



**ECO-INNOVATION**  
WHEN BUSINESS MEETS THE ENVIRONMENT

**CIP Eco-innovation  
Pilot and market replication projects  
Call 2008**

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# **Deliverable D4.1 Methodology definition**

**LiMaS**

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## 1 INTRODUCTION

The objective of Work Package 4 is to define a Methodology that will help small and medium-sized enterprises (SMEs) to Eco-Innovate, optimising the information and resources needed for it. This is in line with Article 77 of the REACH Directive and Article 13 of the ErP Directive, which stipulate that help should be provided to SMEs for the application of the environmental regulations.

Work package 4 is based on the results of the Work packages 2 and 3. Work package 2 aimed at assessing through a survey the current situation of SMEs concerning environmental issues and especially, at highlighting the principal needs regarding the existing software tools. The results showed that there is in SMEs poor knowledge on environmental legislation, and that some companies are ready to eco-innovate as well as willing to get a software tool which could help them in this process. A major finding from the SME survey is that all aspects related to eco-innovation are similarly relevant and of interest to responding SMEs. In Work package 3, the available tools that are currently managing the issues of Eco-Design, EMS, Legislative requirements, LCA, etc. and the level of application in the SMEs world were investigated. Although multitude of tools has emerged aiming at providing enterprises with the means to consider the environmental aspects in their product development and design activities, SMEs still identify different needs so as to find the most convenient tool for their business.

Chapter 2 of this deliverable presents the legislative and self-regulatory requirements on environmental topics that apply to SMEs manufacturing Energy-using products and/or electrical and electronic equipment. The information needed to monitor the compliance with these requirements is presented in chapter 3. Chapter 4 presents the methodology to assess the user data, and chapter 5 the methodology to present the results to the user.

This methodology and tools are only for informative purposes. No responsibility can be asked to EACI and/or partners due to non-legal compliance (the companies are responsible for legal compliance).

## 2 REQUIREMENTS ON ENVIRONMENTAL TOPICS

This chapter presents the legislative and voluntary requirements that are possibly applicable to SMEs producing Electrical and Electronic Equipment and/or Energy-using Products. These brief presentations of the requirements can be made available to the enterprises on the public part of the LiMaS-webpage. They should be completed with links to external webpages related to the requirement.

### 2.1 Legislative requirements

In the European Union, directives have been adopted that defined some requirements for the producers of energy-using products and electrical and electronic equipment (EEE).

#### 2.1.1 ErP Directive (former EuP Directive)

The European Commission currently developed eco-design requirements for a broad number of product categories from the electrical and electronics sector under the directive on eco-design of energy related products (ErP, 2009/125/EC). This directive has amended the directive on eco-design the energy using products (EuP, 2005/32/EC) and

expanded the scope of the legislation to products that do not directly use generate, transfer, or measure energy but could also contribute to significant energy savings.

According to the ErP-directive, a CE marking shall be affixed on any energy-related product covered by implementing measures placed on the market and/or put into service. Moreover, the producer should keep and make available an EC declaration of conformity containing:

1. the name and address of the manufacturer or of its authorised representative;
2. a description of the model sufficient for its unambiguous identification;
3. where appropriate, the references of the harmonised standards applied;
4. where appropriate, the other technical standards and specifications used;
5. where appropriate, the reference to other Community legislation providing for the affixing of the CE mark that is applied; and
6. the identification and signature of the person empowered to bind the manufacturer or its authorised representative.

The manufacturer shall ensure that an assessment of the product's conformity with all the relevant requirements of the applicable implementing measure(s) is carried out. Regulations regarding for example the protection of the user need to be fulfilled for the CE marking. The implementing measures related to environmental aspects are listed on the internet page of the European Commission<sup>1</sup> and on the internet pages of initiatives like the EuP-Network-Germany<sup>2</sup>. So far, the implementing measures concern specific product groups like televisions, electric motors, refrigerators and freezers. Also the 'standby and off mode electric power consumption of household and office equipment' is regulated (Commission Regulation (EC) No 1275/2008). New implementing measures are continuously drafted and adopted. It is expected that every year 5-8 new product groups become subject to the initial analysis. For example, the preparatory study for sound and imaging equipment (DVD players, video game consoles etc.) has been launched in 2009, so that the implementing measure will be adopted in a few years. The time span between the adoption of the finally agreed implementing measure and the date minimum requirements are effective can be extremely short, i.e. down to one year. Hence, it might not be advisable to wait with any product changes until the requirements are fixed. The manufacturers should familiarize themselves with the status of the discussion in time to reflect possible consequences for their products.

The conformity assessment procedures are specified in Directive and in some cases in the implementing measures. The conformity assessment procedures leave to manufacturers the choice between internal design control (compilation of a technical documentation file) and management system (see Annex IV and V to the ErP Directive). Both procedures require environmental assessment studies used by the manufacturer in evaluating, documenting and determining product design solutions. It is recommended to consult the EuP Preparatory Study for the specific product category and product assessments made by public projects.

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<sup>1</sup> [ec.europa.eu/enterprise/policies/sustainable-business/sustainable-product-policy/ecodesign/index\\_en.htm](http://ec.europa.eu/enterprise/policies/sustainable-business/sustainable-product-policy/ecodesign/index_en.htm)

<sup>2</sup> [www.eup-network.de/product-groups/](http://www.eup-network.de/product-groups/)

### 2.1.2 RoHS

The directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment took effect in 2006. Article 4 (1) of the RoHS Directive requires restricting the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ether (PBDE) in new electrical and electronic equipment put on the market. Article 5 (1) (b) of the Directive provides that materials and components of electrical and electronic equipment can be exempted from the substance restrictions. The Annex to the Directive lists some applications of lead, mercury, cadmium and hexavalent chromium, which are exempted from the requirements of Article 4 (1). The exemptions can be specific to certain branches. For example, until 2010 lead in solders is exempted for servers, storage and storage array systems. New exemptions may be added to the Annex and existing exemptions may be deleted in the future, for instance in the frame of the revision of the RoHS Directive, which was initiated by the European Commission on 3 December 2008.

Achieving RoHS compliance requires the verification of every part in a product down to the homogeneous material level. The producer has to take all reasonable measures to make sure that their products are conform to RoHS ("due diligence"). In the practice, the producer is required to:

1. Assure that no restricted substance is used in his own manufacturing processes (i.e. if necessary and if no exemption is present in the Annex, to substitute the restricted substance)
2. Collect certificates of compliance and material declarations for the products of the suppliers
3. Evaluate the validity of the certificates and declarations through surveys, audits and periodical chemical tests carried out by third-party laboratories.

All these activities have to be documented and presented to the authorities in the case that a non-compliance with RoHS is detected.

### 2.1.3 WEEE

Since the implementation of the WEEE directive, EEE producers, which are defined as business that sells or imports electrical and electronic equipment (EEE), are responsible for financing the management of WEEE. Suppliers of components are not EEE producers according to the WEEE directive. EEE is defined as an equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields falling under the categories set out in Annex IA. Annex IA lists ten categories of WEEE:

1. Large household appliances
2. Small household appliances
3. IT and telecommunications equipment
4. Consumer equipment
5. Lighting equipment
6. Electrical and electronic tools (with the exception of large-scale stationary industrial tools)
7. Toys, leisure and sports equipment
8. Medical devices (with the exception of all implanted and infected products)

## 9. Monitoring and control instruments

### 10. Automatic dispensers

A non-exhaustive list of products which fall under the categories is provided by Annex IA.

Concretely, the producers of EEE have to:

- ✿ register with the national system (article 12)
- ✿ mark all EEE with 'the crossed-out wheeled bin symbol' (article 10 and Annex IV)
- ✿ provide the quantities and categories of EEE placed yearly onto the national market(s), collected, reused, recycled, recovered and exported (article 12)
- ✿ provide information on reuse and treatment of each new type of EEE placed onto the market (article 11)

The concrete transposition of the WEEE directive in the national legislations differ according to the member states<sup>3</sup>. It is advisable to inquire about the regulations in the concerned land. Moreover, the WEEE is currently under revision process. The revised WEEE Directive will set higher targets for collection and recovery and will unify the member state reporting procedure.

#### 2.1.4 REACH

REACH is a European Community regulation on chemicals and their safe use (Regulation EC 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)). The law entered into force on 1 June 2007.

EuP/EEE manufacturers are usually downstream users. Two downstream user types are concerned by REACH:

- ✿ Final users, who use REACH substances in their processes
- ✿ Article producers, who include REACH substances in their products (not for intended release)

"Downstream users" have to monitor the regulated substances that are used in its manufacturing process and verify that they are used according to their Material Safety Data Sheet (MSDS). They have to inform their customer about the use of some of the substances included in the Annex XIV (substances subject to authorisation) in the supplied product. A direct contact with suppliers is needed (MSDS, product declarations about REACH, etc.), as well as a clear monitoring of hazardous substances used in the company. The manufacturers also have to consider the "restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles" (Annex XVII). These lists of substances are periodically updated.

The European Chemical Agency (<http://echa.europa.eu>) supplies updated information and manuals in different languages.

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<sup>3</sup> See <http://www.berr.gov.uk/files/file29925.pdf>

## 2.2 Self-regulatory initiatives based on standards

### 2.2.1 Environmental Management System

Environmental management system (EMS) refers to the management of environmental programs of an organisation for developing, implementing and maintaining policy for environmental protection. An EMS follows the process of first developing an environmental policy, planning the EMS, implementing it, checking the system and acting on it (Plan-Do-Check-Act Cycle). EMS can be certified according to standards. A certified environmental management system complying either with

- ✿ the voluntary European EMAS scheme or
- ✿ the standard ISO 14.001 or
- ✿ UNE 150.301:2003

is presumed to fulfill the requirements related to the conformity assessment procedures described in Annex V of the ErP directive – as long as the product design function is included in the management system.

EMS can be implemented for any kind of company or institution conducting any kind of activity. The producer has to implement the following elements of an EMS:

1. Environmental performance policy: The producer must provide a framework for setting and reviewing objectives and indicators with a view to improving the environmental performance. All the measures adopted to improve the overall environmental performance must be documented in a systematic and orderly manner in the form of written procedures and instructions.
2. Planning: The manufacturer establishes and maintains procedures for establishing the ecological profile of the system, defines objectives and a programme for achieving these objectives.
3. Implementation and documentation: The documentation concerning the management system should cover the definition of responsibilities and authorities, the control and verification techniques implemented and the description of the core environmental elements of the management system.
4. Checking and corrective action: The manufacturer takes all measures necessary to ensure that the activities are conducted in compliance with the requirements of the EMS. The manufacturer establishes and maintains procedures to investigate and respond to non-conformity, and implement changes in the documented procedures resulting from corrective action.

### 2.2.2 Carbon footprint

The product Carbon Footprint (CF) is the total set of greenhouse gas emissions caused by a process or a product during its life cycle, including extraction, production and transportation of raw materials, manufacture, distribution, use, disposal and recycling<sup>4</sup>. The carbon footprint corresponds to the environmental impact “climate change” (see chapter 2.3.1) and is measured in tonnes of carbon dioxide equivalent.

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<sup>4</sup> [www.carbontrust.co.uk/cut-carbon-reduce-costs/calculate/carbon-footprinting/pages/product-carbon-footprint.aspx](http://www.carbontrust.co.uk/cut-carbon-reduce-costs/calculate/carbon-footprinting/pages/product-carbon-footprint.aspx)

The calculation of the carbon footprint of a product allows identifying potentials to reduce the emissions and possibly the energy consumption as well as some costs, and communicating to the customers about the environmental impacts of the product. The specification PAS 2050:2008<sup>5</sup> and the GHG Protocol Corporate Standard<sup>6</sup>, which can be downloaded for free, describe methods to calculate the carbon footprint. After auditing, the calculation can be certified by organisations like the Carbon Trust Footprinting Company, which provides the Carbon Reduction Label, or CarbonCounted.

