Final Project Information Sheet

Dear Sir or Madam,

Now, that the implementation of the up-coming directive 2005/32/EC on the Eco-design of Energy-using Products (EuP) is coming closer, measures and methods to improve the environmental performance of products are gaining interest again. The preparation studies for EuP are in process. Several studies are already accomplished and additional studies are scheduled. Therefore our intention is to recall the EU funded research project on eco-design indicators for ICT products, EPIC-ICT, which was completed last year.
This final project information sheet gives you a compact overview of the EPIC-ICT project, introduces the developed method for eco-design, and presents the main outcomes of the application of the method for eco-design recommendations of a personal computer.

Please do not hesitate to forward this information sheet to everybody interested in the theme.

With best regards,

Anna Braune and Michael Held on behalf of the EPIC-ICT consortium

The EPIC-ICT project

Background

In the framework of integrated product policy (IPP), European environmental policy strives towards products with minimized environmental effects. Eco-design activities should be carried out where most effective. Many different actors are involved in this on-going process of continuous improvement. That is why Eco-design in the development of electrical and electronic products gains increasing importance. When assessing environmental aspects of products, the life cycle perspective needs to be considered.

EPIC-ICT facts:
Project titel: “Development of Environmental Performance Indicators for ICT Products on the Example of Personal Computer”

Start:	November 2004
End:	April 2006
Project no.:	513673 (SSPI)
Partners:	University of Stuttgart (LBP, former IKP), Motorola, Philips, Dell, Ambiente Italia, PE Europe

Therefore, mechanisms for rapid, efficient and participatory decision-making are required. One mechanism to support decision-makers in industry in their efforts for environmental conscious product design as well as decision making in policy is the application of “Environmental Performance Indicators” of products.

EPIC-ICT provides a structured method to identify these indicators for ICT products.

Environmental Performance Indicators

Environmental Performance Indicators (EPI) reflect the environmental relevance of technical product specifics - such as parts and components, materials or energy consumption - and give clear advice to the producer what exactly needs to be regarded from an environmental point of view, taking the life cycle into account. Applying EPIs in product design aims at improving the product’s environmental profile from a life cycle perspective.

Beginning in November 2004, the European Commission initiated and funded the EPIC-ICT project (www.epic-ict.org).

Goal and Scope

Goal of the project was to develop a method and the framework to define Environmental Performance Indicators for information and communication technology (ICT) products on the example of personal computers.

In the project industry and researchers together, supported by the European Commission, took on the challenge to combine available environmental and product information in an intelligent and systematic way with the goal of improving the overall environmental performance of products. A promising eco-design method for ICT products was developed, which is scientifically based and applicable, efficiently taking life cycle aspects into account". EPIC-ICT is one of the premier methods to get "life cycle thinking" into product design.

EPIC-ICT Method

Substantially, the EPIC-ICT method is based on the idea to carry out one thorough environmental analysis of the total product group (e.g. PCs, mobile phones), who's results can then efficiently be taken for the eco-design of various products in the same group. Summarized, the main outcomes of the EPIC-ICT project are:

- Environmental Performance Indicators allow using and working with environmental profile results for eco-design of complex products, without carrying out a study for every single product
- Applying the EPIC-ICT method identifies eco-design priorities of ICT products on general and specific product level (e.g. life cycle phase or component level)
- The EPIC-ICT method provides a systematic and flexible approach which combines environmental issues and the producers' constraints and translates environmental aspects into specific design options

A four step approach has been developed:

Step 1: Product definition phase

The first step clearly defines the product under consideration by taking the customer demands and respective required functions into account.

Results: Main assemblies of product to fulfil required functions / customer demands are defined

Step 2: Life Cycle Assessment study

Only one comprehensive full LCA study per product (group) is carried out, which needs to be updated regularly, e.g. every 3 years, depending on product (group) and product development cycles, has to include sensitivity analyses (ensures representativity of study = validity of indicators)

Results: A detailed full scale LCA result, which is needed for an adequate definition of environmental performance indicators of complex products

Step 3: Environmental interpretation

Identifies stepwise environmentally relevant sub-assemblies and components of the product using contribution analyses

Results: Reliable, measurable and scientific sound physical product specific environmental performance indicators

Step 4: Eco-design parameters indication

Combines information from product design (technical specifications and improvement design parameters) and environmental evaluation results from step 3 with adapted QFD approach

Results: Directly usable performance indicators for eco-design of products

Benefits

- The indicators are a source for generic eco-design requirements: EPIC-ICT supports industry in defining internal DfE goals and supports the development of voluntary industry initiatives
- Efficiency and applicability*:* Only one Life Cycle Assessment (LCA) of a reference product per product group is required to identify applicable Environmental Performance Indicators. The method is applicable for all ICT product groups
- Representativity: Data updates according to respective development periods ensures state of the art LCA results.
- Identification of indicators is based on current average industry data and therefore representative for considered product group.

⇨ **Environmental Performance Indicators derived from the EPIC-ICT method allow product designers and marketing to efficiently integrate life cycle based environmental information into their eco-design activities**

Application of the EPIC-ICT Method

The EPIC-ICT method was developed in an iterative process during the project. It has been successfully tested on several ICT product groups like cell phones, notebooks and personal computers and monitors to ensure its applicability.

As an end result of the project, a **report on the EPIC-ICT methodology** was completed. This report can be downloaded from the project website It contains a detailed methodology description on the example of a personal computer. Summarized the main results for an office PC with CRT monitor, the Ecological Profile Indicators and the Eco-design Indicators according to the EPIC-ICT method were identified. The five main **Eco-design Indicators** for an office PC are (here sorted by relevance):

- PC Use phase: MIN mode [kW power x hours MIN mode]
- Connectors on mainboard: Gold plating [kg gold]
- Mainboard: size of the printed wiring board (FR4) [m^2 FR4 board]
- Mainboard silver content [kg silver]
- Housing: Plastic content [kg plastic]

Further project information

For further information please visit our website where you can find detailed project information on:

- Activities
- EPIC Methodology
- Press release
- Newsletters
- Workshop reports

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