

# PeSCoS



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**PeSCoS**

## **Adaptive Withdrawal Planning**

Version 1.0 – 10/09/2011

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<b>Project</b>	Personalised Sustainability Coaching for SMEs - PeSCoS		
<b>Author(s)</b>			
<b>Reviewer(s)</b>			

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(\*) Action: C = Creation, I = Insert, U = Update, R = Replace, D = Delete

## Referenced Documents

ID	Reference	Title
1	510344-LLP-1-2010-1-GR-LEONARDO-LMP	PeSCoS Proposal
2	510344-LLP-1-2010-1-GR-LEONARDO-LMP	Evaluation Comments
3	Meeting_Minutes_Content V1.1	Content Meeting Minutes

## Applicable Documents

ID	Reference	Title
1	FAVINOM Consultancies QMS	Quality Management Procedures

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## Executive Summary

This document forms the Adaptive Withdrawal Planning for the Implementation of the PeSCoS Project (henceforth, "Project").

The PeSCoS project concerns the implementation of a personalised training system for SMEs to be able to eliminate their unsustainable ways and embrace new, greener habits. The aim is to offer personalised training to SMEs on the amount of carbon, energy, Euros and other resources they expend through hundreds of choices and daily actions in an effort to diminish their negative impact on the earth. Following the completion of the training, SMEs will have a personalised unsustainable ways withdrawal plan.

The content that will be developed to support the training system that will be designed will offer businesses practical advice for cutting down energy and water usage and reduce their environmental impact. At the heart of the training system will be an environmental "genie" which will guide the SMEs so as to provide the necessary inputs with respect to the characteristics of their business (e.g. recycling system, heating system, etc.). Following the provision of all the necessary information, the "genie" will produce a detailed report explaining to the SME how to cut costs and turn its business greener. The training system will be geared to small and medium businesses looking to save money, be less harmful to the environment and create a "strong environmental brand ethos" amongst customers and staff.

The PeSCoS project is co-funded by the Education and Culture DG under the Lifelong Learning Programme, LdV Multilateral Project, Development of Innovation

The present document contains information regarding:

- The purpose of the State of the Art work and the Scope of the PeSCoS project and objectives
- The definition of the Ecological footprint
- The methodology for evaluating the most popular calculators currently available
- The conclusions from the evaluation of the footprint calculators
- The Global list of items to be measured for the calculation of the carbon footprint

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## Document Glossary

Term	Description
AT	AVACA Technologies
ATejo	AREANatejo
CBT	Computer Based Training
CIS	Communication Information System
Consortium	The various entities that have partnered for the current project
CPM	Coordinator's Project Manager
EAC	Education, Audio Visual and Culture
EM	Eurocrea Mercant
EU	European Union
FC	FAVINOM Consultancies
FT	FUNDITEC
PKO	Project Kick-Off
PM	Project Manager (Coordinator)
PQP	Project Quality Plan
QA	Quality Assurance
TBD	To Be Defined
TUL	Technical University of Lodz
WBS	Work Breakdown Structure
WD	Working day(s)
WZK	Wij Zijn Koel

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## 1. Introduction

### 1.1. Purpose of the Adaptive Withdrawal Planning

The purposes of the current Adaptive Withdrawal Planning are the following:

- Elaborate the methodology for the production of personalised carbon emissions reduction plans.
- Describe the process to be followed for the production of the withdrawal plans per sector/energy area
- Provide the input data for the implementation of the environmental "Genie" that will be integrated to the PeSCoS platform.

### 1.2. Scope of the project

The PeSCoS project concerns the implementation of a personalised training system for SMEs to be able to eliminate their unsustainable ways and embrace new, greener habits. The aim is to offer personalised training to SMEs on the amount of carbon, energy, Euros and other resources they expend through hundreds of choices and daily actions in an effort to diminish their negative impact on the earth. Following the completion of the training, SMEs will have a personalised unsustainable ways withdrawal plan.

The major tasks of the project are the:

- Sustainability auditing, needs analysis and the unsustainable ways withdrawal planning;
- Development of the training material;
- Implementation of the PeSCoS training system;
- Pilot operation and assessment of the project;
- Dissemination and exploitation of the project results.

### 1.3. Project Objectives

At the core of the training system will be a carbon footprint calculator capable of utilising regionally specific datasets reflecting the types of energy, money and other resources businesses consume because of their choices and operational ways.