### 2.2.3 Environmental Product Declaration

An Environmental Product Declaration (EPD) is based on a standardized tool (ISO 14025/TR) to communicate the environmental performance of a product. It can be applied to any kind of product or component and should consider all relevant environmental aspects of the product life cycle. The overall goal of EPD is to provide relevant, verified and comparable information on the environmental performance of a product in an understandable way.

An EPD shall include information about the product content in terms of material and substances and environmental information, coming for example from studies on life-cycle assessments and life-cycle inventories.

### 2.2.4 Eco-labelling

The goal of eco-labelling is to communicate to the customer on the environmental performance of a product. The product has to fulfil predefined criteria to get the label. Some eco-labels available on the market and applicable to EEE/EuP are presented in following table.

**Table 1: Most common eco-labels applicable to EEE/ErP**

Eco-label	Origin	Scope
Flower	European Union	Product life cycle
(EU) Energy star	Initiated by the Environmental Protection Agency of the USA, now also European Union	Energy consumption during use
Nordic Swan	Nordic countries	Low content of environmentally harmful substances and low impact on the environment

<sup>5</sup> Specification for the assessment of the life cycle greenhouse gas emissions of goods and services: <http://shop.bsigroup.com/en/Browse-by-Sector/Energy--Utilities/PAS-2050/>

<sup>6</sup> See [www.ghgprotocol.org/standards/corporate-standard](http://www.ghgprotocol.org/standards/corporate-standard)

Eco-label	Origin	Scope
Blauer Engel (blue angel)	Germany	Products and services that have an especially environmentally friendly propriety (for example: energy saving)
Umweltzeichen	Austria	Environmental impacts of the product
AENOR Medio Ambiente	Spain	Impact on the environment during life cycle (raw materials used; design; manufacture; use and disposal)
Emblem of Guarantee of Environmental Quality	Catalonia - Spain	Environmental quality requirements for defined products
TCO Certified	International (private company)	High performance and ergonomic design, environmental requirements for IT products

The criteria that have to be fulfilled are specific to the eco-labels and products. Criteria were not defined for all kind of products, so that for many products it is not possible yet to get eco-labels. Anyway, SMEs supplying components for the assembling of an eco-labelled product may have to fulfil criteria related to an eco-label.

## 2.3 Other self-regulatory initiatives

### 2.3.1 Life-cycle assessment

A life-cycle assessment (LCA) aims at quantifying the environmental impacts of a product or system. The standard ISO 14040 describes the methods for conducting LCA. The LCA methodology distinguishes following 'baseline impact categories'<sup>7</sup>, which can be completed with 'study-specific' impact categories:

- ✿ depletion of abiotic resources
- ✿ land use competition
- ✿ climate change
- ✿ stratospheric ozone depletion
- ✿ human toxicity
- ✿ ecotoxicity
- ✿ photo-oxidant formation
- ✿ acidification
- ✿ eutrophication

The LCA procedure is divided into four phases:

<sup>7</sup> See Guinée et al. LCA - An operational guide to the ISO-standards. Final report, May 2001. Available online: <http://cml.leiden.edu/research/industrialecology/researchprojects/finished/new-dutch-lca-guide.html>

1. Goal and scope definition
2. Inventory analysis (system description and data collection)
3. Impact assessment (interpretation of the results of the inventory analysis in terms of environmental impacts)
4. Interpretation (evaluation of the results, formulation of conclusions and recommendations)

Life-cycle assessments can be conducted at various detailed or at simplified level, depending on the goal of the LCA.

### 2.3.2 Eco-design

Eco-design aims at reducing the environmental impacts of a product at the stage of designing. Besides the mandatory regulations related to the ErP Directive (see chapter 2.1.1), eco-design measures can be implemented voluntarily. The preparatory studies related to the ErP Directive can be a source of information on the implementation of eco-design. Also the 'Practical Eco-design guide'<sup>8</sup> summarizes recommendations for eco-design in the electronics industry, including 139 practical recommendations to reduce the environmental impacts caused by a product throughout its life cycle.

Eco-design consists of assessing and improving the environmental aspects for all phases of the life cycle of the product, as shown in table 2.

**Table 2: Aspects to be considered for eco-design**

<b>Environmental aspect:</b>	<b>Consumption of materials, of energy and of other resources</b>	<b>Emissions to air, water or soil</b>	<b>Pollution through physical effects</b>	<b>Generation of waste material</b>	<b>Possibilities for reuse, recycling and recovery</b>
<b>Phase:</b>					
Raw material selection and use					
Manufacturing					
Packaging, transport, and distribution					
Installation and maintenance					
Use					
End-of-life					

Eco-design requires a holistic approach that takes into account the information and the results gathered by applying some of the tools presented in this chapter.

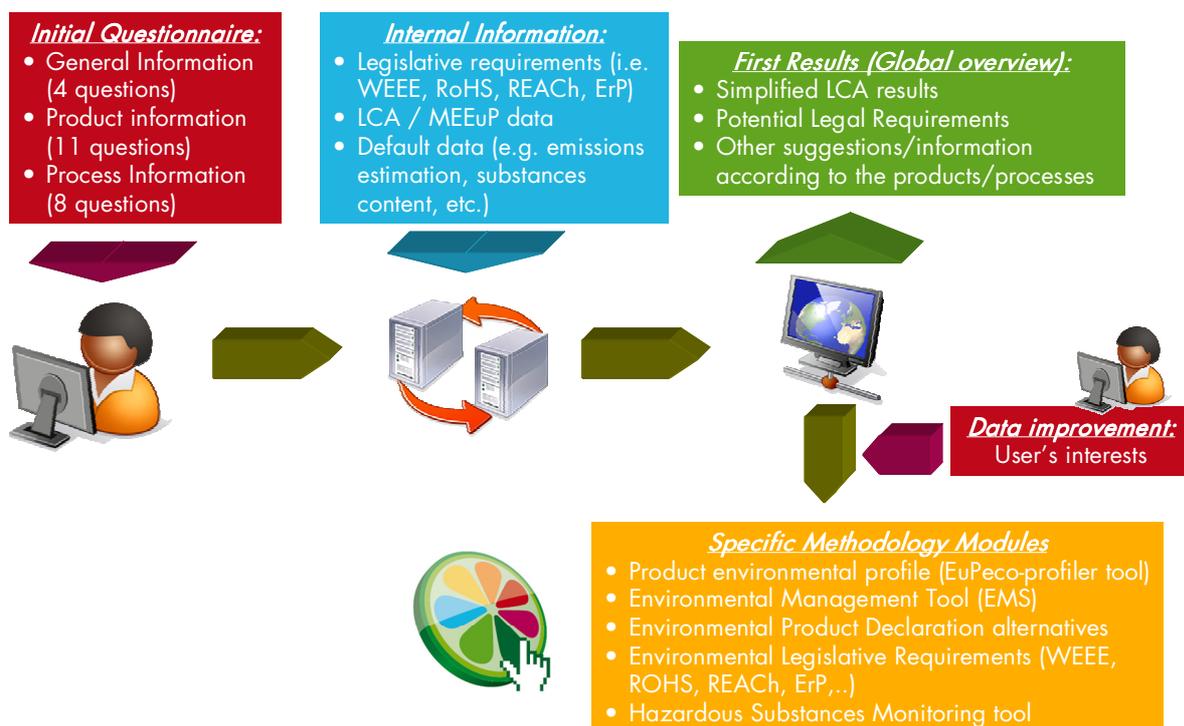
<sup>8</sup> Rodrigo, J.; Castells, F. Electrical and electronic practical eco-design guide. Universidad Rovira i Virgili, 2002

### 3 INFORMATION FROM THE USER

This chapter describes the data that are needed for assessment with the LiMaS methodology, as well as practical approaches to collect them, considering the possible data synergies. Moreover, some methods to estimate missing data will be described.

#### 3.1 Information required

Figure 1 shows the structure of the Methodology approach. The user first gets a initial questionnaire and enters some data, which provide first results and an orientation to detailed assessment through questionnaires (modules) specific to the different environmental requirements.



**Figure 1: Overview of the data flows from and to the user**

The information required for the LiMaS methodology can basically be divided into two categories:

- ✿ Information on the product in the form of answers to questions,
- ✿ Numerical data on the products and processes.

The survey on SMEs conducted in WP2 has shown that there is little knowledge on environmental topics in the enterprises. Supporting information should therefore accompany the questions listed above, so that they can be understood by persons that are not experts.

The questionnaires should consist of interactive and relatively short forms that are clearly arranged, well explained, user-friendly and as simple as possible for the user to enter the necessary data. The questionnaires contain an introduction, definitions and other supporting information for the user. The developed questionnaires for each environmental aspect covered by LiMaS are available as Microsoft Excel. These supporting tools will help

SMEs of EuP/EEE sectors to have a first results and a global overview to improve their products (life cycle thinking approach).

### 3.1.1 Initial questionnaire

To get an overview of the needs of the user, it is recommended to ask some questions to the user at the beginning of his work with the software. The aims of these questions are:

- ✿ to collect basic information that are useful for several environmental requirements,
- ✿ to enable a rough calculation of the environmental impacts by making a simplified LCA
- ✿ to check if the legislative requirements are applicable to the process or the product, and if yes, which have already been undertaken to comply with them.

The wishes and interests of the users regarding the voluntary requirements must also be inquired and considered.

The initial questionnaire allows the user to get a first orientation to the modules relevant are for his activities. It serves as a platform for orientation towards further modules (specific questionnaires) focusing on the specific environmental requirements.

Business and product data		Answer
1	Name of your enterprise	SIMPLE
2	Person in charge for filling in this questionnaire	JCA
3	Completion date (dd/mm/yyyy)	29.10.2010
4	Name of the product	Computer 2
5	<b>PRODCOM code of the product</b> Please introduce the product PRODCOM code of the product (8 digits), but with no points or separations (e.g. 2761110).  The PRODCOM code you have entered matches the following product:  <i>Please verify the indicated product is similar to yours</i>	26201100  Laptop PCs and palm-top organisers
<b>Search the PRODCOM code</b> If you do NOT know your product PRODCOM, please search it on the PRODCOM code list and write it above.		<input type="button" value="SEARCH ON THE PRODCOM LIST"/>
Questions about your product		Answer
6	<b>Product family</b> Which type of product do you manufacture or sell? Is your product an EEE (electrical and electronic equipment)? <i>EEE: Equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields.</i>	<input type="text" value="IT? an EEE"/>
7	<b>Share of the product over total production</b> What is the share of the product over the total production of your facility (in % by weight)? Example: if the considered product accounts a third of the production, enter "33%".	<input type="text" value="75,00%"/>
8	<b>Total volume</b>	

**Figure 2: Screenshot of the initial questionnaire**

PRODCOM, which is a system for the collection and dissemination of statistics on the production of manufactured goods<sup>9</sup>, is used to classify the products. The PRODCOM code of the product has to be entered by the user. A tool to facilitate the search was developed.

