



**ENVIRONMENTAL SURVEY of the IRISH  
ELECTRICAL and ELECTRONICS INDUSTRY 2001**

# Environmental Protection Agency

## Establishment

The Environmental Protection Agency Act, 1992, was enacted on 23 April, 1992, and under this legislation the Agency was formally established on 26 July, 1993.

## Responsibilities

The Agency has a wide range of statutory duties and powers under the Act. The main responsibilities of the Agency include the following:

- the licensing and regulation of large/complex industrial and other processes with significant polluting potential, on the basis of integrated pollution control (IPC) and the application of best available technologies for this purpose;
- the monitoring of environmental quality, including the establishment of databases to which the public will have access, and the publication of periodic reports on the state of the environment;
- advising public authorities in respect of environmental functions and assisting local authorities in the performance of their environmental protection functions;
- the promotion of environmentally sound practices through, for example, the encouragement of the use of environmental audits, the setting of environmental quality objectives and the issuing of codes of practice on matters affecting the environment;
- the promotion and co-ordination of environmental research;
- the licensing and regulation of all significant waste disposal and recovery activities, including landfills and the preparation and periodic updating of a national hazardous waste management plan for implementation by other bodies;
- implementing a system of permitting for the control of VOC emissions resulting from the storage of significant quantities of petrol at terminals;
- implementing and enforcing the GMO Regulations for the contained use and deliberate release of GMOs into the environment;

- preparation and implementation of a national hydrometric programme for the collection, analysis and publication of information on the levels, volumes and flows of water in rivers, lakes and groundwaters; and
- generally overseeing the performance by local authorities of their statutory environmental protection functions.

## Status

The Agency is an independent public body. Its sponsor in Government is the Department of the Environment and Local Government. Independence is assured through the selection procedures for the Director General and Directors and the freedom, as provided in the legislation, to act on its own initiative. The assignment, under the legislation, of direct responsibility for a wide range of functions underpins this independence. Under the legislation, it is a specific offence to attempt to influence the Agency, or anyone acting on its behalf, in an improper manner.

## Organisation

The Agency's headquarters is located in Wexford and it operates five regional inspectorates, located in Dublin, Cork, Kilkenny, Castlebar and Monaghan.

## Management

The Agency is managed by a full-time Executive Board consisting of a Director General and four Directors. The Executive Board is appointed by the Government following detailed procedures laid down in the Act.

## Advisory Committee

The Agency is assisted by an Advisory Committee of twelve members. The members are appointed by the Minister for the Environment and Local Government and are selected mainly from those nominated by organisations with an interest in environmental and developmental matters. The Committee has been given a wide range of advisory functions under the Act, both in relation to the Agency and to the Minister.

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## Environmental Survey of the Irish Electrical and Electronics Industry 2001

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## INTRODUCTION

The Irish Electronic and Electrical Equipment (EEE) Environmental Survey was carried out as research for an MSc and an Irish Environmental Protection Agency project. The survey was intended to provide general baseline data on the attitudes, views, knowledge and awareness of companies with regards to environmentally related management, legislation, information flow and product design in the Irish electrical and electronics industry. It follows an earlier report that estimated the arisings of waste electrical and electronic equipment (WEEE) in Ireland (Wilkinson *et al.*, 2001).

The survey was carried out between January 30<sup>th</sup> and April 30<sup>th</sup>, 2001, among 238 companies in the EEE sector. In total 64, or 27%, of the companies responded to the survey. This is a typical response rate for a self-completion survey.

## PROFILE OF RESPONDENTS

The companies that responded were mainly global, multinational companies. Only 30% of the companies were indigenous. The majority of companies that responded have large facilities in Ireland, with two-thirds employing more than 50 people in their Irish facilities. The survey also found that relatively few companies are involved in the manufacturing of

components, and this is possibly indicative of a trend towards outsourcing components from overseas. The responding companies were predominantly involved in final product assembly and system/equipment supply. A significant number of companies are also involved in Research and Development (R&D) and product design.

## ENVIRONMENTAL MANAGEMENT

Increasing interest in managing environmental aspects of business operation has generally led throughout industry to the appointment of personnel with specific responsibilities for environmental matters and the adoption of formalised environmental management systems.

