The adoption of IPP by SMEs

eLCA: a demonstrative project for different sectors.
A Pilot Sector: the metal processing industry

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SMEs attitude towards environment

- The economic and success model of SMEs is based on:
  - flexibility in production,
  - strong variability of products, processes and suppliers’ chain,
  - continuous and incremental innovation by adaptation of products to customers’ requests.

- Innovation is seldom motivated by environmental reasons that, to be promoted, must be integrated with other kinds of innovation from the beginning.

- Environmental aspects are perceived as constraints and costs (often unknown and hidden), anyway, SMEs manage a massive quantity of environmental data to comply with licensing and operation rules.

- EMS have not generally been known and perceived as an opportunity (some exceptions like food industry).
Specific barriers for SMEs towards IPP

- SMEs’ characteristics are in contrast with the existing IPP:
  - too long procedure and not easy adaptation to small changes in the product/process;
  - low sensitivity of the market to green products;
  - costs and lack of in-house expertise;
  - inability to influence life cycle steps outside the firm;
  - unavailability of life cycle data particularly outside the firm.
Priorities of an IPP governance system suitable for SMEs

– Specific rules, regulations, standards and certification procedures (well recognizable by the market).

– Accompanying measures involving public sector and the already existing specialised “mediator” system for SMEs.

– Tailored and pre-elaborated tools and solutions.
Specific rules, regulations, standards and certification procedures

- Voluntary instruments alone are not sufficient: therefore specific regulations and Command & Control tools, adapted to SMEs, are needed.
- IPP must be introduced as an opportunity to simplify the management of all environmental aspects and to integrate the existing regulations (IPPC, Health & Safety, ...) by:
  - simplified and low cost tool/methodology of evaluation, in particular LCA;
  - focus on continuous and verifiable improvement of environmental performance of products’ life cycle;
  - simplified certification/validation systems.
Accompanying measures

- A solution “one size fits all” does not work, tailored measures to meet needs of both horizontal aggregations (industrial districts) and vertical sectors (supply chains, clusters) could be sustained only by a public governance system at national and local level, with:
  - involvement of stakeholders, consultants, services centres, associations to define priorities and to integrate IPP with other innovation initiatives;
  - industrial and economic support policies (green, technology and co-operative procurement; demonstration projects; incentives);
  - Development of a market of “eco services” with the help of information and training initiatives.
Tailored and pre-elaborated tools and solutions

- Sector analyses involving stakeholders to develop:
  - LCI databases;
  - guidelines and success stories.
- Production of simplified methodologies and “pre-manufactured” sector specialised tools for direct use by SMEs.
- Development of collective platforms as ICT systems.

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eLCA - IPP governance system

GOVERNANCE SYSTEM

- Legislation, certification
- Economic measures
- Information, education
- Accompanying measures
- Technical supports

eLCA PROJECT

- Drivers development
- Service-providing model
- Technical tools

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eLCA: databases and web site for the adoption of IPP in SMEs

- Demonstration project, funded by EC, on 6 sectors: EEE, metal products, wood furniture, construction, textile, hotels
  - Start: 1/9/2002 Duration: 2 years
  - Budget: 3.2 M€ (+ 0.9 M€ feasibility study)
  - Partners:
    - ENEA (coordinator),
    - Environment Agency for England and Wales (UK).
    - Institute for Energy and Environmental Research ifeu (D).
    - University of Thessaloniki AUTh (GR)
    - International Trade Business School ESCI (E)
    - ECIPAR, CONSIEL, LUMETEL, ASQ, SOFIMAR (I)

- Conclusions of the feasibility study:
  www.arcoveggio.enea.it/eLCA

- Informative web site:
  http://summer.bologna.enea.it/elca2/prova/default.asp?

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Technical tools (1)

Exploitation of the WEB’s potentialities to facilitate the integration of different kinds of innovation and the information exchange among chain stakeholders.

