Project full title: "Energy Efficiency Knowledge Transfer Framework for Building Retrofitting in the Mediterranean Area"

Grant agreement no: 314347

EeB.NMP.2012-6 - Methodologies for Knowledge transfer within the value chain and particularly to SMEs

Deliverable D3.1 - Knowledge Generation and Transfer Processes Report

Circulation: Public

Partners: PiM, IMA, ENERCYA

Authors: Brian Restall, PiM / Katia Mifsud, PiM

Date: 22/07/2013

Doc. Ref. N°: eeWISE-WP3-D3.1_Deliverable-V16-29072013

COPYRIGHT

VERSION CONTROL

Version	*Date*	*Comment*
01	13th December 2012	eeWISE-WP3-D3.1_Deliverable-V1-13122012
02	17th March 2013	eeWISE-WP3-D3.1_Deliverable-V2-17032013
03	4th April 2013	eeWISE-WP3-D3.1_Deliverable-V3-04042013
04	10th April 2013	eeWISE-WP3-D3.1_Deliverable-V4-10042013
05	10th June 2013	eeWISE-WP3-D3.1_Deliverable-V5-02072013

06	2nd July 2013	eeWISE-WP3-D3.1_Deliverable-V6-02072013
07	12th July 2013	eeWISE-WP3-D3.1_Deliverable-V7-12072013
08	17th July 2013	eeWISE-WP3-D3.1_Deliverable-V8-17072013
09	18th July 2013	eeWISE-WP3-D3.1_Deliverable-V9-18072013
10	19th July 2013	eeWISE-WP3-D3.1_Deliverable-V10-19072013
11	20th July 2013	eeWISE-WP3-D3.1_Deliverable-V11-20072013
12	22nd July 2013	eeWISE-WP3-D3.1_Deliverable-V12-22072013
13	22nd July 2013	eeWISE-WP3-D3.1_Deliverable-V13-22072013
14	23rd July 2013	eeWISE-WP3-D3.1_Deliverable-V14-23072013
15	27th July 2013	eeWISE-WP3-D3.1_Deliverable-V15-27072013
16	29th July 2013	eeWISE-WP3-D3.1_Deliverable-V16-29072013

TABLE OF CONTENTS

TABLE OF FIGURES

1. INTRODUCTION

The EU Climate & Energy objectives define a 20% reduction in Green House Gas (GHG) emissions by 2020 and a 20% energy savings by 2020 to be obtained by various initiatives including that of improving the energy performance of buildings. The building energy performance has been identified to be a key factor in securing the overall transition to a green resource efficient economy through the reduction of carbon dioxide emissions obtained via improved building energy performance.

Through the vision of transforming buildings to minimum energy consuming buildings, it is envisaged that an overall energy saving of 60-80 Mtoe in final energy consumption is achievable by 2020.

However, the complex nature of the buildings sector scenario together with its many actors forming the value chain, requires effective knowledge transfer at both EU level and MemberState level and within and out of the value chain agents and organisations. Even with all the years of experience and campaigns undertaken by government, industry and civil society, awareness of cost-effective energy saving opportunities is still low. This issue is exacerbated by this period of rapidly advancing technological development where it can be difficult, even for professionals, to keep abreast of prevailing best practice. Dissemination and knowledge sharing techniques need to keep pace with the evolution of consumer needs and media. The market place is complex, and energy efficiency investments have to compete effectively. Due to miscommunication issues, consumers are not aware of or do not fully comprehend the effectiveness of specific technologies. This may lead to scepticism or deferral over implementing a technology especially if two or more professionals give supposedly conflicting advice as to the best way to renovate.

This all underlines the fact that effective knowledge transfer is not only important for allowing new technologies to be developed, or existing technologies to be improved through feedback channels and installation variations, but also for the end user in deciding which technologies are better suited for the climate, dwelling type and occupancy patterns of the particular building envelope.

