SME Support tools for environmental footprinting

Webinar: Presentation of the software concept
March 28th, 2014
Agenda

Part 1 – Introduction

– Introduction (European Commission, Cycleco)
– Interest of « T-shirts » and « Retail » pilots

Part 2 - Software concept

– General approach
– Overview of the common software capabilities
– Solution concept using mockups

Next steps
PART 1 - INTRODUCTION
• "Cookbook": how to calculate life cycle environmental impacts for a specific product or organisation (translate PEF/OEF)

• Takes product / sector specificities into account: Is it an intermediate product or a final product? Frequently changing or more stable supply chain?

• Which are the most important life cycle stages? Is it a product design issue? Is it the production process? Is it the resources that you need to make it? Is it when it's used? Is it logistics? Etc

• Which are the most important environmental impacts of the product/service/ company? Is it energy/ CO₂? Is it water use? or toxic wastewater? Is it the use of resources?
• For SMEs active in supply chains:
  • Readiness to reply to client requests regarding environmental performance
  • Replying based on a single method instead of several
  • Cost reductions

• For SMEs active on green markets
  • Reliable way to prove that the product (or the company) is green
  • Availability of data, simple tools to calculate and communicate environmental performance
  • Ability to compete based on environmental performance
  • Cost reductions
Scope of the project

- Realize environmental footprinting software for SME's
- 4 software applications:
  - 2 PEFCRs (1st: textile, 2nd: food)
  - 2 OEFSRs (1st: retail)
- Snapshot of environmental performance
- Policy making, not eco design
Key aspects

- Tool does not require LCA Expertise
- Attractiveness/Usability
- Robustness & quality
- Compliant with PEF / PEFCR / OEFSR
- Limited learning effort
Deliverables

- detailed requirements
- software specification
- common infrastructure
- 4 case studies
- documentation
# Involved partners

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<tr>
<th>Cycleco</th>
<th>Tools 4 environment</th>
<th>maki consulting</th>
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<tr>
<td>• LCA expert</td>
<td>• IT expert</td>
<td>• LCA expert</td>
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<tr>
<td>• Concept of the software</td>
<td>• Software architecture</td>
<td>• Quality assurance</td>
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<td>• Data quality</td>
<td>• Software development</td>
<td>• ILCD related requirements</td>
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<td>• Compliance with PEF/OEF</td>
<td>• Testing</td>
<td>• Review</td>
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<td>• Project management</td>
<td>• Documentation</td>
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Timeplan

- Project of 2 years, beginning in January 2014

Feedback loops

- Software concept refined
- Prototype dummy PEFCR
- First operational Version, 1 PEFCR
- Alpha version First PEFCR
- Beta version First PEFCR
- Integration and refinement, 3 additional PEFCR/OEFSRs
- Release Candidate
- 4 software applications
Connexion with the stakeholders

Primary goal is to support the realization of 4 applications, but the same infrastructure should be reused in the future without major modifications.

Different PEFCR/OEFSR’s have different requirements → need involvement of stakeholders to cover more aspects

Stakeholders give feedback → User friendly software (simple, understandable) → Adapted to SMEs
1. increase OEF and PEF practical applicability
2. stimulate active reduction economy
Environmental business models

practical applicability

resources manufacturing assembling packaging retailer disposal consumption

1: primary data
2: full value chain view
3: active reduction economy
Complimentary advantages chain OEF

1. Primary organisation data
   1. Valorise/visualise reduction efforts
   2. Allow suppliers/products to be compared
2. Putting responsibility back in value chain
Synergies pilot retail SMEs

1. How to collect OEF data from SMEs - how to simplify inputs for non-experts?

2. How to stimulate & incentivise SMEs to input the data effectively
   Clarify message “What’s in it for retailer SMEs” - what is outcome?

3. How to guarantee & maintain data quality/data verification?

4. How to integrate a learning process?

5. How to integrate confidentiality questions?

6. ... 

Proposal Colruyt to do test with Cycleco input tool
How to proceed?

