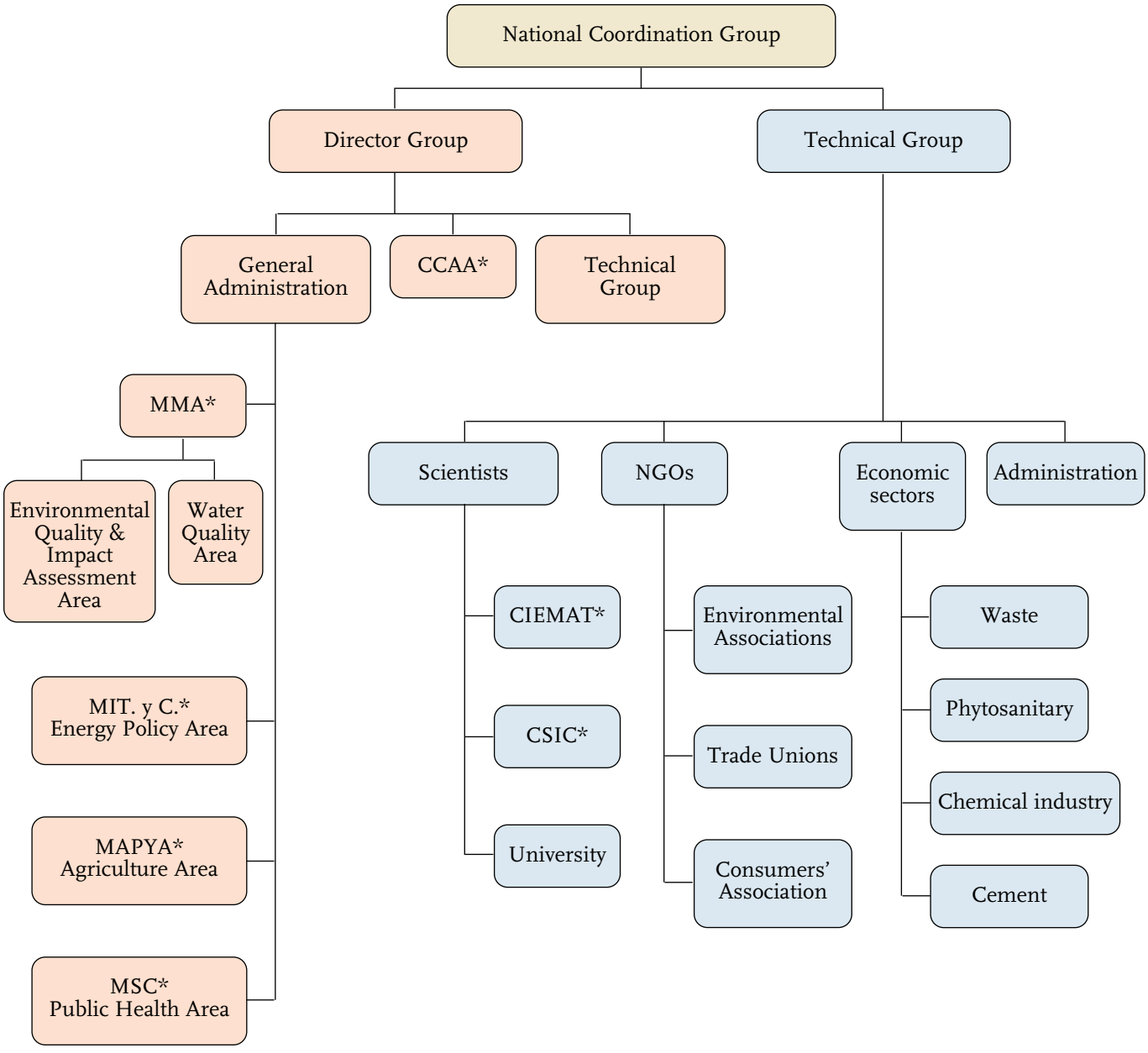
The National Coordination Committee comprises experts from different sectors of industry, environmental NGOs, trade unions, consumers' associations, universities and the scientific community, Autonomous Communities and General Administration [See Figure 1]. Its structure is:

- *Lead Agency:* this is the NIP decision-making body. It studies proposals from the Technical Group, acting as a cooperation and consultation organ between State and Autonomous Communities. It is, therefore, an executive organ that joins areas from several competent authorities to adopt decisions concerning POPs.
- *Technical Group:* or examining committee, it is formed by the main stakeholders whose main function is to advise the Director Group with technical contributions from the different POPs interest groups, with specific knowledge and information based on consistent data.
- *Working Groups:* to carry out the main objectives, the technical group created six working groups that work on different tasks relating to the preparation, study and proposal of the main objectives of the NIP.
  - Inventories
  - Replacement
  - Best available techniques (BATs) and best environmental practices (BEPs)
  - Information and public awareness
  - Cooperation, Coordination and financial aspects
  - Monitoring (different levels for people, food, etc., allowances and environmental compartments)

All the working groups have the aim of proposing a section to include in the National Implementation Plan of the Stockholm Convention and Regulation No 850/2004, appropriate to their working area. Therefore, they are gathering all the information relating to each area from which every group prepares a "base document" containing all this information in a detailed and organized manner.

In addition to the proposed sections, a draft with the structure and common parts of the National Implementation Plan is being prepared.

It is foreseen that the National Implementation Plan will be finished in May 2006, that is, within the deadline specified in the Regulation and the Convention (2 years).



MMA: Spanish initials for Spanish Environmental Ministry
CC.AA: Spanish initials for Autonomous Communities (Regional Governments)
MIT y C: Spanish initials for Ministry of Industry, Commerce and Tourism
MAPYA: Spanish initials for Ministry of Agriculture, Fisheries and Food
MSC: Spanish initials for Ministry of Health
CSIC: Spanish initials for Scientific and Research Council
CIEMAT: Spanish initials for Research Centre for Energy, Environment and Technology

Figure 1. National Coordination Group

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CONVENTION DE STOCKHOLM RELATIVE AUX POLLUANTS ORGANIQUES PERSISTANTS (POP)

Sergio Cuadrado Iglesias
Domaine de l'environnement industriel

MINISTERIO DE MEDIO AMBIENTE
École de génie mécanique, section thermique
c/ Agustín de Betancourt n.° 25 - 28003 Madrid - Espagne
Tél. : (+34) 91 453 54 12 / Fax : (+34) 91 534 86 09
E-mail : sgiaprato5@mma.es

Les polluants organiques persistants (POP) sont des substances chimiques résistant à la dégradation. Ils sont extrêmement toxiques, se bioaccumulent dans des organismes vivants terrestres et aquatiques, et sont fréquemment transportés par l'air, l'eau et certaines espèces migratoires, ce qui fait qu'ils sont déposés à de très grandes distances de leur lieu d'origine, causant des dommages irréversibles à la santé de l'homme et à l'environnement, à l'endroit même d'où ils sont originaires et partout où ils se déplacent.

Cet article tente de donner une vue d'ensemble des principales missions entreprises à l'échelle internationale dont l'objectif est de réduire et d'éliminer les émissions de ce type de substances chimiques. Enfin, il présente le travail développé par l'Espagne pour répondre aux obligations émanant de la législation communautaire et internationale.

Mots-clés : polluants organiques persistants (POP), convention de Stockholm, principe de précaution, BPC, DDT, dioxines and furanes, MTD, MPE, plan national d'implémentation.

CONVENIO DE ESTOCOLMO SOBRE CONTAMINANTES ORGÁNICOS PERSISTENTES (COP)

Sergio Cuadrado Iglesias
Área de Medio Ambiente Industrial

MINISTERIO DE MEDIO AMBIENTE
École de génie mécanique, section thermique
c/ Agustín de Betancourt n.° 25 - 28003 Madrid - España
Tel.: (+34) 91 453 54 12 / Fax: (+34) 91 534 86 09
E-mail: sgiaprato5@mma.es

Los contaminantes orgánicos persistentes (COP) son compuestos químicos resistentes a la degradación y altamente tóxicos. Estos compuestos se bioacumulan en los organismos vivos terrestres y acuáticos y, a menudo, son transportados a través del aire, el agua o mediante especies migratorias, y son depositados a enormes distancias de su lugar de origen. Esto causa daños irreversibles a la salud humana y al medio ambiente, allí donde se originan y en los lugares a donde van a parar.

Este artículo intenta presentar una descripción general de las tareas principales que se han iniciado a nivel internacional para reducir y eliminar las emisiones de este tipo de compuestos químicos. Finalmente, presenta el trabajo desarrollado por España para cumplir con las obligaciones derivadas de la legislación comunitaria e internacional.

Palabras clave: contaminantes orgánicos persistentes (COP), Convenio de Estocolmo, principio de precaución, PCB, DDT, dioxinas y furanos, MTD, MPA, Plan Nacional de Aplicación.

COMMUNICATION ET DÉVELOPPEMENT DURABLE

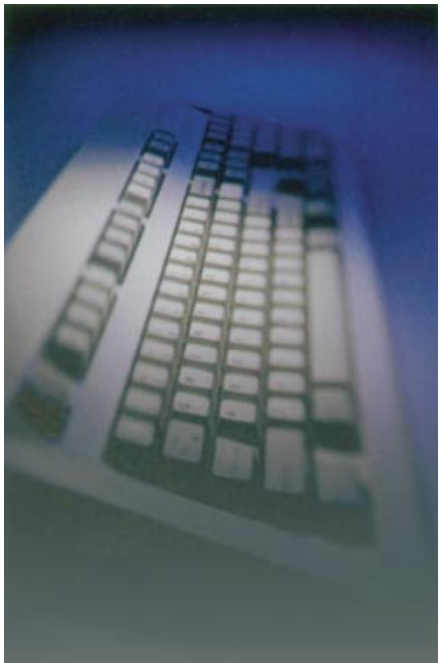
LES RÈGLES DÉONTOLOGIQUES DES PROFESSIONNELS FRANÇAIS DE LA PUBLICITÉ

Anne Chanon
Conseillère de direction générale du BVP en charge de la déontologie

BUREAU DE VÉRIFICATION DE LA PUBLICITÉ
11, rue Saint Florentin – 75008 Paris – France
Tél. : (+33) 1 40 15 15 36 / Fax : (+33) 1 40 15 15 27
E-mail : anne.chanon@bvp.org – Site Internet : http://www.bvp.org

Le BVP (Bureau de vérification de la publicité, organisme français d'autorégulation publicitaire) a publié en 2003 une nouvelle recommandation portant sur « publicité et développement durable ».
Mis au point par des représentants de l'interprofession publicitaire (annonceurs, agences, supports), ce texte se veut à la fois être un signal fort de la volonté de responsabilité des professionnels sur ce thème et un document pédagogique permettant de prendre en compte les enjeux du développement durable par la création publicitaire.
Ce nouveau code de conduite présente deux volets :
– dans le cas où la publicité revendique un positionnement « développement durable », il souligne les précautions à prendre pour ne pas risquer d'induire le public en erreur (en définissant certaines expressions consacrées, en déconseillant des généralisations abusives, etc.)
– dans les autres cas, il recommande à la publicité de ne pas cautionner des pratiques contraires aux objectifs communément admis du développement durable (en matière d'utilisation de véhicules moteur ou de déchets ménagers, par exemple).
Ce texte concerne toutes les publicités et *pas uniquement celles qui se positionnent explicitement pour le « développement durable »*.
Comme tous les codes du BVP, il se situe dans **une logique de « préservation »** (ne pas nuire, ne pas induire des pratiques ou modèles néfastes pour la collectivité), **et non pas dans une logique d'« amélioration »** (favoriser le développement de pratiques ou modèles vertueux pour la collectivité).
Au-delà de la lettre, l'esprit de ce texte est de baliser autant que faire se peut ce champ complexe et mouvant de la déontologie publicitaire appliquée au développement durable. Il s'agit de favoriser chez les professionnels de la publicité une prise de conscience, d'installer des réflexes, de pousser à réfléchir, et non pas d'imposer des normes rigides.
La mise en application de ce code repose sur un système préventif : les projets publicitaires sont examinés et éventuellement recadrés par le BVP avant toute diffusion dans les médias grand public.

Mots-clés : communication responsable, loyauté, véracité, greenwashing, éthique ou déontologie publicitaire, argument écologique, autodiscipline ou autorégulation.



Introduction

L'intérêt des professionnels de la publicité pour les questions environnementales ne date pas d'aujourd'hui : déjà, au tout début des années 90, au moment de la mode du « marketing vert », le BVP était intervenu en mettant au point une recommandation sur l'utilisation d'arguments écologiques encadrant l'utilisation publicitaire de ce type de positionnement et de discours.

Depuis, le sujet a pris de l'ampleur, accolant aux problématiques environnementales des dimensions économiques, sociales et sociétales : désormais, il s'agit d'envisager ces différentes facettes comme un écosystème global dont nos sociétés se doivent d'assurer un développement équilibré dans la durée.

La publicité devait en effet prendre en compte la nouvelle responsabilité sociale demandée aux entreprises. Comme le dit le philosophe Paul Ricœur, il convient désormais que chacun assume un nouveau type de responsabilité

pour l'agir humain. Alors que jusqu'ici la responsabilité était confondue avec l'imputabilité, c'est à dire l'identification de l'auteur d'une action passée, il est demandé aujourd'hui « de prendre en charge une mission pour une tâche à venir ». Nous devenons, comme le préconise Hans Jonas, responsables du futur le plus lointain de l'humanité.

Élargissement des enjeux, approfondissement des réflexions, amplification de la mobilisation : la déontologie publicitaire, dans son souci de rester en phase avec les évolutions de la société, se devait d'intégrer cette nouvelle donne.

L'occasion d'y réfléchir a été offerte par les travaux menés en France en 2003 par le Conseil national du développement durable, mis en place par le Premier ministre pour recueillir et synthétiser les propositions de la société civile.

En mai 2003, dans le rapport remis au Gouvernement figurait, parmi les nombreuses propositions émises, un engagement des professionnels de la publicité pour l'adoption d'un code d'autodiscipline spécifiquement consacré au développement durable.

Engagement rapidement honoré puisqu'en décembre 2003, le BVP rendait public sa nouvelle recommandation sur le développement durable, mise au point par un comité de rédaction composé de professionnels de la publicité.

ÉLABORATION DE CE TEXTE : UNE DÉMARCHE DE PROGRÈS

1. Principes fondateurs : jeter les bases d'une éthique en devenir

Le comité de rédaction de la recommandation sur le développement durable a abordé la question dans un esprit d'ouverture, conscient qu'il travaillait sur une matière éminemment évolutive, et donc, qu'il convenait d'avancer avec détermination sur certaines dimensions désormais consensuelles mais avec prudence pour les points non encore stabilisés.

■ **Une conviction : le développement durable, une tendance lourde**

Au-delà du souci d'assurer en permanence l'actualisation du corpus déontologique, le nouveau Code procède de l'intime conviction de l'interprofession publicitaire que le développement durable n'est pas un simple effet de mode mais bien une tendance lourde, une question clé pour le siècle qui vient de commencer.

Tendance lourde tout d'abord, parce que les problèmes qui motivent cette préoccupation tels que le réchauffement climatique, l'érosion de la biodiversité ou les inégalités sociales, pour ne citer que ceux-là, ne sont malheureusement pas des phénomènes de mode, ni des vues de l'esprit.

Tendance lourde ensuite, parce que la sensibilité du grand public (consommateur, salarié ou citoyen) sur ces sujets ne cesse de s'accroître[1], même si elle revêt des formes souvent moins radicales que le discours de certaines associations ne pourrait le faire penser.

Tendance lourde enfin, parce que le système d'acteurs qui s'activent dans le champ du développement durable ne cesse de se diversifier, de se professionnaliser, de gagner en influence et en cohérence. Syndicats, associations, agences de cotation, fonds de pension, institutions internationales, État et entreprises se rejoignent, de plus en plus nombreux et actifs, sur cet horizon commun.

■ **De la mesure : assumer la part de responsabilité de la publicité**

Comment repenser la déontologie publicitaire face à un projet aussi ambitieux et un concept aussi englobant que le développement durable ? Autant il est compréhensible que les politiques de ressources humaines, les actions de production et de distribution des entreprises soient concernées par cette problématique, autant il est légitimement s'interroger sur ses connections avec la communication publicitaire.

En quoi les messages publicitaires peuvent-ils être reliés à des enjeux aussi énormes que le réchauffement de la planète, l'érosion de la biodiversité ou les inégalités économiques à l'échelle mondiale ?

Le comité technique en charge de l'élaboration de cette nouvelle recommandation s'est attaché à « garder les pieds sur terre », à ne pas sombrer dans une quelconque mégalomanie déontologique : il s'agit « simplement », au travers de ce texte, de *traiter d'éventuelles dérives du discours publicitaire,* pas de prendre position sur ce qui ne relève pas de la publicité. Il ne s'agit pas de

1 L'étude Simm 2003, réalisée sur 10 000 Français, montre que 80 % des Français se déclarent concernés par l'État de la planète et que 52 % des plus de 50 ans privilégient les marques qui ont une vraie dimension éthique.

s'immiscer dans le fonctionnement des entreprises ou les modes de fabrication-distribution-utilisation des produits. Encore moins de se substituer à la responsabilité des politiques.

Par ailleurs, ne perdons pas de vue que la mission première de la publicité est de faire acheter/consommer les produits ou services de l'annonceur qui en est l'initiateur : ce texte n'a pas vocation à lui en assigner d'autres.

■ **Du pragmatisme : rester ouverts dans un contexte d'incertitude et de complexité**

Derrière la conviction grandissante que le développement durable doit être un horizon partagé par tous, il y a beaucoup d'incertitudes et de divergences de points de vue. Concept tellement globalisant qu'il en devient fourre-tout, *le développement durable renvoie au moins autant, si ce n'est davantage, à des interrogations qu'à des certitudes :* interrogations sur son périmètre (que met-on dans le développement durable ?), sur son agenda (quelles priorités ?), sur son suivi (quels indicateurs d'évaluation ?), sur l'ampleur et la réalité des problèmes (de quoi est-on scientifiquement sûr ?), sur la nature des réponses à y apporter, etc.

Conscients d'avancer dans un champ encore largement en friche, les professionnels de la publicité n'ont pas souhaité anticiper outre mesure sur des problèmes non avérés, des solutions non consensuelles, des sujets non encore stabilisés. L'avantage de ces recommandations, par rapport à des textes de loi par exemple, étant de pouvoir facilement évoluer, ce nouveau Code a donc été conçu comme *la première strate d'un corps déontologique qui sera vraisemblablement appelé à se développer à l'avenir.*

Intime conviction de l'interprofession publicitaire que le développement durable n'est pas un simple effet de mode

■ **Pour la liberté : encourager, responsabiliser et non pas interdire**

Comme mentionné précédemment, ce texte concerne l'expression publicitaire et elle seule : *il n'a pas pour vocation d'écarter certains produits/services ou catégories de produits/services de la communication* au motif qu'ils auraient, par exemple, des effets potentiellement nocifs sur la planète.

Les critiques régulièrement adressées par certains à tel ou tel secteur économique (automobile ou énergie par exemple) ne tiennent compte ni des souhaits des consommateurs (qui ne désirent pas renoncer aux avantages de la modernité[2]), ni des réels progrès technologiques effectués par ces secteurs (qui, par exemple, rendent leurs procédés de production et/ou leurs produits moins polluants[3]).

Ce type de raisonnement critique, s'il était suivi jusqu'au bout, conduirait à condamner la consommation. Or le développement durable n'est en rien un plaidoyer contre la croissance, les entreprises ou la consommation, mais bien plutôt une mobilisation en faveur d'une croissance plus qualitative et d'entreprises plus responsables. *Le développement durable ne se conçoit pas contre, mais avec les entreprises.* Il s'agit de réconcilier croissance économique et équilibre environnemental/social/sociétal.

Le concept même de développement durable s'inscrit dans une démarche de progrès et c'est bien là une de ses vertus : il ne refuse pas l'imperfection, il l'intègre et vise à enclencher des processus d'amélioration progressifs. Posture que l'on retrouve à l'identique dans ce texte d'autodiscipline publicitaire : il vise à responsabiliser, à accompagner et à encourager les efforts que toutes les entreprises seront amenées à faire sur la mise en cohérence de leurs communications avec les objectifs du développement durable (et non pas sanctionner leurs inévitables insuffisances).

2. Méthode d'élaboration : dégager une position commune ajustée aux réalités

■ **Délimitation : relecture de la production publicitaire récente**

Sûr de ses objectifs mais soucieux de ne pas s'engager dans des voies purement théoriques, le comité de rédaction s'est attaché à partir du réel, de cas concrets, pour identifier les éléments potentiellement problématiques au regard du développement durable.

2 Ainsi, l'idée de limiter l'accès des centres-villes aux voitures ne cesse de perdre du terrain dans l'opinion publique. En revanche, on voit progresser régulièrement l'attrait pour des véhicules moins polluants, toutes choses égales par ailleurs (prix, performance notamment). Renoncer à sa voiture, non. Disposer de voitures moins polluantes, oui.

3 Par exemple, un véhicule neuf, essence ou diesel, pollue aujourd'hui 10 fois moins qu'il y a 10 ans. Et l'industrie envisage encore plus de progrès avec le passage aux normes dites Euro 4.