1.1. Purpose of Work Package 3

This document is the final deliverable of ee-WiSE Work Package 3 which will analyse the needs for effective knowledge transfer for the various agents in, and out, of the value chain with regards to energy efficient retrofitting techniques and solutions in the Mediterranean. The needs of each agent will be detected, classified and investigated leading to solutions for best practice proposals. The report also includes an inventory of general knowledge transfer tools and techniques, with an evaluation of the most suitable features for a knowledge transfer framework in the EE sector.

The task description for work package 3 is as follows and shall be carried out in line with the timeline chart shown in Figure 1.

Task 3.1 Diagnosis of the sector's energy efficiency needs, in retrofitting issues, for the value chain

Task Leader: PiM

This task carried out an identification of the needs for knowledge transfer at different levels of the value chain. The main goal was to detect what agents require to successfully activate the sector. The most important needs are identified for each individual group of the value chain, as well as for the communication processes between them.

Task 3.2 Diagnosis of the society's energy efficiency needs, in retrofitting issues, out of the value chain

Task Leader: IMA

This task analyses what is needed to improve the reach of the EE sector further from the involved agents and what kind of impact do EE matters produce over agents out of the value chain. Needs are detected and classified for agents that have an influence on the EE sector but are not members of the value chain like citizens, public authorities and administrations, certification bodies, financial institutions, etc.

Task 3.3 Segmentation and prioritization of the demand detected

Task Leader: ENERCYA

This phase studies the principal needs resulting from the previous tasks by making a global classification. The organisation of this information requires a structural sketch of the needs depending on the impact on the EE sector of each one of these needs.

Task 3.4 Identification of best practices with a high potential to overcome knowledge transfer breakdowns

Task Leader: PiM

This task creates a classification of existing best practices in the EE market out of the information gathered. Knowledge transfer flow maps, together with their breakdowns and knowledge transfer needs guides this task, so that a proposal of best practices are put forward to overcome the existing breakpoints.

Task 3.5 Propose additional solutions to gaps in the knowledge transfer flows and needs detected

Task Leader: PiM

Additional solutions that were not included in the best practices for the previous task, are suggested at this stage. The main objective is to develop an analysis that will reveal solutions for

knowledge transfer needs with new best practice ideas. This task is aimed to fill the gaps in the transfer flows and guide the accomplishment of further practical activities in the next work packages.

Figure 1 shows the timeline for each of the Tasks within the timeframe for Work Package 3, i.e, Month 7 to Month 10.

Activities		Leadership				
WP3	**ANALYSIS OF KNOWLEDGE GENERATION AND TRANSFER PROCESSES**	**PIM**	**M7**	**M8**	**M9**	**M10**
T3.1	Diagnosis of the sector's energy efficiency needs, in retrofitting issues, for the value chain	PIM				
T3.2	Diagnosis of the society's energy efficiency needs, in retrofitting issues, out of the value chain	IMA				
T3.3	Segmentation and prioritization of the demand detected	ENERCYA				
T3.4	Identification of best practices with a high potential to overcome knowledge transfer breakdowns	PIM				
T3.5	Propose additional solutions to gaps in the knowledge transfer flows and needs detected	PIM				

Figure 1 Work Package 3 Timeline of each Task

The task of identifying the needs of each agent in the value chain and then proposing a best practice framework for effective knowledge transfer must definitely involve discussion and feedback from the agents themselves. A general background knowledge of effective knowledge transfer flow and possible scenarios that foster knowledge building and technological improvements is vital to obtaining results from this exercise. Therefore, the methodology employed for the execution of WP3 has been structured into 3 phases as depicted in Figure 2.