Half of the companies responding have an Environmental Manager/Officer, but this function may be carried out as part of another position. However, none of the small companies (<50 employees) that responded have a staff member responsible for environmental matters.

Over 50% of companies responding to the survey have an environmental management system (EMS) in place. As can be seen in Figure 2, ISO14001 is by far the most popular EMS and has been installed by 40% of companies. This is a 10% higher uptake of the standard than was found in a similar survey of the industry in the Nordic countries (Hellum and Ausen, 2000).

Further analysis of responses found that almost 75% of the global companies have an EMS in place or are working on implementation, compared with just 16% of indigenous companies (see Figure 3). Significantly, it was found that over 40% of indigenous companies felt that an environmental management system would not be relevant to them. Smaller companies were also found to have a much lower uptake of environmental management systems.

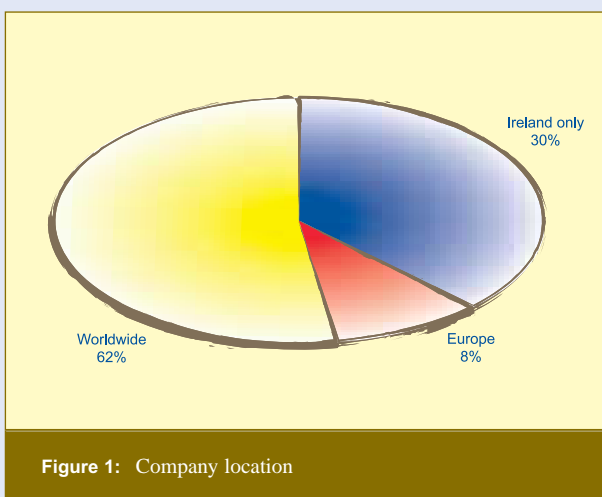
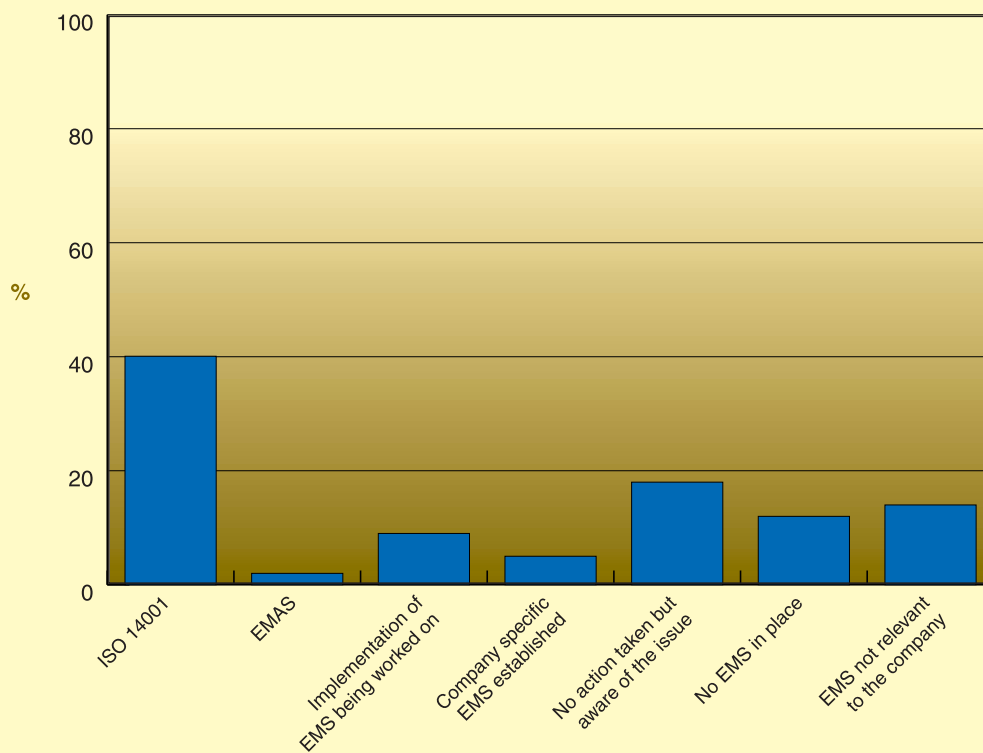