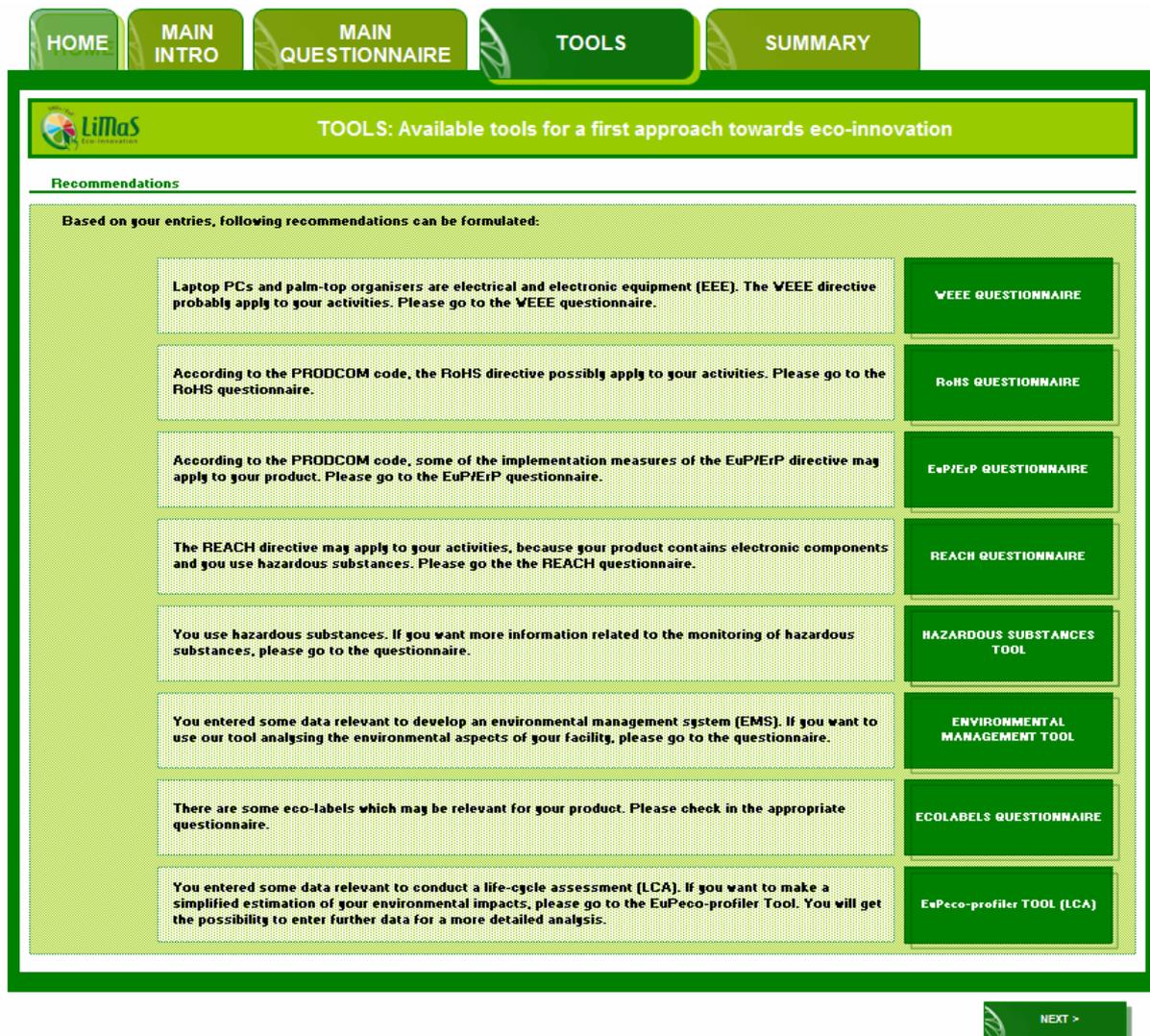
Data synergies can be observed, so that some questions asked in the initial questionnaire will not have to be repeated in the specific modules (table 3). For example, the PRODCOM number is needed for the modules RoHS, WEEE, ErP and eco-label. For allocation reasons, all the data are needed per unit of product.

<sup>9</sup> See <http://epp.eurostat.ec.europa.eu/portal/page/portal/prodcom/introduction>

**Table 3: Data asked in the initial questionnaire and data synergies to the specific modules**

Module	LCA	ROHS	WEEE	REACH	Hazard. Sub.	ErP	Eco-label	EMS
<b>PRODUCT BASIC INFORMATION:</b>								
•Product Name:	X	X	X	X	X	X	X	X
•PRODCOM number:		X	X			X	X	
•Product Family (WEEE/ROHS classification):		X	X					
•% of units over total production (y):	X							
•Total volume:	X							
•Total weight:	X							
•% of metals:	X							
•% of plastics:	X							
•% of electronic components:	X	X		X				
•Energy consumption in use (kWh/y):	X							
•Lifetime (y):	X							
<b>MANUFACTURING BASIC INFORMATION:</b>								
•Electricity Consumption (kWh/y):	X							X
•Gas Consumption (Nm <sup>3</sup> /y):	X							X
•Fuel Consumption (ltr/y):	X							X
•Water Consumption (m <sup>3</sup> /y):	X							X
•Hazardous Wastes (kg/y):								X
•Non-Hazardous wastes (kg/y):								X
•Solvents Consumption (kg/y):								X
•Do you use substances classified as hazardous?				X	X			X

The data of the initial questionnaire are analyzed, so that some first recommendations can be formulated (figure 3). These recommendations provide links to the specific questionnaires, where the environmental requirements are treated more in details.



**Figure 3: Screenshot of the results of the initial questionnaire and links to the specific questionnaires**

### 3.1.2 Specific modules

All the modules were first developed using Microsoft Excel (except for the LCA module, which is a free-software tool named EuPeco-profiler), and will be converted into the final web-based software tool in work package 5. The modules described hereafter will be downloadable from the LiMaS website.

#### 3.1.2.1 WEEE module

Like in the RoHS module, the possible application of the WEEE directive to the product is checked through the Prodcom code. The following questions check the compliance with specific requirements of the WEEE directive, like the marking with the 'crossed-out wheeled bin' symbol, the registration in the national system(s), the financial guarantee for the management of WEEE, the data reporting, the fulfillment of the rates of recovery and reuse and treatment information.

HOME
INTRO WEEE
QUESTIONNAIRE WEEE
RESULTS WEEE

WEEE QUESTIONNAIRE: Business and product data

You have introduced these data in the Main Questionnaire. If some of the information displayed is not accurate or must be changed, please click on the "HOME" button, and then go to the "MAIN QUESTIONNAIRE" sheet.

Laptop PCs and palm-top organisers are electrical and electronic equipment (EEE) belonging to category .

**Business data**

Enterprise: SIMPPLE  
 Person in charge for filling in this questionnaire: JCA  
 Date: 29/10/2010

**Product data**

Product: Computer 2  
 PRODCOM code: 26201100  
 Product according to the PRODCOM code: Laptop PCs and palm-top organisers  
 Your product is an EEE

Questions about your product	Answer
<p><b>1 EEE marking</b></p> <p>Do you mark the EEE you put on the market with the 'crossed-out wheeled bin' symbol?</p> <div style="text-align: center; margin: 10px 0;">  </div>	<input type="text" value="NO"/>
<p><b>2 Registration in the national system (s)</b></p> <p>Did you register in the national systems of the countries where you put products on the market?</p> <p style="font-size: x-small; margin-top: 5px;">See document providing an overview of National Registers in Member States:  <a href="http://ec.europa.eu/environment/waste/weee/pdf/weee_faq.pdf">http://ec.europa.eu/environment/waste/weee/pdf/weee_faq.pdf</a></p>	<input type="text" value="YES"/>
<p><b>3 Financial guarantee</b></p> <p>Did you provide a financial guarantee for the management of WEEE?</p> <p style="font-size: x-small; margin-top: 5px;">The financial guarantee shall ensure that the operations relating to WEEE management will be financed. The guarantee may take the form of participation by the producer in appropriate schemes for the financing of the management of WEEE, a recycling insurance or a blocked bank account.</p>	<input type="text" value="NO"/>

**Figure 4: Screenshot of the WEEE questionnaire**

### 3.1.2.2 RoHS module

According to the Prodcom code, the module searches if the directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment, which restricts the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ether (PBDE) in new electrical and electronic equipment, could apply to the product.

If the RoHS directive is applicable, the following questions aim at determining if one or more substances restricted by the RoHS-Directive is used in the own manufacturing processes or contained in products of suppliers. Other questions related to certificates of RoHS-compliance and material declarations, to the evaluation of these certificates and declarations and to exemptions are asked. Finally, for the case that the user has too little

information to answer these questions, a list of components that might contain restricted substances is shown.

HOME
INTRO  
RoHS
QUESTIONNAIRE  
RoHS
RESULTS  
RoHS


RoHS QUESTIONNAIRE: Business and product data

You have introduced these data in the Main Questionnaire. If some of the information displayed is not accurate or must be changed, please click on the "HOME" button, and then go to the "MAIN QUESTIONNAIRE" sheet.

The RoHS directive may apply to your product that belongs to the group of Laptop PCs and palm-top organisers.

**Business data**

Enterprise: SIMPPLE  
 Person in charge for filling in this questionnaire: JCA  
 Date: 29/10/2010

**Product data**

Product: Computer 2  
 PRODCOM code: 26201100  
 Product according to the PRODCOM code: Laptop PCs and palm-top organisers

Questions about your product	Answer
<b>1 Use of regulated substances in own manufacturing processes</b> Do you use in your own manufacturing processes substances regulated by the RoHS-Directive? (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ether (PBDE))	<input type="text" value="I don't know"/>
<b>2 Regulated substances in products of suppliers</b> Do product(s) of your suppliers contain substances regulated by the RoHS-Directive?	<input type="text" value="YES"/>
<b>3 Certificates of RoHS-compliance and material declarations</b> Do you collect certificates of RoHS-compliance and material declarations for the products of your suppliers?	<input type="text" value="YES"/>
<b>4 Validity of certificates and declarations</b> Do you evaluate periodically the validity of these certificates and declarations through surveys, audits and periodical chemical tests carried out by third-party?	<input type="text" value="NO"/>
<b>5 Exemptions</b> Is the use of the regulated substance exempted?  <small>The legislation including the commission decisions relating to the exemptions is available on the webpage <a href="http://ec.europa.eu/environment/waste/wEEE/legis_en.htm">http://ec.europa.eu/environment/waste/wEEE/legis_en.htm</a></small>	<input type="text" value="NO"/>
<b>6 Components that might contain restricted substances</b>	

**Figure 5: Screenshot of the RoHS questionnaire**

### 3.1.2.3 EuP/ErP module

The ErP module first asks general question on the applicability of the ErP directive, for example if the product is manufactured for the European Union market, if it depends on an energy source and if it is possible to independently assess the environmental performance of the product.

Afterwards, some questions are asked to check if one or more implementation measures might apply to the product.

HOME
INTRO  
EuP/ErP
QUESTIONNAIRE  
EuP/ErP
RESULTS  
EuP/ErP

EuP/ErP QUESTIONNAIRE: Business and product data

You have introduced these data in the Main Questionnaire. If some of the information displayed is not accurate or must be changed, please click on the "HOME" button, and then go to the "MAIN QUESTIONNAIRE" sheet.

The ERP directive may apply to your product.