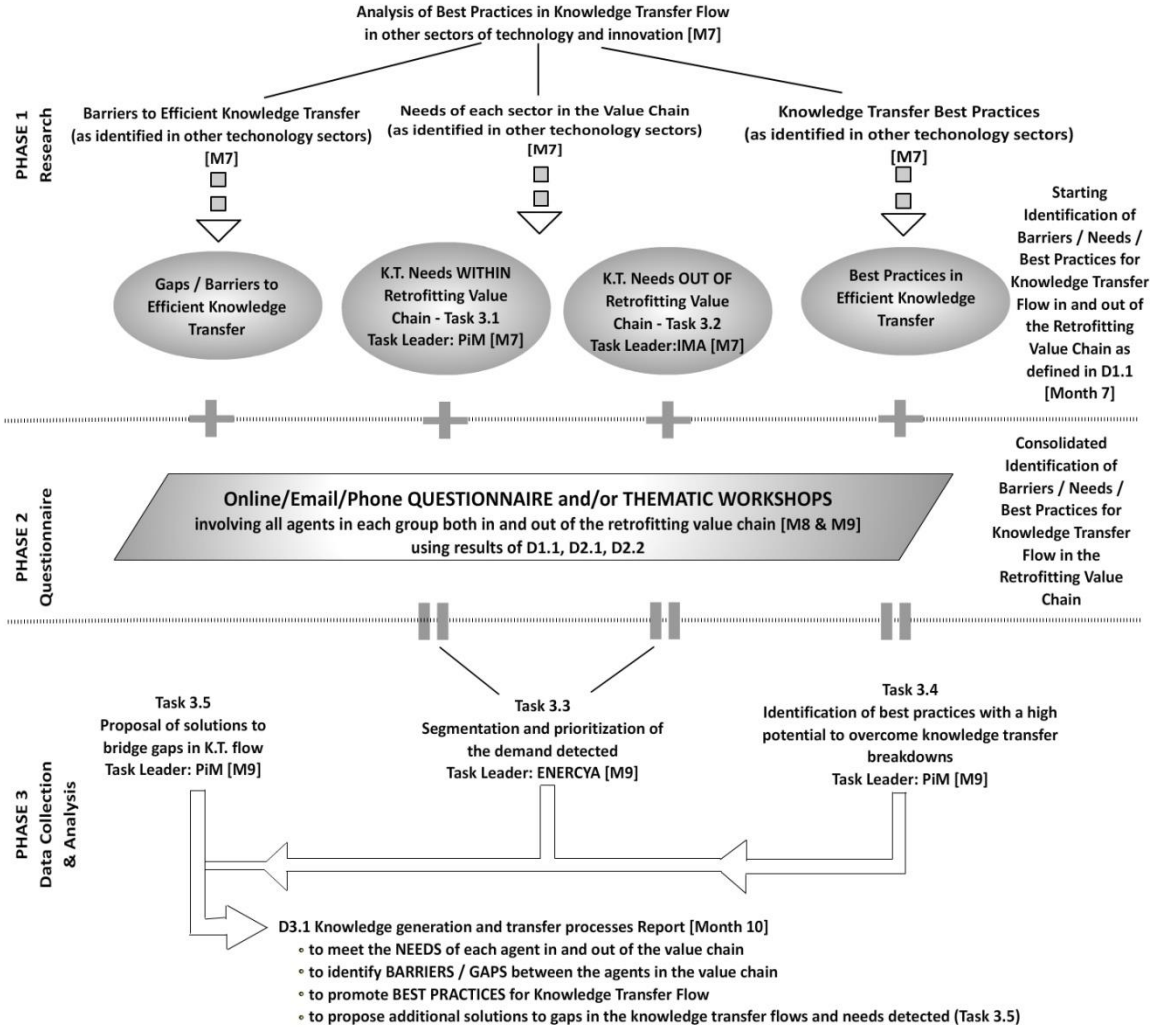


Figure 2 Working Plan for WP3: Analysis of Knowledge Generation and Transfer Processes

Phase 1. Research and documentation reviews of other studies, projects and experiences of other value chains that are then filtered out as applicable to the Retrofitting EE Value Chain.

Phase 2. Collection of information from agents both in and out of the value chain leading to an identification of their needs and description of any known best practice scenarios. The data collection exercise will be done through various possible methods depending on the agent group and their availability. Methods include: online or email questionnaires; telephone surveys; and workshops.

Phase 3. This phase will involve an analysis of the needs as identified in Phase 2. These needs will be classified and prioritised according to their importance and relevance leading to proposals for tools to help meet the needs of the various agents, thus fostering effective knowledge transfer within the retrofitting EE value chain.