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Technical tools (2)

- ecoSMEs characterised as:
  - “Place” where SMEs can find collected all the elements useful to think about and start IPP interventions
  - “Gate” to access more sophisticated services for the IPP implementation phase. Free access to tools and data to stimulate firms to access more qualified services (for a fee)
  - Connection with mediators, to be inside the typical relationship networks of SMEs
  - “Product oriented” approach by chain analysis
ecoSMEs classes of services

- **GENERAL SERVICES**: Access to on and off-line consultancy; News and Links, “Ecoproducts Showroom”, etc.
- **GENERAL SUPPORT INFORMATION**: About IPP and SMEs; analysis and design methods (LCA, Ecodesign, Environmental Benchmarking); market tools (Ecolabel, EPD, Eco taxes); Environmental Management Systems (EMAS, ISO 14000, Environmental Reporting), supportive instruments (incentives, standards and regulations), etc.
- **TRAINING PACKAGES**: On line packages for self-training introductory courses on market tools, Environmental Management Systems, analysis and design methods; downloadable support materials for off-line training, etc.
- **GENERAL AND SECTOR SPECIALISED LCI DB AND GUIDELINES**: General Life Cycle Indicators databases and sector specific databases for six specific industrial sectors (hotels, wood/metal/textile products, construction, electronics/electrical equipments).
- **SPECIALISED IPP SOFTWARES**: A simplified LCA methodology, with related software tool and database (eVerdEE), tools for Ecodesign
ecoSMEs service-providing model

Public-Private management with sector specific items (some services free, other for a fee), by partnership with: networks of services to enterprises, waste management firms, consultants, associations, IT operators.
Drivers development

- Agreements with:
  - Public national and local Authorities, to gradually promote a market of green products and services, based on public support, accompanying measures and demonstration activities.
  - Collective players like Associations, Service Centres, Chambers of Commerce and other mediators, to integrate eLCA services with other services for SMEs and to create new market-players.

- Contacts and negotiations in progress with:
  - UNEP-SETAC LCI
  - EA (UK) for integration with their environmental services to SMEs
  - Greek Ministry of industrial development
  - Regional authorities (Emilia Romagna, Lombardia, Cataluna, Balearic islands)
  - Local and sectorial actors (many)
Related Project: CASCADE

Co-operation and Standards for Life Cycle Assessment Data in Europe
EU Contract G7RT-CT-2001-05045

• The objective is to realise and demonstrate a standardised information model:
  – compliant with ISO 14048,
  – making use of existing standards - mostly developed in the framework of the ISO TC 184 technical committee
  – adapting them to the need of the LCA data in order to create common tools and a web-based reference data library specific for the LCA
A Pilot Sector: The Metal Processing Industry

• Why selecting the metal processing industry?
  • Economic relevance of the sector in Germany
  • Relevant processes for a lot of products

• Characteristics of the sector:
  • High quota of SME
  • Process oriented industry
  • However, 40 % of the sector's turnover are based on consumer products
  • Environmental improvements mostly on process level
  • IPP is still of little importance
Design Alternatives in the Metal Processing Sector

• Variation of the raw material

• Enhancing a material's characteristics by specific production processes and using it as an alternative to other materials

• Variation of the surface treatment
The Sector Study

Goals

- Identification of the relevant metal working processes
- Identification of the environmental issues and design alternatives
- Identification of the technical standards
- Collection of data for LCA
- Gaining knowledge about the requirements of the Website

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The Sector Study: Procedure

Literature
- studies, websites, statistics...

Interviews
- with associations and companies

Selection of relevant processes for the LCA database

Co-operation with 4 SME

Evaluation of environmental statements

Cooperation with associations

Data of 40 materials and metal working processes for the LCA database

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Challenges and methods of resolution

Data availability:
The enterprises' view usually is focussed on processes, not on products.
- Detailed guidelines for data collection and conversion for the website users are a must.

Data gaps:
Some data even are not available for the users in enterprises, like heavy metal emissions or data on toxicity.
- It is discussed to add quantitative information based on legal classification on substances.

Broad range wide:
The environmental impacts of the processes differ widely depending on the conditions of the production (e.g. serial versus piece production).
- It is discussed to provide estimates on the range of the sector-specific data.

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Future steps

Data collection:
Completed up to the end of autumn 2003

Testing phase:
Starting at the beginning of 2004

Revision phase:
Starting at summer 2004

Delivering of the website:
At the beginning of 2005

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How to evolve from the demonstration project

Sectors
- EEE
- Metal
- Wood
- Construction
- Textile
- Hotel

Tools
- Partial and self validated

Data
- Data gaps
- Not standard format

Countries

Regulation
- Low recognizability by the market
- No IPP obligation

Identified priorities

Complete and validated toolbox

Reference databases in standard format

Certification system adapted to SMEs

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How to evolve from the demonstration project

- eLCA is a demonstration project with a limited scope, but with a broad view on IPP governance system.
- eLCA will finish at end 2004. ecoSMEs maintenance and development cannot be sustained by the market that, in particular for SMEs, does not exist yet.
- In the development of IPP governance system, the implementation of green services like ecoSMEs is a key issue.

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