Toute la production publicitaire à destination de la télévision du premier semestre 2003 a ainsi été revisionnée. Les autres supports ont fait l'objet d'une pige plus aléatoire. Cela a permis d'identifier quelques dérives, essentiellement dans le champ de l'environnement, qui ont inspiré les rédacteurs de la présente recommandation. Les plus notables étant des campagnes de promotion dans le secteur automobile où la publicité encourage explicitement à une consommation sans limites ou bien sans réel objet (pour sortir sa poubelle du garage ou promener le chien, par exemple).

Ce travail d'analyse rétrospective a surtout permis de prendre conscience que, contrairement à ce que certains prétendent, *les cas problématiques sont extrêmement rares*. Sans doute parce que ce type de sensibilités contemporaines sont naturellement bien représentées au sein des agences, comme dans le reste de la population. Sans doute aussi parce que le caractère complexe et très ambitieux d'un concept comme le développement durable incite les annonceurs à une certaine circonspection en matière de communication : peu nombreux étaient ceux, finalement, qui s'étaient lancés sur ce terrain en publicité, au moment de la rédaction de ce Code.

Ce code de bonnes pratiques publicitaires présente donc, plus que d'autres textes analogues, un caractère théorique et préventif. En ce sens, il diffère de la recommandation sur l'utilisation d'arguments écologiques, conçue au début des années 90 en plein boom du « marketing vert » avec l'objectif de gérer les problèmes d'allégations « écologiques » trompeuses ou déloyales qui tendaient à se multiplier à l'époque.

La mise au point des règles déontologiques par les professionnels est un des maillons essentiels du bon fonctionnement de l'autodiscipline publicitaire

■ **À l'écoute : prise en compte d'avis d'experts**

Le travail de rédaction à proprement parler a été précédé d'une analyse des ouvrages, articles et sites faisant référence en matière de développement durable, au plan national comme au plan international.

Les débats et retombées du Sommet de Johannesburg ainsi que les positions d'experts des Nations Unies ont été tout particulièrement pris en compte. À ce titre, les travaux du groupe Global Compact dans le cadre des Nations Unies ont été suivis de près et cette recommandation s'efforce, dans la mesure du possible, d'être cohérente par rapport aux principes fondateurs retenus par ce groupe.

À l'échelon national, la participation de la profession aux travaux du CNDD mais également à ceux de la Mission interministérielle de l'effet de serre (MIES) a permis de s'assurer de la bonne adéquation de la déontologie publicitaire aux problèmes posés.

■ **Une coproduction : annonceurs, agences, supports autour d'une table**

Ce texte n'est pas une déclaration de principes du BVP mais bien une production de l'interprofession publicitaire réunie au BVP. Plusieurs réunions ont été nécessaires pour parvenir à un consensus et à une version finalisée. Des annonceurs majeurs (distribution, énergie, santé/beauté, agroalimentaire) ont directement participé à cette rédaction. Par ailleurs, les représentants de la Commission « communication et image » de l'Union des annonceurs (dont les travaux, en 2001, 2002 et 2003 ont beaucoup tourné autour du développement durable) ont porté dans le comité de rédaction la parole de la majorité des grands annonceurs français.

On retiendra donc que ce texte, mis au point et validé par ces différents acteurs, constitue un engagement volontaire de leur part sur un thème dont ils sont convaincus qu'il est appelé à durer. *Ce dispositif de mise au point des règles déontologiques par les professionnels auxquels elles vont ensuite s'appliquer est un des maillons essentiels du bon fonctionnement de l'autodiscipline publicitaire :* d'une part, parce qu'il permet de s'assurer que ces règles sont applicables, et d'autre part parce qu'il permet de garantir l'adhésion ultérieure des professionnels à ces règles.

CONTENU DE LA RECOMMANDATION : DU VÉRIDIQUE À L'ÉTHIQUE

Après un préambule qui rappelle l'esprit de cette recommandation et qui précise que ce qui est dit ici pour le développement durable vaut également pour le concept de responsabilité sociale des entreprises (RSE), le texte envisage le problème sous un double angle :

– d'une part, lorsqu'un annonceur se prévaut dans sa communication d'un positionnement global ou partiel favorable au développement durable : la posture déontologique consiste à veiller à ce que cette allégation ne soit pas usurpée ;

– d'autre part, pour toutes les communications mettant en scène des comportements ayant des incidences sur le développement durable : la posture déontologique consiste à veiller à ce que la publicité ne contrecarre pas les objectifs communément admis du développement durable.

Il est bien clair, en conséquence, que ce Code ne s'applique pas seulement aux publicités positionnées sur le développement durable, mais bien potentiellement à l'ensemble des communications.

1. Pour une utilisation honnête et loyale des allégations relatives au développement durable

Le premier volet reprend, en les actualisant et en en élargissant le champ, les principaux éléments de la précédente recommandation sur l'utilisation d'arguments écologiques.

Le risque habituel d'une communication de nature à induire le consommateur en erreur est accru en matière de développement durable : sur un champ tellement en friche, avec un concept tellement « auberge espagnole », des indicateurs tellement foisonnants, il est clair que le risque de confusion est grand. Sur ces sujets encore plus que sur d'autres, la publicité se doit d'être attentive au bien-fondé et à la clarté de ce qu'elle avance.

À noter, la recommandation envisage à ce sujet deux cas concrets : d'une part, le cas où la publicité fait référence au développement durable *dans sa globalité* (paragraphe A1) et, d'autre part, le cas où la publicité ne communique *que sur une des composantes* (environnementale, sociale/sociétale, ou économique) du développement durable (paragraphe A2).

Parmi les différents points abordés sur ce volet, nous retiendrons pour l'essentiel :

■ Du bon usage des expressions consacrées

Certaines expressions utilisées sur ces problématiques renvoient à des définitions assez précises. La déontologie recommande à toute publicité faisant référence à ces expressions de veiller à ce que la réalité des actions et des produits de l'annonceur soit conforme à ces définitions.

Ainsi :

– pour l'expression « développement durable », le texte dit notamment : *« Pour une entreprise, communiquer sur le thème général de développement durable sous-entend qu'elle est engagée dans ses trois composantes : environnementale, sociale et économique. » ;*

– pour l'expression « commerce équitable », le texte dit : *« l'utilisation de l'expression commerce équitable implique des échanges commerciaux avec des producteurs de pays moins développés, qui leur garantissent des conditions de travail et de rémunération décentes et favorisent le développement de centres de production autonomes et durables » ;*

– d'autres expressions connexes sont évoquées, ainsi *« l'emploi de notions comme celles de placements éthiques, investissements responsables, bonne gouvernance ou tout autre renvoyant à des pratiques commerciales ou financières se réclamant de l'éthique, doit pouvoir être justifié par le respect de critères précis ».*

■ De la véracité de ce qui est énoncé : ne pas induire en erreur

Les dispositions figurant dans cette recommandation au titre de l'impératif de véracité sont assez classiques. Il y est notamment dit que :

« La publicité ne doit pas tromper le public sur la réalité des actions de l'annonceur en faveur du développement durable, ni sur les propriétés de ses produits et services en la matière.

L'utilisation d'un signe ou d'un symbole *dans la publicité ne doit pas prêter à confusion avec des labels officiels. La publicité ne doit pas attribuer à ces signes, symboles ou labels une valeur supérieure à leur portée effective.*

La publicité ne doit pas reproduire ou faire état d'attestations ou de témoignages *qui ne seraient pas véridiques ou rattachés à l'expérience de la personne qui les donne. »*

■ **De l'objectivité des arguments avancés : reposer sur des éléments vérifiables**

Pour ce qui relève de l'objectivité des allégations utilisées, au-delà des dispositions habituelles, communes à la plupart des thématiques ou des secteurs, la recommandation souligne qu'il importe de respecter le caractère systémique du développement durable et *déconseille toute généralisation abusive* en disant que :

« L'ampleur de la revendication d'une action en faveur du développement durable doit être proportionnée à l'étendue des actions réellement entreprises. Si l'effort de l'annonceur ne porte que sur un produit/service ou sur un ou des éléments limités, la publicité ne peut exprimer un engagement global. »

Ce point important est repris plus loin dans la recommandation dans le cas où l'annonceur n'utilise qu'un des thèmes du développement durable. Il y est dit que :

« sa publicité ne doit pas abusivement présenter ce seul élément comme constitutif d'une politique générale de développement durable de l'entreprise. »

■ **De la loyauté des propos tenus : ne pas se distinguer abusivement de ses concurrents**

Sur ce volet de la loyauté du discours publicitaire, la recommandation plaide en faveur d'une publicité respectueuse des concurrents, ce qui renvoie également à une forme de respect du consommateur dans la mesure où il s'agit de veiller à ne pas tromper le public sur la spécificité de l'annonceur en matière de développement durable.

C'est ainsi qu'il est dit que :

« La publicité ne doit pas attribuer à un annonceur l'exclusivité d'une action, alors que celle-ci est analogue ou similaire à celle d'autres annonceurs.

De même, une publicité ne peut attribuer exclusivement à un produit ou service des vertus au regard du développement durable alors même que celles des concurrents seraient identiques.

Un annonceur ne peut se prévaloir de certaines actions à titre exclusif alors que celles-ci seraient imposées à tous par la réglementation en vigueur. »

Néanmoins, la déontologie n'interdit pas de communiquer sur des actions imposées à tous. C'est pourquoi, il est précisé que :

Ce principe n'exclut pas que, dans un but pédagogique, une publicité puisse informer de l'existence d'une réglementation, afin d'en promouvoir la mise en œuvre ou d'inciter le public à y souscrire.

■ **Des précautions à prendre lorsqu'on communique sur l'un ou l'autre des volets spécifiques du développement durable**

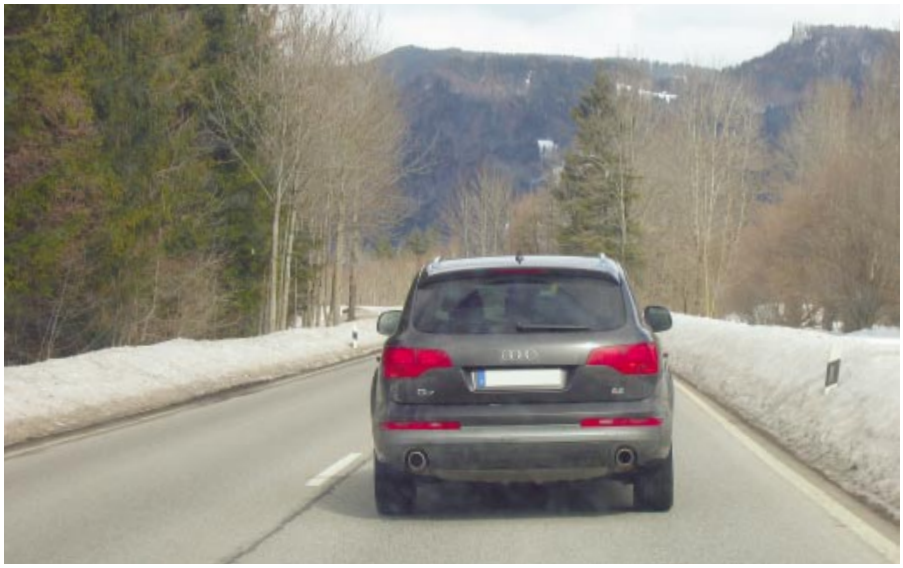
Sur chacun des volets spécifiques du développement durable, l'impératif de véracité/objectivité suppose que la publicité prenne certaines précautions. Ainsi :

o pour le volet environnement, le texte dit notamment que :

« la publicité ne doit pas donner ou paraître donner une garantie totale d'innocuité dans le domaine de l'environnement, lorsque les qualités écologiques du produit ne concernent qu'un seul stade de la vie du produit ou qu'une seule de ses propriétés,

le choix des signes ou des termes utilisés dans la publicité, ainsi que des couleurs qui pourraient y être associés, ne doit pas suggérer des vertus écologiques que le produit ne posséderait pas,

dans le cas où il serait impossible, compte tenu des difficultés rencontrées en la



matière, de justifier de formulations globales, la publicité utilisera de préférence des formulations telles que « contribue à la protection de l'environnement par... », « contribue à protéger votre environnement par... », en ajoutant les précisions nécessaires sur les éléments concernés »

o Pour le volet social/sociétal, le texte encourage à se référer à :

« la Déclaration universelle des droits de l'homme, aux conventions de l'OIT (Organisation internationale du travail), aux textes de l'Union européenne, de l'ONU, aux droits nationaux en vigueur, ainsi qu'aux différents principes directeurs, normes sociales, codes de conduite, recommandations etc., émanant des organismes nationaux et internationaux qui font autorité en la matière, dont par exemple la recommandation " Image de la personne humaine " du BVP ».

o Pour le volet économique, le texte précise que :

« l'annonceur qui souhaitera faire état de la viabilité de son activité, de la transparence de sa gestion, des différentes notations ou classements dont son entreprise aura fait l'objet, ou de la qualité de ses relations avec ses clients, ses fournisseurs ou ses actionnaires, devra pouvoir en apporter la justification. »

2. Contre des publicités manifestement contraires aux objectifs du développement durable

La préoccupation du second volet de la recommandation est d'*éviter que ne soient banalisés des comportements manifestement contraires aux objectifs communément admis du développement durable.*

Autant le premier volet de la recommandation est une actualisation de dispositions déontologiques qui existaient déjà sous une autre forme, autant ce second volet est radicalement nouveau. Il marque une avancée significative des professionnels en direction d'une meilleure prise en compte du développement durable dans la publicité.

La publicité doit bannir toute évocation ou représentation de comportement contraire à la protection de l'environnement et à la préservation des ressources naturelles

Même si c'est incontestablement dans le champ environnemental que ces dispositions peuvent trouver des incarnations concrètes en matière de publicité, les autres volets sont également envisagés dans cette partie de la recommandation, mais de façon plus limitée pour l'instant. Il est vrai que le chapitre social/sociétal est déjà largement couvert par la déontologie publicitaire au travers, par exemple, d'autres recommandations[4] du BVP comme *« l'image de la personne humaine », « enfants », « races, religions, ethnies » voire « sécurité »* ou *« automobile ».*

Dans le champ environnemental, la recommandation pose pour principe que :

« La publicité doit bannir toute évocation ou représentation de comportement contraire à la protection de l'environnement et à la préservation des ressources naturelles (gaspillage et/ou dégradation des ressources naturelles, pollution air/eau/sols, changements climatiques, etc.), sauf dans le cas où il s'agit de le dénoncer. »

Elle précise ensuite les points suivants :

- Banalisation de consommations déraisonnables

« La publicité ne saurait inciter, directement ou indirectement, à des modes de consommation excessive ou au gaspillage d'énergies et ressources naturelles. Elle ne saurait suggérer ou cautionner des agissements manifestement inconséquents ou irresponsables. »

- Minimisation d'impacts néfastes sur l'environnement

« La publicité doit éviter, dans son discours, de minimiser les conséquences de la consommation de certains produits ou services susceptibles d'affecter l'environnement. »

- Comportements contraires aux principes du recyclage

« La publicité doit proscrire toute représentation ou évocation de comportement contraire au recyclage des produits ou à leur méthode spécifique de traitement. »

4 En intégralité sur notre site www.bvp.org

APPLICATION DE LA RECOMMANDATION : LA PRÉVENTION ET LA RESPONSABILISATION

1. Les spécificités du système d'autodiscipline publicitaire français

L'autodiscipline publicitaire à la française est délibérément à l'opposé d'un système reposant sur la contrainte, l'obligation ou la sanction a posteriori. Ce ne sont pas des insuffisances mais bien *des choix pleinement assumés.*

Le système trouve en effet l'essentiel de son efficacité dans une logique reposant sur :

- **L'appropriation :** à partir du moment où les règles sont rédigées par les professionnels eux-mêmes (annonceurs, agences, supports), elles acquièrent de facto une solide légitimité parce qu'ils ont l'assurance qu'elles tiennent compte de leurs réalités quotidiennes. Et même si l'application de ces règles peut leur imposer des renoncements et donc occasionner quelques grincements de dents, il leur est difficile d'en contester les fondements puisqu'ils les ont eux-mêmes élaborées. *La dimension volontaire de l'engagement des professionnels dans une autodiscipline qu'ils ont le sentiment de maîtriser est fondamentale ;* y introduire de la contrainte ou bien laisser à d'autres qu'aux professionnels le soin de définir ces règles serait totalement contre-productif. L'efficacité de l'autorégulation publicitaire repose sur un travail permanent de conviction, de négociation, d'influence, qui vise à ce que les acteurs de la publicité, de plus en plus nombreux, se sentent partie prenante du système et aient la conviction profonde qu'il est de leur intérêt d'y adhérer.

- **La responsabilisation :** la logique d'autodiscipline repose sur la confiance et la responsabilisation des professionnels. C'est ainsi que, confronté à une allégation précise qui demande à être étayée (allégation nutritionnelle ou écologique par exemple), le BVP alerte l'agence ou l'annonceur concerné sur la nécessité de disposer des preuves permettant de justifier cette promesse. Il peut demander un dossier à l'appui de l'allégation, mais il en fera alors une analyse purement logique (est-ce que l'allégation est cohérente avec les preuves ?) et non pas une contre-expertise scientifique, considérant que c'est au professionnel de prendre ses responsabilités à ce niveau. Dans la relation au quotidien qui se noue entre les juristes conseil du BVP et les professionnels qui les interrogent, un invisible travail de sensibilisation, et donc de responsabilisation, fait son œuvre.

- **La prévention :** l'accent du dispositif français est mis sur l'amont, c'est à dire sur les étapes précédent la diffusion effective des campagnes publicitaires. *Notre souci est d'intervenir avant que « le mal ne soit fait », avant que tel ou tel visuel ou spot problématique ne puisse endommager la confiance que le public accorde à la publicité.* Cette logique préventive s'incarne de différentes façons : pédagogie en direction des agences et de leurs annonceurs ; conseils délivrés par l'équipe de juristes-conseils du BVP à tous les stades de la création publicitaire ; avis définitifs avant diffusion pour les spots télévisés. Toutes les occasions sont mises à profit pour rappeler aux professionnels les codes de bonnes pratiques publicitaires et les conduire à amender leurs productions, si nécessaire. C'est l'efficacité de ces filtres amont que l'autodiscipline cherche à renforcer, car eux-seuls garantissent qu'une « mauvaise » publicité ne sorte pas dans le domaine public. Qui plus est, la logique préventive est indissociable de la logique volontaire décrite dans le point précédent : adopter des modes opératoires plus coercitifs (sanctions aval) conduirait automatiquement les professionnels à se désengager du système.

2. Mise en application de la recommandation sur le développement durable

En deux ans d'existence, à force de conseils, de conférences, d'articles et autres interventions du BVP, la recommandation sur le développement durable s'est progressivement imposée comme un référent dans le milieu professionnel. Elle a globalement été bien accueillie, même si elle ne figure pas en première ligne des priorités des professionnels à l'heure actuelle (beaucoup plus mobilisés sur les problématiques « obésité » et « image de la femme »).

Quantitativement, le nombre de conseils ou d'avis émis par le BVP sur ce motif (ou sur celui, contigu, d'environnement) n'est pas très important. Il faut dire qu'au regard du volume total de la production publicitaire française, considérable, les projets revendiquant un positionnement « développement durable » ou bien susceptibles de contrevenir aux principes généraux du développement durable ne sont pas si nombreux que ça.

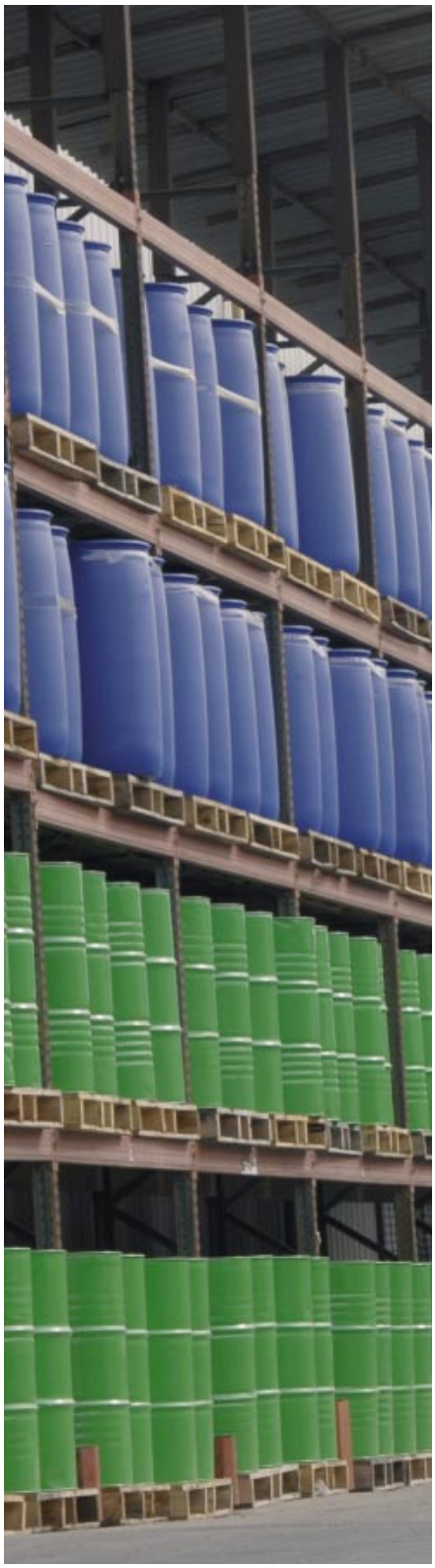
Qualitativement, les interventions que nos services ont dû faire renvoient globalement aux cas de figure suivants :

– véhicules automobiles garés ou circulant dans des espaces naturels ;
– problèmes liés à la gestion des déchets ménagers (abandonnés dans des espaces naturels, produits devant être recyclés jetés à la poubelle tout venant, etc.) ;
– revendications de sobriété énergétique (souvent dans le secteur automobile) ;
– pratiques de gaspillage (utiliser un véhicule pour sortir sa poubelle du jardin ou se rafraîchir devant un réfrigérateur qui reste ouvert par exemple).