The process will start by calculating the current carbon footprint and producing a detailed report comprising all the appropriate actions that will turn the business greener. The actions will be divided into categories such as the ones below:

- Simple actions that can be implemented immediately without requiring an investment;
- Simple actions that can be implemented immediately, but require an investment;
- Actions that have prerequisites (other actions need to be implemented first), but require no investment;
- Actions that have prerequisites and require an investment.

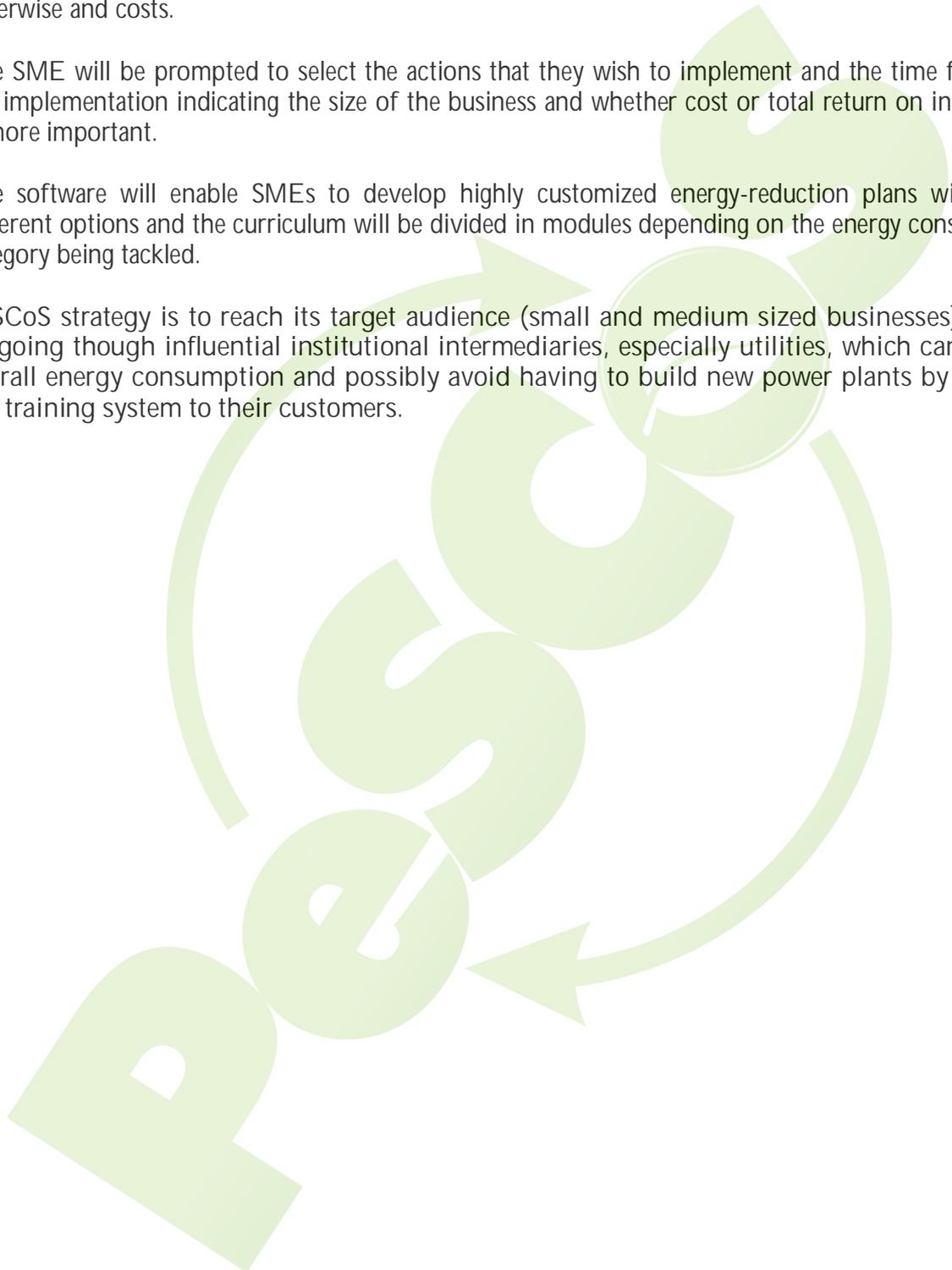
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Each action will be explained in detail, it will include a time plan and cost estimate (if applicable) for its implementation and a detailed description of the associated reduction in energy consumption or otherwise and costs.