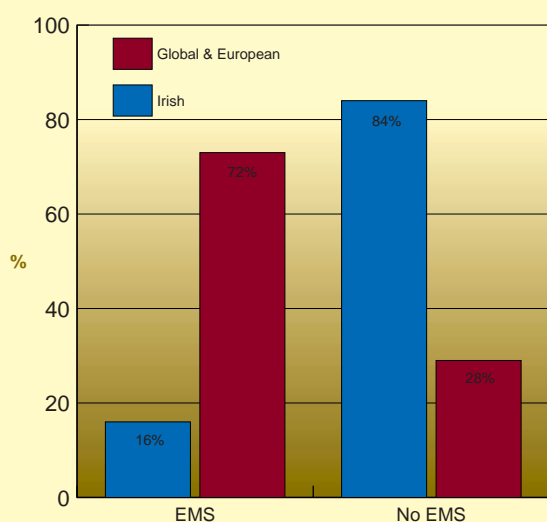
Figure 1: Company location



**Figure 2:** Status of environmental management systems on Irish site(s)

The poor performance and perception of Irish companies and small companies with regard to environmental management systems, has implications for their future business practices. Part of the obligation of the ISO14001 certification is to drive EMS down the supply chain (Enterprise Ireland, 2000). As more global

companies implement systems such as ISO14001 they are likely to exert pressure on their suppliers to implement similar environmental management systems. This may result in companies with such systems already in place holding a competitive advantage and gaining "preferred supplier" status from the large companies.

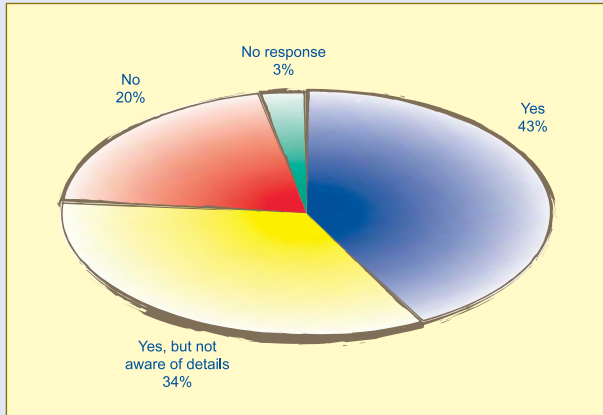


**Figure 3:** EMS uptake in Irish companies and global companies

## PREPAREDNESS FOR IMPENDING EUROPEAN LEGISLATION

The electronic and electrical equipment (EEE) industry is facing new legal requirements for the design and end of life management of products. These requirements will have direct implications on all the different actors within the complex, many-tiered network of the EEE product chain. The survey asked a number of questions regarding the draft European legislation in order to gauge the awareness and readiness of companies in Ireland.

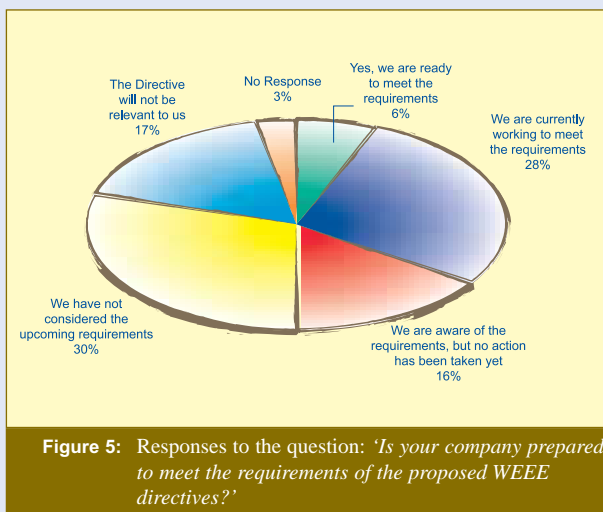
Figure 4 shows that almost a quarter of companies



**Figure 4:** Responses to the question: 'Are you aware there is draft European legislation regarding waste electronic and electrical equipment (WEEE)?'

