



TOOLS EVALUATION REPORT



Intelligent Energy  Europe





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1. INTRODUCTION

This document describes the tools developed specifically to be used inside the project and their role. The ECHO-ACTION project have been based on informative tools necessary to interact in a quick and easy way with the family groups participating to the project avoiding to limit the involvement only to a few meetings, thus dispersing interest and attention.

In order to achieve this goal three tools have been developed and managed by the partners involved.

A website, containing the overall details of the project, the contacts and all the documents produced during the evolution of the project itself.

A handbook, printed in paper version, in which a simple and clear description of the energy saving best practices is detailed.

As a last tool, a software, indicating the energy saving level of many of the most common practices, has been developed.

All these tools needed to be evaluated, at the end of the ECHO-ACTION project, in order to comprehend how effective they have been, and what sort of *feeling* the families involved in the project had with them. To this aim, a series of evaluation criteria of each tool is presented in this report, together with the





evaluation of the people of the different groups involved in the project, according to a questionnaire we have distributed.



2. TOOLS EVALUATION QUESTIONNAIRE

The English version of the questionnaire distributed to the families is here reported, it contains a standardized *close form* series of questions on the three tools with three different marks indicating the level of appraisal of the tool with respect to the specific topic, and three open answer questions.

	Mark		
	Not sufficient	Sufficient	Good
HANDBOOK			
Clear			
Easy to use			
Pictures useful for comprehension			
Graphic			
Described topics			
Overall evaluation			
Things I liked			
Things I disliked			
Things I would change			





SOFTWARE	Mark		
	Not sufficient	Sufficient	Good
Easy to use			
Complete			
Clear			
Help in choosing action			
Graphic			
Overall evaluation			
Things I liked			
Things I disliked			
Things I would change			



WEBSITE	Mark		
	Not sufficient	Sufficient	Good
Easy to use			
Clear information			
Good quality information			
Useful			
Graphic			
Download material			
Overall evaluation			
Things I liked			
Things I disliked			
Things I would change			





3. HANDBOOK

The ECHO Action handbook has been developed to help the people participating to the project to have a direct reference into subject areas important inside the project. It is divided into eight sections with glossary to explain the meaning of the terms used in the text: Introduction, Energy Use & CO₂, The structure of your home, Heating, Summer cooling & Ventilation, Home Appliances, Sustainable & Renewable Energy Technologies and Sustainable Mobility.

Each section can be read independently from the others for specific inquiries.

The technical level of the handbook has been chosen simple and plain because the aim of it was to get people informed on the basics of the topics treated. The handbook should act as a guide, introducing and expanding on some of the more common energy related issues relevant to householder. Therefore, the use of the handbook needs to be combined with the meetings among the families and the trainers and with specific meetings among single families or small groups and technicians to develop in detail topics in which there is a strong interest. One of the biggest problem we had with the handbook development was to produce





something which could be useful and informative for people living in very different environments and climatic areas so that things that are of absolute interest for some people could be negligible for others. For these reasons, numerical data has been avoided for the most part of the text because of the large differences and the intrinsic limitations of dealing with buildings and habits closely linked to a specific lifestyle.



4. SOFTWARE

In order to quantify the effect of a virtuous energetic behavior and to explain the direct effect of the saving actions to the families, a specific software has been developed during the project.

It was realized to be used by the families to quantify their effective energy consumption reduction connected to specific actions in terms of kWh of energy saved and CO₂ emission reduction.

It is written in Excel closed macro form to simplify its use on every computer and it is arranged in five pages each containing a specific topic.

In the first page, all the data of the family using the software need to be inserted. In this way the overall energy consumption of the family is calculated.

The next three sections are devoted to the actions which can be applied in order to reduce energy consumptions and CO₂ emission. The sections are devoted each to a specific topic: heating, electricity and mobility.

The actions to be applied in each of the sections are divided into three groups according to their cost (and hence to their





efficiency): no cost actions, low cost actions and actions needing an investment not negligible.

For each of the actions that are considered there is a menu permitting to choose if the specific action is applied or not. It is important to underline that this software is relative to applying changes in the behavior, if any of the action has been already performed by the family, it has not to be chosen as yes because its energy saving effect is already inside the energy consumption inserted in the first page, otherwise the action should be counted twice.

A large amount of actions have been inserted and a general parameter of energy saving and CO₂ emission reduction has been applied to each of them in a way that is a sort of average effect all over Europe, since some actions could have a smaller or bigger impact depending on the place they are applied.

Also the energy production through renewable energy systems as photovoltaic or solar thermal water warming have been inserted. For these specific topics, a calculation depending on the solar irradiation of each country has been developed.