The SME will be prompted to select the actions that they wish to implement and the time frame for the implementation indicating the size of the business and whether cost or total return on investment is more important.

The software will enable SMEs to develop highly customized energy-reduction plans with many different options and the curriculum will be divided in modules depending on the energy consumption category being tackled.

PeSCoS strategy is to reach its target audience (small and medium sized businesses) mostly by going through influential institutional intermediaries, especially utilities, which can reduce overall energy consumption and possibly avoid having to build new power plants by offering the training system to their customers.



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## 2. "Genie" Specification

The methodology for creating individualized plans for reducing carbon dioxide emissions for small and medium-sized enterprises (SMEs) is based on four core blocks of actions.

### 1. Footprint

Footprint block is based on a set of general and detailed questions in the areas as follows: Recycling system, heating systems, electricity, paper consumption, transportation, water consumption, resulting in obtaining a certain amount of carbon dioxide emitted by SMEs. Figures inserted by SMEs are multiplied by the adequate for each country factors, enabling calculation of CO<sub>2</sub> emission that gives an output in kg of CO<sub>2</sub> per year.

The answers obtained in footprint will be utilized to eliminate from the set of available advice/solutions (Z) those which do not relate to the certain SME (see point 2).

### 2. Additional questions

Assuming that for each area (recycling system, heating systems, electricity, paper consumption, transportation, water consumption) there will be 30 advice/solutions to be proposed in training, some notations can be introduced:

1, 2, 3, 4, 5...30 - solutions/advice in training

Z – a set of solutions/advice in training {1, 2, 3, 4, 5...30}

X – a set of selected solutions for a given SME {1, 5, 6, 12 etc.....}

Y – a set of eliminated solutions {2, 3, 4, 7, 8, 9, 10, 11, 13 etc.....}

$$Z=X+Y$$

Additional questions asked in the areas mentioned in footprint above, do not give the direct output of the CO<sub>2</sub> emission. Questions are identifying the status quo in the SME and eliminating from the set of available advice/solutions (Z) those which do not relate to the certain SME (Y).

### 3. Advice/solutions set

All solutions (Z) are divided into the following categories:

- actions that can be implemented immediately without requiring an investment.
- actions that can be implemented immediately but require an investment.
- actions that have prerequisites (other actions need to be implemented first) but require no investment.
- actions that have prerequisites and require an investment.

From the set of all advice/solutions available in training (Z) after the elimination process carried out on the basis of additional questions (see point 2), there is a set left comprising solutions for the certain SME (X), which are to be put forward for implementation in the SME.