(23%) were unaware that there is major legislation pending in their industry. A further 34% know that there is proposed legislation but are unaware of the details of this legislation. This means that almost 60% of companies in the EEE industry are unaware of how the impending European legislation will affect them. Awareness was found to be particularly poor among Irish companies and smaller companies.

The industry also appears to be relatively unprepared for the requirements of the following two proposed European Directives: the Directive on Waste Electrical and Electronic Equipment (WEEE) and the Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment. Figure 5 shows that two-thirds (66%) of the companies

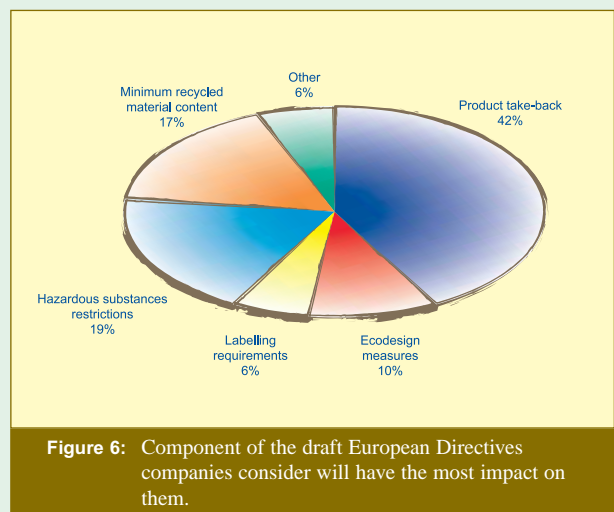


**Figure 5:** Responses to the question: 'Is your company prepared to meet the requirements of the proposed WEEE directives?'

surveyed have taken no action to prepare for the requirements of these Directives. One reason for this is that almost 20% of companies believe that the legislation will not be relevant to them. Given the extensive measures proposed by the Directives, this appears to be a worrying misconception.

Irish companies in the industry were found to be considerably less prepared for the legislation than global companies, and significantly more Irish companies believe that this legislation will not be relevant to them. Small companies exhibit a similar lack of preparedness and disregard for the legislation.

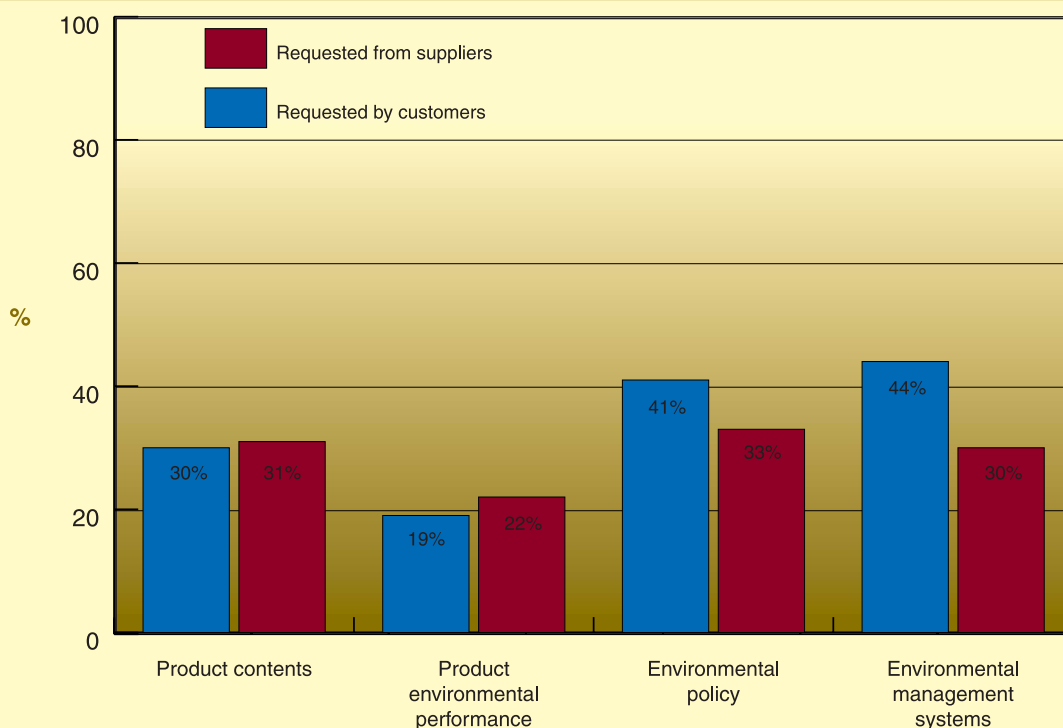
The proposed WEEE directives contain a number of key components that will impact upon the industry. The survey shows that companies in Ireland are most concerned about the product take-back component of the Directives (see Figure 6, below). The hazardous substance restrictions and minimum recycled content requirements of the legislation are also significant concerns.