**Business data**

Enterprise: SIMPPLE  
 Person in charge for filling in this questionnaire: JCA  
 Date: 29/10/2010

**Product data**

Product: Computer 2  
 PRODCOM code: 26201100  
 Product according to the PRODCOM code: Laptop PCs and palm-top organisers  
 Your product is an EEE

Questions about your product	Answer
<p><b>1 European Union market</b></p> <p>Is this product manufactured for the European Union market?</p> <p style="font-size: x-small; margin-top: 10px;"><i>If your answer is NO, you do not have to go on with this questionnaire</i></p>	<input type="text" value="YES"/>
<p><b>2 Energy use/generation</b></p> <p>Does the product depends on an energy source (electricity, fossil fuels and renewable energy sources) to function as intended or is its purpose the generation, transfer and measurement of such energy?</p>	<input type="text" value="YES"/>
<p><b>3 Energy consumption in use</b></p> <p>Does the product (once commercialized or put into service) have an impact on energy consumption during its use?</p> <p style="font-size: x-small; margin-top: 10px;"><i>If answers to questions 2 and 3 are both NO, there is no need to go on with this questionnaire</i></p>	<input type="text" value="YES"/>
<p><b>11 Environmental performance assessment</b></p> <p>Is it possible to independently assess the environmental performance (or energy consumption) of the product?</p>	<input type="text" value="YES"/>
<p><b>12 Individual parts / finished products</b></p>	

**Figure 6: Screenshot of the EuP/ErP questionnaire**

### 3.1.2.4 REACH module

Also the REACH questionnaire checks the application and the fulfillment of the requirements defined in the directive. The Prodcom code cannot deliver information on the application of the directive, so that specific questions on the use of chemical substances and preparations, on their hazardousness, on documentation etc. are asked.

HOME
INTRO REACH
DEFINITIONS REACH
LINKS REACH
QUESTIONNAIRE REACH
RESULTS REACH

REACH QUESTIONNAIRE

You have introduced these data in the Main Questionnaire. If some of the information displayed is not accurate or must be changed, please click on the "HOME" button, and then go to the "MAIN QUESTIONNAIRE" sheet.

The REACH directive may apply to your activities.

**Business data**

Enterprise: SIMPPLE

Person in charge for filling in this questionnaire: JCA

Date: 29/10/2010

**Product data**

Product: Computer 2

PRODCOM code: 26201100

Product according to the PRODCOM code: Laptop PCs and palm-top organisers

Your product contains electronic components

You don't use hazardous substances

Question no.	Question		Actions according to answer
1	Do you have a list of all the chemical substances/preparations used in your products/processes, their annual consumption and who supply them?	YES ▼	
2	From this substances list, Have you identified which substances/preparations have risks for human or environment (see "hazardous substance" definition)?	YES ▼	
3	Do you have the CAS and/or EC number to identify these hazardous substances?	NO ▼	
4	From this list, do you purchase/import any hazardous substance/preparation outside EU?	YES ▼	
5	Does the supplier of these substances/preparations have an only representative who will register the substance?	NO ▼	
6	From the hazardous substances list, Is any of the substances classified as CMR (carcinogenic, mutagenic and/or reprotoxic substance), PBT (persistent, bio-accumulative and toxic substance), vPvB (very persistent, very bioaccumulative substance) or similar?	YES ▼	

**Figure 7: Screenshot of the REACH questionnaire**

### 3.1.2.5 Hazardous substances module

The hazardous substances module helps the user for managing the information associated to the hazardous substances used in its products and processes. The user needs to input information about its hazardous substances and suppliers: name of the substance, hazard classification, risk phrases, if the substance remains in the product, annual consumption etc.

HOME
INTRO Hazard
SUBSTANCES INFORMATION
SUPPLIERS INFORMATION
ACTION PLAN for Hazard Subst.

HAZARDOUS SUBSTANCES SUPPLIERS INFORMATION

**Reminders:**

- This spreadsheet is designed only for hazardous substances suppliers. You could adapt it if needed
- Do you need the Safety Data Sheet (SDS) and the Exposure Scenario (ES) of all hazardous substances (ask supplier if it is not the case)
- The EU representative/distributor of the hazardous substance has REACH obligations. If you import it directly from outside EU, you could have REACH obligations

**FILTER CRITERIA:**

- Indicate the filter criteria in each column below
- Push the filter button. To see again the complete list, delete all filter criteria and press the button

NAME	Contact Person	e-mail	Phone	Address	Does it has an EU representative? (yes/no)	Has it supplied all the needed SDS/ES for hazardous substances? (yes/no)	Date of the latest update	Has it supplied other needed declarations (e.g. ROHS compliance, etc.)?	Date of the latest update2
					no				

**SUPPLIERS DATA:**

FILTER SUPPLIERS

- Fill in the table with the suppliers that supply hazardous substances
- Cross the information with the "Substance Information"

NAME	Contact Person	e-mail	Phone	Address	Does it has an EU representative? (yes/no)	Has it supplied all the needed SDS/ES for hazardous substances? (yes/no)	Date of the latest update	Has it supplied other needed declarations (e.g. ROHS compliance, etc.)?	Date of the latest update2
3 CLENUR	Shiru Stee	sshiru@clenur.com	1 00 564757	Tuegu 23, Xigun, CHINA	no	yes		no	

NEXT >

**Figure 8: Screenshot of the Hazardous Substances questionnaire**

### 3.1.2.6 Environmental Management System module

The EMS module is a tool for assessing and determining which environmental aspects (e.g. raw materials, energy, wastes, emissions, noise, etc.) of an organisation cause or can cause the most significant impacts on the environment. It allows the compilation of environmental data on the product and the process and the calculation of the environmental impacts. The environmental priorities to be considered during the establishment of future organisation's environmental objectives and targets can be identified. This tool is aligned with EMAS and ISO 14001 requirements.

The tool consists of four steps:

- ✿ Collection of quantitative data on material and energy inputs (e.g. raw materials, water, energy, etc.) and outputs (e.g. wastes, emissions, noise, etc.) for the period to be assessed (e.g. current year) and also for a previous period to be compared with (e.g. last year). This data could be very detailed (e.g. extensive list of all materials, wastes, etc.) or more aggregated by using categories instead of individual inputs and outputs (e.g. wastes can be classified in hazardous and non-hazardous instead of listing all the types). Some default values are given according to the answers of the Initial Questionnaire.
- ✿ The tool automatically calculates and displays for each individual flow a score which is the percentage of increase/decrease. This is the "quantity perspective".

- The user can also consider and assess for each individual flow the "PROXIMITY TO LIMITS" (e.g. potential risk, proximity to legal limits or to threshold values, etc.) ("quality perspective"). The user can choose the most appropriate option between four possibilities for each individual flow. The scores and options can be modified and adapted to the preferences of the user.
- Finally, once both perspectives have been considered in the assessment (quantity & quality), the tool multiplies both scores and presents the resulting scores. Higher scores are the most significant environmental aspects of the organisation and consequently the environmental priorities for the future.

Figure 9: Screenshot of the EMS questionnaire

### 3.1.2.7 Eco-labelling module

The eco-labelling module asks the user one single information, which is the Prodcom code. Based on that code, the user is informed that some eco-labels might be relevant for his product. The questionnaire summarizes the business and product data (Prodcom and product description).

### 3.1.2.8 LCA module (EuP<sub>Eco-Profiler</sub> tool)

The LCA module is the EuP<sub>Eco-Profiler</sub> free software tool, which is developed as a part of work package 7 and has been available on the webpage of the LiMaS project since April 2010. More information on the EuP<sub>Eco-Profiler</sub> is provided by the software manual that can be downloaded from the LiMaS webpage [www.limas-eup.eu](http://www.limas-eup.eu).

The supporting module developed for LCA includes a template to be entered into the EuP<sub>Eco-Profiler</sub> software tool, including the proposed case structure and data (according to the information answered in the Initial Questionnaire).



Base Case EuP EcoProfiler						
FLOW	VALUE	UNIT	FAMILY	MATERIAL / PROCESS	COMMENT	
<b>Computer 2</b>						
<b>PRODUCTION</b>						
<b>Materials</b>						
	PP	3.0000	kg	Plastics	PP	Plastic
	Stainless steel	1.5000	kg	Metals	Stainless 18/8 coil	Ferrous metal
	PCB	0.5000	kg	Electronics	PWB 6 lay 4.5 kg/m <sup>2</sup>	Electronics
<b>Manufacturing</b>						
	Plastics	3.0000	kg	Manufacturing	All plastic parts	Manufacturing processes
	Sheet plant	1.5000	kg	Manufacturing	Sheet metal plant	Manufacturing processes
	Sheet scrap	0.3750	kg	Manufacturing	Sheet metal scrap	25% of scrap
	PCB assembly	0.5000	kg	Manufacturing	PWB assembly	Manufacturing processes
<b>DISTRIBUTION</b>						
<b>PACKAGING</b>						
		0.0030	m <sup>3</sup>	Logistics	Packaging (CE&ICT)	Final packaging
<b>TRANSPORT</b>						
<b>LARGE RETAIL</b>						
	Transport	0.0030	m <sup>3</sup>	Logistics	Large retail (CE&ICT)	Distribution to a large retailer
	Large retailer	1.0000	u	Logistics	Large retailer activity	Large retailer facilities
<b>RETAIL</b>						
	Transport	0.0030	m <sup>3</sup>	Logistics	Retail (CE&ICT)	Distribution to a retailer
	Retailer	1.0000	u	Logistics	Retailer activity	Retailer facilities
<b>USE</b>						
<b>ELECTRICITY</b>						
		1.0000	MWh	Energy	Electricity	Electricity consumption
<b>MAINTENANCE</b>						
	Transport	50.0000	km	Maintenance / Repairs	Transport (mini-van diesel)	Maintenance service estimation
<b>Repairs</b>						
<b>Materials</b>						
	PP	0.0300	kg	Plastics	PP	Plastic - 1% of production
	Steel	0.0150	kg	Metals	Steel tube/profile	Ferrous metal - 1% of production
	PCB	0.0050	kg	Electronics	PWB 6 lay 4.5 kg/m <sup>2</sup>	Electronics - 1% of production
<b>Manufacturing</b>						
	Plastics	0.0300	kg	Manufacturing	All plastic parts	Manufacturing - 1% of production
	Sheet plant	0.0150	kg	Manufacturing	Sheet metal plant	Manufacturing - 1% of production
	Sheet scrap	0.0038	kg	Manufacturing	Sheet metal scrap	Manufacturing - 1% of production
	PCB assembly	0.0050	kg	Manufacturing	PWB assembly	Manufacturing - 1% of production
<b>Packaging</b>						
	Transport	0.0000	m <sup>3</sup>	Logistics	Packaging (CE&ICT)	Final packaging - 1% of distribution
<b>Transport</b>						
<b>Large retail</b>						
	Transport	0.0000	m <sup>3</sup>	Logistics	Large retail (CE&ICT)	Distribution to a large retailer - 1% of distribution
	Large retailer	0.0100	u	Logistics	Large retailer activity	Large retailer facilities - 1% of distribution
<b>Retail</b>						
	Transport	0.0000	m <sup>3</sup>	Logistics	Retail (CE&ICT)	Distribution to a retailer - 1% of distribution
	Retailer	0.0100	u	Logistics	Retailer activity	Retailer facilities - 1% of distribution
<b>END-OF-LIFE</b>						
<b>LANDFILL</b>						
		0.2500	kg	Disposal	Landfill	5% of total materials
<b>RECOVERY</b>						
<b>Plastics</b>						

Figure 10: Screenshot of the template to be entered into the EuP<sub>Eco-Profiler</sub> software tool

### 3.2 Information available

The survey conducted in Work Package 2 concluded that 52% of the participating companies assess the environmental impact of their products and/or processes. This requires data that can be classified into three categories:

- ✿ Process Information (e.g. raw materials, energy consumption etc.)
- ✿ Product information (e.g. material composition, energy consumption during use etc.)
- ✿ Supplier information

The most used information for the manufacturers to perform the environmental assessment is:

1. Energy consumption
2. Water emissions
3. Water consumption
4. Waste generation
5. Air emissions
6. Bill of materials of final products
7. Raw materials consumption
8. Services consumption (e.g. Nitrogen, steam, compressed air, etc.)
9. Environmental information from suppliers

Basically the sources of information are:

- ✿ Company invoices: raw material consumption, energy consumption, water consumption, waste management
- ✿ Legal controls on air emissions, water emissions
- ✿ Production/engineering data on product composition, product use and end-of-life
- ✿ Supply-chain data concerning the material composition and other environmental impacts of the compounds provided by suppliers, for example material declarations, substance packaging labels and Safety Data Sheets.