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#### 4. Training

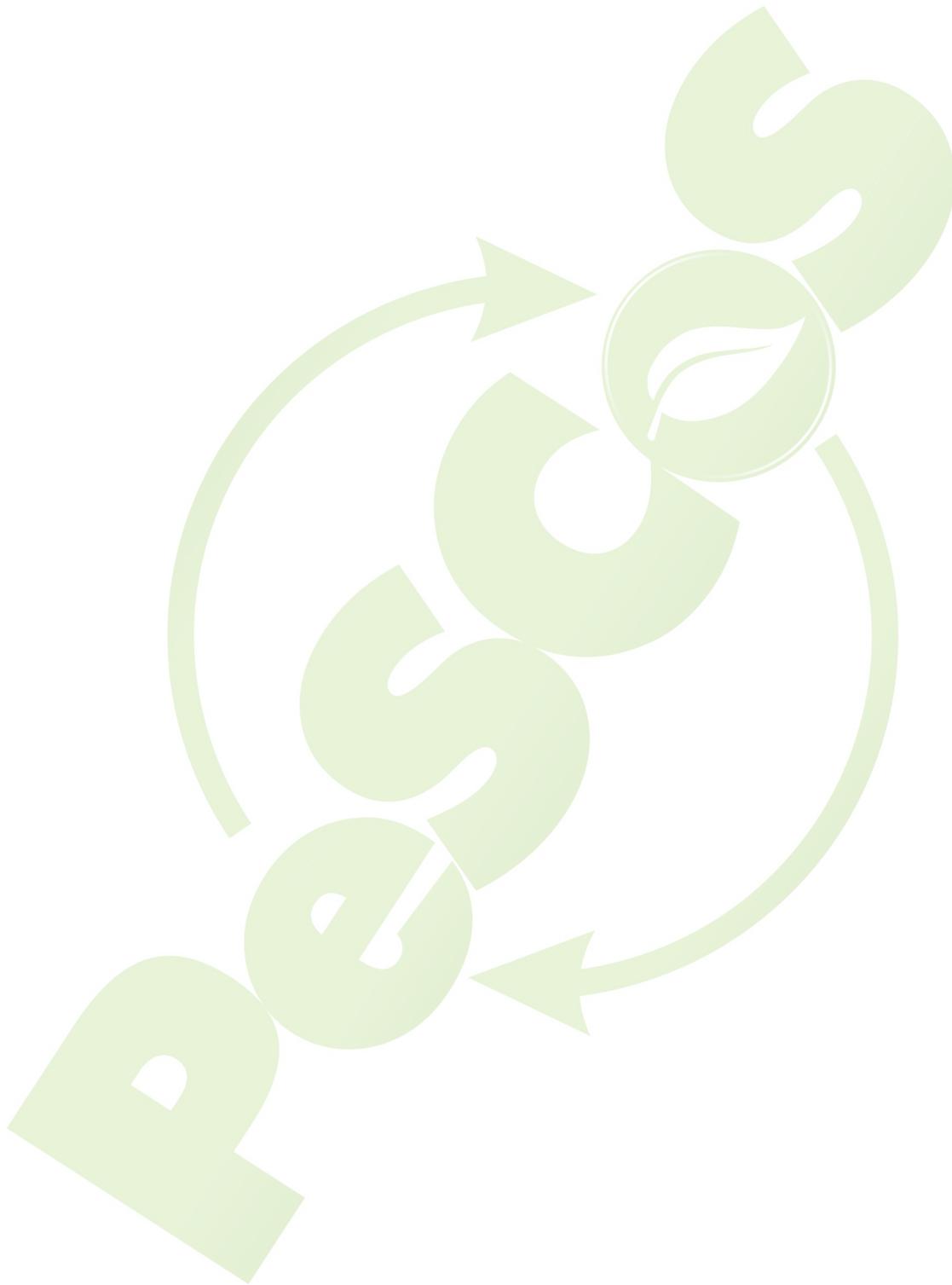
Training is a set of all advice/solutions (Z). Training comprising (X) proposed advice/solutions shall follow the same logical and graphical scheme in all areas (recycling system, heating systems, electricity, paper consumption, transportation, water consumption).

Proposed training scheme shall include (for discussion):

- a) a general description of the activities/methods as an introduction (briefly and in general about available heating systems or what paper recycling is about)
- b) a description of the selected solutions (X) for the certain SME, including for a particular advice/solution:
  - a description of various actions/solutions implementation, time needed to implement proposed solutions
  - how to reduce energy consumption after the implementation (CO2 reduction)
  - pros and cons of the certain solution
  - cost of each activity
  - content identification allowing for cultural differences

A detailed description of the design is provided in document D2.3.1 - Adaptive Withdrawal Planning Design - PeSCoS Genie

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### 3. Business Use Cases

#### 3.1. Purpose

The purposes of the current Business Use Cases are the following:

- Provide a narrative description of the Genie functionality from the viewpoint of a simple user.
- Provide insight of the main functionality of the Genie by depicting the main envisaged screen graphically with simple drawings accompanied by a description of the main elements that each drawing comprises.
- Serve as a navigational map of the Genie application, even though limited in this respect, it will still provide valuable input for the front end designers with regards to the envisaged functionality that needs to be facilitated.

#### 3.2. Functionality

##### 3.2.1. Access PeSCoS Genie

The Genie will be a separate web application, most likely embedded in the PeSCoS information site displayed below:

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Figure 1-PeSCoS homepage

The main access point will be the PeSCoS website (<http://www.pescos.eu/genie>). Direct http links to the Genie can then be added to the partner's websites, as well as other related websites contributing to the creation of the necessary back links for search engine optimisation purposes.

However, since the Genie will need to store data specific to the SME in order to retain data, proper use of the Genie necessitates that users become registered users of the PeSCoS Website and login prior to accessing the Genie. Unregistered users will still be able to access and use the Genie but no information will be persisted.