Très rares, au total, sont les publicités revendiquant un positionnement global développement durable, tout simplement parce que rares sont, encore aujourd'hui, les annonceurs qui s'y risquent. Dans les cas où de tels projets nous ont été présentés, nous avons alerté l'annonceur, comme mentionné supra, sur la nécessité pour lui de pouvoir justifier ce positionnement publicitaire ambitieux. Sur ce terrain, de toutes façons, le contrôle social est tellement actif, via le corps associatif, que les annonceurs qui s'engagent dans une communication manifeste de développement durable ne se risquent pas à le faire sans fondement.

CONCLUSION

Cette recommandation vise à prendre les devants sur un dossier auquel les professionnels accordent une grande importance. Au-delà de la lettre, l'esprit de ce texte est d'émettre un signal fort en direction des praticiens publicitaires et de baliser autant que faire se peut ce champ complexe de la déontologie publicitaire appliquée au développement durable. Il s'agit de favoriser une prise de conscience, d'installer des réflexes, de fixer des horizons. Ces règles sont au moins autant des pistes à suivre que des guides de questionnement. Dans les métiers difficiles de la communication publicitaire, où la pression des journées de travail est permanente, le plus difficile est sans doute de trouver les quelques minutes qui peuvent être le fondement réel d'une éthique professionnelle. Cette recommandation, fruit d'une réflexion de professionnels sur plusieurs mois, a l'ambition de donner quelques repères et de remettre de la durée dans les choix du publicitaire au quotidien.



COMMUNICATION AND SUSTAINABLE DEVELOPMENT

The rules governing a code of conduct for members of the French advertising profession

Anne Chanon
Council to the AAU Board for Conduct Code issues

BUREAU DE VÉRIFICATION DE LA PUBLICITÉ
11, rue Saint Florentin – 75008 Paris – France
Tel.: (+33) 1 40 15 15 36 / Fax: (+33) 1 40 15 15 27
E-mail: anne.chanon@bvp.org – Website: http://www.bvp.org

The Advertising Audit Unit, or AAU (known as the BVP in France, where it is in internal regulatory body within the advertising industry) published a new recommendation in 2003 on "advertising and sustainable development".
Developed by officials from the advertising industry (advertisers, agencies, media services), this text was meant as a firm statement of the will of the professionals to engage their due responsibilities with respect to this subject. At the same time, it is intended as an educational tool to allow for better accounting of the advertising industry's stakes in sustainable development.
There are two facets to this new code of conduct:
– Where advertising takes a stand on sustainable development, it follows that concomitant measures must be guaranteed in order to avoid misleading the public (through the conscientious definition of certain signal expressions, avoiding misleading generalizations, etc.)
– For other cases, advertisers are recommended to make sure that they do not lend support to practices contrary to the general lines of sustainable development (for example, in regard to motor vehicle use or household waste)
This document concerns all advertising and *not only advertisements which take a stand on sustainable development.*
As with other AAU codes it is oriented towards a strategy of "preservation" (avoid harm, inhibit actions or models that are harmful to the society), rather than an "improvement" strategy (encourage the adoption of sound practices or models).
Beyond the practical guidelines it proposes, the text serves to delimit the relationship of sustainable development with the complex and challenging subject of ethical conduct in advertising. Not a prescription of rigid guidelines, its aim is to win over the advertising professionals by increasing their awareness, conditioning reflexes and prompting thoughtful practice.
The application of this code relies on a preventive system: prior to mass media distribution, advertising projects receive a review, followed up by any resulting frameshift the AAU might propose.

Key words: responsible communication, loyalty, accuracy, greenwashing, advertising ethics or code of ethics, ecological rationale, self-discipline or self-regulation.

COMUNICACIÓN Y DESARROLLO SOSTENIBLE

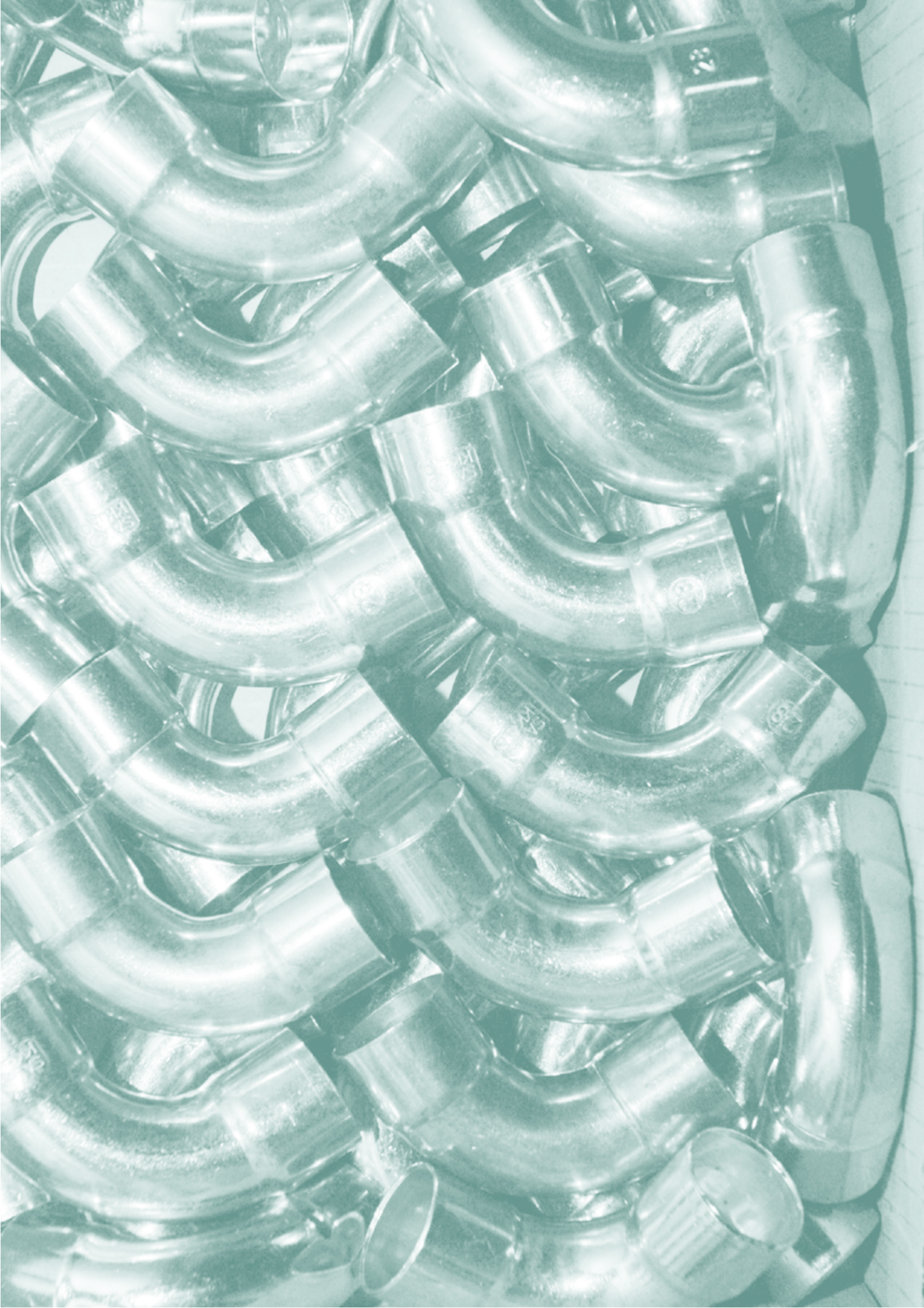
Las reglas deontológicas de los profesionales franceses de la publicidad

Anne Chanon
Asesora de dirección general de la BVP a cargo de la deontología

BUREAU DE VÉRIFICATION DE LA PUBLICITÉ
11, rue Saint Florentin – 75008 Paris – Francia
Tel.: (+33) 1 40 15 15 36 / Fax: (+33) 1 40 15 15 27
E-mail: anne.chanon@bvp.org – Sitio web: http://www.bvp.org

La Oficina de Verificación de la Publicidad (BVP), organismo francés de autorregulación publicitaria, publicó en 2003 una nueva recomendación sobre «publicidad y desarrollo sostenible».
Elaborado por representantes de varios sectores de la publicidad (anunciantes, agencias, patrocinadores), este texto intenta ser a la vez una muestra clara de la voluntad de responsabilidad de los profesionales sobre este tema y un documento pedagógico que permita a la creación publicitaria tomar en consideración los retos del desarrollo sostenible.
Este nuevo código de conducta presenta dos aspectos:
– en el caso en que la publicidad reivindique un posicionamiento de «desarrollo sostenible», subraya las precauciones que deben tomarse para no inducir conceptos erróneos en el público (define determinadas expresiones consagradas, desaconseja generalizaciones abusivas, etc.);
– en los demás casos, recomienda a la publicidad no avalar prácticas contrarias a los objetivos admitidos del desarrollo sostenible (respecto al uso de vehículos de motor o de residuos domésticos, por ejemplo).
Este texto hace referencia a toda la publicidad, *no sólo a las que se posicionan explícitamente por un «desarrollo sostenible».*
Como todos los códigos de la BVP, se sitúa en una lógica de «conservación» (no perjudicar ni inducir prácticas o modelos perjudiciales para la colectividad), y no en una lógica de «mejora» (favorecer el desarrollo de prácticas o modelos favorables a la colectividad).
El espíritu de este texto es delimitar, tanto como sea posible, este campo complejo y cambiante de la deontología publicitaria aplicada al desarrollo sostenible. Se trata de fomentar una concienciación en los profesionales de la publicidad, de instaurar reflejos y de motivar la reflexión, no de imponer normas rígidas.
La puesta en práctica de este código se apoya en un sistema preventivo: la BVP examina y eventualmente reencuadra los proyectos publicitarios antes de cualquier difusión en los medios de comunicación de masas.

Palabras clave: comunicación responsable, lealtad, veracidad, greenwashing, ética o deontología publicitaria, argumento ecológico, autodisciplina o autorregulación.



CAPACITY BUILDING IN CLEANER PRODUCTION IN BOSNIA AND HERZEGOVINA

PART II – CP IMPLEMENTATION IN BiH INDUSTRIAL ENTERPRISES

Sanda Midzic, MSc Tech
Jasminka Bjelavac, BSc CE

CENTER FOR ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT (CESD)
Stjepana Tomica 1 – Sarajevo – Bosnia and Herzegovina
Tel.: (+387) 33 212 466 / Fax: (+387) 33 207 949
E-mail: sanda.midzic@heis.com.ba, jasminka.bjelavac@heis.com.ba
Website: http://www.coor.ba

This article aims to give an overview of the results achieved through the training program carried out as the second task of the project "Capacity Building in Cleaner Production in Bosnia and Herzegovina", implemented by the Centre for Environmentally Sustainable Development (CESD). Basically, the article summarises the information on cleaner production measures implemented in the 9 industries that participated in the project and environmental and economic benefits they achieved. The article also explains the lessons learned by trainees. This project showed different motivation for business companies to implement cleaner production. The article details the most significant motivating factors.

Key words: cleaner production, efficiency, environmental and economic benefits, capacity building.

Introduction

Capacity building was supposed to be achieved through the training program. The latter was conceived and executed as a combination of the following components: theoretical training on cleaner production and in-company assessment and demonstration projects on adoption of cleaner production in 10 selected industries that expressed their interest in participating in this program financed by the European Commission. The companies, with the help of domestic and foreign experts, were supposed to adopt proposed measures, i.e. introduce cleaner production within one year.

The 10 industries participated in the program of cleaner production introduction within the project "Capacity Building in Cleaner Production in BiH", were: "Sarajevska pivara" Sarajevo, "Vegafruit" Mala Brijesnica, "Teleoptic Sinalco" Sarajevo, "Fana" Srebrenik, "Omerbašić" Odžak, "Žica" Sarajevo, "Enegoinvest" Tvornica dalekovodnih stubova Sarajevo, "Krajinaklas" Banja Luka, "Meboš" Šamac, "Živinoprodukt" Srbac. Participating companies are from all over Bosnia and Herzegovina and belong to the food and metal sector.

Unfortunately one company, Omerbašić d.o.o from Odžak, terminated their activities on the project due to the bankruptcy of the company in April 2004. However, nine of them successfully implemented CP projects as explained in the following chapters.

CP PROJECT IMPLEMENTATION

Aware of the fact that industries are significant polluters of the environment, they expressed their interest in introducing pollution prevention measures and putting an end to the excessive pollution of water, soil and air. Implementation of CP projects started with presentation of the results of environmental diagnosis and identified minimization opportunities (CP projects) to the companies' management. Techno-economical analyses from the MOED study have revealed the phases of each production process in which pollution prevention opportunities can be applied. The management of each company discussed the list of identified CP projects and then selected and approved implementation of the most suitable alternatives. The official approval was an important step towards implementation of selected CP projects, after which each company management made its own plan for implementation. They approved budget for necessary investments, activities, team in charge for implementation and schedule.

Aware of the fact that industries are significant polluters of the environment, they expressed their interest in introducing pollution prevention measures

Key environmental problems in the food industry

The food industry has high requirements in terms of the sanitary safety of workers and working areas. Therefore, the processes of washing, sterilization or disinfection are important consumers of water, energy and disinfection agents. Cooking and pasteurisation are also typical food industry processes that consume significant amounts of water and energy. Bearing in mind that the industry uses organic raw materials, the wastewater generated is loaded with suspended organic matter, and a significant quantity of organic waste is also generated.

1. Krajina klas, Banja Luka

The production of cakes and bakery products in plants such as those of Krajina klas from Banja Luka, has the minimum impact on environment and it is very challenging to look for opportunities to introduce environmental management measures. Nevertheless, by analysing their business practices, the management of Krajina klas detected irrational consumption of water and energy, and noticed some organizational problems in production plants, which they considered could be solved and increase the production efficiency, at the same time saving raw materials. Identified cleaner production measures refer to the improvement of energy efficiency, waste recycling and better or-

ganization of the transport of finished products to the points of sale. Three types of measure for improvement of environmental efficiency of companies were proposed:

Technical measures:

1. Construction of front chamber before the entrance into the cooling chamber in the cake production line, in order to avoid mixing of warm outer air with the cold air from chamber, and thus reducing energy losses.
2. Placement of fans for extraction of the warm air and fresh air inlet, in order to improve ventilation and save energy.
3. Building a 3 cm-thick insulating panel (made of polyurethane) between the refrigerator and the bakery oven in order to thermally insulate the refrigerator, and thus reduce its energy consumption.

Organisational measures:

1. Change in business organization in the company in order to reduce the involvement of management staff in performing executive tasks. Re-organization has been established according to the «Pareto principle» meaning that the main technologist should solve only 20% of the problems but with 80% of importance.
2. Reorganization of the delivery of raw materials and final products by changing delivery routes as well as by bringing drivers' attention to the need for regular maintenance of vehicles in order to rationalize fuel consumption.

Good housekeeping measures:

1. Collecting the packaging waste separately in all facilities and selling it at the waste market instead of disposing of it at waste dumps. The income goes to a fund for the employees' social program, thus further motivating them to recycle and to take care of the environment.
2. Collecting the organic waste separately (waste from fruits, fillings, biscuits) and giving it to the nearby farmers without compensation for cattle feeding, instead of disposing of it at waste dumps.

Measures for increasing energy efficiency:

1. Introduction of the work discipline of not turning the lights on during the day when there is no need for that.
2. Activation of the hibernation command on computers as well as turning off the photocopy machines, computers, printers and air conditioners after the end of working hours.
3. Avoidance of turning on the air conditioning unless all doors and windows are closed and closing of the blinds in order to reduce the heat and sunlight getting through.
4. Finding a more satisfactory location for the refrigerator further away from heat sources, regular cleaning of the cooling areas on the back of the refrigerator, checking that the thermostat is adjusted to the appropriate temperature.

By introducing these measures, the Krajina klas company managed with small investments, above all, to improve the energy efficiency of its premises. With the above-mentioned measures, the company has saved 7568 kWh of electricity annually. In addition to that, approximately 1.2 t of packaging waste was collected and approximately 600 kg of organic waste, which was recycled instead of being disposed of at the landfill. The investment payback period is 2.2 months.

2. Vegafruit, Mala Brijesnica

The first implemented cleaner production project in Vegafruit Company concerned the recovery of packaging waste. Another ongoing project involves the reduction of wastewater load by avoiding the discharge of organic matter and organic waste into the wastewater. Prevention, in the food industry, means preventing the organic substances from entering the wastewater and recovering organic waste by composting. In the peppers pickling line in the Vegafruit factory, a system of channels was built for wastewater collection with settling basins that keep the organic components out of wastewater. Before washing of the plant, dry cleaning is used in order to save the water and to reduce the quantities of wastewater. Collected organic waste is being disposed of, together with the organic waste from vegetable washing s, in separate waste bins, after which it is taken for composting.

Implementation of measures aimed at recycling of packaging waste and composting the organic waste, the company has reduced the quantity of solid waste being disposed of by 534 tons of organic and 51 tons of packaging waste, thus preserving natural resources, saving valuable space at the landfill, and achieving economic benefit. The total saving achieved is €9,963 per year.

3. Fana Srebrenik

Based on a detailed analysis of the production process in the Fana company, and taking into consideration the per-

centage of expenditure for supply of raw and auxiliary materials, water and energy consumption, it has been decided that the marmalade production process, which has the largest share of total production, will be chosen as the focus of environmental diagnosis. The detailed analysis of the marmalade production line has revealed and irrational water consumption. Analysing the amount of water consumed during the last several years, it was found that for the production of 1 ton of marmalade 9.24 m^3 of water is consumed or €6.71/t of marmalade. Most of that water is used for vacuum cooking and discharged into the sewage system afterwards. Bearing in mind that this is drinking water from the water supply system, the damage is significant from the environmental, as well as from the economic point of view. In addition, it was noticed that, due to inadequate storage space next to the packing machine, a significant percentage of damaged final product of approximately 1% has appeared as a result of glass fractures. Moreover, the workers have been spending a large number of hours on moving and rearranging the final products, which was reducing their work efficiency.

In order to solve the above-stated problems, they have undertaken the following measures:

1. Construction of a reservoir for the collection and recirculation of water from the vacuum cooking system. This way, the clean water, already used for cooling of the vacuum-cooking device, is used again, several times, for the same purpose, before it is discharged into the sewage system.
2. A well-organized storage space was built for storage of the finished products.
3. Collection of cardboard, PVC packaging and foil was organised for sale to the recycling companies.

The economic benefit of cleaner production was a major motivation for most of the industries

Building a reservoir for collection and recirculation of water, meant the clean water, previously discharged into the sewage system after cooling the vacuum device, could be reused. Drinking water consumption from the municipal water supply was reduced by 60%, generating savings of €5,808/year. As a result of building a well-organized warehouse the losses caused by glass fractures and inadequate storage of finished products, were eliminated, and the number of employee working hours in the storage house was reduced. Through the collection and recycling of the packing material waste, the amount of waste disposed of at the waste dumps was reduced by 30 tonnes per year. The investment payback period is 4 years and 6 months.

4. Sarajevo Brewery, Sarajevo

Sarajevo Brewery was founded in 1864, as the first industrial plant in Bosnia and Herzegovina. The basic activity of this company is the production and sale of beer, carbonated beverages, syrups, and mineral and natural water. In the beer production process, energy and water consumption is significant, and wastewater generated has a high organic load.

The analysis of process water consumption for cooling CO_2, injection plants and air production plants, showed that a significant amount of water is discharged directly into the sewage system, although, based on its quality, it can be reused for rinsing the glass bottles in the washing and filling line, as well as on lines for filling PET packages and cans.

Analysis of the causes of increased organic load in wastewater, revealed that when cooking the malt with hops, insoluble mixtures are created and settled in cooking bowls. This warm residue had been discharged into the sewer system, increasing the organic load of wastewater, although it has nutritional value and can be used as cattle food.

In the analysis of electricity bills, it was found that a considerable amount is charged due to the negative power factor cos Ø and to the peak loads. The environmental diagnosis has revealed that considerable savings can be achieved by the building of a compensation system, with the purpose of improving the power factor cos Ø.

In order to reduce water consumption, wastewater organic load and increase energy efficiency, the following measures were introduced:

1. Reuse of cooled water from the CO_2 injection plant into air compressors for cooling of compressors. For that purpose, a small run-off vessel and pump were installed. By introducing these measures, which also directly reduced the energy consumption needed to work the water pumps, the need to pump out clean water from the well was reduced.
2. Installation of a storage vessel for warm deposit from the cooking plant, mixing it with the beer husk and selling it as a high quality cattle food for a fee of €25.60/t instead of discharging it into the sewer system.
3. Design and construction of the new system for improved power factor.

The changes introduced resulted in reduction of fresh water consumption, reduced wastewater organic load, and increased energy efficiency.