**Figure 6:** Component of the draft European Directives companies consider will have the most impact on them.

## INFORMATION FLOW

Product or supply chains for items of electronic and electrical equipment are complex in nature, involving a multi-tiered network of supplier companies. The flow of environmental information in the product chain has been



**Figure 7:** Comparison of the type of environmental information requested from suppliers and by customers.

recognised as a crucial issue in environmental policy. However, a lot of information is lost as a product passes through its life cycle and along the product chain (Kärnä, 1999).

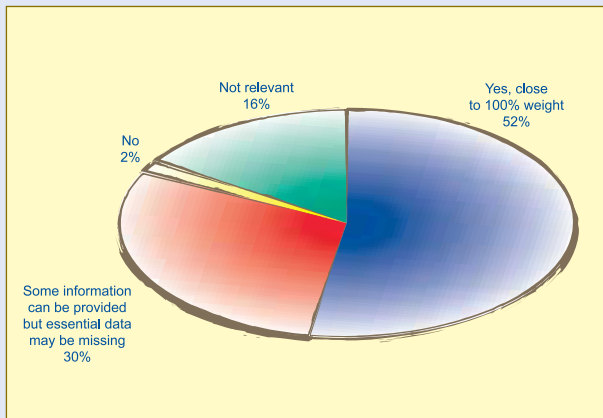
The survey found that companies in the EEE industry have relatively poor communication of environmental information through the product chain, particularly when compared with the industry in the Nordic countries (Hellum and Ausen, 2000).

Companies are asked for more environmental information by their customers than they ask of their own suppliers. These customers are more likely to be interested in the environmental policy and environmental management system of the company than they are in the details of products.

Irish companies and smaller companies are significantly less likely to request environmental information from their suppliers than global and large companies. None of the small companies (<50 employees) request

environmental information from their suppliers. The component manufacturing sector of the industry has environmental information requested of them more than the other activity groups, and they are also more likely to request this information from their suppliers.

Obtaining information on the material contents of electronic components and products has been identified as a major difficulty and a barrier to improving environmental dialogue through the product chain (Kärnä, 1999). A lack of environmental information on a product prevents customers from making informed decisions and acts as a barrier to efficient end-of-life management of the product. Despite the fact that only 30% of companies are asked by customers for information about the contents of their products (see Figure 7, above), over 50% of companies stated that they can document close to 100% of the material contents of their products (see Figure 8). A further 30% stated that they can at least provide some information about product contents.

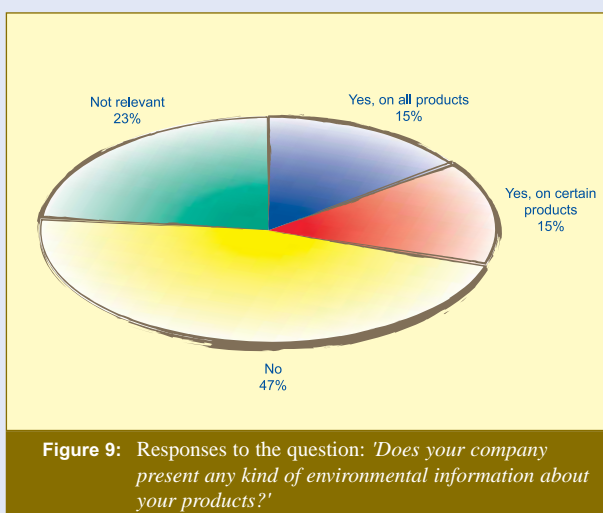


**Figure 8:** Responses to the question: 'Can the material contents of your products be documented?'

This survey shows that many companies are asked for environmental information about their products and the majority of companies feel that they are able to document the material contents of their products. But, are companies actually making this information readily available? Despite the ability of 80% of companies to document at least some of the material contents of their products, Figure 9 shows that only 30% actually provide environmental information on products. This indicates the potential for an improvement in providing information to customers about the contents of products.