These sources of information can potentially provide the data that are necessary for an environmental assessment. However, the availability of the data depends on the enterprises, so that it is difficult to generalise.

### 3.3 Comparison information required and information available

Chapters 3.1 showed the data necessary for each requirement, and that many synergies can be observed, since the data are used for several requirements. The possible sources of data in enterprises are listed in chapter 3.2. According to this list, the SMEs may have all the data necessary for an environmental assessment. In practise, it is possible that some data are missing.

A data gap can possibly occur if the suppliers do not or do only partly provide the environmental data relating to their components. According to article 11 of the ErP directive, suppliers of components may have to provide the manufacturer with information on "the material composition and the consumption of energy, materials and/or resources of the components or sub-assemblies". Also for compliance with the RoHS directive or REACH, the suppliers have to communicate data on the composition of their components.

### 3.4 Estimation of missing data

According to the standard ISO 14025, the evaluation of the data quality should include coverage, precision, completeness, representativeness, consistency, reproducibility, sources and uncertainty.

If some data are missing, assumptions have to be done based on the literature, on other data or on observations. Oftentimes, some allocation estimations have to be made, for

example to estimate how the electricity consumption of the process can be allocated to the different products to calculate the electricity consumption per unit of product.

If data from suppliers are not available, literature data on the average characteristics of the supplied products (for example capacitor or another electronic component) can be used. The data of the MEEuP methodology (2005) and the associated Excel file `EuP_EcoReport_v5.xls` is provided in the `EuPEco-Profiler` software tool. Moreover, the ROHS modules provide a list of parts that might contain RoHS-substances and should therefore get special attention by checking RoHS compliance. The following table presents in a simplified way the parts of EEE/EuP that might be affected by RoHS directive (additional information could be seen in Annex A of Joint Industry Guide No. JIG-101<sup>10</sup>).

**Table 4: Parts or components that might contain substances restricted by the RoHS directive**

RoHS substance	Part	Application as
Lead	Casing plastics, cable insulation and other plastic parts	Additive, plastic colorant, stabilizer
	Electronic components	Additive to glass and ceramic, solders
	Printed circuit boards	Solder
Mercury	Switches/Relays	Contained in switches/relays
Cadmium	Casing plastics, cable insulation and other plastic parts	Additive, plastic colorant, stabilizer
	Printed circuit boards	Contact
Hexavalent chromium	Metal parts	Pigment, plating
	Inks	Additive
Polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE)	Casing plastics and other plastic parts	Flame retardants

General recommendations on methods to be used for estimations are difficult to formulate, because it significantly depends on the kind of missing data and on the context. For every question of all the modules, pragmatic methods were proposed to estimate the data that might be missing. These methods are listed in Annex 1. Incorrect assumptions may strongly influence the results, so that the assumptions need to be carefully justified and documented.

For simplicity reason, the Methodology modules do not include a sensitivity and uncertainty analysis. However, it is recommended to develop internally strategies to get reliable information in the future, for example through additional measurements.

<sup>10</sup> Material Composition Declaration for Electrotechnical Products. JIG-101 Ed. 3.1. September 13, 2010. Available online: [www.ce.org/PDF/JIG\\_101\\_Ed\\_3\\_1\\_final\\_100913.pdf](http://www.ce.org/PDF/JIG_101_Ed_3_1_final_100913.pdf)

## 4 METHODOLOGY TO ASSESS THE USER DATA

The data entered by the user needs to be assessed to deliver the results related to the different environmental requirements. Internal databases conduct these assessments. Table 5 lists the databases than is used. They are provided by the different regulations and by data systems developed in the frame of former commercial or public projects.

**Table 5: Sources of information for assessing the user data**

Module	Goal of the assessment	Source of data for assessment
ErP	Evaluation of the conformity with the legislation	Requirements defined in the implementing measures under the ErP directive
RoHS	Evaluation of the conformity with the legislation	Requirements defined in RoHS directive
WEEE	Evaluation of the conformity with the legislation	Requirements defined in WEEE directive
REACH	Evaluation of the conformity with the legislation	Requirements defined in the REACH directive (suppliers and processes monitoring)
EMS	Quantification of the environmental aspects associated to the manufacturing process and determination of priorities	Own calculation tool based on the standards EMAS and ISO 14001
LCA	Calculation of the environmental impacts	MEEuP methodology and database
CF	Calculation of the carbon footprint	MEEuP methodology and database
EL / EPD	Evaluation of the fulfilment of the requirements for eco-labelling	Eco-labelling criteria

The assessments related to several requirements are carried out using the rules and criteria presented in the methodology MEEuP<sup>11</sup>. The legislative requirements and the requirements for eco-labelling are described in the respective texts.

<sup>11</sup> MEEuP Methodology Report, Final / 28.11.2005 / VHK for European Commission and its EuP\_EcoReport\_v5.xls (Copyright © Van Holsteijn en Kemna BV 2005. Distribution rights European Commission 2005)

## 5 DATA ASSESSMENT

### 5.1 Presentation of the results

Depending on the entered data, on the applicability of the legislative requirements and on the wishes of the user regarding the voluntary requirements, the results of the data assessment need to be communicated to the user in an easily understandable way.

In each questionnaire, the results are summarised and consist of:

- A very short introduction on the requirement (one sentence)
- The applicability of the requirement (for legislative requirement)
- The main facts on the requirements, which can be the data entered by the user or the results of calculations, if possible presented graphically
- Some recommendations, including a guidance (to-do-list) to comply with the requirement if necessary

#### 5.1.1.1 WEEE module

The answers of the users indicate which requirements of the WEEE directive are fulfilled (for example marking with the 'crossed-out wheeled bin' symbol, data reporting) and what to do to comply with the requirements that are not fulfilled yet.

HOME
INTRO WEEE
QUESTIONNAIRE WEEE
RESULTS WEEE

WEEE RESULTS: Recommendations to comply with the Directive

**Application**

Application The WEEE directive applies to your activities.

Your product belongs to the category 3- IT and telecommunications equipment

**Recommendations**

Based on your entries, following recommendations can be formulated:

Your product has to be marked with the 'crossed-out wheeled bin' symbol to comply with the WEEE-Directive.

You need to report following data to the national system(s) of the countries where you put products on the market: quantities and categories of EEE that you put on the market(s), that you collected, reused, recycled and recovered, and the collected waste that you exported.

The rates of recovery, reuse and recycling have to be met by the treatment processes of your recycler.

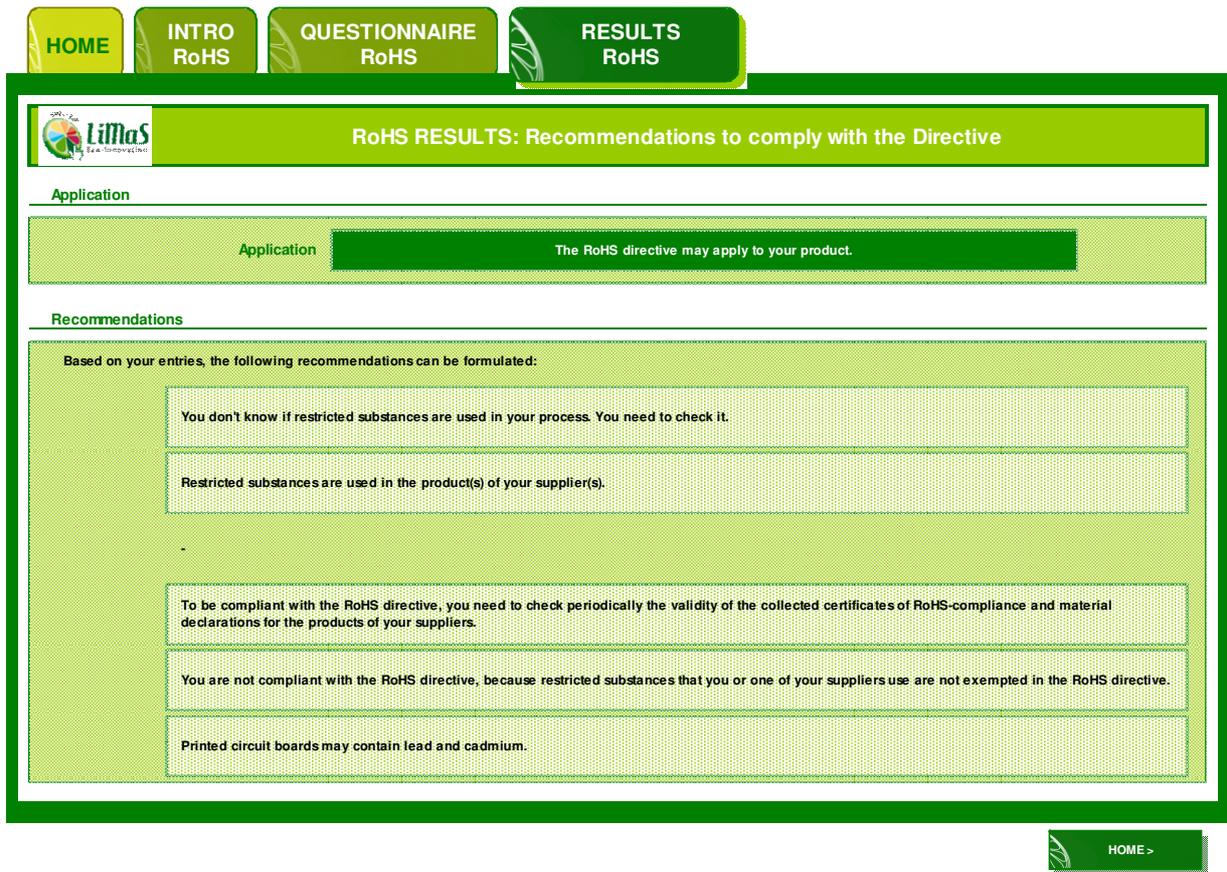
Reuse and treatment information has to be made available to reuse centres, treatment and recycling facilities by producers of EEE in the form of manuals or by means of electronic media (e.g. CD-ROM, online services).

HOME >

**Figure 11: Screenshot of the results of WEEE questionnaire**

### 5.1.1.2 RoHS module

If the RoHS directive is applicable to the product that has the entered Prodcom code, recommendations to comply with the RoHS directive are formulated based of the entered data. In the case that the user cannot answer the questions but uses components that might contain restricted substances, the attention of the user is drawn to the importance of making sure that these components are RoHS-conform.



**Figure 12: Screenshot of the results of RoHS questionnaire**

### 5.1.1.3 EuP/ErP module

The ErP module combines the Prodcom code and the answers to questions specific to the implementation measures to identify the implementation measures that might apply.

HOME
INTRO  
EuP/ErP
QUESTIONNAIRE  
EuP/ErP
RESULTS  
EuP/ErP

**EuP/ErP RESULTS: List of priorities, regulations and LOTS of the Directive that may affect to your product**

**Classification and level of affectation**

level of affectation: The product is affected by the current EuP/ErP Directive

classification: The assessed product is considered by the Directive as a "final product", and not as a "component or subcomponent"

**List of priorities, regulations and LOTS, depending of the PRODCOM code**

At the main questionnaire, you have selected the following PRODCOM code: 26201100

- The table below displays the PRODCOM codes closer to the one that has been chosen, highlighting in GREEN the match.
- If your product is listed below but is not green highlighted, please return to the main questionnaire (click on "HOME" > "MAIN QUESTIONNAIRE") and enter the proper PRODCOM code.
- If the introduced PRODCOM code does not appear below, please check the list in Annex II to review possible priorities beyond 2011.