The system for recirculation of cooling water helped to reduce water consumption by 24% and energy consumption by 18%. Through the elimination of warm deposit from the wastewater, the wastewater organic load was reduced by 0.25 kg BOD/hl of beer produced. The construction of the new system for power factor enhancement helped decrease the load on power sub-stations by approximately 400 kVA, releasing the transmission lines and opening up space for connection of new consumers onto the existing transformers. A higher use of active energy was achieved and energy efficiency increased. The company saved €58,604. The investment payback period was 3 months.

5. Teloptic Sinalco, Sarajevo

In the soft drinks industry, the high consumption of water and energy for product preparation and maintenance of hygienic conditions is a crucial issue. The team of experts from the company has decided to apply cleaner production measures focused on energy efficiency and reduction of packaging waste. With the purpose of increasing energy efficiency, the following measures were applied:

1. Optimisation of bottle dryer performance with three compressed air nozzles, instead of four,
2. Separation of electrical circuits, to provide lighting only in areas where work is being carried out,
3. Regulation of optimum ambient temperature between 18-20°C with 4 fan heaters instead of 8 when the production line is working and gives off heat.

The factory also applied measures to reduce paper and PVC packaging that were being sent to landfill.

1. Separate collection and transport of cardboard, paper and PVC packaging for recycling,
2. Reuse of cardboard boxes, received as packaging for empty bottles, as a cardboard pad for the final product.

The company has saved €2,202.40 in electricity bills. The separate collection and reuse of packaging waste brought a double benefit. The company no longer has expenses for transport of waste to the waste landfill and makes a profit from selling packaging material. The reuse of cardboard boxes helped save €4,294.90/year.

6. Zivinoprodukt, Srbac

Zivinoprodukt belongs to a group of medium-sized companies for the production, slaughter, cooling and freezing of poultry meat. The poultry slaughterhouse Zivinoprodukt, by the quality of equipment and its working capacity, is one of the largest slaughterhouses in Bosnia and Herzegovina. The purpose of the analysis of the industrial process was to assess the overall water consumption and to identify measures for reduction of water consumption per unit product. The analysis revealed the main reasons for excessive consumption, including discontinued work of the slaughterhouse, which contributes to an increase in water consumption of up to 30% once production restarts, and the human factor or irresponsible water management. A detailed analysis was made of all water consumption points and the opportunities for replacing drinking water with process water by building a well were assessed. Upon completion of a feasibility study of the technical, environmental and economical aspects, it was decided to introduce the following measures into the process:

1. Construction of a well with a capacity of 15 l/sec of process water, which is sufficient for a production capacity of 3,780-5,670 tons of final product. Connecting 30% of consuming units to this water source was found feasible. In that way, 14.4 m^3 of drinking water per ton of final product were replaced by cheaper process water.
2. Installation of new nozzles on the machines for the rinsing of the slaughtered broilers in the production process that was consuming 57% of total drinking water due to water leakage from the old nozzles.
3. Installation of pistols with spray nozzles on rubber hoses for industrial cleaning of work areas, that was consuming 12% of total drinking water.
4. Installation of an electro-magnetic valve to control water consumption for cooling compressor power units and ammonia condensate.

The company saved €43,703 per year, with the investment payback period of 5.2 months.

Key Environmental Problems in the Metal Industry

The crucial pollution issues for the metal industry involving zinc plating are the generation of toxic wastewaters from degreasing and zinc plating processes, evaporation of acidic solutions, and generation of solid waste mixed with zinc. In addition, irrational water and energy consumption, as well as other raw and auxiliary materials are typical for the metal finishing industry.

1. Zica, Sarajevo

In the production of wire, consumption of water and energy, as well as chemicals used in the process of wire zinc plating is dominant. The factory has already applied cleaner production measures by replacing chemical with the mechanical wire cleaning, thus eliminating wastewater generation. Water is used for wire rinsing after the chemical treatment, acid baths, and cooling. The detailed analysis has revealed of all these problems as typical in iron and steel production:

1. Excessive water consumption, and resulting production of wastewater that needs to be taken care of.
2. Excessive energy consumption.
3. Excessive consumption of different lubricants, chemicals, soils and similar agents.

An additional problem is the wastewater treatment plant, which exists but is not operating due to physical damage and malfunctioned automatic mechanisms. The expert team identified a set of minimisation opportunities, of which the three most interesting ones were implemented, while the remai-

ning ones will be implemented in due course. The measures that focus on the reduction of energy and water consumption and raw materials management are selected as priority, including:

1. The continuous measuring of gas and water at places where it was the most necessary and feasible, with the purpose of consumption control and its reduction. Two gas meters and two water meters were installed. One gas meter was installed to measure gas consumption in the preheating and ignition process, and the other in the zinc plating process. Water meters were installed to measure water consumption in the rinsing processes, after pickling, and in the zinc plating process.
2. The surplus of thermal energy from the zinc bath is used for drying wire after the fluxing process in the drying chamber. That is how the zinc plating process was technically improved.
3. Monitoring of auxiliary materials consumption for their rational use.

Applying the above-stated measures, the company succeeded in reducing water consumption by 72% and natural gas consumption by 10% and the amount of acid used by 49%, within one year, which yielded very significant annual savings of €26,321.80, with immediate payback.

2. Energoinvest-Industry of Long Distance Power Lines, Sarajevo

The factory is providing metal finishing services by zinc plating. The consumption of water and energy, as well as chemicals, in the process is significant. The expert team has made an analysis of water, energy and zinc cost share in the product unit price and concluded that they contribute to the increase of unit prices of the finished product making it uncompetitive, and that the solutions lies in their reduction. A reduction in energy costs share in the price of the finished product of 50% was achieved by:

1. Installation of devices for regulation of peak loads.
2. Adequate planning of production with the purpose of working at the lower tariff, and avoidance of connecting several energy consumers at the same time.

An almost sevenfold reduction of water cost share in the price of the finished product was achieved by:

1. Pumping the water from wells in the system to reduce groundwater level at the factory location, for water reuse in final product cooling, applied after the zinc plating.
2. Use of cooling water again in acid preparation and neutralisation processes.
3. Installation of thermostats in the cooling baths, and an automatic valve for adjustment of flow from the public water supply.

A reduction of zinc cost share in the price of the finished product for 17% was achieved by:

1. Reduction of zinc plating temperature to an average temperature of 447 °C. The same quality of the product was achieved with the thinner zinc coat, which contributed to the reduction of the overall zinc consumption, and
2. recycling of zinc ash by sieving, thus recovering an amount of pure zinc which is returned to the process.

3. Meboš, Šamac

As the factory deals with the production of boilers, booster pumps and barrels for which it is necessary to carry out the procedure of cleaning and degreasing and coating of containers prior to dying, it is faced with the requirement of adequate storage of generated waste and monitoring of water and air emissions. The factory already reduced the waste from cutting the sheet metals by using it for by-products. Moreover, the zinc plating process is outsourced as it was not possible to find cost-effective treatment. The project implemented concerns the barrel production line. The analysis of barrel production line in Meboš, the expert team detected the problem of claims and increased return of finished products from the buyers. More than 2% of finished products (400 units) per year have been returned, requiring reprocessing which increased the consumption of raw materials (paint and solvent), energy (oil and electricity) and wastewater generation.

The production process diagnosis focused on analysing and removing the causes of claims. Each phase of production is analysed, from procurement of raw materials, to storage and final delivery of products, and it is concluded that the main cause of paint damage on barrels is inadequate storage. Final products are stored in the open exposed to the elements, which prevents the paint from adhering to the barrels, which were thus easily damaged. Therefore, the management decided to construct a covered storage area that would enable better adherence of the paint. Not only was the percentage of claims regarding the final product reduced, but also significant annual savings of raw materials were achieved: the amount of paint used was reduced by at least 120 kg, solvent byr 50 litres, oil byr 400 l and electricity by about 400 kWh. The quantity of wastewater was reduced by 165 m^3. The total annual saving, achieved through implementation of these measures was €6,135.50.

LESSONS LEARNED

Generally, during the implementation process the participants have learned the following:

- Pollution is a cost item to be avoided.
- Accounting practices should be improved in order to identify real waste costs.
- The only visible costs of the wastes are waste treatment costs while loss of raw materials, energy and labor are hidden.
- Prevention is a process efficiency item to be maximized.
- Environment is a business opportunity to be realized and financed.
- Financing prevention is preferable option rather then financing treatment.

MAJOR BUSINESS MOTIVATING FACTORS

The LIFE project showed different motivation for business companies to implement cleaner production. The most significant motivating factor was the potential for improving bottom-line results.

Cost Benefit: The economic benefit of cleaner production was a major motivation for most of the industries. The cost of auxiliary materials is high, therefore any loss of raw material represents financial loss for the companies. The increase in emission treatment requirements means the companies will face new investments and operating and maintenance costs for emission treatment installations. There is reasonable fear that this will increase unit price Therefore, many projects selected focused on better organization of production and costs reduction (savings in raw materials and energy) of their product.

Image & marketing: Close behind, image and public relations were frequently cited as a key driver. Concerns about image were twofold:

For some, image was related to compliance. It referred to their relationship with government administration, and the desire to move away from their image as, for example, a “dirty industry”.

For some, image was related to overseas markets, where there were customer related concerns with product perception, packaging and so on. There was also recognition that the time is coming when also the local public will make choices on the basis of the environmental image of a product or company.

Information: Participants also saw the network as an opportunity to source useful information. For example, several participants had an interest in technology information.

The Government selected the issue of pollution prevention/cleaner production as one of the priority activities in a national environmental policy document

Sustainability: Although the drive to become a sustainable business was not a significant motivator, they became aware that to ignore sustainability is to wait for the competition to become more competitive and put them out of business.

Environmental Management Systems (EMS): Companies that had begun moving toward some form of EMS, either in-house or externally accredited, saw cleaner production as a key supporting and complementary tool. Through implementation of the cleaner production concept, the industrial companies prepare themselves for the introduction of ISO standards, because the work procedures and quality monitoring have been introduced or improved due to more efficient management. At the same time, the results achieved bring them closer to satisfying BAT requirements prescribed by the new Law on Environment.

Four of nine companies from the LIFE CP project showed interest in participating in the "Capacity Building for Implementation of EMS based on ISO 14001-POEMS-BiH" project. The main project objective was to build the capacities of BiH SMEs for implementation of environmental management system (EMS). The project methodology was based on a step-by-step approach towards the company's preparation for independent certification of EMS by some of the authorized certificate bodies.

CONCLUSIONS

Two capacity building components of the project: i) Dissemination of information and raising awareness on cleaner production (CP), ii) Training the trainers, has been designed with aim to build the capacities of local stakeholders in cleaner production. The impact of those tasks on the local stakeholders was reflected in several ways.

As a result of the capacity building program, the Government first committed to the project and later selected the issue of pollution prevention/cleaner production as one of the priority activities in a national environmental policy document.

The industry has recognized the economic and environmental benefits of cleaner production showing an interest in participating in the project through the training-the-trainers program. Demonstration projects carried out as a part of the training program provided concrete results showing demonstrable and sustained improvement in a company's profits, obtained through good industrial housekeeping practices and cleaner production approaches. These results had a strong motivational effect on industrialists to continue implementing cleaner production and to spread information on the benefits that they obtained from the use of this approach instead of end-of-pipe treatment. They became aware of the environmental impacts of their production processes, of the need to better organize production processes in order to be able to monitor their emissions and waste streams, and the need to set up an accounting system that will allow them to calculate environmental costs and to internalize them in to the product unit price. By implementing the cleaner production concept, the industrial companies prepare themselves for the introduction of ISO standards, because the work procedures and quality monitoring have been introduced or improved due to more efficient management. At the same time, everything mentioned also means implementation of criteria prescribed by a new set of environmental laws.

The universities have recognized that their role in cleaner production promotion is not limited to the reorganization of curricula, but they also can offer training programs to industrial employees, and also make a contribution through applied research.

By being active in the dissemination and training the trainers program the chambers of commerce showed that they recognized that cleaner production is an important aspect of overall business performance and success on national and international markets. They took an active part in the promotion of environmental and economic benefits of cleaner production through their industrial branch associations.

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RENFORCEMENT DES CAPACITÉS DE PRODUCTION PLUS PROPRE EN BOSNIE-HERZÉGOVINE

Partie II – Mise en place de la P+P dans les entreprises industrielles de Bosnie-Herzégovine

Sanda Midzic, MSc Tech
Jasminka Bjelavac, BSc CE

CENTER FOR ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT (CESD)
Stjepana Tomica 1 – Sarajevo – Bosnie-Herzégovine
Tél. : (+387) 33 212 466 / Fax : (+387) 33 207 949
E-mail : sanda.midzic@heis.com.ba, jasminka.bjelavac@heis.com.ba
Site Internet : http://www.coor.ba

L'objectif de cet article est d'avoir une vision globale des résultats obtenus grâce à l'application du programme de formation, deuxième mission du projet « Renforcement des capacités de production plus propre en Bosnie-Herzégovine », mis en place par le Centre pour l'environnement et le développement durable (CESD). L'article résume en effet les informations relatives aux mesures de production plus propre misent en place par 9 industries participant au projet, ainsi que les avantages environnementaux et économiques qu'elles ont permis. L'article explique également les leçons qui ont pu être tirées par les stagiaires. Ce projet a montré que les motivations des entreprises souhaitant introduire la production plus propre étaient différentes. L'article énumère les facteurs de motivation les plus significatifs.

Mots-clés : production plus propre, efficacité, avantages environnementaux et économiques, renforcement des capacités.

CAPACITACIÓN EN PRODUCCIÓN MÁS LIMPIA EN BOSNIA-HERZEGOVINA

Parte II – Aplicación de la P+L en las empresas industriales de Bosnia-Herzegovina

Sanda Midzic, MSc Tech
Jasminka Bjelavac, BSc CE

CENTER FOR ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT (CESD)
Stjepana Tomica 1 – Sarajevo – Bosnia-Herzegovina
Tel.: (+387) 33 212 466 / Fax: (+387) 33 207 949
E-mail: sanda.midzic@heis.com.ba, jasminka.bjelavac@heis.com.ba
Sitio web: http://www.coor.ba

Este artículo pretende ofrecer una visión general de los resultados obtenidos con el programa de formación llevado a cabo como segunda tarea del proyecto «Capacitación en Producción más Limpia en Bosnia-Herzegovina», puesto en práctica por el Centro para un Desarrollo Ambientalmente Sostenible (CESD). Básicamente, el artículo resume la información sobre las medidas de producción más limpia aplicadas en las 9 industrias que participaron en el proyecto, así como los beneficios económicos y ambientales que lograron. El artículo también explica las lecciones aprendidas por el personal en formación. Este proyecto muestra que las motivaciones de las empresas para aplicar la producción más limpia son diferentes. El artículo detalla los factores motivadores más significativos.

Palabras clave: producción más limpia, eficiencia, beneficios ambientales y económicos, capacitación.

ECODESIGN: THEORETICAL FRAMEWORK AND CATALAN PROGRAMME FOR ECODESIGN IN PACKAGING

Joan Rieradevall[1], Marta Albet[1*], Raul Garcia[1], Rafael Osorio[1], Alba Bala[1], Toni Clariana[2], Mercedes Hortal[3], Maria Lluïsa Maspoch[4], Javier Peña[5] and Marina Centelles[6]

[1] INSTITUT DE CIÈNCIA I TECNOLOGIA AMBIENTALS (ICTA) I DEL DEPARTAMENT D'ENGINYERIA QUÍMICA. UNIV. AUT. DE BARCELONA
Edifici Cn - Campus UAB, 08193 Bellaterra (Cerdanyola del Vallès) – Catalonia
Tel. / Fax: (+34) 935 813 850 / (+34) 935 812 013

[2] MAGMA DESIGN AND UNIVERSITAT POMPEU FABRA
San Fernan 7, p 28, Sant Just Desvern, 08960 Barcelona – Catalonia
Tel. / Fax: (+34) 934 734 050 – E-mail: tclariana@magmadesign.net

[3] INSTITUTO TECNOLÓGICO DE ENVASES Y EMBALAJES (ITENE)
Polígon d'Obradors, c/ Soguers 2, 46110 Godella – Valencia
Tel. / Fax: (+34) 963 905 400 – E-mail: mhortal@itene.com

[4] CENTRE CATALÀ DEL PLÀSTIC. UNIVERSITAT POLITÈCNICA DE CATALUNYA (UPC)
Colom 114, 08222 Terrassa – Catalonia
Tel. / Fax: (+34) 937 837 022 – E-mail: ccp@cmem.upc.es

[5] ELISAVA. UNIVERSITAT POMPEU FABRA (UPF)
Carrer Ample 11-13, 08002 Barcelona – Catalonia
Tel. / Fax: (+34) 933 174 715 – E-mail: jpenya@elisava.es

[6] CENTRE FOR THE ENTERPRISES AND THE ENVIRONMENT (CEMA)
París 184, 3r., 08036 Barcelona – Catalonia
Tel.: (+34) 934 151 112 / Fax: (+34) 932 370 286
E-mail: mcentelles@gencat.net – web: http://www.cema-sa.org

The move towards more sustainable development —how we can meet current needs without compromising the development of future generations— requires the minimisation of the overall environmental impact associated with the life cycle of products. By product life cycle we mean the set of stages through which the product passes from the extraction and processing of its raw materials, through production, marketing, transportation and use, to its final management as waste. Ecodesign is the key step leading to sustainable design and responsible consumption, since it incorporates new concepts, such as the vision of product-system, the concept of life cycle and the involvement of all the participating players in the improvement of the environmental aspects of products. This article describes ecodesign concepts and the environmental and economic improvements gained through the ecodesign of different packages from representative companies from different industrial sectors of Catalonia.

Key words: ecodesign, packaging, ecoproduct, environmental impact, final management.

Introduction

Over the last years, strategies for the environmental improvement of products in southern European countries have focussed on reducing the local environmental impact of the manufacturing processes of products at the manufactures' quarters by using such tools as environmental audits (EMAS, ISO 14001) and proper management of product waste through waste treatment at the end of the process, and, more recently, re-use and recycling. During these years governments have observed that, while significant improvements have been achieved at a local level, there has been no reduction in the overall environmental impact. This failure to resolve overall environmental problems has led to the realisation that a substantial part of the environmental impact of products is generated at stages other than production or end-management.

ECODESIGN: A KEY TO SUSTAINABLE DEVELOPMENT

Faced with these environmental problems, and thanks to increased citizen awareness and pressure in connection with environmental degradation, public institutions such as the European Community, through its Directives: End-of-Life Vehicles (2002); Waste Electrical and Electronic Equipment (2002); Packaging Waste (2004) and the Green Paper on Integrated Product Policy has assimilated the concept of product cycle and strategies for overall environmental protection. By the life cycle of a product we mean the set of stages through which the product passes from the extraction and processing of its raw materials, through production, marketing, transportation and use, to its final management as waste. The environmental impact of a product arises as result of the substantial consumption of resources and energy and the generation of direct or indirect pollutant emissions, and consists of the depletion of natural resources, impact on human health and degradation of environmental quality, in terms of both human and natural surroundings. The key aspect allowing us to study these stages and their possible environmental improvement is product design.

Ecodesign is the key step leading to sustainable design and responsible consumption

We can define Ecodesign as the:

Actions aimed at environmental improvement of products during the initial design phase through functional enhancement, selection of materials with lower impact, application of alternative processes, improvement of transportation and use, and minimisation of impact during the final treatment stage.

Ecodesign is the key step leading to sustainable design and responsible consumption, since it incorporates new concepts, such as the vision of product-system, the concept of life cycle and integration of all players involved focussing on the improvement of the environmental aspects of products, and expands partial actions on environmental issues, such as treatment, recycling and cleaner production, and the move toward the integration of financial aspects, such as ecoeffiency, and socio-economic aspects, such as sustainable design.

SPECIFIC ACTIONS AND STRATEGIES OF ECODESIGN

Worth mentioning, among others, are the specific actions and strategies associated with ecodesign set out in Table 1. Their application will lead to the creation of new products. Known as ecoproducts, which, through the reduction of overall environmental impact, will allow the creation of greater competition among enterprises in a way that is compatible with the improvement of the quality of life of our society.

Table 1. Specific actions and strategies within the framework of ecodesign

Strategies	Specific actions
Improvement of product concept	Dematerialisation Efficiency Multifunction
Materials with lower impact	Reduction of toxic by-products Renewable resources Recyclable materials Recycled materials Lower weight and volume
Cleaner production	Energy savings Renewable energy Reduced resource consumption Decreased emissions Improved management
Environmental improvements in enterprise logistics	Reduced energy consumption Redesign of logistics Use of new, more environmentally friendly fuels
Reduction of environmental impact of packaging	Reduction of weight and volume Use of recycled materials Re-use of packaging Recyclables
Use of products with improved product use	Renewable energy sources Minimisation of consumption Reduced consumption of material resources Durability Modular Structure No-obsolescence
Minimisation of final impact in waste management	Re-use of components Recycling of materials Use of waste for energy production

PLAYERS INVOLVED IN THE REDUCTION OF THE ENVIRONMENTAL IMPACT OF PRODUCTS

The key players involved in the process of minimisation of the environmental impact of products are designers and technicians, enterprises, consumers, and the government. Designers and technicians are responsible for working during the initial stage though the ecodesign of existing products or ecoinnovation with new, more environmentally-friendly products.