The last page is devoted to the results with a summary of the actions taken and their effect and the calculation of the overall energy saved and CO₂ emission reduction. Also the E-score





obtained through the actions is reported in this page showing the level of efforts taken by the family.

The biggest difficulty in software development has been to accord the effect of the actions to values that could be meaningful independently on the country they are applied.



5. WEBSITE

The website has been developed as the tool necessary to keep in contact all the partners involved in the project.

It is arranged in an international part, where all the details of the project are contained. This part also hosts all the English version documents produced during the project as the meetings presentations. A link brings from the main web-page to the website of each city partner where are hosted the information about the local actions taken in the framework of the project and the documents describing the project in the language of the partner are present. All the local actions as documents, newsletters, update and the version of the handbook can be found here. The level of computer using is not the same all over Europe so that some countries received a larger feedback in terms of use of the website, while others didn't.

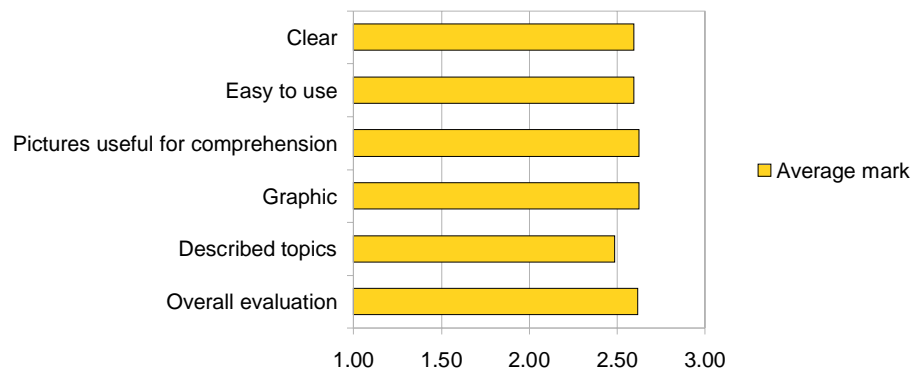
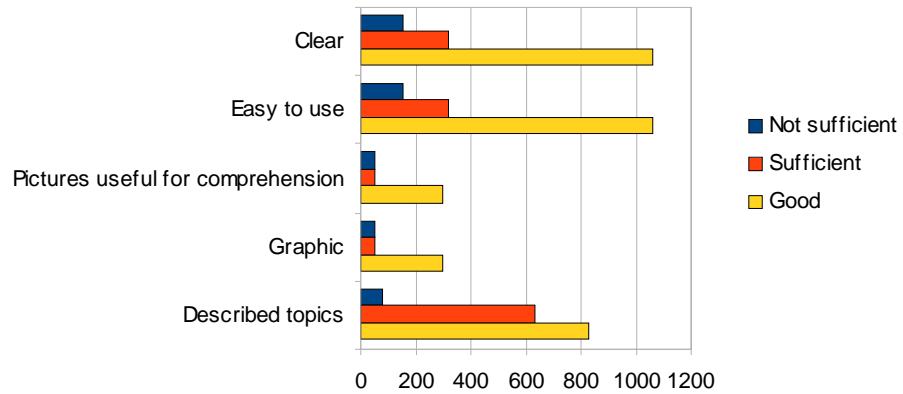


6. EVALUATION DATA

This section is devoted to present the data of the feedback obtained by the people involved in the projects, trainers, families, economic and technical operators, city partner officer have been interviewed by the questionnaire and the overall results are shown in the following.

For what concern the numerical results of the average marks of the specific topics of the tools and the overall result: 1 means not sufficient; 2 means sufficient; 3 means good.