## PRODUCT DESIGN

Ecodesign, sometimes called 'Design for the Environment (DfE)', can be described as "the systematic incorporation of environmental factors into product



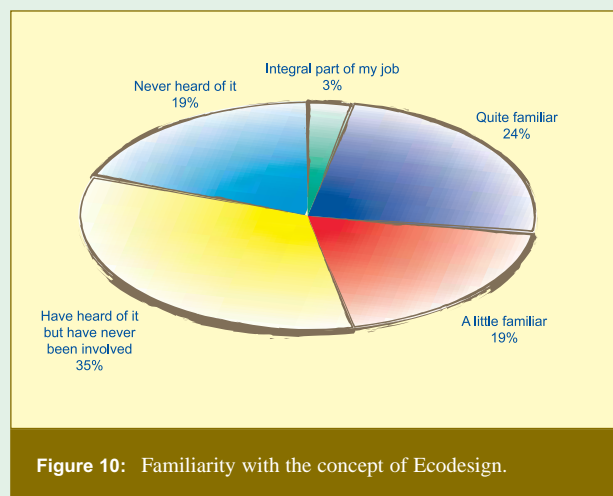
**Figure 9:** Responses to the question: 'Does your company present any kind of environmental information about your products?'

design and development" (Tukker *et al.*, 2000).

Ecodesign is a relatively new area and to date the only significant activity in Ireland has been an "Environmentally Superior Products" scheme coordinated by Enterprise Ireland between 1999 and 2001 (Enterprise Ireland, 2001). This scheme involves a small number of Irish SME's including two from the EEE industry.

As can be seen in Figure 10, the majority of EEE companies in Ireland (73%) have little or no knowledge of the concept of Ecodesign. The survey also found that Awareness is particularly poor among Irish companies.

Following from this, it was found that only 20% of companies have established environmental design

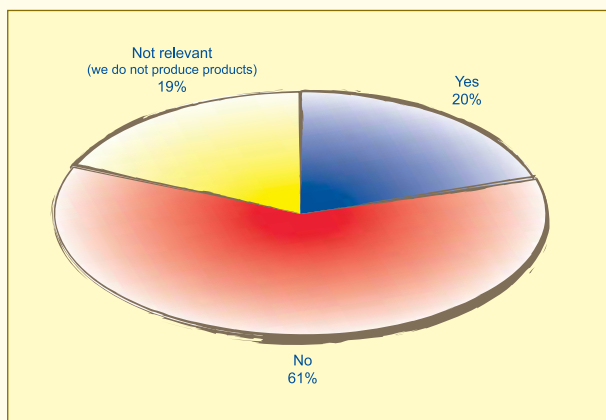


**Figure 10:** Familiarity with the concept of Ecodesign.

guidelines for their products (Figure 11). Global and Irish companies were comparable with regard to their lack of preparation of environmental design guidelines.

Environmental improvements can often occur as a by-product of other design efforts. Despite finding that there is relatively poor awareness of the Ecodesign concept and that few companies have environmental design guidelines, the survey revealed that almost 60% of companies have implemented Ecodesign measures of some kind (as shown in Figure 12, below). The survey also found that smaller companies are less likely to have



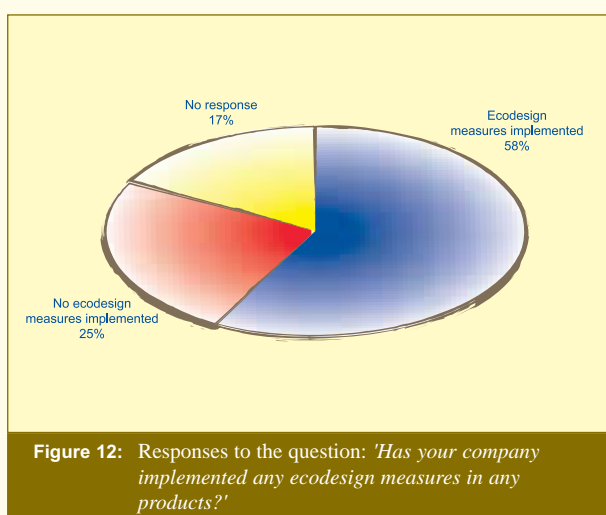


**Figure 11:** Responses to the question: 'Has your company established environmental design guidelines for the design of your products?'

implemented Ecodesign measures.