### 3.2.2. Main Screen

The Main Screen will be the single access point through which all the functionality of the Genie can be invoked. The main elements of the screen are displayed below:

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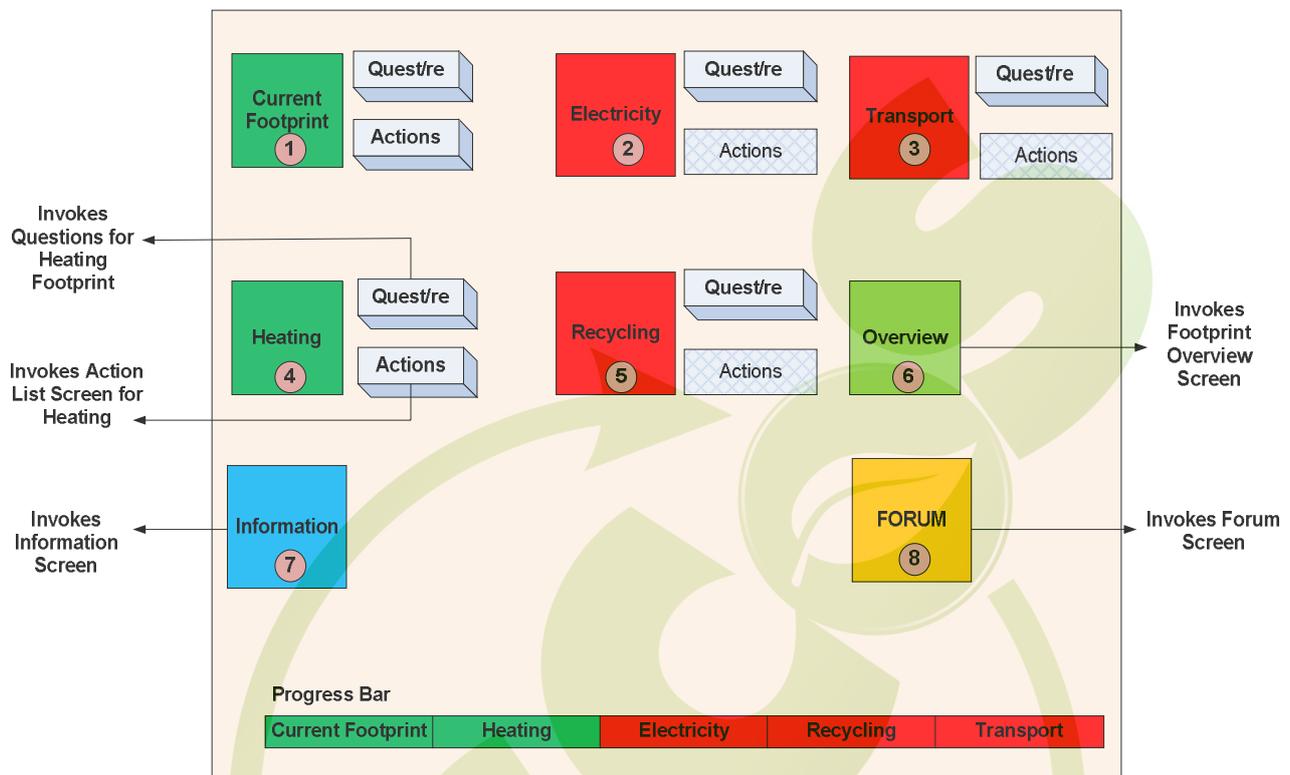


Figure 2-Genie Main Screen

All the main elements are “boxed” in the figure above and are explained in more detail in the sections that follow.

From a functional point of view, the following functionality is envisaged for logged in users:

- First time log in:
  - Items [1] to [6] are all red and the “Actions” button is disabled
  - User can start by clicking on the Questionnaire button of any of the items [1] to [5]. Normally, user should start by calculating the current footprint by clicking on the “Questionnaire” button of item [1]. However, the application will be flexible enough to allow the user to start with the calculation of any individual footprint if he/she prefers to do so.
  - Clicking on any of the items from [1] to [5] will invoke the corresponding screen. Please refer to Section 3.2.4 for a description of the Current Footprint screen (Item 1) and to Section 3.3 for a description of the individual energy areas screens (Items 2 to 5)
  - The user will provide the requested data and the application will calculate the corresponding footprint

### 3.2.3. Information Screen

The Information screen refers to a screen which will be used to provide general information about the Genie and its use, as well as information that is considered important for the SMEs to read and understand in order to be in position to successfully use the tool to reduce their footprint (e.g. how to

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prepare and what data to have at their disposal in order to respond to the questions that will be asked per energy area).