1.2. The EE Retrofitting Value Chain

The knowledge transfer of retrofitting technologies through the value chain is determined by the decisions of a large number of actors/organisations that can be grouped into agent groups acting directly within the value chain or influencing the value chain from the outside.

The value chain for energy efficiency retrofitting (refer to Figure 3) has been defined in the eeWise Deliverable 1.1 – Methodological Framework: Value Chain, Concepts and Project Methodology.

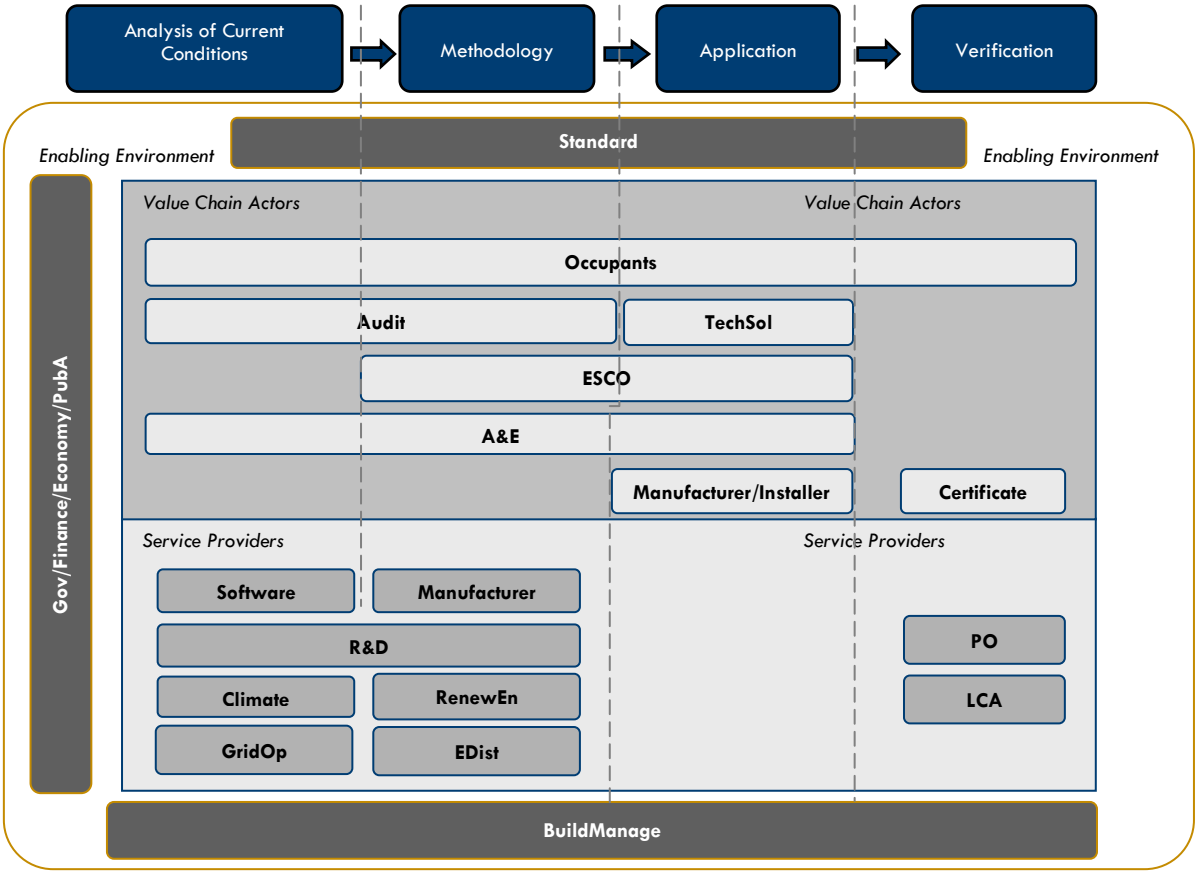


Figure 3 Energy Efficiency Retrofitting Sector's Value Chain

Extract from Deliverable 1.1

> *The value chain key players are classified according to their roles in the retrofitting flow chart. From left to right, each actor plays their role in the EE retrofitting flow chart in one or some of the stages; these are (i) analysis of current conditions, (ii) methodology, (iii) application and (iv) verification. All these players have also top to bottom, or vice versa, dependencies with each other while playing their role in the flow chart. However, in order not to make the value chain graph a complex one, these dependencies are not shown with arrows.*