Direct action in the area of environmental improvement by enterprises, as producers and distributors, centres on minimisation of the consumption of material resources, cleaner production and more environmentally acceptable transportation and packaging. Consumers, by demanding more environmentally-friendly products, can favour the development of a market for ecoproducts, but their role does not end with the green procurement. Instead, they have a key role in connection with ten environmentally correct uses of products and proper final management. The government is responsible for setting up a new regulatory framework based on environmental protection and green procurement, which will foster development of more environmentally-friendly enterprises.

THE ECODESIGN PROCESS

The process of developing and ecodesign project begins with the creation of a multidisciplinary team. The next ten stages consist of selection of the appropriate tool for environmental analysis and determination of the best actions for environmental improvement in the ecodesign pilot project. Lastly, are the stages involving follow-up and evaluation of the process. The tools of ecodesign are used to perform some of the following functions: description of environmental problems associated with products, prospecting of possible actions for improvement associated with ecodesign, evaluation to determine the actual environmental benefits once the project is complete, and finally, communication of the improvements achieved to consumers, enterprises and the government.

THE TOOLS OF ECODESIGN

There are a large number of ecodesign tools. The main characteristics common to all of them is the incorporation of concepts such as "cycle", "overall improvement" and "product-system". The use of an environmental tool by an enterprise depends upon environmental maturity and the cost and degree of complexity of the tool. Where the enterprise is at the stage of introducing environmental concepts into its products, the most advisable tools are those of a qualitative nature, such as Strategic Environmental Appraisal (SEA) and Check lists (CL); where the enterprise is at a transitional stages allowing semi-quantitative environmental analysis, the appropriate tools are Design Change Evaluation (DCE) or Analysis Matrixes (AM); if the enterprise has reached a more advanced stage of implementation of ecodesign, quantitative tools, such as Life Cycle Analysis (LCA), are called for.

PRESENT STAGE OF ECODESIGN

Ecodesign is still at an incipient stage in the Mediterranean and is largely undeveloped in northern European countries.

The vast majority of industrial enterprises in this area continue to manufacture products without taking environmental issues into account. Nevertheless, in recent years a certain localised (not general) environmental improvement has been noted in many products, mainly in the use of recycled materials, the incorporation of available technological improvement at the production stage and the reduction of weight and volume packaging uses in distribution. In many cases these improvements are the outcome of a strategy aimed at attaining financial rather than environmental benefits by reducing cost (energy and materials saving and reduction of cost of emissions treatment); in other cases the cause has been the search for distinctive features, such as ecolabelling (paints, lacquers, water-saving systems); in yet other cases, the improvement has been in response to legal regulation (directives on packaging, end-of-life vehicles, waste electrical and electronic equipment, etc.), or to circumstantial pressures.

The application of ecodesign in enterprises, therefore, is not a question of fashion or impulse, but a situation where both the enterprise and the society in which it operates attain a certain degree of environmental and financial maturity. It is no coincidence that German, Danish and Dutch enterprises are leaders in the application of ecodesign.

The ecodesign action in Catalonia has been favoured by actions such as those undertaken by CEMA by start up the Catalan Program in 2004. Another action has been the efforts by Barcelona City Council's Sustainable Resources Offices and the First Exhibition of Spanish Ecodesign by the Institute of Culture's Museum of Decorative Arts, also an organisation of the City Council, scheduled in 2003.

Ecodesign is still at an incipient stage in the Mediterranean

Other actions have been undertaken by the Town Council of El Prat de Llobregat, such as the green procurement of urban furnishings, and by Barcelona Provincial Council, such as the studies now underway of municipal ecoproducts, through the Sustainable Cities and Towns Network. All these projects have been developed with the cooperation of ICTA (Environmental Science and Technology Institute), Autonomous University of Barcelona.

BARRIERS TO ECODESIGN DEVELOPMENT

Table 2 below shows the barriers encountered by the main players in connection with ecodesign and production, purchasing and final management of ecoproducts.

Table 2. Barriers to implantation of ecodesign and manufacture of ecoproducts

Designers and technicians	**Enterprises**
Consider the product in isolation, not applying the concept of cycle.	Priority for treatment and recycling
Lack of awareness of ecodesign	Lack of awareness of ecodesign
No use of tools for environmental improvement and processes.	Few environmental inventories
Intuitive approach to environmental improvement	Lack of awareness of overall impact of their products life cycle.
Environmental improvement of products only in the use of recycled materials.	Make environmental improvements
	Make environmental improvements to products only to obtain cost saving.
Consumers	**Governments**
Environmental responsibility for product beyond consumers control.	Green public procurement by government only incipient and of minor importance.
Preferential choice of ecoproducts not widespread	Few resources dedicated to research and development on new ecoproducts.
Lack of awareness of ecolabels	
Little importance seen in environmental consideration in the home.	Little promotion and dissemination of ecolabels
Very little awareness of the environmental implication of products.	Priority for end-process strategies (treatment and recycling).

OPPORTUNITIES PROVIDED BY ECODESIGN

In spite of barriers to ecodesign, the implementation of this approach and the manufacture of ecoproducts offers advantages for all players involved, as shown in table 3 below.

The manufacture of ecoproducts offers advantages for all players involved

Table 3. Opportunities offered by ecodesign and the resulting ecoproducts

Designers and technicians	Enterprises
Innovation Concept of life cycle Integration of environmental aspects in financial and social aspects. Product-system	Identification of stages with greatest impact on financial efficiency thanks to cost reductions in production, transportation, use and final-management of waste. Differentiation from competitors Advanced on regulation: IPP, ecodesign regulations, directives on final-management products. Improvement of image, marketing and communication. Greater safety and reduction of insurance costs Movement towards sustainable enterprises
Consumers	**Governments**
Green procurement Financial saving from reduced consumption of energy and materials during use. Improvement of final management of products. Enhanced quality of life More environmentally-friendly lifestyles.	Contribute to definition of new environmental policies. Image of environmentally-friendly institution Resource saving Reaction to overall environmental impact Greater participation by all players Commencement of programmes for sustainable development.

CATALAN PROGRAMME FOR ECODESIGN IN PACKAGING

The packaging sector in Catalonia is concerned in a restrictive European legal framework. On the other hand, there is a deficiency in the incorporation of environmental aspects in the design processes both by companies and designers. The Catalan Programme for Ecodesign in Packaging tries to respond to this situation.

The main stakeholders in this project are the public administration, the small and medium-sized enterprises and the university. For this pilot project, supported economically by the Centre for the Enterprises and the Environment (CEMA), six representative companies of different industrial sectors have been chosen: Arcadíe España (fresh meat products), Embamat (wood and cardboard packaging), KH Lloreda (laundry detergent products), Lamp (lighting design), Santa & Cole (urban lighting and furniture) and Candy Glam Rings by Escribà (sweet rings). The objectives are:

- To work on an interdisciplinary project between the public administration, the companies and the university.
- To improve the incorporation of the packaging ecodesign strategy by the companies.
- To train professionals in environmental prevention of packages.
- To integrate environmental tools in the process of ecodesign such as spider diagram —a subjective tool— and simplified LCM – a quantitative tool.
- To draw up an ecodesign guide based on this pilot project.
- To communicate and spread the results to favour an environmental improvement of packaging in Catalonia.

METHODOLOGY PACKAGING ECODESIGN

As shown in Figure 1, the developed methodology process is based in the following steps:

- Company definition & Package selection.
- Current situation analysis. A preliminary environmental diagnosis (simplified LCA[1] and spider diagram) and a market study.
- Strategies. The critical environmental points are obtained from analysing the results. From that point, the improvement strategies are proposed.
- Design. Considering these improvement strategies, the company requirements and the current legislation, the packaging ecodesign is determined.
- Improvements quantification. The package ecodesign proposal is subjected to an environmental analysis (LCA comparative[1]) in order to evaluate the improvements.
- Dissemination. The project results are published with the purpose of favouring ecodesign application in other Catalan packaging companies, and training the administration technicians and workers.

The environmental diagnosis consists of two phases. The first phase consists of a current situation analysis based on a semi quantitative and subjective tool - a spider diagram done by the project expert panel and a quantitative and objective tool —the simplified LCA— (2.b.). A comparative LCA is done in the second phase of the environmental study, after the product ecodesign, in order to quantify the ecodesign improvements (5.a.).

The SETAC[2] methodology has been applied in Life Cycle Analysis.

The computer program SimaPro 6.0 by PRé Consultants B.V (2004) has been used to make the calculations and to provide an environmental impact database about different life-cycle stages. The environmental impact evaluation has been done using the Eco-indicator 99 method, hierarchy version, developed by PRé Consultants (2000).

In order to carry out an LCA of every package, the system studied has been divided in 5 subsystems:

- *Extraction and processing:* this stage considers raw material extraction and processing needed to produce the different packaging components, and raw material transport to the delivery plant and processing.
- *Transport to the packaging plant:* this subsystem considers the different packaging components' transport from manufacturing plants to the packaging production plant.
- *Production:* includes the energy requirements of machines and tools involved in the packaging production.
- *Distribution:* considers transport associated with product (packaging) distribution from the packaging production plant to the customer.
- *Waste management:* includes the waste transport from containers to the waste treatment plants and final waste treatment.

1.a. COMPANY DEFINITION
1.b. PACKAGE SELECTION
2.a. PRELIMINARY DIAGNOSIS
2.b. ENVIRONMENTAL ANALYSIS
2.c. RESULT ANALYSIS
2.d. CRITICAL POINTS DEFINITION
3.a. STRATEGY IMPROVEMENT STUDY
3.b. ECODESIGN STRATEGIES DEFINITION
4.a. PACKAGE ECODESIGN
4.b. PROTOTYPING
5.a. IMPROVEMENTS QUANTIFICATION
6.a. DISSEMINATION

Figure 1. Developed methodology process

1 Simplified and Comparative LCA are done following the main principle and within the legal framework defined by the international standard ISO 14040:1997 and national standard "UNE-EN ISO 14040:1998 Environmental Management, Life Cycle Analysis standards. Principles and structure" and all the ISO 1404x.

2 Society of Environmental Toxicology and Chemistry (SETAC).

RESULTS OF THE CATALAN PROGRAM FOR ECODESIGN IN PACKAGING

Applying this methodology to study different cases from 6 companies, results are obtained. These results show that the most critical life-cycle phases of the studied packages are, generally, the "Extraction and Processing" of materials and the transport associated with the "Distribution".

In order to determine the ecodesign strategy followed in each package, the LCA and spider diagram results of each one were considered as characteristic, such as technological, economic and social aspects. The improvements corresponding to each package can oscillate depending on the development of the sector to which it belongs.

The environmental and economic improvements obtained through the ecodesign of the different packages from the six representative companies of different industrial sectors are shown in the table below. (See Tables 4, 5 and 6).

Table 4. Economic improvements obtained by the ecodesign proposal

Packaging (Company)	Economic improvement
400 g minced meat: Multilayer plate (Arcadíe)	No data
Tribox: Industrial packaging (Embamat)	Decrease of 46.07%
Candy-Glam Rings: Sweet ring packaging (Escribà)	Decrease of 24.62%
KH Gel: Laundry detergent bottle (KH Lloreda)	Decrease of 18.00% Increase of 14.70% (Labelling area)
Dinamic: Standard lamp packaging (Lamp)	Decrease of 46%
Neoliviano: Bench packaging (Santa & Cole)	Decrease of 10.29%

Table 5. Environmental improvements obtained by the ecodesign proposal

Packaging (Company)	Environmental aspects	Improvements	
400 g minced meat: Multilayer plate (Arcadíe)	Packaging weight Material	Decrease of 12.00% Decrease of 95.00%	
Tribox: Industrial packaging (Embamat)	Packaging weight Global environmental improvements Waste treatment	Decrease of 34.65% Decrease of 14.28% Decrease of 53.29%	
Candy-Glam Rings: Sweet ring packaging (Escribà)	Packaging weight Packaging volume Material	Decrease of 0.51% Decrease of 11.42% Decrease of 16.21%	
KH Gel: Laundry detergent bottle (KH Lloreda)	Secondary packaging weight Primary packaging volume Secondary packaging volume Fuel consumption Material	Decrease of 3.40% Decrease of 7.50% Decrease of 10.00% Decrease of 9.80% 30.00%	Decrease of 11.30% Decrease of 20.00% Decrease of 25.00% Decrease of 24.50%
Dinamic: Standard lamp packaging (Lamp)	Packaging weight Packaging volume (base) Material	Decrease of 4.00% Decrease of 36.00% Decrease of 73.00%	
Neoliviano: Bench packaging (Santa & Cole)	Packaging weight Packaging volume Transport volume Material	Decrease of 7.36% Decrease of 21.7% Increase of 50% Decrease of 13%	

The most significant improvements from the cases studied arise from the application of the following ecodesign strategies:

– Reduction of the primary packaging volume that supposes an optimization with values between 7.5 and 36%. This improvement reduces the secondary packaging volume (10-36%) so that optimising the transport by up to 50%.
– Use of material with less environmental impact, recycled material or reused components that avoids or reduces the consumption of virgin material. This material change reduces the environmental impact by up to 95%.
– Weight optimization by up to 35% of the current packaging.
– As a consequence of the material changes and volume optimization, economic improvements between 10 and 45% have been achieved; obtaining ecoefficient packaging.
– In some cases studied, the labelling area has enlarged by 15% which is a very important point in marketing.

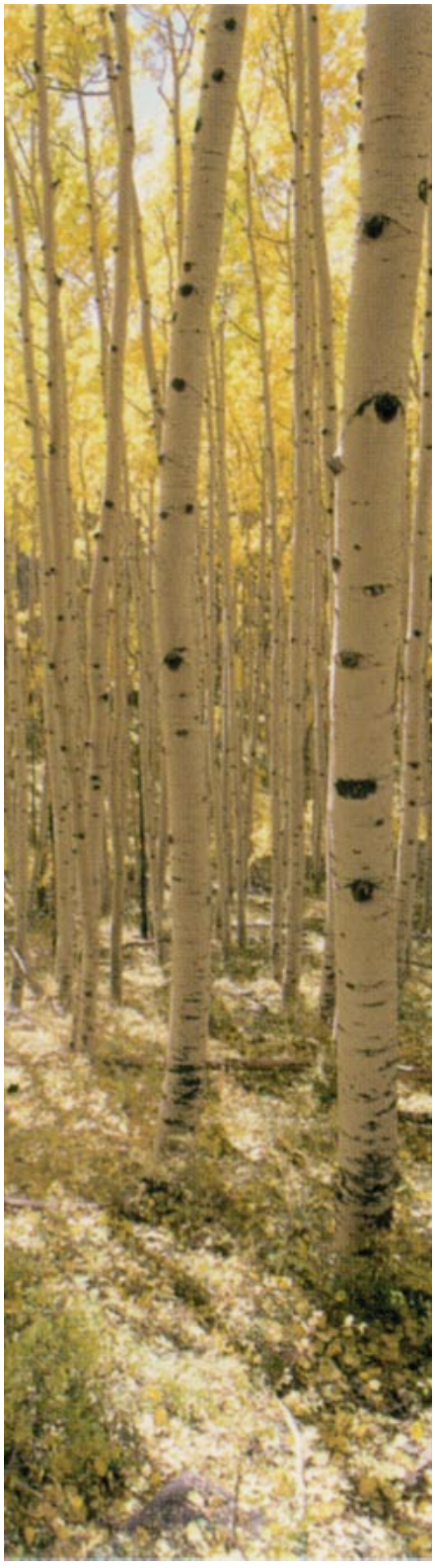
Table 6. Comparative between current & ecodesign packaging

Packaging (company)	Current packaging	Ecodesign packaging
400 g minced meat: Multilayer plate (Arcadíe)		
Tribox: Industrial packaging (Embamat)		
Candy-Glam Rings: Sweet ring packaging (Escribà)		
KH Gel: Laundry detergent bottle (KH Lloreda)		
Dinamic: Standard lamp packaging (Lamp)		
Neoliviano: Bench packaging (Santa & Cole)		

FUTURE PROSPECTS FOR ECODESIGN

The move towards ecodesign is a difficult one for enterprises, since it requires a new way of thinking and working overall. Managers and technicians find it difficult to move from a culture based on localised and final environmental strategies of treatment and recycling to a process of ecodesign, and overall, initial strategy linked to new cultures of organisation of work through multidisciplinary participation of workers in the process of ecoproduct development. In order to make this process of change a reality, governments must take action within the framework of the EU Integrated Product Policy (IPP), such as programmes promoting R&D in ecodesign and awareness of products, creation of an environmental data base stimulation of university training in ecodesign issues, promotion and awareness campaigns focussing on ecoproducts and compulsory green procurement.

The move towards ecodesign requires a new way of thinking and working overall



Acknowledgement

This Catalan Programme for Ecodesign in Packaging was carried out with the financial support of the Centre for the Enterprise and the Environment (CEMA), the public administration and participating private institutions.

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ÉCO-CONCEPTION : CADRE THÉORIQUE ET PROGRAMME CATALAN D'ÉCO-CONCEPTION D'EMBALLAGES

Joan Rieradevall[1], Marta Albet[1*], Raul Garcia[1], Rafael Osorio[1], Alba Bala[1], Toni Clariana[2], Mercedes Hortal[3], Maria Lluïsa Maspoch[4], Javier Peña[5] and Marina Centelles[6]

[1] INSTITUT DE CIÈNCIA I TECNOLOGIA AMBIENTALS (ICTA) I DEL DEPARTAMENT D'ENGINYERIA QUÍMICA. UNIVERSITAT AUTÒNOMA DE BARCELONA
Edifici Cn - Campus UAB, 08193 Bellaterra (Cerdanyola del Vallès) Catalogne
Tél. / Fax : (+34) 935 813 850 / (+34) 935 812 013

[2] MAGMA DESIGN AND UNIVERSITAT POMPEU FABRA
San Fernan 7, p 28, Sant Just Desvern, 08960 Barcelona – Catalogne
Tél. / Fax : (+34) 934 734 050 – E-mail : tclariana@magmadesign.net

[3] INSTITUTO TECNOLÓGICO DE ENVASES Y EMBALAJES (ITENE)
Polígon d'Obradors, C/ Soguers 2, 46110 Godella – Valence (Espagne)
Tél. / Fax : (+34) 963 905 400 – E-mail : mhortal@itene.com

[4] CENTRE CATALÀ DEL PLÀSTIC. UNIVERSITAT POLITÈCNICA DE CATALUNYA (UPC)
Colom 114, 08222 Terrassa – Catalogne
Tél. / Fax : (+34) 937 837 022 – E-mail : ccp@cmem.upc.es

[5] ELISAVA. UNIVERSITAT POMPEU FABRA (UPF)
Carrer Ample 11-13, 08002 Barcelona – Catalogne
Tél. / Fax : (+34) 933 174 715 – E-mail : jpenya@elisava.es

[6] CENTRE POUR L'ENTREPRISE ET L'ENVIRONNEMENT (CEMA)
París 184, 3r., 08036 Barcelona – Catalogne
Tél. : (+34) 934 151 112 / Fax : (+34) 932 370 286
E-mail : mcentelles@gencat.net – Site Internet : http://www.cema-sa.org

La marche vers un développement plus durable (comment répondre aux besoins actuels sans compromettre le développement des générations futures ?) suppose la minimisation globale de l'impact environnemental lié au cycle de vie des produits. Par cycle de vie du produit, nous entendons l'ensemble des étapes à travers lesquelles le produit passe, de l'extraction et la transformation des matières premières, en passant par la production, le marketing, le transport et l'utilisation, jusqu'à sa gestion finale en tant que déchet. L'éco-conception est une mesure clé orientée vers la conception durable et la consommation responsable, puisqu'elle intègre de nouveaux concepts, tels que la vision de produit-système, le concept de cycle de vie et l'engagement de l'ensemble des acteurs participant à l'amélioration de l'aspect environnemental des produits. Cet article décrit des projets d'éco-conception ainsi que les améliorations environnementales et économiques obtenues grâce à l'éco-conception de plusieurs emballages au sein d'entreprises représentatives issues de différents secteurs industriels en Catalogne.

Mots-clés : éco-conception, emballages, éco-produit, impact environnemental, gestion finale.