CHECK ANNEX II

**Priorities, regulations and lots of the eup/erp directive that may affect to your product:**

PRODCOM	Product	Priority	Regulation	LOT
varios	Products with power consumption in Standby and Off modes	A++	R1	6
26113003	Multichip integrated circuits: processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits	A++	BR	4
26113023	Multichip integrated circuits: memories	A++	BR	4
26113091	Other multichip integrated circuits n.e.c.	A++	BR	4
26201100	Laptop PCs and palm-top organisers	A++	BR	3
26201300	Desk top PCs	A++	BR	3
26201400	Digital data processing machines: presented in the form of systems	A++	BR	3

In order to understand the results shown above, please read the following description of the codes:

Code	Description
<b>Priority</b>	
A++	Completed or ongoing LOTS (preparatory studies)
A+	Product family to be studied in the short term ( 2009-2011) (LOT not assigned yet)
<b>Regulation</b>	
Rx	It has a published Regulation. See the number listed to verify affectation
BR	A draft of the Regulation is available
<b>LOT (Preparatory Study)</b>	
x	Shows the LOT number that has been (or is being) developed
Px	Shows the number of the family product in the preparatory study which will be developed from 209

**Probable product affectations**

Your product appears to be affected by the following Regulations. Please click on the links at the right to enter further data.

Code	Comission Regulation Number	Regulation Object
R1	Commission Regulation (EC) No. 1275/2008	"Standby" and "of" mode electric power consumption of electrical and electronic household and office equipment

Please click on the highlighted links to enter further data

Figure 13: Screenshot of the first part of the results of EuP/ErP questionnaire

**Summary of product affectations**

---

**Regulations**

According to your product input data, the following Regulations apply:

Code	Commission Regulation Number	Regulation Object
R1	Commission Regulation (EC) No. 1275/2008	"Standby" and "off" mode electric power consumption of electrical and electronic household and office equipment

You can read these regulations by clicking on the links shown at the side

**Preparatory studies**

You product can be also affected by the following preparatory studies, so it is recommended that you keep informed about these LOTs:

Priority	LOT	Description of the LOT
A++	6	Standby and Off-mode Losses
A++	3	Personal Computers (desktops and laptops) and Computer Monitors

You can find out more about these LOTs by clicking on the links shown at the side

You may find further information at the following web pages:

Enterprise and Industry site at the European Commission web page

Energy site at the European Commission web page

Environment site at the European Commission web page

HOME >

**Figure 14: Screenshot of the second part of the results of EuP/ErP questionnaire**

#### 5.1.1.4 REACH module

Like for the WEEE and RoHS modules, the answers of the users indicate which requirements are fulfilled and what needs to be done to comply with the requirements that are not fulfilled yet.

HOME	INTRO REACH	DEFINITIONS REACH	LINKS REACH	QUESTIONNAIRE REACH	RESULTS REACH
 <b>REACH RESULTS: Summary notes about how REACH affects to your product</b>					
<b>Question no.</b>					
1	---				
2	---				
3	Ask for the CAS/EC number to the substance supplier, look for it in the substance packaging or see the link to Regulation 1272/2008 (list of hazardous substances)				
4	---				
5	Potential Obligation: You may have a legal responsibility as an importer to register the substance. Verify the exceptions from the obligation to register according Annex IV and Annex V if you import 1 tonne or more of the substance (on its own, in preparation or in article) per year				
6	Prioritise the assessment on the substances classified as CMR, PBT or vPvB and analyse possible substitutes for them				
7	Ask the affected suppliers for the SDS (Safety data sheet) and the ES (Exposure scenario) for each hazardous substance. Monitor their answers and register them				
8	Communicate your use to the substance supplier and request, in writing form, the inclusion of your use in his ES. It is needed that your own use was included in the substance ES to avoid the obligation to develop your own "Downstream user chemical safety report" (see Annex XII of REACH)				
9	Ask the substance supplier why your processing steps are not covered in the ES and request, in written form, to include them on it				
10	Readjust your processes to the conditions fixed in the substance ES. If it is not possible, ask your supplier how to do it or ask him to include your process conditions on its ES				
11	Fulfill the requirements indicated in the Art. 38 (6 months after you received it) and Art. 37 (12 months after)				
12	Check that you are fulfilling the restrictions indicated in Annex XVII for this substance. If it is not the case, change your using conditions or find a substitute for it				

**Figure 15: Screenshot of the results of REACH questionnaire**

### 5.1.1.5 Hazardous substances module

The module gives to the user some advice about the needed action plans according with the provided information on management of hazardous substances, considering legal implications according to the REACH directive. It proposes a simplified approach to classify the "degree" of hazard of substances.





HOME	INTRO EMS	TOOL Environmental MS	RESULTS Environmental MS	CRITERIA Environmental MS
<b>EMS ASSESSMENT CRITERIA: modify the scores and percentages</b>				
		<b>CRITERION 1: MAGNITUDE</b>	<b>CRITERION 2: PROXIMITY TO LIMITS</b>	
<b>Raw materials</b>	<b>Value</b>	<b>Score</b>	<b>Options</b>	<b>Score</b>
Decrease > value	5%	1	Without risk pictogram	1
Decrease < or = value	5%	2	With risk pictogram	2
Increase < or = value	5%	3	Affected by REACH	3
Increase > value	5%	4	Affected by REACH SHVC	4
<b>Water &amp; Energy consumption</b>	<b>Value</b>	<b>Score</b>	This criterion is not applicable for "Water & Energy consumption". In this case, for maintaining the consistency of the assessment, the criterion MAGNITUDE is considered two times.	
Decrease > value	5%	1		
Decrease < or = value	5%	2		
Increase < or = value	5%	3		
Increase > value	5%	4		
<b>Air emissions</b>	<b>Value</b>	<b>Score</b>	<b>Options</b>	<b>Score</b>
Decrease > value	5%	1	Less than 85% of threshold value	1
Decrease < or = value	5%	2	Between 90-85% of threshold value	2
Increase < or = value	5%	3	Between 95-90% of threshold value	3
Increase > value	5%	4	Between 100-95% of threshold value	4
<b>Water emissions</b>	<b>Value</b>	<b>Score</b>	<b>Options</b>	<b>Score</b>
Decrease > value	5%	1	Less than 85% of threshold value	1
Decrease < or = value	5%	2	Between 90-85% of threshold value	2
Increase < or = value	5%	3	Between 95-90% of threshold value	3
Increase > value	5%	4	Between 100-95% of threshold value	4

**Figure 18: Screenshot of the criteria of EMS questionnaire**

### 5.1.1.7 Eco-labelling module

Based on the Prodcom code, the user is informed that some eco-labels might be relevant for his product. The considered eco-labels are:

-  European Eco-label (flower logo)
-  Blaue Angel
-  European Energy star
-  Environmental Product Declaration
-  Nordic Eco-label

Because each one of these eco-labels applies to different product groups using specific criteria, in total the application of 87 eco-labels to the different Prodcom codes was checked.

HOME
INTRO Ecolabel
QUESTIONNAIRE ECOLABEL
RESULTS ECOLABEL


**ECOLABEL RESULTS: Main Ecolabels that may suit to your product**

The PRODCOM code you have entered matches the Ecolabel's Product Groups shown below. Choose the one your company may be interested in, in order to check its criteria. Remember that the International EPD System program certifies that your Environmental Product Declaration complies with the specific Product Category Rules. You will have to follow the requisites there explained to apply for the EPD ecolabel.

An Ecolabel displayed in green colour means that it covers a concrete scope and that the product entered, if all requirements are met, may possibly obtain the suggested Ecolabel. To ensure, please verify entering the Internet address shown below.

An Ecolabel displayed in green-brown colour means that it covers a broad or non-specific scope. Therefore, the Work Team has assumed that the product category would fall under the scope, but advises that it is necessary to contact the Advisory Board.

**Index**

1	EUROPEAN ECOLABEL > PORTABLE COMPUTERS	Click to read more about the scope of this Eco-label?	<input type="text"/>
2	BLAUE ANGEL > RAL-UZ-078 - Workstation Computers	Click to read more about the scope of this Eco-label?	<input type="text"/>
3	BLAUE ANGEL > RAL-UZ 135 - Netbooks	Click to read more about the scope of this Eco-label?	<input type="text"/>
4	EUROPEAN ENERGY STAR > Computer Equipment	Click to read more about the scope of this Eco-label?	<input type="text"/>

**Scope of the Ecolabels that may suit your product**

1 **EUROPEAN ECOLABEL > PORTABLE COMPUTERS**



Criteria valid until:  
31 December 2010 (under revision)

**The scope of this ecolabel is:**

The product group portable computers shall comprise all computers which can be used in multiple locations, which consist of a system unit, display and keyboard combined in a single case, which are intended to be easily transported between locations and which can be used with an internal battery. That product group shall also cover devices equipped with a touch screen keyboard.

**The following products are excluded or not covered by this ecolabel's scope**

The product group shall not cover products whose primary use is not computing.

Find more about this Ecolabel at its official site



BACK TO INDEX

HOME >

**Figure 19: Screenshot of the results of the eco-label questionnaire**

### 5.1.1.8 Summary

The initial questionnaire contains a sheet called "summary", which summarizes the main recommendations formulated by the initial questionnaire and the specific modules.

HOME
MAIN INTRO
MAIN QUESTIONNAIRE
TOOLS
SUMMARY


SUMMARY

**Recommendations**

Based on your entries, following recommendations can be formulated:

**WEEE QUESTIONNAIRE** WEEE QUESTIONNAIRE

The WEEE directive applies to your activities.

- 1 Your product has to be marked with the 'crossed-out wheeled bin' symbol to comply with the WEEE-Directive.
- 2 You need to report following data to the national system(s) of the countries where you put products on the market: quantities and categories of EEE that you put on the market(s), that you collected, reused, recycled and recovered, and the collected waste that you exported.
- 3 The rates of recovery, reuse and recycling have to be met by the treatment processes of your recycler.
- 4 Reuse and treatment information has to be made available to reuse centres, treatment and recycling facilities by producers of EEE in the form of manuals or by means of electronic media (e.g. CD-ROM, online services).

**RoHS QUESTIONNAIRE** RoHS QUESTIONNAIRE

The RoHS directive may apply to your product.

- 1 You don't know if restricted substances are used in your process. You need to check it.
- 2 Restricted substances are used in the product(s) of your supplier(s).
- 3 To be compliant with the RoHS directive, you need to check periodically the validity of the collected certificates of RoHS-compliance and material declarations for the products of your suppliers.
- 4 You are not compliant with the RoHS directive, because restricted substances that you or one of your suppliers use are not exempted in the RoHS directive.
- 5 Plastics casings, cable insulation and other plastic parts may contain lead, cadmium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).

**EuP/ErP QUESTIONNAIRE** EuP/ErP QUESTIONNAIRE

The product is affected by the current EuP/ErP Directive

According to your product input data, the following Regulations apply:

	Code	Comission Regulation Number	Regulation Object
1	R1	Commission Regulation (EC) No. 1275/2008	"Standby" and "off" mode electric power consumption of electrical and electronic household and office equipment

You product can be also affected by the following preparatory studies, so it is recommended that you keep informed about these LOTs:

	Priority	LOT	Description of the LOT
1	A++	6	Standby and Off-mode Losses
2	A++	3	Personal Computers (desktops and laptops) and Computer Monitors

Figure 20: Screenshot of the summary

## 5.2 Conformity with the legislation

The LiMaS Methodology supporting modules provide to the user following service related to the compliance with the legislation:.