The information screen will also communicate the notion and use of footprint.

### 3.2.4. Current Footprint Screen

The current screen comprises a set of screens holding the questions that it was decided to use for the calculation of the current footprint. It is envisaged that 9 questions are adequate. An example of how these pages may be presented to the user is provided below:

The current page displays general information about the company

**1. Please provide the following details:**

Name:

Surname:

Telephone:

E-mail:

Company Name:

Position within the company:

**\*2. Country and Post Code (two letter country code, post code - example: CY, 1310)**

**\*3. Number of employees within the company**

0 – 10       101 – 200

11 – 50       More than 200

51 – 100

**\*4. Please specify the number of full time employees**

**\*5. In which sector does the company operate**

Food & Beverage       Shops (retail)

Services       Production (raw materials, industrial SME's)

Other (please specify)

**Figure 3-**Current footprint calculation screen

### 3.3. Screens for calculating footprint per energy area

The current screen will comprise questions specific to each energy area (additional questions) and it may be presented to the user as in the example below:

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**Energy Consumption Questions**

41%

Questions regarding the consumption of energy by the company

**\* 10. Heated surface in square meters**

**\* 11. Please enter the amount of electric energy your company consumes in a full year and if possible the associated cost:**

kWh/year

Euros/year

**Figure 4-Specific energy area footprint calculation screen**

Depending on the number of questions there may be more than one pages with questions. A page indicator on each page will inform the user with regards to how many more pages of questions are following. There will also be a progress bar on top to provide information with respect to the current completion percentage.

For each question there will be an info tooltip providing further information with respect to what is required.

If the answer requires the provision of a numerical response, then it will be possible for the user to select the units he/she wants to use in order to provide the response.

The default units will be configurable through the "Admin" screen (please refer to Section 3.5).

Upon completion of the questions, the last page will display a report comprising the current footprint.

### 3.3.1. Action List Screen

For the energy areas for which the user had provided responses to the questionnaire for the calculation of the footprint, the "Actions" button will be enabled and the user will be able to invoke the action list screen for this energy area displayed below:

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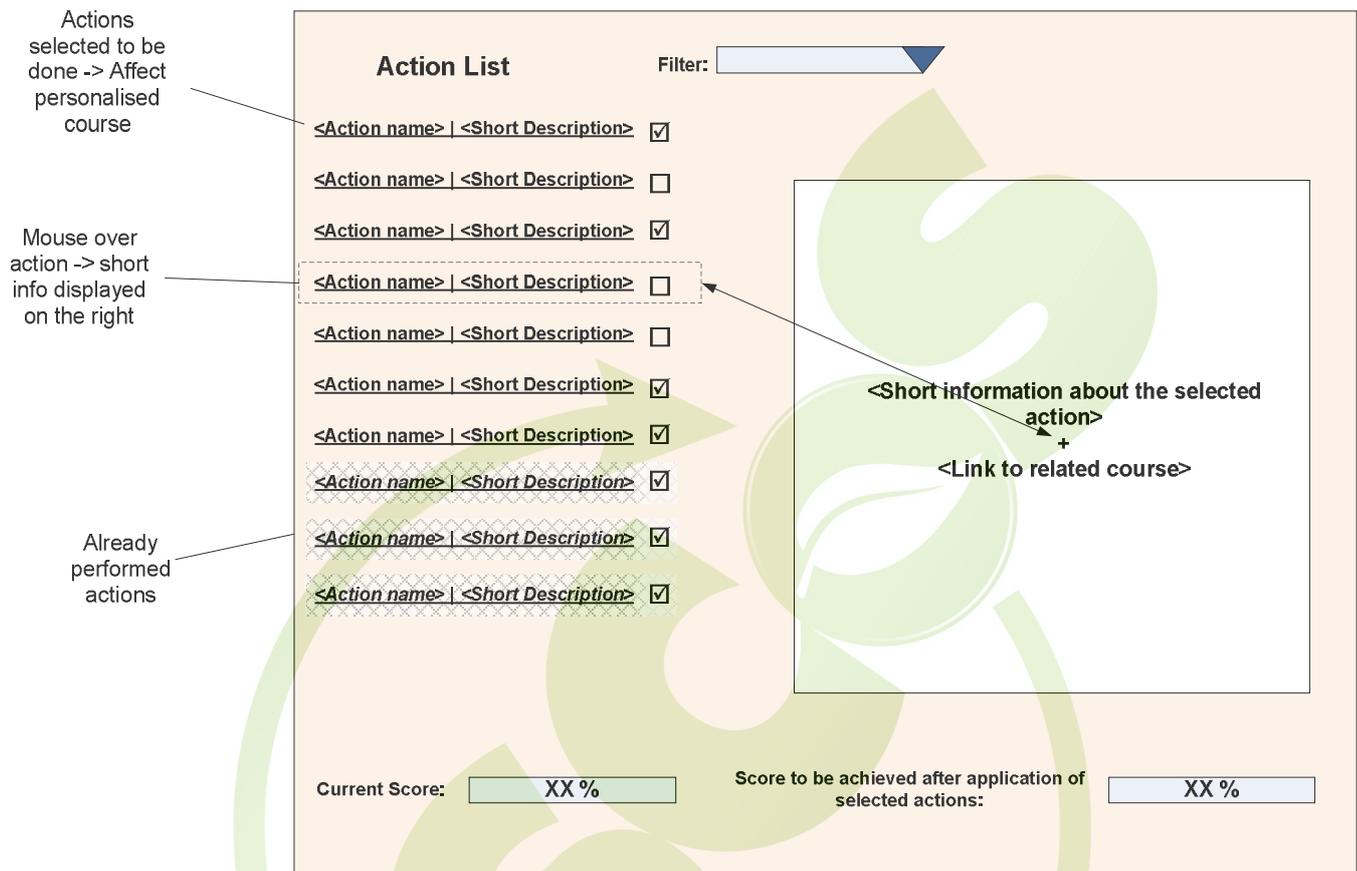