ECODISEÑO: MARCO TEÓRICO Y PROGRAMA CATALÁN DE ECODISEÑO DE ENVASES

Joan Rieradevall[1], Marta Albet[1*], Raul Garcia[1], Rafael Osorio[1], Alba Bala[1], Toni Clariana[2], Mercedes Hortal[3], Maria Lluïsa Maspoch[4], Javier Peña[5] and Marina Centelles[6]

[1] INSTITUT DE CIÈNCIA I TECNOLOGIA AMBIENTALS (ICTA) I DEL DEPARTAMENT D'ENGINYERIA QUÍMICA. UNIVERSITAT AUTÒNOMA DE BARCELONA
Edifici Cn - Campus UAB, 08193 Bellaterra (Cerdanyola del Vallès) Cataluña
Tel. / Fax: (+34) 935 813 850 / (+34) 935 812 013

[2] MAGMA DESIGN AND UNIVERSITAT POMPEU FABRA
San Fernan 7, p 28, Sant Just Desvern, 08960 Barcelona – Cataluña
Tel. / Fax: (+34) 934 734 050 – E-mail: tclariana@magmadesign.net

[3] INSTITUTO TECNOLÓGICO DE ENVASES Y EMBALAJES (ITENE)
Polígon d'Obradors, C/ Soguers 2, 46110 Godella – Valencia
Tel. / Fax: (+34) 963 905 400 – E-mail: mhortal@itene.com

[4] CENTRE CATALÀ DEL PLÀSTIC. UNIVERSITAT POLITÈCNICA DE CATALUNYA (UPC)
Colom 114, 08222 Terrassa – Cataluña
Tel. / Fax: (+34) 937 837 022 – E-mail: ccp@cmem.upc.es

[5] ELISAVA. UNIVERSITAT POMPEU FABRA (UPF)
Carrer Ample 11-13, 08002 Barcelona – Cataluña
Tel. / Fax: (+34) 933 174 715 – E-mail: jpenya@elisava.es

[6] CENTRO PARA LA EMPRESA Y EL MEDIO AMBIENTE (CEMA)
París 184, 3r., 08036 Barcelona – Cataluña
Tel.: (+34) 934 151 112 / Fax: (+34) 932 370 286
E-mail: mcentelles@gencat.net – Sitio web: http://www.cema-sa.org

El proceso hacia un desarrollo más sostenible (cómo podemos resolver las necesidades actuales sin comprometer el desarrollo de las generaciones futuras) pasa por la minimización del impacto ambiental global asociado al ciclo de vida de los productos. Por ciclo de vida de un producto se entiende el conjunto de etapas desde la extracción y procesamiento de sus materias primas, la producción, comercialización, transporte, utilización, hasta la gestión final de sus residuos. El ecodiseño es el primer peldaño para alcanzar un diseño sostenible y un consumo responsable, ya que permite la incorporación de nuevos conceptos, una visión de producto-sistema, el concepto de ciclo de vida y la integración de todos los actores implicados en la mejora de los aspectos ambientales de los productos. Este artículo describe conceptos de ecodiseño, así como las mejoras económicas y ambientales de la aplicación del ecodiseño en distintos tipos de envases de compañías representativas de diferentes sectores industriales de Cataluña.

Palabras clave: ecodiseño, envases, ecoproducto, impacto ambiental, gestión final.

LE BILAN CARBONE® DE L'ADEME

Christophe Hévin

ADEME – Délégation régionale Midi-Pyrénées
Rue Jean Bart – BP 672 – 31319 Labège Cedex – France
Tél. : (+33) 5 62 24 00 34 / Fax : (+33) 5 62 24 34 61
E-mail : christophe.hevin@ademe.fr
Site Internet : www.ademe.fr/Bilan-Carbone

Sylvie Padilla

ADEME – Département Activités économiques
2, square Lafayette – BP 90406 Angers Cedex 01 – France
E-mail : sylvie.padilla@ademe.fr

Elisabeth Gaillarde

ADEME – Service Économie
27, rue Louis Vicat – 75737 Paris Cedex 15 – France
E-mail : elisabeth.gaillarde@ademe.fr

Toute activité humaine engendre directement ou indirectement des émissions de gaz à effet de serre. Aussi, toute entreprise industrielle ou tertiaire, toute administration ou association doit légitimement se préoccuper de ses émissions et de la dépendance économique qui en résulte. Un bilan est indispensable avant toute prise de décision.
Le Bilan Carbone® est le premier logiciel français de comptabilisation des émissions de gaz à effet de serre qui vous donne les moyens d'agir.
Le Bilan Carbone® est la réponse simple et efficace pour hiérarchiser les postes d'émissions et entamer une dynamique de réduction de vos émissions.
La méthode Bilan Carbone® a été élaborée par l'ADEME en partenariat avec Jean-Marc Jancovici du bureau d'études Manicore. Bilan Carbone® est une marque déposée de l'ADEME.

Mots clés : énergie, gaz à effet de serre, inventaire des émissions, Bilan Carbone®, ADEME.

Introduction

L'**Agence de l'environnement et de la maîtrise de l'énergie** (ADEME), créée en 1992, est un établissement public à caractère industriel et commercial, sous tutelle des ministères français de l'écologie et du développement durable, de l'industrie et de la recherche.

Les missions de l'ADEME sont les suivantes :
- **Réduire la quantité de déchets ménagers et industriels** en favorisant le recyclage et la valorisation, la réduction à la source, la pérennité des filières de traitement et de valorisation.
- **Maîtriser la consommation énergétique** en développant les techniques sobres en énergie dans l'industrie, l'agriculture, le résidentiel, le tertiaire, les transports, etc.
- **Favoriser l'utilisation d'énergies renouvelables** (solaire, éolien, géothermie, biomasse, etc.).
- **Préserver la qualité de l'air** en développant la surveillance et la prévention des émissions polluantes.
- Améliorer les performances des **transports.**
- **Réhabiliter les sites pollués.**
- **Développer le management environnemental** dans les entreprises ainsi que les collectivités, et promouvoir les éco-produits.

L'ADEME est étroitement associée à la mise en œuvre des politiques publiques dans les domaines de l'environnement et de l'énergie. Elle contribue également au respect des engagements internationaux pris par la France. Il s'agit d'un acteur du développement durable et de lutte contre le changement climatique, dont la mission est de concilier le développement économique et social, ainsi que la protection de l'environnement, tant au niveau local que mondial.

QU'EST-CE QUE LA MÉTHODE BILAN CARBONE® ?

Après avoir accompagné au cours des 20 dernières années les entreprises sur les thèmes de l'énergie, des déchets et de la pollution de l'air, l'ADEME a commencé dès le début des années 1990 à faire la promotion du management environnemental avec la diffusion du « Plan Environnement Entreprise » pour accéder à la certification ISO 14001, puis a favorisé la prise en compte de l'éco-conception.

Désormais, avec l'adoption du protocole de Kyoto et l'entrée en vigueur de la directive quotas, les entreprises sont concernées par les émissions de gaz à effet de serre.

Il s'agit de l'objet du Bilan Carbone®.

L'ADEME a pour mission de concilier le développement économique et social, ainsi que la protection de l'environnement

Il s'agit d'une méthode de comptabilisation des émissions de gaz à effet de serre à partir de données facilement disponibles pour parvenir à une bonne évaluation des émissions directes ou induites par les activités de l'entreprise ou la collectivité.

Au-delà de la comptabilisation, le Bilan Carbone® se situe dans une démarche de management environnemental. Il permet de :

- sensibiliser les entreprises et les salariés à l'effet de serre,
- hiérarchiser les enjeux prioritaires en matière de réduction des émissions,
- définir, piloter et suivre les actions de réduction à court et long terme.

Cette méthode développée par l'ADEME est compatible avec la norme ISO 14064 en préparation, le GHG Protocol[1] et les termes de la directive « permis » n° 2003/87/CE relative au système d'échanges de quotas de CO_2.

L'outil Bilan Carbone® se compose des éléments suivants :

- un **tableur Excel** prêt à l'emploi pour effectuer le calcul des émissions, comparer entre elles les émissions d'une année sur l'autre et évaluer le potentiel de diverses actions de réduction,
- le **manuel d'utilisation du tableur**,
- deux documents disponibles sur le site, le « Guide méthodologique–entreprises », décrivant la **mise au point de la méthode** pour toute activité industrielle ou tertiaire, et le document « Calcul des facteurs d'émission » qui explique notamment comment ont été choisies les valeurs par défaut utilisées dans le logiciel et les sources utilisées.

1 Le GHG Protocol désigne une initiative regroupant des entreprises privées et des ONG. Il vise à créer un standard international concernant les règles de comptabilisation des émissions de gaz à effet de serre. Les deux principales sont le World Resource Institute et le World Business Council for Sustainable Development.

QUELS SONT LES GAZ À EFFET DE SERRE CONCERNÉS ?

Les gaz à effet de serre qui seront traités dans la présente méthodologie sont essentiellement ceux qui font l'objet d'accords internationaux :

- le gaz carbonique (CO_2), dont la durée de vie dans l'atmosphère est de l'ordre du siècle,
- le méthane (CH_4), dont la durée de vie dans l'atmosphère est de l'ordre de la décennie,
- l'oxyde nitreux (N_2O), dont la durée de vie dans l'atmosphère est de l'ordre du siècle,
- les hydrofluorocarbures ($C_nH_mF_p$), dont la durée de vie dans l'atmosphère s'échelonne de quelques semaines à quelques siècles,
- les perfluorocarbures (C_nF_{2n+2}), dont la durée de vie dans l'atmosphère est de l'ordre de quelques siècles à plusieurs dizaines de millénaires,
- l'hexafluorure de soufre (SF_6), dont la durée de vie dans l'atmosphère est de quelques milliers d'années.

QU'EST-CE QUI EST COMPTABILISÉ ?

L'idée de base de la méthodologie est de prendre en compte l'ensemble des flux physiques qui sont nécessaires à l'activité (flux de personnes, flux de matières, flux d'énergie) et de leur associer les gaz à effet de serre qu'ils génèrent.

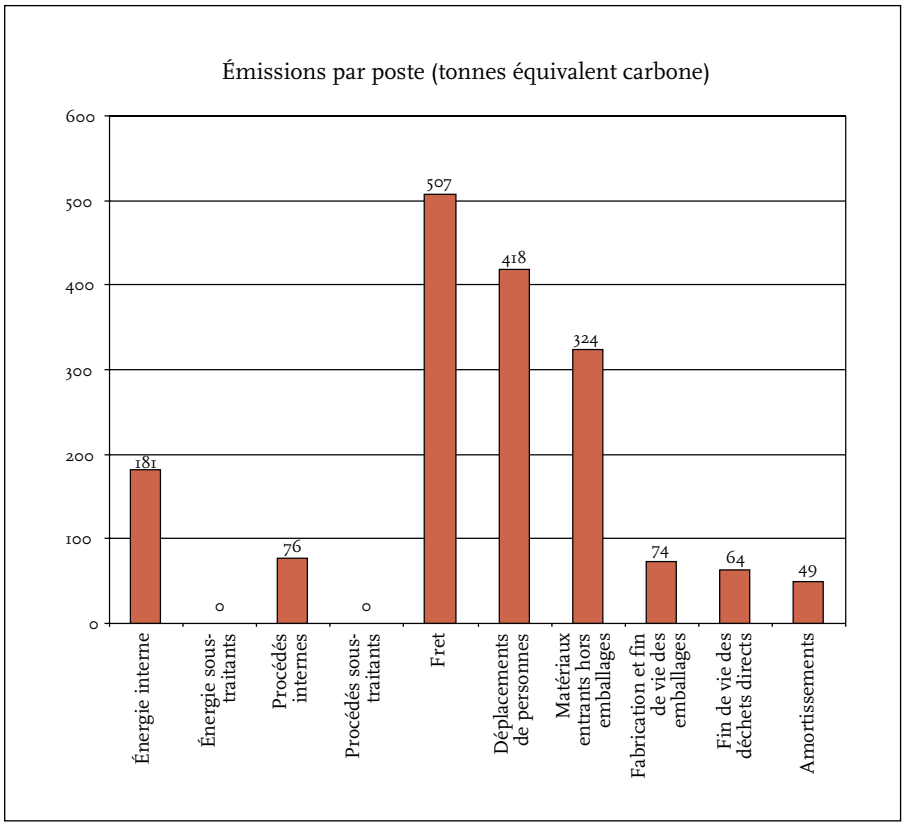
Le gaz à effet de serre qui seront traités dans la présente méthodologie sont essentiellement ceux qui font l'objet d'accords internationaux

COMMENT LES DIFFÉRENTS POSTES D'ÉMISSIONS SONT-ILS RÉPERTORIÉS ?

Les émissions calculées sont regroupées en huit postes d'agrégation qui doivent être parlants pour des responsables opérationnels :

- usages directs de l'énergie (combustibles, achats de vapeur et d'électricité),
- fuites et émanations **(CO_2 et autres gaz à effet de serre),**
- fret amont, aval et interne à l'activité,
- transports de personnes (déplacements professionnels et du domicile au travail),
- fabrication et fin de vie des matériaux servant d'emballages aux produits vendus,
- fabrication des autres matériaux nécessaires à l'activité et prise en compte des services achetés,
- fin de vie des déchets directs de l'activité et émanations des eaux usées,
- prise en compte des immobilisations (bâtiments, parcs informatiques, machines-outils, voiture, etc.).

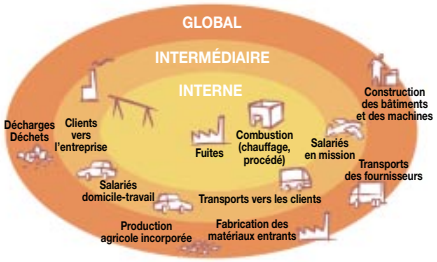
Exemple de graphique donnant les émissions par poste (ce graphique est disponible en standard dans le tableur, qui comporte plus de 20 graphiques préformatés pour illustrer les résultats).



Graphique 1. Exemple d'émissions par poste

Afin de permettre une grande souplesse d'utilisation, le tableur associé à la méthode Bilan Carbone® propose plusieurs extractions des résultats en standard, qui sont détaillées ci-dessous :

- une extraction correspondant au périmètre de la directive quotas (n° 2003/87/CE),
- 3 extractions dites « ISO » correspondant aux 3 « scopes » définis dans la future norme ISO 14064 : scope 1 - scope 2 - scope 3.
  - **« ISO SCOPE 1 » :** celles dont l'entreprise est propriétaire y compris le transport possédé, c'est-à-dire les émissions des sources fixes (installation de combustion et procédés) et celles du transport de marchandises et de personnes dès lors que l'entreprise possède ces moyens de transport pour tous les gaz du protocole de Kyoto.
  - **« ISO SCOPE 2 » :** elles comprennent les émissions ISO SCOPE 1 et les émissions dues à la production de l'électricité et de la vapeur.
  - **« ISO SCOPE 3 » :** elles prennent en compte toutes les émissions de gaz à effet de serre listés dans le protocole de Kyoto répertoriés dans la méthode Bilan Carbone®.
- 3 extractions correspondant aux 3 périmètres (interne, intermédiaire et global) du Bilan Carbone® (graphique 2) :
  - **« Émissions internes » :** celles dont l'entreprise est propriétaire hors transport, c'est-à-dire les émissions des sources fixes (installation de combustion et procédés) pour tous les gaz du protocole de Kyoto.
  - **« Émissions intermédiaires » :** elles comprennent les émissions internes et les émissions dues au fret interne et aval, celles dues aux transports des personnes et celles dues à la production des combustibles, de l'électricité et de la vapeur. Ces émissions sont le pendant de la valeur ajoutée en économie, c'est-à-dire qu'elles sont sommables le long d'un ensemble d'entreprises qui sont chacune le client de la précédente et le fournisseur de la suivante.
  - **« Émissions globales » :** elles prennent en compte les processus nécessaires de la manière la plus large possible y compris des émissions de gaz des avions, hors Kyoto. On a ainsi l'ensemble des émissions répertoriées dans la méthode Bilan Carbone®.



Graphique 2. Les trois périmètres d'extraction

COMMENT PEUT-ON PRÉSENTER LES RÉSULTATS ?

L'esprit général de la méthode Bilan Carbone® est de donner le panorama le plus large possible des émissions qui sont associées aux processus utilisés par une activité. Disposer d'un impact global est en effet la meilleure base de départ pour savoir ce qu'il est possible de faire d'utile pour concourir à la baisse des émissions.

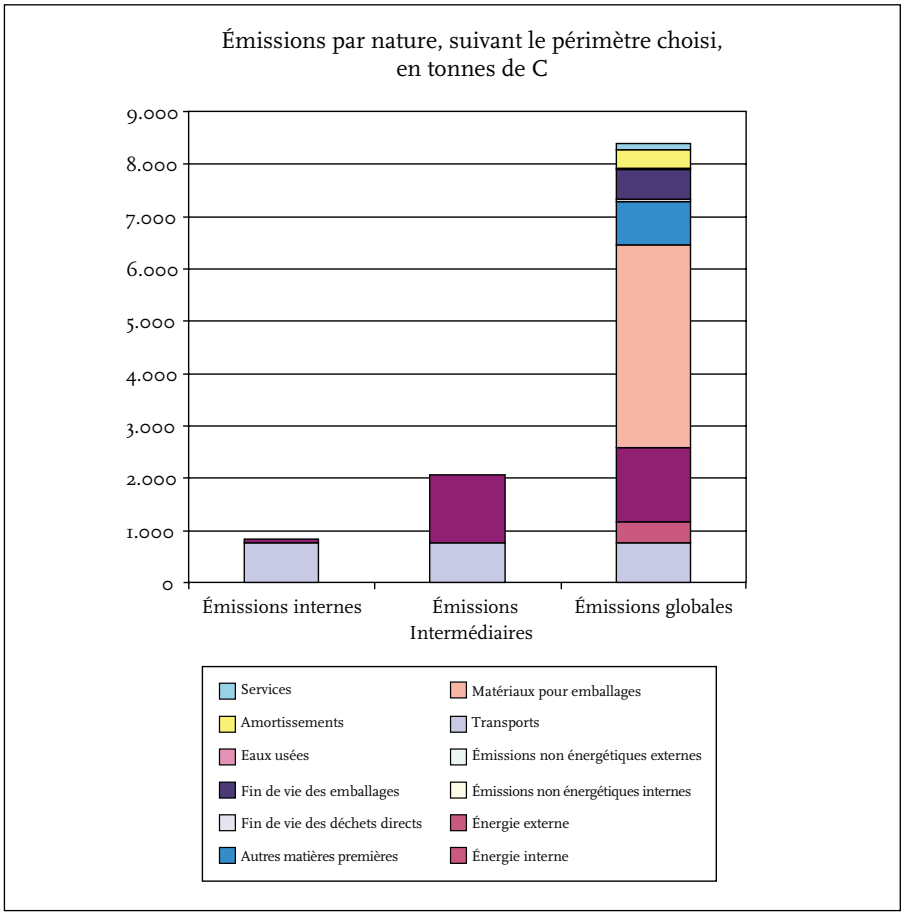
C'est également la seule approche pertinente pour faire de la prospective et anticiper l'effet de diverses évolutions possibles, comme par exemple une contrainte accrue sur les émissions de gaz à effet de serre ou, **ce qui est identique sur un plan micro-économique**, une hausse significative du prix de marché de l'énergie fossile.

La présentation « par défaut » des émissions dans le Bilan Carbone® est donc de tenir compte de tout processus physique qui permet l'exercice de votre activité, où qu'il prenne place, et quel que soit le propriétaire direct de la source d'émissions. Cette logique globale, pertinente pour mettre en place un management environnemental ou des analyses stratégiques, tient compte de tous les postes cités précédemment. Il est également pertinent d'ajouter des modules sur-mesure, le cas échéant, sur la consommation des produits ou des services, sur leur durée de vie et sur les émissions associées à leur fin de vie, si elles s'avèrent significatives.

Cependant, dans certains cas de figure il est préférable de :

- agréger des résultats de différents sites pour lesquels les calculs sont faits indépendamment les uns des autres,
- produire des résultats formatés selon des modalités établies par d'autres organismes (ISO, GHG Protocol, etc.),
- ne compter que les émissions qui s'ajoutent le long d'une chaîne de valeur,
- limiter les calculs aux émissions soumises à la directive européenne n° 2003/87/CE relative aux systèmes d'échanges de quotas de CO_2.

Le méthode Bilan Carbone® permet de faire l'inventaire de tous les gaz à effet de serre émis



Graphique 3. Exemple d'émissions pour une industrie agro-alimentaire en se basant sur les trois périmètres (interne, intermédiaire, global)

CONCLUSIONS

La méthode Bilan Carbone® permet de faire l'inventaire de tous les gaz à effet de serre émis. Grâce à cette méthode, toute entreprise ou administration désirant « faire quelque chose » pour limiter la dérive climatique peut ainsi connaître :

- sa pression globale sur le climat ;
- ses marges de manœuvre à court et long terme pour la faire baisser ;
- son exposition au risque d'un renchérissement de l'utilisation de combustibles fossiles, via une taxe carbone par exemple.

Concrètement, il est possible d'utiliser le résultat pour :

- inclure un objectif de réduction dans un système de management environnemental (y compris ISO ou EMAS) ;
- calculer, pour les entreprises qui y seront soumises, leurs émissions dans le cadre de la directive « permis » ;
- publier le montant des émissions, volontairement (rapport environnement) ou dans le cadre d'obligations ou d'engagements concernant l'activité (REGES, directive permis, stratégie nationale de développement durable pour les administrations, etc.).

Une centaine d'entreprises utilisent cette méthode, et une version en langue anglaise est prévue pour la fin de l'année 2005. Plus de 150 prestataires sont formés à la méthode permettant de réaliser un Bilan Carbone®.

Références

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ADEME site Internet – www.ademe.fr/Bilan-Carbone

ADEME'S BILAN CARBONE®

Christophe Hévin

ADEME – Délégation régionale Midi-Pyrénées
Rue Jean Bart – BP 672 – 31319 Labège Cedex – France
Tel: (+33) 5 62 24 00 34 / Fax: (+33) 5 62 24 34 61
E-mail: christophe.hevin@ademe.fr – Website: www.ademe.fr/Bilan-Carbone

Sylvie Padilla

ADEME – Département Activités économiques
2, square Lafayette – BP 90406 Angers Cedex 01 – France
E-mail: sylvie.padilla@ademe.fr

Elisabeth Gaillarde

ADEME – Service Économie
27, rue Louis Vicat – 75737 Paris Cedex 15 – France
E-mail: elisabeth.gaillarde@ademe.fr

All human activity causes, directly or indirectly, emissions of greenhouse gases. As such, all industries or service firms, as well as all governments or associations must pay genuine attention to these emissions, along with the attendant economic factors that they engender. Any decision-making process must be preceded by a balance sheet. Bilan Carbone® is the first greenhouse gas emissions accounting software in France that enables a proactive response.