1. Understand timings
   1. Timing draft/final version OEF SR required inputs
   2. Timings Cycleco tool

2. Understand exact deliverables & approach tool
Interest of T-shirts and Retail pilots

• Access to a software compliant with PEFCR/OEFSR

• Possibility to work with SME Tools team:
  – To obtain an easy-to-use software, in term of interface and functionalities
  – To have a software suitable for SMEs in term of terminology and structure
PART 2 – SOFTWARE CONCEPT

➔ GENERAL APPROACH
➔ OVERVIEW OF THE COMMON SOFTWARE CAPABILITIES
General approach

- Use a common infrastructure: the goal is to cover 90% of all software requirements for any PEFCR/OEFSR.
- Have a mechanism that allows adaptations for particular PEFCR/OEFSR's.
- Define a format for PEFCR/OEFSR software specifications.

→ Minimize the risk of non-PEFCR/OEFSR compliant software.
→ Rely on stable, common infrastructure → better software quality.
→ Terminology of the SME.
Easy to use software

→ Appealing user interface
→ Accessibility (screen resolution, font size)
→ Internationalization
→ Terminology of the SME, no LCA expertise
→ Guidance → the software must assist the user with workflows and user input
→ Consistent user interface
→ Good error handling and feedback
→ Documentation and support
Appealing user interface

- clean
- minimalistic
- attractive, fresh, modern
- quick access to functionality
- usability → minimize number of clicks
- No redundancies on user input

vs

convoluted interface
Accessibility

• support for multiple screen resolutions
• zoom factor / font sizes for better readability
• support for keyboard only navigation (tabs, hotkeys)
• evtl. support for screen readers

Examples:
• tab moves to the next input field
• CTRL+Mouse-up increases screen size
Internationalization

- multiple languages support
- local units (km, mi)
- time zones
- input formats (date-time formats and floating numbers)

Defaults will be taken from the user's operating system profile. E.g. German desktop → defaults to German formats, units, etc. but the user can customize it.
Guidance of data input

→ The software must assist the user with workflows and user input.

- input parameters have help text (explaining the parameter itself, the type/format of the parameter as well as some typical examples)
- Detailed information on the production process can be received by following the link on the process

An up-to-date list informs the user of inconsistencies or missing data input
Error handling

→ validate all input and give good error messages
→ support the user! guide him through the next steps
→ link to documentation and support
→ be prepared for unexpected issues
Installation & environment

➔ Hassle free installation (no dependencies)
➔ Software updates integrated in the software
➔ Support for many platforms (Windows, Mac, Linux)
➔ Possibility to go ‘web’ in the future.
➔ Modest hardware requirements
Security

→ Support for managing confidential data
→ Secure data transfer
→ Backup & restore → capability to safely export/re-import the SME's datasets
Reliability & quality

- Compliant with PEF-OEF / PEFCR-OEFSR guidelines (DQR, Units)
- Reliable calculation of environmental footprints and data quality (Calculation of impacts based on PEF, PEFCR guidance)
- Reliable management of environmental databases
- Good performance
- Traceability of datasets, calculations and report
PART 2 – SOFTWARE CONCEPT

FUNCTIONALITY OF THE SOFTWARE VIA MOCKUP EXAMPLES
Welcome screen

- Software functionality organized in a menu structure
- Search functionality quickly helps to narrow down the choices

The user can check if the software is adapted for the product that he wants to study.
Data sources

- Sources specified in PEFCR/OEFSR
- Free and of good quality will get precedence
- Licensed databases cannot be included in the tool but it must be possible to import them
- Primary data from suppliers can be imported

+ Content of a database
Managing studies

→ Manage a study: support for creating / loading / saving / deleting / cloning a study

→ Support for managing multiple studies → classification, organizing groups of similar products (e.g. T-Shirt summer collection 2015)
Selection of the project

The user manages his projects (new project, delete…) and select the project that he wants to study.
Structure of the study

Different PEFCR will have different menu structure (following the life cycle of the product)

Quickly activate forms to manage user input.