Figure 5-Specific energy area action list screen

The screen comprises the following main elements:

- List of actions, specific to the energy area, for reducing the current footprint: The list will contain all possible actions. However, a filter will be at the disposal of the user in order to allow the user to filter the list with respect to the following categories of actions:
  - Simple actions that can be implemented immediately without requiring an investment;
  - Simple actions that can be implemented immediately, but require an investment;
  - Actions that have prerequisites (other actions need to be implemented first), but require no investment;
  - Actions that have prerequisites and require an investment.
  - Completed actions

Each action will be displayed in the form of an action name, followed by a short description of the action and a check box. When the user performs a 'mouse over' a specific action, then more information about the action is displayed in the area on the right including a link to the relevant course for applying the action. The user will be able to use the check box to select actions to perform in order to reduce footprint. Actions that the user may have already implemented will be displayed as completed (checked and dashed) and the user will not be able to alter them in any way. The user will mark already completed actions by clicking on an action and confirming to the system that the action is completed (upon clicking on an action, a small pop up will ask the user to confirm whether the action should be completed or not)

- Information area: When the user browses through the list of actions, on mouse over a specific action, the information area will display additional information about the selected action

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accompanied by a link to the relevant course in Chamilo for implementing the action. The Chamilo area with the course in question will only open on a new window.

- **Current Score:** The current footprint, before the application by the user of the selected actions. If the user is revisiting and has already applied actions which are now displayed as completed, then the reduction percentage is embedded into this footprint.
- **Score to be achieved after the application of the selected actions:** The associated reduction from the actions checked by the user is used for the calculation of the resulting footprint after the application of these actions.

### 3.3.2. Overview Screen

By clicking on the “Overview” button (Item 6 of the main screen), the user can invoke the overview screen which provides an overview of the current situation:

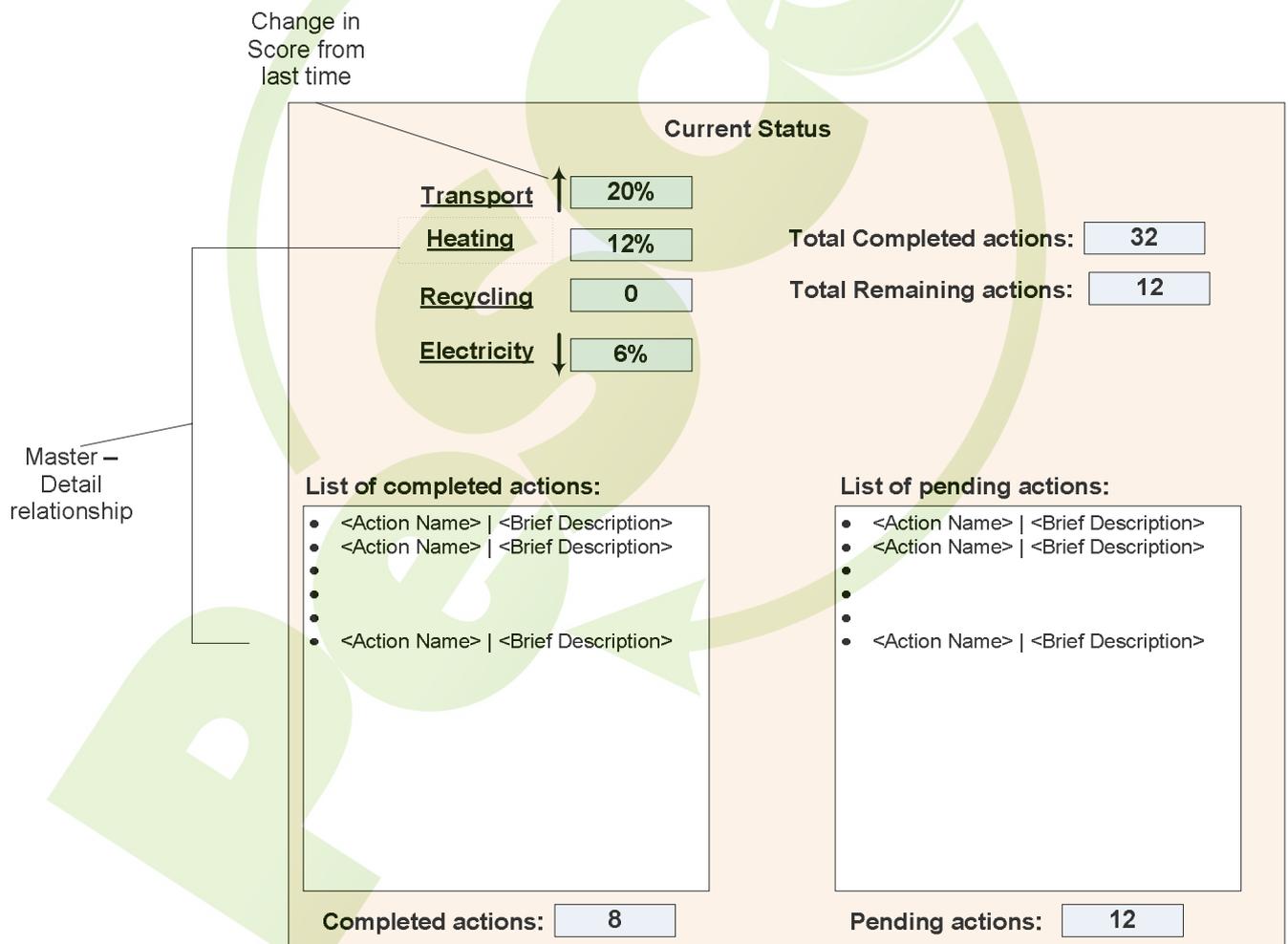


Figure 6-Overview screen

The overview screen comprises the following elements:

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- CO2 footprint values: For each energy area, the screen displays the percentage of actions already completed in the form of a score and an indication depicting if the score has changes since the last time.
- Total completed actions: The total number of completed actions. The number is a total from completed actions from all energy areas.
- Total remaining actions: The total number of remaining actions. The number is a total from remaining actions from all energy areas.
- List of completed actions: This information box holds the completed actions per selected energy area. It has a master-detail relationship with the 4 energy areas above. If the user clicks on any of the areas, then the completed actions for that area are displayed in the information box. Under the information box is a counter for the total number of completed actions.
- List of pending actions: This information box holds the pending actions per selected energy area. It has a master-detail relationship with the 4 energy areas above. If the user clicks on any of the areas, then the pending actions for that area are displayed in the information box. Under the information box is a counter for the total number of pending actions.

### 3.4. Forum

To be decided

### 3.5. Admin Screen

The administrator of the platform will have access to a screen where it will be possible to configure all kinds of parameters, such as:

- The default units assigned to quantitative questions
- The questions to be displayed per energy area
- The actions to be presented per energy area
- Other.....

Such flexibility is important because depending on the country and the specific geography and climate, certain questions may not be relevant. Ideally, it will be also possible to add new questions per energy area from this screen and new actions per energy area.