For launching a reduction plan, the Bilan Carbone® provides a simple and effective control-management solution for generating an emissions source priority list.

The Bilan Carbone® method was developed by the ADEME (Agency for the Environment ant Energy Management) in a partnership with Jean-Marc Jancovici of Manicore Consultants. Bilan Carbone® is a trademark of the ADEME.

Key words: energy, greenhouse gases, emissions inventory, Bilan Carbone®, ADEME.

EL BILAN CARBONE® DE LA ADEME

Christophe Hévin

ADEME – Délégation régionale Midi-Pyrénées
Rue Jean Bart – BP 672 – 31319 Labège Cedex – Francia
Tel: (+33) 5 62 24 00 34 / Fax: (+33) 5 62 24 34 61
E-mail: christophe.hevin@ademe.fr – Sitio web: www.ademe.fr/Bilan-Carbone

Sylvie Padilla

ADEME – Département Activités économiques
2, square Lafayette – BP 90406 Angers Cedex 01 – Francia
E-mail: sylvie.padilla@ademe.fr

Elisabeth Gaillarde

ADEME – Service Économie
27, rue Louis Vicat – 75737 Paris Cedex 15 – Francia
E-mail: elisabeth.gaillarde@ademe.fr

Toda actividad humana engendra, directa o indirectamente, emisiones de gas de efecto invernadero. Por ello, cualquier empresa industrial o terciaria y cualquier administración o asociación debe preocuparse legítimamente por sus emisiones y por la dependencia económica que ello provoca. Antes de cualquier toma de decisión es indispensable realizar un balance. El Bilan Carbone® es el primer software francés de contabilización de las emisiones de gases de efecto invernadero que ofrece al usuario las medidas de actuación.

El Bilan Carbone® es la respuesta simple y eficaz para la jerarquización de los puntos de emisión y para iniciar una dinámica de reducción de las emisiones.

El método Bilan Carbone® ha sido desarrollado por la ADEME en colaboración con Jean-Marc Jancovici de la oficina de estudios Manicore. Bilan Carbone® es una marca registrada de la ADEME.

Palabras clave: energía, gases de efecto invernadero, inventario de emisiones, Bilan Carbone®, ADEME.

PROTOCOL ON POLLUTANT RELEASE AND TRANSFER REGISTER: IMPLEMENTATION IN SPAIN

Sergio Cuadrado Iglesias
Área de Medio Ambiente Industrial

MINISTERIO DE MEDIO AMBIENTE
C/Agustín de Betancourt n.º 25 - Madrid 28003 - Spain
Tel.: (+34) 91 453 54 12 / Fax: (+34) 91 534 86 09
E-mail: sgiaprat05@mma.es

The Pollutant Release and Transfer Register (PRTR) Protocol is an open Protocol negotiated under the auspices of the United Nations' Economic Commission for Europe (UNECE). This article tries to reflect the consequences that its implementation can have for the current Spanish data gathering system, considering that the European Pollutant Emission Register (EPER) has been working for the last three years.
Moreover, taking into account that this Protocol has been developed in accordance with the Aarhus Convention or UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, this Protocol implies a new way of understanding public participation and awareness in Spain, offering every stakeholder access to environmental matters that may affect them.

Key words: emission register, PRTR, EPER, Aarhus Convention, awareness.

INTRODUCTION

Background

In 2002 got started the EPER, which was established by the Commission Decision of 17 July 2000 on the implementation of a European Pollutant Emission Register (EPER) according to Article 15 of Council Directive 96/61/EC concerning Integrated Pollution Prevention and Control (IPPC).

Besides, in accordance to the Aarhus Convention or UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, the PRTR (Pollutant Release and Transfer Register) Protocol was adopted in Kiev May 2003. As signatories the European Commission and the Members States, it was decided to take the EPER as a starting point of the future European-PRTR (E-PRTR). Considering that Article 5.9 of the Decision of the Commission 2000/479/EC relative to the gathering and publication of environmental information including the relevant pollutant sources by means of internet.

In the Aarhus Convention (from now on Convention) all parties agreed to make all emissions data accessible to the public, and in using PRTRs as a tool for monitoring the progress in environmental policy. At the beginning of 2002 a "PRTR working group" was established according to the Convention, whose aim has been to develop a legal instrument as a Protocol. That was adopted during the 5th Interministerial Conference "Environment for Europe", that took place in Kiev in May 2003.

The PRTR is an open Protocol, which means that countries not part of the Aarhus Convention, as well as non-UNECE countries, can join.

The working group on PRTR was led by the Czech Republic. All the meetings were held in Geneva, in the United Nations and with in the framework of UNECE.

The work developed by the working group can be easily followed on the UNECE website (www.unece.org) where all the information regarding the Protocol can be found.

This work carried out by the PRTR working group is as follows:

- In the **first meeting** (February-March 2001) it was decided to establish a technical group parallel to the general working group, in charge of the more specific technical aspects of the Protocol.
- During the **second meeting** (Geneva, July 2001), the working group decided to establish a legal instrument, a Protocol to be precise, and approved the decision of this being open.
- As a result of the **third meeting,** it was proposed to form a group in charge of the wording of the first draft of the Protocol under the supervision of the "chairman" and the secretary. The group was named "Ottawa group", since its first meeting took place in that city in January 2002.
- The **fourth meeting** of the working group took place during the first semester of 2002, when Spain had the presidency of the Europe Council. In the fourth meeting (March 2002), discussions continued on the text of the draft Protocol, centered basically in the document CEP/WG.5/AC.2/2002/3. The results of these discussions were taken into account when drawing up the second draft worded later by the Ottawa group.
- In the **fifth meeting** (Geneva, June 2002) the group continue to discuss the draft, paying special attention to the articles 6 to 10, according to the wording of the Ottawa group in its document CEP/WG.5/AC.2/2002/7. Other important aspect discussed in this meeting were the annexes of the Protocol, since they contain what activities and substances must be object of notification and included in the national PRTRs, established to comply with this Protocol.

During the second semester of 2002 another two meetings of the working group were held according to the calendar already approved. However, the work was not over, so it was necessary to hold an 8th meeting, in January 2003, with the mandate of finalising the text of the Protocol and without possible extension, since the Protocol had to be adopted at the next interministerial conference in Kiev.

Finally, the objective of reaching an agreement on the final text of the Protocol was achieved, meaning a big effort for the delegations to reach a minimum consensus.

Spanish participation

Spanish participation in these forums coincided with the Spanish Presidency of the European Community during the first semester of 2002, not taking part in the first three sessions of the working group held in 2001.

Therefore, Spain joined the group in the 4th meeting (Geneva, March 2002). From its entrance it took a very active part, first developing coordination tasks between the European countries, and later on as an active part in the general sessions of the working group, as well as in its parallel technical and legal groups. In addition, Spain participated in the development of a PRTR for the European Community.

GUIDELINES AND SCOPE OF THE PROTOCOL

The final version of the Protocol was adopted by the working group in its eighth meeting (second of the new working group according to the decision adopted by the parties to the Aarhus Convention in the first meeting that took place in Lucca, Italy, in October 2002; visit www.unece.org for detailed information on the official designation of the Aarhus working groups).

The aim of the Protocol is to observe Article 5, Paragraph 9 and Article 10, Paragraph 2 of the Convention, providing the parties with an appropriate instrument for the establishment and implementation of such registers in the countries that adopt the Protocol, which can enhance public participation in the decision procedures concerning environment and contribute to the prevention and reduction of pollution, as expressed in Article 1 of the Protocol.

The Protocol adopted by the working group has a similar structure to other international agreements, conventions and protocols within the framework of the UNECE.

Contains 23 items, 30 articles and 4 annexes, which are considered part of the Protocol.

The 23 items refer to the relevance of the Protocol adoption taking into account the international legal regulations in this respect, the recommendations from different organisms and other international organizations. Likewise, include the will to cooperate and contribute to a better environment expressed in forums such as Río, and the conviction that these kinds of instruments are the way to achieve the protection of the environment for future generations, as well as to achieve control and monitoring, and the appropriate channel to promote public participation in aspects of its concern.

The aim of the Protocol is to enhance public participation in the decision procedures concerning environment and contribute to the prevention and reduction of pollution

The following are the most important aspects of the Protocol:

- Article 1: Protocol objective, according to the general objective of the Convention.
- Article 2: definitions of the terms used in the Protocol.
- Article 3: general provisions.
- Article 4: core elements of a Pollutant Release and Transfer Register system.
- Article 5: establishes the design and structure of the Register.
- Article 6: describes the scope of the Register and how it must develop by reason of the experience gained.
- Article 7: includes the specific obligations that must be fulfilled; describes as well the duties arising from the two different procedures that can be used for the drawing up of the registers.
- Article 8: describes the reporting cycle.
- Article 9: helps to decide on the data collection and record-keeping to comply with what is required in the rest of the text.
- Article 10: deals with the quality of the data contained in the register.
- Article 11: on Public Access to environmental information. Although it is a requirement of the Aarhus Convention, from the beginning it was considered fundamental that the Protocol include a specific article in this respect, basically to stress the importance of this objective and taking into account that the Protocol is open. Consequently, it is possible that countries that are not parties to the Convention can be parties to the Protocol.

- Article 12: on data confidentiality. This article describes which data must be considered confidential and which not, according to the requirements and the scope of the Protocol.
- Article 13: relating to Article 11, this guarantees public participation in the development and implementation of the register.
- Article 14: deals with access to justice referred to environmental information, according to each state or country's legislation.
- Article 15: on capacity-building, guarantees the promotion of the existence of these registers, as well as the provision of resources by each Party for the creation and development of such registers.
- From Article 16 till the end: include basically legal contents similar to other protocols.

Special attention should be paid to Articles 19 and 20 on annexes and their possible amendments. The annexes to the Protocol are considered an inseparable part, and any reference made to the Protocol includes the annexes, unless otherwise stated. This is important since the main body of the Protocol and what is going to determine the scope of each party, are the contents of the Annex 1 and 2: activities on which the operator or owner of a facility have to report emission data to the competent authority, and the substances and thresholds of which is necessary to inform.

These annexes specify what activities constitute the object of the Protocol and its thresholds, and what substances must be notified; there is no reference though, to the way such thresholds can be applied.
In both annexes two alternative means of complying with the requirements of Article 7 are included:

- activities: thresholds referred to the general production capacity or the number of employees (size of the facility);
- substances: thresholds referred to the emission of these substances depending on the receptor, and total quantity of wastes or thresholds related to the pollutants processed or used in different processes (MPU thresholds, pollutant manufactured, processed or used).

The reason the Protocol considers these two possibilities of gathering, processing and organizing the information, is that, although the working group agreed concerning the substances and activities, there is no consensus on how to compile and treat such information.

What is clearly expressed in the Protocol (Article 7) is that both systems of notification cannot be used indiscriminately. So:

- whoever decides to apply the production capacity thresholds (Column 1, Annex 1) for the activities, must use the emission thresholds for substances depending on the receptor mean (Column 1, Annex 2 and Article 7);
- if the thresholds included in Column 2, Annex 1 relating to the number of employees (facility size) are chosen, they must use columns 2 and 3 of Annex 2 for the thresholds of the substances and Article 7 (MPU thresholds).

This is because in the current systems the use of one or other thresholds are closely related. For example, the first item reflects what nowadays is being applied in the EPER, while item 2 refers to the US or Canadian Inventories.

REASONS FOR SPANISH ADHESION

The main reasons why Spain decided to join the Protocol are as follows:

1. Legal reasons:

Spain is a signatory of the Aarhus Convention; this means, necessarily that Spain has assumed the commitments derived from this international Convention, promoted by the UNECE and adopted in Denmark in 1998.

Furthermore, Spain is a Member State of the EU, who has adopted and ratified the Convention. Its requirements have been developed by means of legal European instruments that Spain will have to incorporate into its legal system.

Besides, Spain has assumed and ratified other international environmental commitments, such as the Kyoto Protocol and others concerning waste, hazardous substances and emissions, connected with the development of these registers.

2. Environmental reasons:

This Protocol must not be considered as another obligation that has to be met. The development and enforcement of these types of register must be understood as a very useful tool for the control and monitoring of the evolution of the different national environmental problems.

It is a tool that will enable information to be gathered on environmental aspects that are ignored at present, as well as enabling an approach to possible uncontrolled problems, and their impacts; so more suitable solutions for each case can be adopted.

Spain has assumed the commitments derived from the Aarhus Convention

In addition, it must be an instrument that guarantees the public right to access to the environmental information that affects them and that allows the development of important tasks such as appropriate education and awareness of the stakeholders, with the aim of making a correct interpretation and processing of the available information. This is the responsibility of the Administration due to its general interest, and must be carried out correctly.

The Spanish administration and the Autonomous Communities already have experience in this matter; in fact EPER has been working for almost three years, in accordance with European and national legislation reflected in IPPC Law 16/2002.

3. Socioeconomic reasons:

The Administration must watch over the sustainability of the framework where all the activities of a free market economy like Spain take place, guaranteeing the right of the consumers and industrialists. The use of these kinds of tools, allow the administration and the rest of the social partners, to guarantee that, at least from an environmental point of view, the rules of competition can be observed. These instruments help prevent unfair competition between the same industrial activities and/or different sites, since through the available information the production at any environmental price can be avoided.

Although the peculiarities of each industrial activity and site are taken into account and differ greatly, there is always a reference that enables establishment of the minimum required for the maintenance of the rules. It is an instrument for the application of sustainable development, in order the environmental aspects are not used as an excuse for socioeconomic imbalance.

CONSEQUENCES FOR SPAIN

It is obvious that the adoption of the Protocol has important repercussions for Spain. We can stress the following effects:

1. Administration

- Adaptation of the current sectoral environmental legislation, public information of administrative procedures, industrial, economic and financial incentives.
- Technical and human resources.
- Data gathering systems and the analytical methodologies for emissions, and also for inmissions, must be standardised so that they can be validated and comparable. Answering questions about what is being polluted, how much is being polluted and who pollutes most, enables us to know where prompt action is necessary and why.
- Administrative coordination between the different environmental competent authorities.
- Educational, informative and awareness programs.
- Information transparency at all levels and for every stakeholder: other countries administrations, international organizations, general public.
- Establishment of financial programs and mechanisms.
- Reasonable periods of application and implementation.

2. Industries

- Information transparency on environmental behaviour, change of many habits in reporting on the effects on the environment of their industrial activities. Not only within the same sector or activity, but also concerning their connection with the different stakeholders.
- Compliance with the strictest environmental legislation.
- A challenge to achieve the aim of sustainable development through environmental improvement.
- Optimization of processes and resource consumption.
- Economic investments of different amounts.
- Promote technical and technological development in order to know and quantify the pollutant emissions.

The adoption of the Protocol has important repercussions for Spain

3. General public

- Access to the environmental information that affect them.
- Participation in decision-making concerning environmental matters.
- More knowledge of the environmental impacts of industry.
- Become aware of the positive and negative consequences of industrial development.
- Promotion of a constructive critical spirit in environmental matters.

NECESSARY RESOURCES FOR ADOPTION OF THE PROTOCOL

In the application of a Protocol like this, there are many factors to take into account for the appropriate estimation of the necessary resources for its implementation; especially when Spain is currently making a big effort to consolidate and optimise the EPER system according to the national and European legislation on IPPC.

In order to have an idea of what the implementation of the Protocol can mean on a nationwide scale, for the administration as well as for industry, see Tables 1 and 2. They show a comparison among the scopes of the "national" EPER (EPER-España), the future PRTR, the draft of the European Regulation concerning the establishment of a European PRTR and the draft of the Spanish Regulation concerning the development and implementation of Law 16/2002, which mean a significant increase in the number of industrial activities as well as pollutants to notify. Also, another thing to bear in mind is that in the current EPER, emissions into soil and waste are not included, but indeed fall within the scope of the Protocol.

Nevertheless, the following aspects can be considered:

1. Administration point of view

- The need to increase human resources: more qualified staff for correct PRTR work/management.
- Design, development and implementation of the technical resources and computer programs, that satisfy the PRTR system in accordance with the requirements of the Protocol.
- Resources to guarantee the necessary interadministrative cooperation among the State, Autonomous Communities, town councils and other public and private bodies, that could be a source of information and/or summarised data.
- If necessary, resources for the standardization and homogenization of measurement and control systems, calculation and/or estimation of emissions and waste transfer.
- The necessary legislative adaptation.
- Adaptation of the available technical resources or replacement of existing ones. Coordinate and/or unify the different databases and manage the registers to save efforts and meet current international commitments (Climate change, Ospar, Corine Air inventory, etc.).
- Promotion of information, education and awareness for the personnel of the Administration as well as for industry and other stakeholders.

2. Industry point of view

We have to take into account that according to the content of Annex II of the Protocol, and considering as a starting point the number of installations included in Spanish Law 16/2002 and the current EPER, the scope of the Protocol will affect around 5,000 industrial installations. There is a lot of cross activity, whose capacity thresholds can affect a great number of installations, currently not considered. Likewise, the number of industrial activities concerning waste management have increased, for example the waste treatment plants that are not included in Annex 1 of Law 16/2002. The implementation of the PRTR Protocol implies the following consequences for industry:

- Need for investment and optimization of measurement systems and emission control, depending on the substances emitted and the receiving media.
- Increase of human resources
- Educational and informative needs: changes in companies' policies on environmental informative transparency.
- R+D+I Investments.
- Investments in information control and management.

Table 1. Categories of industrial activities

The new activities or modifications included in the Protocol in relation to the IPPC Directive and Spanish Law 16/2002 appear in red. Annex 1 of the Spanish Regulation concerning development and implementation of the IPPC Directive and of Law 16/2002 have the same content, and PRTR Protocol Annex I and Annex I of the European Draft Regulation on EPRTR both list the same activities.

In the following table the correlation between the current scope of Law 16/2002 and the IPPC Directive and the industrial activities included in Annex I of the PRTR Protocol can be seen.

1. COMBUSTION INSTALLATIONS			1. ENERGY SECTOR
	IPPC Spanish Law (16/2002) Annex 1 Activities (Source categories)	IPPC Directive (Annex I Activity codes)	PRTR Protocol (Annex I Activities)
1.1	Combustion installations with a rated thermal input exceeding 50 MW	1.1	1.c
1.2	Mineral oil and gas refineries	1.2	1.a
1.3	Coke ovens	1.3	1.d
1.4	Coal gasification and liquefaction plants	1.4	1.b 1.e) Coal rolling mills (With a capacity of 1 ton per hour) 1.f) Installations for the manufacture of coal products and solid smokeless fuel
2. PRODUCTION AND PROCESSING OF METALS			
2.1	Metal ore (including sulphide ore) roasting or sintering installations	2.1	2.a)
2.2	Installations for the production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2,5 tonnes per hour	2.2	2.b)
2.3	Installations for the processing of ferrous metals: a) hot-rolling mills with a capacity exceeding 20 tonnes of crude steel per hour b) smitheries with hammers the energy of which exceeds 50 kilojoules per hammer, where the calorific power used exceeds 20 MW c) application of protective fused metal coats with an input exceeding 2 tonnes of crude steel per hour	 2.3 a) 2.3.b) 2.3.c)	 2.c.i) 2.c.ii) 2.c.iii)
2.4	Ferrous metal foundries with a production capacity exceeding 20 tonnes per day	2.4	2.d)
2.5	INSTALLATIONS: a) for the production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes b) for the smelting, including the alloyage, of non-ferrous metals, including recovered products, (refining, foundry casting, etc.) with a melting capacity exceeding 4 tonnes per day for lead and cadmium or 20 tonnes per day for all other metals	 2.5.a) 2.5.b)	 2.e.i) 2.e.ii)
2.6	Installations for surface treatment of metals and plastic materials using an electrolytic or chemical process where the volume of the treatment vats exceeds 30 m^3	2.6	2.f
3. MINERAL INDUSTRY			
			3 Mineral Industry: 3.a) Underground mining and related operations 3.b) Opencast mining Where the surface of the area being mined equals 25 ha
3.1	Installations for the production of cement clinker in rotary kilns with a production capacity exceeding 500 tonnes per day or lime in rotary kilns with a production capacity exceeding 50 tonnes per day or in other furnaces with a production capacity exceeding 50 tonnes per day	3.1	3.c)

3.2	Installations for the production of asbestos and the manufacture of asbestos-based products.	3.2	3.d)
3.3	Installations for the manufacture of glass including glass fibre with a melting capacity exceeding 20 tonnes per day.	3.3	3.e)
3.4	Installations for melting mineral substances including the production of mineral fibres with a melting capacity exceeding 20 tonnes per day.	3.4	3.f)
3.5	Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain, with a production capacity exceeding 75 tonnes per day, and/or with a kiln capacity exceeding 4 m^3 and with a setting density per kiln exceeding 300 kg/m^3.	3.5	3.g) Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain. With a production capacity of 75 tons per day, or with a kiln capacity of 4 m^3 and with a setting density per kiln of 300 kg/m^3
4. CHEMICAL INDUSTRY			
4.1	Chemical installations for the production of basic organic chemicals, such as:		4.a) Chemical installations for the production on an industrial scale of basic organic chemicals, such as:
	a) simple hydrocarbons (linear or cyclic, saturated or unsaturated, aliphatic or aromatic)	4.1.a)	4.a.i)
	b) oxygen-containing hydrocarbons such as alcohols, aldehydes, ketones, carboxylic acids, esters, acetates, ethers, peroxides, epoxy resins	4.1.b)	4.a.ii)
	c) sulphurous hydrocarbons	4.1.c)	4.a.iii)
	d) nitrogenous hydrocarbons such as amines, amides, nitrous compounds, nitro compounds or nitrate compounds, nitriles, cyanates, isocyanates	4.1.d)	4.a.iv)
	e) phosphorus-containing hydrocarbons	4.1.e)	4.a.v)
	f) halogenic hydrocarbons	4.1.f)	4.a.vi)
	g) organometallic compounds	4.1.g)	4.a.vii)
	h) basic plastic materials (polymers synthetic fibres and cellulose-based fibres)	4.1.h)	4.a.viii)
	i) synthetic rubbers	4.1.i)	4.a.ix)
	j) dyes and pigments	4.1.j)	4.a.x)
	k) surface-active agents and surfactants	4.1.k)	4.a.xi)
4.2	Chemical installations for the production of basic inorganic chemicals, such as:		4.b) Chemical installations for the production on an industrial scale of basic inorganic chemicals, such as:
	a) gases, such as ammonia, chlorine or hydrogen chloride, fluorine or hydrogen fluoride, carbon oxides, sulphur compounds, nitrogen oxides, hydrogen, sulphur dioxide, carbonyl chloride	4.2.a)	4.b.i)
	b) acids, such as chromic acid, hydrofluoric acid, phosphoric acid, nitric acid, hydrochloric acid, sulphuric acid, oleum, sulphurous acids	4.2.b)	4.b.ii)
	c) bases, such as ammonium hydroxide, potassium hydroxide, sodium hydroxide	4.2.c)	4.b.iii)
	d) salts, such as ammonium chloride, potassium chlorate, potassium carbonate, sodium carbonate, perborate, silver nitrate	4.2.d)	4.b.iv)
	e) non-metals, metal oxides or other inorganic compounds such as calcium carbide, silicon, silicon carbide	4.2.e)	4.b.v)
4.3	Chemical installations for the production of phosphorous- nitrogen —or potassium— based fertilizers (simple or compound fertilizers)	4.3	4.c)
4.4	Chemical installations for the production of basic plant health products and of biocides	4.4	4.d)
4.5	Installations using a chemical or biological process for the production of basic pharmaceutical products	4.5	4.e)
4.6	Chemical installations for the production of explosives	4.6	4.f) Installations for the production on an industrial scale of explosives and pyrotechnic products.