Handbook

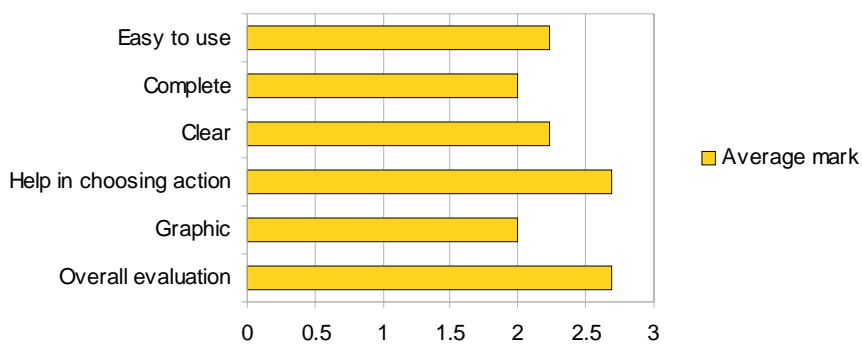
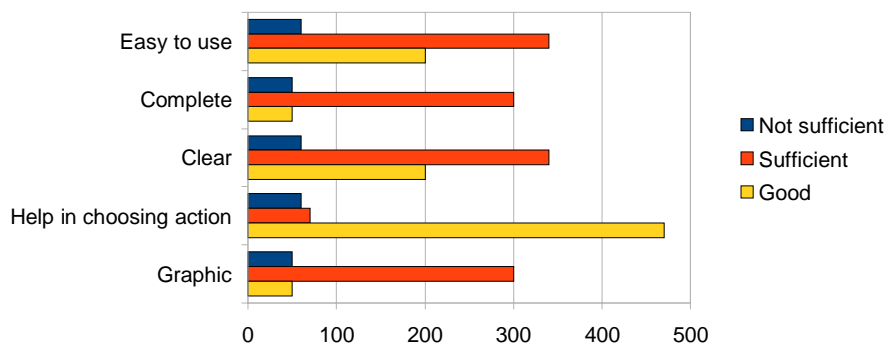


Data analysis: the marks about the tool are all in between sufficient and good mark but, anyway, the weakest part is represented by the choice of the topics.

Suggestions and comments

The pictures and examples have been largely appraised, a weak point, due to the difficulty to homogenize different countries, has been the lack of numeric data and the sustainable mobility part.

Software





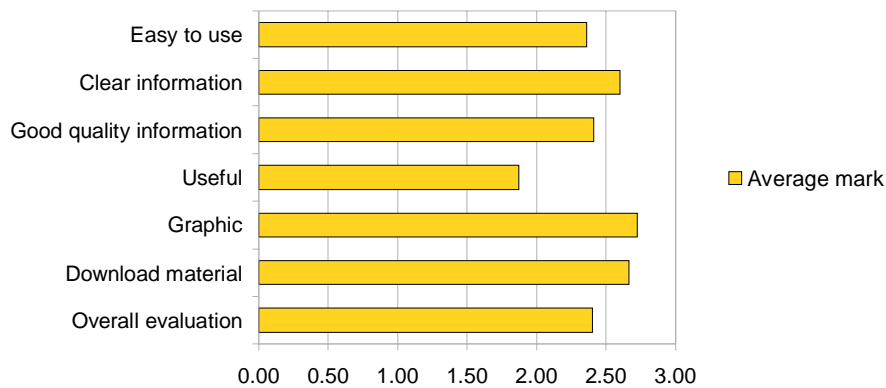
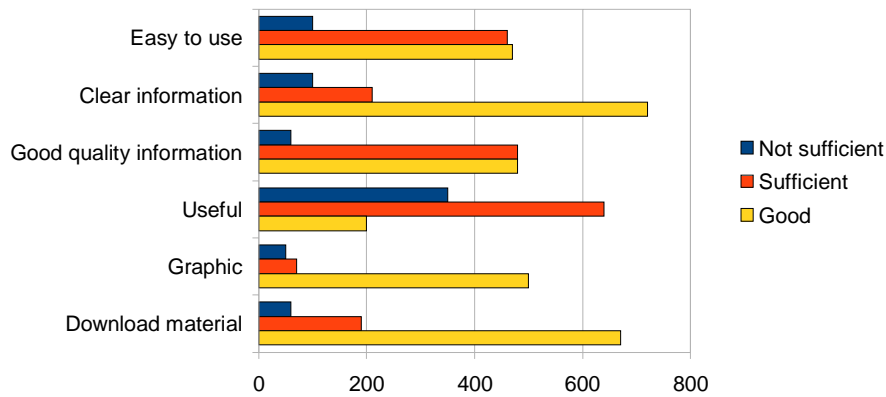
Data analysis: the marks of the tool are not uniform going from sufficient to values in the middle between sufficient and good mark. Anyway the results reflect the problem in the choice of the actions and the very simple aspect of the tool for what concerns negative aspects while its usefulness is considered very high.

Suggestions and comments

The low cost interventions divided from the others have been particularly appraised, while it has been criticized the low level of choices in the mobility part.



Website



Data analysis: even for the website, the results are differentiated according to the requested marks. Its usefulness has been questioned probably due to a scarce level of computer users while the rest of the questions got a positive mark.



Suggestions and comments

The comments are very few anyway the most appreciated aspect was the graphic presentation.

7. CONCLUSIONS

The tools developed for the project receive an overall positive feedback from users thus resulting in useful deliverables also considering the possibility to spread them out to people external to the project, specially for what concerns the handbook. Some weaknesses, due to homogenization and topics difficult to be treated in a simple way has been evidenced but the overall results appear to be fully satisfactory.