Ecodesign efforts in Ireland have been focussed on materials issues including hazardous material reduction or substitution, material reduction, and the use of recycled materials. Less effort has been put into improving energy efficiency and improving the durability/longevity of products.

Life cycle assessment (LCA) is a tool that can be used in the Ecodesign process for identifying the most important harmful environmental effects caused by a product during its lifetime. Only 16% of the responding companies use LCA to assess their products. Those that do are predominantly large, global companies. It was noted from the responses that LCA is often undertaken



**Figure 12:** Responses to the question: 'Has your company implemented any eco design measures in any products?'

in offices outside of Ireland.

The majority of companies do not consider the end of life phase of a product during its design. In many cases it was stated that this is because the products are components or sub-assemblies, and therefore are not perceived as an end product. Just under one-third of EEE companies in Ireland currently take back their products once they reach the end of their life, and these are predominantly global companies.

## CONCLUSIONS

Awareness of and preparedness for the EU Directives is low, particularly among indigenous companies. Given the extensive measures proposed by the Directives, this is a matter of concern.

The potential requirement for product take-back under the legislation is a major concern among companies, but there is currently little preparation for this.

There appears to be a polarisation between multinational companies that are larger and relatively sophisticated in terms of their environmental management and Irish companies that are generally smaller and less developed.

As a significant number of Irish companies and small companies don't have environmental management systems in place, this may have implications for their future business practices. As more global companies implement systems such as ISO14001 such companies run the risk of not being able to satisfy their customer requirements and hence lose business.

A lack of environmental information on a product prevents customers from making informed decisions and acts as a barrier to efficient end-of-life management of the product. This survey indicates the potential for an improvement in providing information to customers about the contents of products.

Some environmentally related product design has been undertaken, but this is largely a by-product of general product improvement or as a consequence of customer or head-office specific requirements. There is little formal incorporation of environmental factors in product design.

## RECOMMENDATIONS

Overall, this survey indicates that there is both scope and an associated need to enhance the environmental awareness and capability among companies in the EEE sector in Ireland.

Three key recommendations are:

1. Enterprise Ireland already operates schemes to promote environmental management systems and environmentally superior products. The indigenous companies in the EEE sector should be encouraged to participate in such schemes.
2. The prolonged development of the various relevant EU Directives may have contributed to the lack of awareness and preparedness. However, much has now been resolved and there is therefore a need to publicise their implications and the importance of preparing in advance for implementation.
3. Eco-design is beneficial both economically and environmentally. Again there is a need to improve awareness and capability in industry through publicity and training.

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# An Ghníomhaireacht um Chaomhnú Comhshaoil

## Bunú

Achtaíodh an tAcht fán nGníomhaireacht um Chaomhnú Comhshaoil ar an 23ú lá d'Aibreán, 1992 agus faoin reachtaíocht seo bunaíodh an Ghníomhaireacht go hoifigiúil ar an 26ú lá d'Iúil, 1993.

## Cúraimí

Tá réimse leathan de dhualgais reachtúla ar an nGníomhaireacht agus de chumhachtaí reachtúla aici faoin Acht. Tá na nithe seo a leanas san áireamh i bpríomhfhreagrachtaí na Gníomhaireachta:

- ceadúnú agus rialáil próiseas mór/ilchasta tionsclaíoch agus próiseas eile a d'fhéadfadh a bheith an-truaillitheach, ar bhonn rialú comhtháite ar thruailliú (Integrated Pollution Control-IPC) agus cur chun feidhme na dteicneolaíochtaí is fearr atá ar fáil chun na críche sin;
- faireachán a dhéanamh ar cháilíocht comhshaoil, lena n-áirítear bunachair sonraí a chur ar bun a mbeidh rochtain ag an bpobal orthu, agus foilsiú tuarascálacha treimhsiúla ar staid an chomhshaoil;
- comhairle a chur ar údaráis phoiblí maidir le feidhmeanna comhshaoil agus cuidiú le húdaráis áitiúla a bhfeidhmeannas caomhnaithe a chomhlíonadh;
- cleachtais atá fóna ó thaobh an chomhshaoil de a chur chun cinn, mar shampla, trí úsáid iniúchtaí comhshaoil a spreagadh, cuspóirí cáilíochta comhshaoil a leagan síos agus cóid chleachtais a eisiúint maidir le nithe a théann i bhfeidhm ar an gcomhshaoil;
- taighde comhshaoil a chur chun cinn agus a chomhordú;
- gach gníomhaíocht thábhachtach diúscartha agus aisghabhála dramhaíola, lena n-áirítear líontaí talún, a cheadúnú agus a rialáil agus plean náisiúnta bainistíochta um dhramháil ghuaiseach, a bheidh le cur i ngníomh ag comhlachtaí eile, a ullmhú agus a thabhairt cothrom le dáta go treimhsiúil;
- córas a fheidhmiú a chuirfidh ar ár gcumas astúcháin COS (Comhdhúiligh Orgánacha Sho-ghalaithe) a rialú de bharr cáinníochtaí suntasacha peitрил a bheith á stóráil i dteirminéil;
- na rialúcháin OMG (Orgánaigh a Mionathraíodh go Géiniteach) a fheidhmiú agus a ghníomhú maidir le húseaid shrianta a leithéad seo d'orgánaigh agus iad a scaoileadh d'aon turas isteach sa timpeallacht;

- clár hidriméadach náisiúnta a ullmhú agus a chur i ngníomh chun faisnéis maidir le leibhéil, toirteanna agus sruthanna uisce in aibhneacha, i lochanna agus i screamhuiscí a bhailiú, a anailisiú agus a fhoilsiú; agus
- maoirseacht i gcoitinne a dhéanamh ar chomhlíonadh a bhfeidhmeanna reachtúla caomhnaithe comhshaoil ag údarás áitiúla.

## Stádas

Is eagrais poiblí neamhspleách í an Ghníomhaireacht. Is í an Roinn Comhshaoil agus Rialtais Áitiúil an coimirceoir rialtais atá aici. Cinntítear a neamhspleáchas trí na modhanna a úsáidtear chun an tArd-Stiúrthóir agus na Stiúrthóirí a roghnú, agus tríd an tsaoirse a dhearbhaíonn an reachtaíocht di gníomhú ar a conlán féin. Tá freagracht dhíreach faoin reachtaíocht aici as réimse leathan feidhmeannas agus cuireann sé seo taca breise lena neamhspleáchas. Faoin reachtaíocht, is coir é iarracht a dhéanamh dul i gcion go míchuí ar an nGníomhaireacht nó ar aon duine atá ag gníomhú thar a ceann.

## Eagrú

Tá ceanncheathrú na Gníomhaireachta lonnaithe i Loch Garman agus tá cúig fhoireann chigireachta aici, atá lonnaithe i mBaile Átha Cliath, Corcaigh, Cill Chainnigh, Caisleán an Bharraigh agus Muineachán.

## Bainistíocht

Riarann Bord Feidhmiúcháin lánaimseartha an Ghníomhaireacht. Tá Ard-Stiúrthóir agus ceathrar Stiúrthóirí ar an mBord. Ceapann an Rialtas an Bord Feidhmiúcháin de réir mionrialacha atá leagtha síos san Acht.

## Coiste Comhairleach

Tugann Coiste Comhairleach ar a bhfuil dáréag ball cunamh don Ghníomhaireacht. Ceapann an tAire Comhshaoil agus Rialtais Áitiúil na baill agus roghnaítear iad, den chuid is mó, ó dhaoine a ainmníonn eagraíochtaí a bhfuil suim acu i gcúrsaí comhshaoil nó forbartha. Tá réimse fairsing feidhmeannas comhairleach ag an gCoiste faoin Acht, i leith na Gníomhaireachta agus i leith an Aire araon.



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