	IPPC Spanish Law (16/2002) Annex I Activities (Source categories)	IPPC[2] Directive (Annex I Activity codes)	PRTR Protocol (Annex I Activities)
5. WASTE MANAGEMENT[1]			5. WASTE AND WASTE-WATER MANAGEMENT
5.1	Installations for the disposal or recovery of hazardous waste, waste oils management included, or for the elimination of such wastes, not in landfill, with a capacity exceeding 10 tonnes per day	5.1	5.a. Installations for the incineration, pyrolysis, recovery, chemical treatment or landfilling of hazardous waste with a receiving capacity exceeding 10 tonnes per day
5.2	Installations for the incineration of municipal waste with a capacity exceeding 3 tonnes per hour	5.2	5.b)
5.3	Installations for the disposal of non-hazardous waste, not in landfill, with a capacity exceeding 50 tonnes per day	5.3	5.c)
5.4	Landfills receiving more than 10 tonnes per day or with a total capacity exceeding 25,000 tonnes, excluding landfills of inert waste	5.4	5.d)
	(see epigraph 9.2 of group 9, Intensive livestock, food and agriculture industry)	*See 6.5*	5.e) Installations for the disposal or recycling of animal carcasses and animal waste with a treatment capacity exceeding 10 tonnes per day
–	–	–	5.f) Municipal waste -water treatment plants. With a capacity 100,000 population equivalents
–	–	–	5.g) Independently operated industrial waste-water treatment plants which serve one or more activities of this Annex. With a capacity of 10,000 m^3 per day
6. PULP AND PAPER INDUSTRY			6. PAPER AND WOOD PRODUCTION AND PROCESSING
6.1	Industrial plants for the production of: a) Pulp from timber or other fibrous materials paper and board with a production capacity exceeding 20 tonnes per day b) Paper and board with a production capacity exceeding 20 tonnes per day	6.1.a) 6.1.b)	6.a) 6.b) Industrial plants for the production of paper and board and other primary wood products (such as chipboard, fibreboard and plywood)
–	–	–	6.c) Industrial plants for the preservation of wood and wood products with chemicals.
7. TEXTILE INDUSTRY			9. OTHER ACTIVITIES
7.1	Plants for the pre-treatment (operations such as washing, bleaching, mercerization) or dyeing of fibres or textiles where the treatment capacity exceeds 10 tonnes per day	6.2	9.a)
8. TANNING INDUSTRY			9. OTHER ACTIVITIES
8.1	Plants for the tanning of hides and skins where the treatment capacity exceeds 12 tonnes of finished products per day	8.1	Plants for the tanning of hides and skins where the treatment capacity exceeds 12 tonnes of finished products per day
9. INTENSIVE LIVESTOCK, FOOD AND AGRICULTURE INDUSTRY			8. ANIMAL AND VEGETABLE PRODUCTS FROM THE FOOD AND BEVERAGE SECTOR
9.1	Installations for: a) Slaughterhouses with a carcase production capacity greater than 50 tonnes per day	6.4.a)	8.a)

	b) Treatment and processing intended for the production of food products from[3]:		
	b.1 Animal raw materials (other than milk) with a finished product production capacity greater than 75 tonnes per day	6.4.b)	8.b.i)
	b.2 Vegetable raw materials with a finished product production capacity greater than 300 tonnes per day (average value on a quarterly basis)	6.4.b)	8.b.ii)
	c) Treatment and processing of milk, the quantity of milk received being greater	6.4.c)	8.c) Treatment and processing of milk than 200 tonnes per day (average value on an annual basis) with a capacity to receive 200 tons of milk per day (average value on an annual basis)
9.2	Installations for the disposal or recycling of animal carcases and animal waste with a treatment capacity exceeding 10 tonnes per day	*See 6.5*	Included in section 5 of the Protocol in epigraph 5.e)
9.3	Installations for the intensive rearing of poultry or pigs with more than:		7. INTENSIVE LIVESTOCK PRODUCTION AND AQUACULTURE
	a) 40,000 places for poultry "if these are laying hens" or of the equivalent number for other productive fowl enterprises	6.6.a)	7.a.i)
	b) 2,000 places for production pigs (over 30 kg),	6.6.b)	7.a.ii)
	c) 750 places for sows	6.6.c)	7.a.iii)
–	–	–	7.b) Intensive aquaculture (1,000 tons of fish and shellfish per year)
10. ORGANIC SOLVENTS CONSUMPTION			9. OTHER ACTIVITIES
10.1	Installations for the surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating, with a consumption capacity of more than 150 kg per hour or more than 200 tonnes per year.	6.7	9.c)
11. COAL INDUSTRY			9. OTHER ACTIVITIES
11.1	Installations for the production of carbon (hard-burnt coal) or electrographite by means of incineration or graphitization.	6.8	9.d)
			9. OTHER ACTIVITIES
–	–	–	9.e) Installations for the building of, and painting or removal of paint from ships (With a capacity for ships 100 m long)

Besides the activities specified in Annex I of the Protocol, we have to take into account that according to Articles 4, 6 and 7[4] releases from diffuse sources must also be included. It is not specified which ones, as this is open and dependant on the availability of data. In case of a lack of data on these releases the Parties will take the necessary measures to incorporate the information into the register.

1 In this activity, all those installations that undertake any of the activities listed in the 5.1-5.4 categories must be considered to be affected, taking into account applicable waste and landfill legislation.

2 It is recommended that the Directive be read, as it does not coincide exactly with Law 16/2002. The PRTR Protocol conserves the thresholds of the Directive but increases the number of activities, as we can see in the respective column.

3 We have to remember that the IPPC Directive only makes reference to food products, and the Protocol to the Food and Beverage sector.

4 Article 4 describes the core elements of the national PRTRs. Article 6 establishes the scope of the register in the first and subsequent stages, and Article 7 describes the specific reporting requirements that must be accomplished according to PRTR Protocol.

Table 2. Pollutants

No.	CAS Number	Pollutants	Column 1			Column 2	Column 3
			Threshold for releases			*Threshold for*	*Manufacture,*
			Column 1 a To air kg/year	Column 1 b To water kg/year	Column 1 c To land kg/year	*off-site transfers of pollutants (column 2) kg/year*	*process or use threshold (column 3) (***) kg/year*
1		Methane (CH_4)	100,000	–	–		**
2		Carbon monoxide (CO)	500,000	–	–		**
3		Carbon dioxide (CO_2)	100,000,000	–	–		**
4		Hydro-fluorocarbons (HFCs)	100	–	–		**
5		Nitrous oxide (N_2O)	10,000	–	–		**
6	7664-41-7	Ammonia (NH_3)	10,000	–	–		10,000
7		Non-methane volatile organic compounds (NMVOC)	100,000	–	–		**
8		Nitrogen oxides (NO_x/NO_2)	100,000	–	–		**
9		Perfluorocarbons (PFCs)	100	–	–		**
10		Sulphur hexafluoride (SF_6)	50	–	–		**
11		Sulphur oxides (SO_x/SO_2)	150,000	–	–		**
12		Total nitrogen	–	50,000	50,000		10,000
13		Total phosphorus	–	5,000	5,000		10,000
14		Hydrochlorofluorocarbons (HCFCs)	1	–	–		10,000
15		Chlorofluorocarbons (CFCs)	1	–	–		10,000
16		Halons	1	–	–		10,000
17	7440-38-2	Arsenic and compounds (as As)	20	5	5		50
18	7440-43-9	Cadmium and compounds (as Cd)	10	5	5		5
19	7440-47-3	Chromium and compounds (as Cr)	100	50	50		10,000
20	7440-50-8	Copper and compounds (as Cu)	100	50	50		10,000
21	7439-97-6	Mercury and compounds (as Hg)	10	1	1		5
22	7440-02-0	Nickel and compounds (as Ni)	50	20	20		10,000
23	7439-92-1	Lead and compounds (as Pb)	200	20	20		50
24	7440-66-6	Zinc and compounds (as Zn)	200	100	100		10,000
25	15972-60-8	Alachlor	–	1	1	5	[5]
26	309-00-2	Aldrin	1	1	1	1	1
27	1912-24-9	Atrazine	–	1	1	5	[5]
28	57-74-9	Chlordane	1	1	1	1	1
29	143-50-0	Chlordecone	1	1	1	1	1
30	470-90-6	Chlorfenvinphos	–	1	1	5	[5]
31	855-358-48	Chloro-alkanes (C10-13)	–	1	1	10	10,000
32	2921-88-2	Chlorpyrifos	–	1	1	5	[5]
33	50-29-3	DDT	1	1	1	1	1
34	107-06-2	1,2-dichloroethane (EDC)	1,000	10	10	100	10,000
35	75-09-2	Dichloromethane (DCM)	1,000	10	10	100	10,000
36	60-57-1	Dieldrin	1	1	1	1	1
37	330-54-1	Diuron	–	1	1	5	[5]
38	115-29-7	Endosulphan	–	1	1	5	[5]
39	72-20-8	Endrin	1	1	1	1	1
40		Halogenated organic compounds (as AOX)	–	1,000	1,000	1,000	10,000
41	76-44-8	Heptachlor	1	1	1	1	1
42	118-74-1	Hexachlorobenzene (HCB)	10	1	1	1	5
43	87-68-3	Hexachlorobutadiene (HCBD)	–	1	1	5	[5]
44	608-73-1	1,2,3,4,5,6-hexachlorocyclohexane (HCH)	10	1	1	1	10
45	58-89-9	Lindane	1	1	1	1	1

46	2385-85-5	Mirex	1	1	1	1	1
47		PCDD +PCDF (dioxins + furans) (as Teq)	0.001 0.0001	0.001 0.0001	0.001 0.0001	0.001	0.001
48	608-93-5	Pentachlorobenzene	1	1	1	5	[5]
49	87-86-5	Pentachlorophenol (PCP)	10	1	1	5	[5]
50	1336-36-3	Polychlorinated biphenyls (PCBs)	0.1	0.1	0.1	1	[5]
51	122-34-9	Simazine	–	1	1	5	[5]
52	127-18-4	Tetrachloroethylene (PER)	2,000	–	–	1,000	10,000
53	56-23-5	Tetrachloromethane (TCM)	100	–	–	1,000	10,000
54	87-61-6	Trichlorobenzenes (TCBs) 120-82-1	10	–	–	1,000	10,000
55	71-55-6	1,1,1-trichloroethane	100	–	–	1,000	10,000
56	79-34-5	1,1,2,2-tetrachloroethane	50	–	–	1,000	10,000
57	79-01-6	Trichloroethylene (TRI)	2,000	–	–	1,000	10,000
58	67-66-3	Trichloromethane	500	–	–	1,000	10,000
59	8001-35-2	Toxaphene	1[b]	1	1	1	1
60	75-01-4	Vinyl chloride	1,000	10	10	100	10,000
61	120-12-7	Anthracene	50	1	1	50	50
62	71-43-2	Benzene	1,000	200 (as BTEX)[c]	(as BTEX)	2,000 (as BTEX)	10,000
63		Brominated diphenylethers (PBDE)	–	1	1	5	**
64		Nonylphenol ethoxylates (NP/NPEs) and related substances	–	1	1		10,000
65	100-41-4	Ethyl benzene	–	200 (as BTEX)	200 (as BTEX)	2,000 (as BETX)	10,000
66	75-21-8	Ethylene oxide	1,000	10	10	100	10,000
67	34123-59-6	Isoproturon	–	1	1	5	[5]
68	91-20-3	Naphthalene	100	10	10	100	10,000
69		Organotin compounds (as total Sn)	–	50	50	50	[50]
70	117-81-7	Di-(2-ethyl hexyl)phthalate (DEHP)	10	1	1	100	10,000
71	108-95-2	Phenols (as total C)	–	20	20	200	10,000
72		Polycyclic aromatic hydrocarbons (PAHs)[d]	50	5	5	50	50
73	108-88-3	Toluene	-	200 (as BTEX)	200 (as BTEX)	2,000 (as BTEX)	10,000
74		Tributyltin and compounds	–	1	1	5	[5]
75		Triphenyltin and compounds	–	1	1	5	[5]
76		Total organic carbon (TOC) (as total C or COD/3)	–	50,000	–		*****[e]
77	1582-09-8	Trifluralin	–	1	1	5	[5]
78	1330-20-7	Xylenes	–	200 (as BTEX)	200 (as BTEX)	2,000 (as BTEX)	10,000
79		Chlorides (as total Cl)	–	2,000,000	2,000,000	2,000,000	10,000[f]
80		Chlorine and inorganic compounds (as HCl)	10,000	–	–		10,000
81	1332-21-4	Asbestos	1	1	1	10	10,000
82		Cyanides (as total CN)	–	50	50	500	10,000
83		Fluorides (as total F)	–	2,000	2,000	10,000	10,000
84		Fluorine and inorganic compounds (as HF)	5,000	–	–	–	10,000
85		HCN	200	–	–	–	10,000
86		PM10 (particulate matters)	50,000	–	–	–	**
87	1806-26-4	Octylphenols and Octylphenol ethoxylates	–	1	–		
88	206-44-0	Fluoranthene	–	1	–		
89	465-73-6	Isodrin	–	1	–		
90	36355-1-8	Hexabromobiphenyl	0.1	0.1	0.1		
91	191-24-2	Benzo(g,h,i)perylene		1			
92		Total particles in suspension (PST)[h]					

Substances included in the Annex A1 of the EPER Decision and their reporting thresholds values appear in **green.**
The increase that Annex II of the PRTR Protocol means in relation to the current EPER register appears in **yellow.**
The increase that Annex II of the European Draft Regulation on EPRTR means in relation to Annex II of the PRTR Protocol appears in **blue.**
The increase that Annex 2 of the Spanish Regulation concerning development and implementation of Law 16/2002 means in relation to Annex II of the European Regulation on EPRTR appears in **red.**

Explanatory notes:
No.: Number of the substance
CAS number: means the precise identifier in Chemical Abstracts Service of the substance.
Pollutant: name of the pollutant

Column 1: contains the thresholds referred to in Article 7, Paragraph 1 (a)(i) and (iv). If the threshold in a given sub-column (air, water or land) is exceeded, reporting of releases or in the case of pollutants in waste water –23– destined for wastewater treatment, transfers to the environmental medium referred to in that sub-column, is required with respect to the facility in question, for those Parties that have opted for a system of reporting pursuant to Article 7, Paragraph 1 (a).

Column 2: contains the thresholds referred to in Article 7, Paragraph 1 (a)(ii). If the threshold in this column is exceeded for a given pollutant, reporting of the off-site transfer of that pollutant is required with respect to the facility in question, for those Parties that have opted for a system of reporting pursuant to Article 7, Paragraph 1 (a)(ii).

Column 3: contains the thresholds referred to in Article 7, Paragraph (1) (b). If the threshold in this column is exceeded for a given pollutant, reporting of the releases and off-site transfers of that pollutant is required with respect to the facility in question, for those Parties that have opted for a system of reporting pursuant to Article 7, Paragraph 1 (b).

A dash (-) indicates that the parameter in question does not trigger a reporting requirement.

** in column 3 indicates that, for this pollutant, the release threshold in column (1) (a) is to be used rather than a manufacture, process or use threshold.

*** in column 3, see footnote[a]

***** in column 3 indicates that, for this pollutant, the release threshold in column (1) (b) is to be used rather than a manufacture, process or use threshold.

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a Note included by Canada about the application of the MPU: "to determine if a facility applies an MPU threshold for a concrete pollutant, the quantity of pollutant manipulated, processed or used will be calculated when its concentration is beyond 1% of the weight of the threshold value, except when this pollutant is processed as a product in which the threshold is not applied.

b Threshold value agreed by the "Contact Group".

c Single pollutants are to be reported if the threshold for BTEX (the sum parameter of benzene, toluene, ethyl benzene, xylene) is exceeded.

d Polycyclic aromatic hydrocarbons (PAHs) are to be measured as benzo(a)pyrene (50-32-8), benzo(b)fluoranthene (205-99-2), benzo(k)fluoranthene (207-08-9), indeno(1,2,3-cd)pyrene (193-39-5) (derived from the Protocol on Persistent Organic Pollutants to the Convention on Long-range Transboundary Air Pollution).

e BOD may be used instead of TOC/TDC where the threshold value of column 1.b is 10,000 kg/year.

f As inorganic compounds.

g As inorganic compounds.

h Spanish acronym for total particles in suspension. These releases have to be notified, although they will not be included in the report data that the Environmental Ministry, to comply with information requirements, sends to the European Organisations.

PROTOCOLE SUR LES REGISTRES DES REJETS ET TRANSFERTS DE POLLUANTS: MISE EN PLACE EN ESPAGNE

Sergio Cuadrado Iglesias
Domaine de l'environnement industriel

MINISTERIO DE MEDIO AMBIENTE
C/Agustín de Betancourt nº 25 - Madrid 28003 - Espagne
Tél. : (+34) 91 453 54 12 / Fax : (+34) 91 534 86 09
E-mail : sgiaprato5@mma.es

Le protocole sur les registres des rejets et transferts de polluants (RRTP) est un protocole ouvert négocié sous l'égide de la Commission économique pour l'Europe des Nations Unies (CEE-ONU). Cet article tente de montrer les conséquences que sa mise en place peut avoir pour le système espagnol actuel de collecte des données, étant donnée que le Registre européen des émissions de polluants (REPE) y a travaillé durant les trois dernières années.

En outre, ce protocole a été développé en accord avec la convention d'Aarhus ou convention sur l'accès è l'information, la participation du public au processus décisionnel et l'accès à la justice en matière d'environnement, ce qui fait qu'il suppose une nouvelle conception de la participation et de la sensibilisation du public en Espagne, en proposant à tous les intéressés un accès aux questions environnementales les concernant.

Mots-clés : registre d'émissions, RRTP, REPE, convention d'Aarhus, sensibilisation.

PROTOCOLO SOBRE LOS REGISTROS DE EMISIONES Y TRANSFERENCIAS DE CONTAMINANTES: APLICACIÓN EN ESPAÑA

Sergio Cuadrado Iglesias
Área de Medio Ambiente Industrial

MINISTERIO DE MEDIO AMBIENTE
C/Agustín de Betancourt n.º 25 - Madrid 28003 - España
Tel.: (+34) 91 453 54 12 / Fax: (+34) 91 534 86 09
E-mail: sgiaprato5@mma.es

El Protocolo sobre los Registros de Emisiones y Transferencias de Contaminantes (RETC) es un protocolo abierto negociado bajo los auspicios de la Comisión Económica para Europa de las Naciones Unidas (CEPE/ONU). Este artículo intenta reflejar las consecuencias que puede tener su aplicación para el sistema español actual de recogida de datos, considerando que el Registro Europeo de las Emisiones Contaminantes (EPER) ha estado trabajando durante los últimos tres años.

Además, teniendo en cuenta que se ha desarrollado de acuerdo con el Convenio de Aarhus o Convenio sobre el acceso a la información, la participación pública en la toma de decisiones y el acceso a la justicia en materia de medio ambiente, este Protocolo supone una nueva forma de entender la participación y la sensibilización ciudadana en España, y ofrece a cada participante el acceso a las cuestiones ambientales que podrían afectarle.

Palabras clave: registro de emisiones, RETC, EPER, Convenio de Aarhus, sensibilización.

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