The user completes the various tabs and gets the results of his study
Description of the project

1. Description of the project

The user defines the study (reason for study, target audience, intended application…)

The software asks for all necessary information
Description of the project

Information about the unit of analysis and the reference flow

The user indicates the weight of the product
Description of the project

Access to a list of tasks which describe the project progress.
Description of the project

Dashboard configurable via settings
Multiple widgets can be displayed on the dashboard. The core framework will define a set of standard widgets

Quick overview of the hotspots. e.g. The processes contributing most to environmental impact
Description of the product

- The description if the product is made for each step of the life cycle, based on data provided by the user
→ processes can be excluded or included

→ Primary data from supplier processes can be connected, respectively the affected processes can no longer be modified

→ Allow an adaptation of the processes to the SME's needs (customization of life cycle)
Modelling - Data collection

- Processes, units, parameter names
- List of input parameters relevant for calculation
- Simplification of input
  - SME units
  - Terminology of the SME

- Guidance will be provided to help SME for the data collection

The user complete the primary data
Import capabilities

- **Import of primary data from SME Software:**
  - There are potentially many input fields → source of risk (redundancy)
  - Facilitate input → automate input (reduce risk)
  - How to deal with data quality?
  - Objective of project but many uncertainties → low priority

- All formats of SME software may not be covered by the import function of the software

  **Suggestion:** provide information to the users on the format supported by the software and how to develop adapters themselves
Data quality

• Data quality is taken into account in the study -> Quality criteria to meet

  The user shall specify the quality of his data -> 6 data quality criteria

• The software will allow the user to customize data quality for all processes and parameters

• If supplier data is imported, this information should not be customizable

• This part will be simplified:
  • specific questions posed to the users to help define the data quality
  • Provision of a easy guidance
Packaging

Info icons are used to facilitate input
→ help the user how to collect the data
→ examples of data
→ reference values (for background processes)

Processes are linked with the
• documentation
• pefcr (for evidence)
• the datasets involved.
Distribution is the transport stage of the finished product from storage to delivery point. This transport is considered as local (1000 Km in a truck).

<table>
<thead>
<tr>
<th>Mode</th>
<th>Distance</th>
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<tbody>
<tr>
<td>Truck</td>
<td>1000 Km</td>
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<tr>
<td>Boat</td>
<td>0 Km</td>
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<tr>
<td>Plane</td>
<td>0 Km</td>
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Help text can be used to clarify what input needs to be provided. This can include pictures, diagrams, etc. The goal is that the user is not forced to follow the links to the documentation at every page.
Use phase

- Certain processes are independent to each other, hence the SME user first needs to select a process from a category before he can enter a value.

- Support for product categories (selection rules) → find the applicable processes automatically, based on basic input information.
Study summary

### Overview of all input data

**Description of the product**
- Summer T-Shirt for kids
- Product Code: 0A-99F

**Production**
- Component 1
  - Composition: Cotton
  - Weight: 150 g

**Spinning**
- Electricity Mix: France
- Electricity: 10 kWh/Kg

**Knitting**
- Electricity Mix: France
- Electricity: 10 kWh/Kg

**Making**
- Electricity Mix: France
- Total electric consumption (sewing and ironing): 10 kWh/article
- Scraps: 10 %
- Data source: Supplier1

### Summary of the study
- Calculation of the environmental impacts according to databases (generic data) and user inputs
- Compliant with the technological and methodological requirements
- Ad-hoc reports: Environmental impacts, hotspots can be visualized directly in the software
Report capabilities

- Compliant with PEF/OEF guide, and PEFCR/OEFSR
- Pdf and evtl. Word format

Summary
- Main report
  - Goal of the study
  - Scope of the study
  - Compiling and recording the Resource Use and Emissions Profile
  - Calculating PEF impact assessment results
  - Interpretating PEF results
- Annex
- Confidential Report
NEXT STEPS
Next steps

• In 1 month: **Software concept refined**
  – Incorporates feedback from the stakeholders
  – Applicable to textile PEFCR

  ➔ **in 2 weeks: feedback from stakeholders (will provide contact information after webinar)**

• In 3 months: **Prototype**
  – Core infrastructure developed
  – Support basic calculations of env. Impact based on textile PEFCR

  ➔ **Schedule a second webinar.**
Next steps

• In 5 months: **1st operational version** (Textile)
  – Core functionality implemented for Textile PEFCR
  – Robustness and Reliability
  – User interface fully functional

• In 7 months: **Alpha version** (Textile)
  – Bugfixes
  – Incorporates feedback from stakeholders
  – Internationalization
  – Packaging for download (not public)
THANK FOR YOUR ATTENTION.