- ✿ Direct guidance: with the help of the specific questionnaires, the SME is in the position to check directly possible compliance issues for the legislation that is already adopted
- ✿ Meta information: the SME is guided to latest information resources (e.g. official websites), explaining background and general structures.

Since the policy framework might undergo some revisions, it is important to check this Meta information for the periodical updates. For example, changes in the RoHS exemptions, and new ErP implementation measures are expected in the near future.

The developed supporting tools provide an assessment of the conformity with the legislation based on the data entered by the user and the criteria of the developers, but cannot deliver any legally binding document. The user is responsible for complying with the legislation and should not only rely on the results delivered by the LiMaS Methodology. The supporting tools are just a first approach for possible requirements that should be checked into detail by the user.

## 5.3 Improvement of the environmental profile

Several approaches can be considered to provide ideas to the user for improving the environmental profile of his products and processes:

- ✿ Possibility to create a profile for a "fictive product", in which some characteristics are changed compared to the "real product" (for example materials used for manufacturing, energy consumption), so that the user can observe how concrete changes of the characteristics of the product can improve the environmental profile. This could be done using the  $\text{EuP}_{\text{Eco-Profiler}}$  free software tool
- ✿ Identification of the phases of the life-cycle that have the most significant environmental impacts, to define the priority of actions (using  $\text{EuP}_{\text{Eco-Profiler}}$ )
- ✿ Benchmark with enterprises manufacturing similar products to know how high the potential is for improvement
- ✿ Links to literature sources that present technical solutions with low environmental impacts

An analysis of the best-available technologies is provided by the EuP preparatory studies (task 6 "Technical Analysis BAT"). They describe the state-of-the-art in energy consumption, resource efficiency, design for recycling and other eco-innovation parameters that are relevant for the considered product. Table 6 presents the product groups for which EuP/ErP preparatory studies are available or currently conducted.

**Table 6: Product groups for which preparatory studies were conducted, defining among others best-available technologies<sup>12</sup>**

Product groups	Preparatory Study	Regulation mandatory from
Lot- Simple Set-Top Boxes	Completed	25.02.2010
Lot 1 Boilers und combiboilers	Completed	
Lot 2 Water heater	Completed	
Lot 3 PC (Desktops and Laptops) and Computer-monitors	Completed	
Lot 4 Imaging Equipment	Completed	
Lot 5 Consumer Electronics: TV	Completed	07.01.2010
Lot 6 Standby and off-mode losses	Completed	07.01.2010
Lot 7 Battery chargers and external power supplies	Completed	27.04.2010
Lot 8 Office lighting	Completed	13.04.2010
Lot 9 Street lighting	Completed	13.04.2010
Lot 10 Room air conditioning	Completed	
Lot 10 Residential Ventilation	Completed	
Lot 10 Comfort Fans	Completed	
Lot 11 Electric motors	Completed	16.06.2011
Lot 11 Circulators	Completed	01.01.2013
Lot 11 Fans	Completed	
Lot 11 Water pumps	Completed	
Lot 12 Commercial refrigerators and freezers	Completed	
Lot 13 Domestic refrigerators and freezers	Completed	01.07.2010
Lot 14 Domestic dishwashers	Completed	
Lot 14 Domestic washing machines	Completed	
Lot 15 Solid fuel small combustion installations	Ongoing	
Lot 16 Laundry dryers	Completed	
Lot 17 Vacuum cleaner	Completed	
Lot 18 Complex set-top boxes	Completed	
Lot 19 Domestic lighting part I "non-directional lamps"	Completed	01.09.2009

<sup>12</sup> See [www.eup-network.de/product-groups/overview-ecodesign/](http://www.eup-network.de/product-groups/overview-ecodesign/)

<b>Product groups</b>	<b>Preparatory Study</b>	<b>Regulation mandatory from</b>
Lot 19 Domestic lighting part II "directional lamps"	Completed	
Lot 20 Local room heating products	Ongoing	
Lot 21 Central heating products using hot air to distribute heat	Ongoing	
Lot 22 Domestic and commercial ovens	Ongoing	
Lot 23 Domestic and commercial hobs and grills	Ongoing	
Lot 24 Professional washing machines, dryers and dishwasher	Ongoing	
Lot 25 Non-tertiary coffee machines	Ongoing	
Lot 26 Networked standby losses of energy using products	Ongoing	
ENTR Medical imaging equipment		
ENTR Lot 1 Refrigerating and freezing equipment	Ongoing	
ENTR Lot 2 Transformers	Ongoing	
ENTR Lot 3 Sound and imaging equipment	Ongoing	
ENTR Lot 4 Industrial and laboratory furnaces and ovens	Ongoing	
ENTR Lot 5 Machine tools	Ongoing	
ENTR Lot 6 Air-conditioning and ventilation systems	Ongoing	

## 6 REFERENCES

Fraunhofer IZM (2005): Training material on Eco-Design for small and medium sized enterprises of the Electrical and Electronics sector. Compiled by Fraunhofer IZM for Industrial Technology Research Institute, CESH

MEEuP Methodology (2005): Methodology Study Eco-design of Energy-using Products, Final Report / 28.11.2005 / VHK for European Commission (Copyright © Van Holsteijn en Kemna BV 2005. Distribution rights European Commission 2005). Online: [http://ec.europa.eu/energy/demand/legislation/doc/2005\\_11\\_28\\_finalreport1\\_en.pdf](http://ec.europa.eu/energy/demand/legislation/doc/2005_11_28_finalreport1_en.pdf)

Rodrigo, J.; Castells F. (2002): Electrical and Electronic Practical Eco-design Guide. With the collaboration of Juan Carlos Alonso. University Rovira i Virgili, Tarragona, Spain, ISBN 84-8424-010-X

Greenhouse Gas Protocol. Supporting tools (<http://www.ghgprotocol.org/calculation-tools>)

National Pollutant Inventory - Australia - Emission Estimation Technique Manual. Combustion in Boilers. Version 1.2 (<http://www.npi.gov.au/>)

## 7 ANNEX 1: METHODS TO ESTIMATE MISSING DATA

Module	Question	Possible methods to estimate the missing data
RoHS	PRODCOM code	Search tool "PRODCOM LIST" to find the right PRODCOM number associated to the product
RoHS	Do you use in your own manufacturing processes substances regulated by the RoHS-Directive? (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ether (PBDE))	<p>If one of following components are produced, restricted substances may be used:</p> <ul style="list-style-type: none"> <li>- For lead: Casing plastics, cable insulation and other plastic parts; Parts with plating; Electronic components; Printed circuit boards</li> <li>- For mercury: Switches; Relays; Parts with pigments, surface treatment</li> <li>- For cadmium: Casing plastics, cable insulation and other plastic parts; Parts with pigments, plating, surface treatment; Printed circuit boards</li> <li>- For hexavalent chromium: Metal parts with pigments, painting, plating, surface treatment; Inks</li> <li>- For polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE): Casing plastics and other plastic parts</li> </ul> <p>Additional information could be found in Annex A of Joint Industry Guide No. JIG-101, Ed. 3.1. September 13, 2010</p>
RoHS	Do product(s) of your suppliers contain substances regulated by the RoHS-Directive?	
RoHS	Do you collect certificates of RoHS-compliance and material declarations for the products of your suppliers?	If the user does not know the answer to this question, it can be assumed that certificates and material declarations are not collected
RoHS	Do you evaluate periodically the validity of these certificates and declarations through surveys, audits and periodical chemical tests carried out by third-party?	If the user does not know the answer to this question, it can be assumed that the validity of certificates and material declarations is not evaluated

Module	Question	Possible methods to estimate the missing data
RoHS	Is the use of the regulated substance exempted?	Present the exemptions classified by substance and by component. The list should be user-friendly, which possibly means that the language should be simplified
RoHS	Do you get from yours suppliers or do you produce one of the following components: ...	This question aims at roughly estimating missing data
WEEE	PRODCOM code	Search tool "PRODCOM LIST" to find the right PRODCOM number associated to the product
WEEE	Do you mark the EEE you put on the market with the 'crossed-out wheeled bin' symbol?	The user should know if the marking is present on the products.
WEEE	Did you register in the national systems of the countries where you put products on the market?	If the user does not know the answer to this question, it can be assumed that the enterprise did not register or that another department is responsible for this topic.
WEEE	Did you provide a financial guarantee for the management of WEEE?	If the user does not know the answer to this question, it can be assumed that the user did not provide the financial guarantee.
WEEE	Do you report the quantities and categories of EEE that you put on the national market(s), that you collected, reused, recycled and recovered, and the collected waste that you exported?	If the user does not know the answer to this question, it can be assumed that the user did not report the data.
WEEE	Does the WEEE treatment processes applied by your recycler meet the rates of recovery defined in the WEEE directive for category ...?	The answer to this question depends on the applied recycling processes and not on the manufacturer. Thus, it is not possible to make assumptions if the user does not know, which means that he did not explicitly require from the recycler that the targets are met.
WEEE	Do you provide reuse and treatment information for new EEE you put on the market?	If the user does not know the answer to this question, it can be assumed that the user did not provide this information.

Module	Question	Possible methods to estimate the missing data
REACH	Do you have a list of all the chemical substances/preparations used in your products/processes, their annual consumption and who supply them?	If the user does not know the answer to this question, it can be assumed that the user did not fulfil the requirements.
REACH	From this substances list, Have you identified which substances/preparations have risks for human or environment (see "hazardous substance" definition)?	
REACH	Do you have the CAS and/or EC number to identify these hazardous substances?	If the user does not know the answer to this question, it can be assumed that the user did not fulfil the requirements.
REACH	From this list, Is any hazardous substance/preparation purchased from outside EU?	
REACH	Does the supplier of these substances/preparations have an only representative who will register the substance?	
REACH	From the hazardous substances list, Is any of the substances classified as CMR (carcinogenic, mutagenic and/or reprotoxic substance), PBT (persistent, bioaccumulative and toxic substance), vPvB (very persistent, very bioaccumulative substance) or similar?	
REACH	Have you received from the suppliers of hazardous substances the corresponding SDS (Safety data sheet) and ES (Exposure scenario) for each substance?	
REACH	Is your own use of the hazardous substances identified in the respective ES?	
REACH	Are your processing steps covered by the ES of the respective hazardous substance?	
REACH	Are you fulfilling the conditions fixed on the substances' ES at your processes?	

Module	Question	Possible methods to estimate the missing data
REACH	Have you received from your supplier a "Registration Number" for any of the substances you are using? (included in their SDS)	
REACH	Are any of the used hazardous substances included in the Annex XVII of the REACH Directive? (It contains the "restrictions on the manufacture, placing on the market and use of certain hazardous substances, preparations and articles")	For more details see Figure F-1 of Joint Industry Guide No. JIG-101, Ed. 3.1. September 13, 2010
REACH	Are you using hazardous substances included in the Annex XIV of the REACH Directive? (List of substances subject to authorisation)	For more details see Figure F-1 of Joint Industry Guide No. JIG-101, Ed. 3.1. September 13, 2010
REACH	Is its use generally exempted or it is an exemption of REACH Annex XIV (see Art. 56)?	If the user does not know the answer to this question, it can be assumed that the user did not fulfill the requirements.
REACH	Are your own use in line with authorised use & conditions or you could adapt it?	If the user does not know the answer to this question, it can be assumed that the user did not fulfill the requirements.
REACH	Is any hazardous substance covered by REACH intended to be released from your articles under normal or foreseeable conditions of use? (thus the release of the substance carries out a function of the article)	Usually, EEE does not release substance under normal conditions. Exception: ink from printer
REACH	Is the hazardous substance exempted from registration?	If the user does not know the answer to this question, it can be assumed that the user did not fulfil the requirements.
REACH	Is the substance already registered for your use?	If the user does not know the answer to this question, it can be assumed that the user did not fulfill the requirements.
REACH	Does the total amount of the substance present in articles produced and/or imported, from which the substance is intended to be released, exceed 1 tonne per year?	If the manufacturer produces/imports no more than 10 tons of products per year, we assume that the limit of 1 ton of hazardous substances cannot be achieved. This is based on the assumption that the hazardous substances cannot be more than 10% of the weight of the produced/imported articles.

Module	Question	Possible methods to estimate the missing data
REACH	Do your articles contain any hazardous substance included in the Annex XIV of the REACH Directive or in the Candidate List of Substances of Very High Concern (SVHC) for Authorisation?	For more details see Figure F-1 of Joint Industry Guide No. JIG-101, Ed. 3.1. September 13, 2010
REACH	Is the concentration of hazardous substance in the article above 0,1% w/w? Check in the EChA web site how to calculate it (Section 8.2 and 8.4 of the Guidance on requirements for substances in articles. May 2008. EChA)	It is not possible to make assumptions without having the information from the user
REACH	Is the hazardous substance already registered for your use?	If the user does not know the answer to this question, it can be assumed that the user did not fulfill the requirements.
REACH	Is the hazardous substance intended to be released from the article?	Usually, EEE does not release substance under normal conditions. Exception: ink from printer
REACH	Is the total amount of the hazardous substance in all articles above 1 ton per year? (Section 8.2 and 8.4 of the Guidance on requirements for substances in articles. May 2008. EChA)	If the manufacturer produces no more than 10 tons of articles per year, we assume that the limit of 1 ton of hazardous substances cannot be achieved. This is based on the assumption that the hazardous substances cannot be more than 10% of the weight of the articles.
REACH	Have the articles only been produced before the substance was included in the candidate list of substances for Authorisation?	It is not possible to make assumptions without having the information from the user
REACH	Can exposure of the substance to humans or the environment be excluded during normal or reasonably foreseeable conditions of use including disposal?	It is not possible to make assumptions without having the information from the user
ErP	PRODCOM code	Search tool "PRODCOM LIST" to find the right PRODCOM number associated to the product
ErP	Is this product manufactured for the European Union market?	"Yes" can be assumed

Module	Question	Possible methods to estimate the missing data
ErP	Does the product depends on an energy source (electricity, fossil fuels and renewable energy sources) to function as intended or is its purpose the generation, transfer and measurement of such energy?	"Yes" can be assumed for enterprises using the software, which explicitly focuses on EEE/EuP
ErP	Does the product (once commercialized or put into service) have an impact on energy consumption during its use?	"Yes" can be assumed for enterprises using the software, which explicitly focuses on EEE/EuP
ErP	Is it possible to independently assess the environmental performance (or energy consumption) of the product?	This question is difficult for persons who are no environmental experts. "yes" can be assumed
ErP	Is the product commercialized or put into service as individual parts or a finished product for end-users?	It is not possible to make assumptions without having the information from the user
ErP	Which is the target market of the product?	It is not possible to make assumptions without having the information from the user
ErP	Which type of energy does the product depend on to work?	It is not possible to make assumptions without having the information from the user, even though "electricity" will probably the most common answer
ErP	Does the product have an electricity consumption in "standby" mode and/or "off" mode?	It is not possible to make assumptions without having the information from the user, even though "yes" will probably the most common answer
ErP	Does the product belong to some of the families listed in the link below?	It is not possible to make assumptions without having the information from the user
ErP	Please point out other supplies of your product	It is not possible to make assumptions without having the information from the user
EMS	Raw materials - present period	The assessment aims at comparing the environmental aspects in the previous period to the aspects in the present period. It does not make sense to make assumptions about the changes between previous and present period. The information from the
EMS	Raw materials - previous period	
EMS	Water & Energy consumption - present period	

Module	Question	Possible methods to estimate the missing data																												
EMS	Water & Energy consumption - previous period	<p>user is necessary.</p> <p>The data included in the Initial Questionnaire is used as default data for present period.</p> <p>The air emissions, i.e. CO<sub>2</sub>, NO<sub>x</sub>, HC or particles emissions, are estimated in a first approach using the Gas/Fuel consumption of the plant. The user should improve these figures with more precise figures or real measurements.</p> <p>Estimated Values (combustion in boilers):</p> <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="5">Emissions (kg)</th> </tr> <tr> <th></th> <th>Unit</th> <th>CO<sub>2</sub></th> <th>SO<sub>2</sub></th> <th>NO<sub>x</sub></th> <th>VOCs</th> <th>PM10</th> </tr> </thead> <tbody> <tr> <td>Natural Gas</td> <td>Nm<sup>3</sup></td> <td>1,88E+00</td> <td>8,36E-06</td> <td>1,60E-03</td> <td>8,80E-05</td> <td>1,22E-04</td> </tr> <tr> <td>Diesel</td> <td>ltr.</td> <td>2,68E+00</td> <td>1,70E-02</td> <td>2,40E-03</td> <td>9,00E-05</td> <td>1,20E-05</td> </tr> </tbody> </table>			Emissions (kg)						Unit	CO <sub>2</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOCs	PM10	Natural Gas	Nm <sup>3</sup>	1,88E+00	8,36E-06	1,60E-03	8,80E-05	1,22E-04	Diesel	ltr.	2,68E+00	1,70E-02	2,40E-03	9,00E-05	1,20E-05
			Emissions (kg)																											
	Unit		CO <sub>2</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOCs	PM10																							
Natural Gas	Nm <sup>3</sup>		1,88E+00	8,36E-06	1,60E-03	8,80E-05	1,22E-04																							
Diesel	ltr.		2,68E+00	1,70E-02	2,40E-03	9,00E-05	1,20E-05																							
EMS	Air emissions - present period																													
EMS	Air emissions - previous period																													
EMS	Water emissions - present period																													
EMS	Water emissions - previous period																													
EMS	Waste production - present period																													
EMS	Waste production - previous period																													
EMS	External noise - present period																													
EMS	External noise - previous period																													
EMS	Incidental conditions - Spillage of substances - present period																													
EMS	Incidental conditions - Spillage of substances - previous period																													
EMS	Number of informed suppliers about your commitment with eco-management - present period	<p>The assessment aims at comparing the environmental aspects in the previous period to the aspects in the present period. It does not make sense to make assumptions about the changes between previous and present period. The information from the user is necessary.</p>																												
EMS	Number of informed suppliers about your commitment with eco-management - previous period																													
EMS	Increase/decrease of your products/parts energy efficiency - present period																													
EMS	Increase/decrease of your products/parts energy efficiency - previous period																													
EMS	Increase/decrease of your parts/components recyclability - present period																													
EMS	Increase/decrease of your parts/components recyclability - previous period																													

Module	Question	Possible methods to estimate the missing data
EMS	Increase/decrease of your parts/components recyclability - previous period	
Eco-labelling	PRODCOM code	Search tool "PRODCOM LIST" to find the right PRODCOM number associated to the product
LCA EuP <sub>Eco-Profiler</sub>	Please list the materials used in the product and indicate their weight in g	<p>It is not possible to make assumptions without having more information from the user. Some assumptions are already integrated in MEEuP (e.g. average material composition of printed circuit boards)</p> <p>As default values for a rough LCA based on the data entered in the initial questionnaire, it is assumed that the used materials are:</p> <ul style="list-style-type: none"> <li>- Plastics percentage: PP</li> <li>- Metals percentage: Stainless steel</li> <li>- Electronics percentage: PWB 6 layer 4,5 kg/m<sup>2</sup></li> </ul>
LCA	Percentage of Sheetmetal Scrap used for manufacturing	The default value according to the MEEuP is 25% - the same assumption is done.
LCA	Is it an ICT or Consumer Electronics product <15 kg ?	This question is not necessary if the user entered all the materials used in the product and their weight (sum of the materials >15 kg = "no", sum of the materials <15 kg = "yes")
LCA	Is it an installed appliance (e.g. boiler)?	If the user does not know the answer to this question, it can be assumed that "no".
LCA	Volume of packaged final product in m <sup>3</sup>	It is not possible to make assumptions without having more information from the user

Module	Question	Possible methods to estimate the missing data
LCA	Product Life in years	If no information is given by the user, 5 years can be assumed for EEE - this is a very very rough assumption based on a study from the Netherlands (GfK Panel Services Benelux. Bezit, af-danking en verkrijging van witgoed, bruingoed en grijsgoed [Ownership, disposal and collection of white, brown and gray goods]. 2007)
LCA	On-mode: Consumption in W	It is not possible to make assumptions without having information from the user. The electricity consumption is easy to measure
LCA	On-mode: No. Of hours / year	The user has to make assumptions, because this can be very different according to the type of EEE (e.g. toaster vs. fridge)
LCA	Standby-mode: Consumption in W	If the EEE is affected by and conform with the EuP eco-design requirements in respect of the standby and off mode power consumption of electrical and electronic household and office equipment, the maximum limit of 2 W can be assumed (from 2013 1 W). The PRODCOM numbers that are affected by this implementation measure can be found in the ErP questionnaire.
LCA	Standby-mode: No. Of hours / year	The user has to make assumptions, because this can be very different according to the type of EEE (e.g. toaster vs. fridge)
LCA	Off-mode: Consumption in W	If the EEE is affected by and conform with the EuP eco-design requirements in respect of the standby and off mode power consumption of electrical and electronic household and office equipment, the maximum limit of 1 W can be assumed (from 2013 0.5 W). The PRODCOM numbers that are affected by this implementation measure can be found in the ErP questionnaire.
LCA	Off-mode: No. Of hours / year	The user has to make assumptions, because this can be very different according to the type of EEE (e.g. toaster vs. fridge)

Module	Question	Possible methods to estimate the missing data
LCA	Avg. Heat Power Output in kW	It is not possible to make assumptions without having more information from the user
LCA	No. Of hours / year	It is not possible to make assumptions without having more information from the user
LCA	Source of heat	
LCA	Water in m <sup>3</sup> /year	
LCA	Auxilliary material 1 in kg/year	
LCA	Auxilliary material 2 in kg/year	
LCA	Auxilliary material 3 in kg/year	
LCA	Transport of the product for maintenance, repairs, service in km	If the user does not make his own assumption, we can assume 50 km.
LCA	Refrigerant in the product in g	0g if the product has no refrigerant function. For products with refrigerant function, it is not possible to make assumptions without having more information from the user
LCA	Percentage of fugitive & dumped refrigerant	If the product contains refrigerants, the user has to make the assumption
LCA	Mercury (Hg) in the product in g	If the product is RoHS conform and there is no exemption for the use of mercury: 0g
LCA	Percentage of fugitive & dumped mercury	If the product contains mercury, the user has to make the assumption
LCA	Percentage of plastics that are re-used	The default value according to the MEEuP is 1% - we can make the same assumption.
LCA	Percentage of plastics that are recycled	The default value according to the MEEuP is 9% - we can make the same assumption.
LCA	Percentage of plastics that go for thermal recycling	The default value according to the MEEuP is 90% - we can make the same assumption.

Module	Question	Possible methods to estimate the missing data
LCA	Are the printed circuit boards easy to disassembly?	If the user does not make his own assumption, we can assume "no".