Figure 4 shows the EE Building Retrofitting key players and the interactions between them. In order to show the dependencies and relationships between each other the key players are classified as value chain actors, service providers and enabling environment. This classification shows that the value chain main actors are the ones who are actively playing role in the EE retrofitting sector, while service providers supply the necessary source and information for EE retrofitting sector. The service mentioned here may even be a crucial service for EE retrofitting, e.g. an insulation material, a design software or a bio-energy source. Even though they have high importance for EE retrofitting applications, their role is not as vital as the value chain actors, because it is possible to search and find other alternatives for the above services mentioned. Enabling environment, as its name implies, refers to the sectors or agencies that provide viability for EE retrofitting activities, facilitating them. An example for such enabling activities can be the loans or other financial supports given by banks or the government.

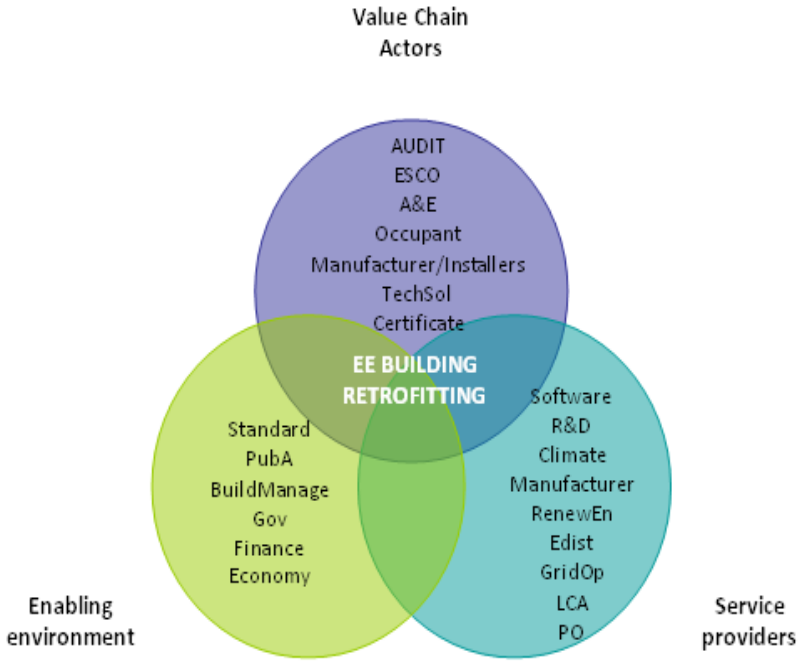


Figure 4 The interactions between the value chain key players

The above classification facilitates us to see the dependencies and interactions of different key player actors. However, it is necessary to differentiate the actors that are IN and OUT of the value chain. Considering all the key players, it can be concluded that the Value Chain Actors are definitely IN the value chain while the key players involved in Service Providers and the Enabling Environment are OUT of the value chain.

The principal key players described above can be discussed considering their presence in the retrofitting flow chart:

- **Energy auditing firms (Audit)** serves actively IN the value chain for inspecting the housing units and recommending cost-effective, energy-efficiency retrofitting measures.
- **Energy Service Companies (ESCOs)** main purpose is to deliver energy services and energy efficient improvement measures being an active key player IN the value chain.
- **Technical solutions developers companies (TechSol)** develop and provide innovative services and install retrofitting measures necessary for EE building retrofitting. Thus, TechSol is an important key player with an active role IN the value chain.
- **Certification bodies (Certificate)** provide energy performance certifications based on the measurements and rating indexes showing how efficient EE building retrofitting is applied (verification stage). This is the vital part of the value chain and these bodies are important key players playing an active role IN the value chain.
- **Occupants** are the users of the building, and building owners literally are the financial owners of the building, they are in the demand side of the value chain, having the right to choose the most appropriate and economical EE retrofitting measure, but also having the least knowledge about the EE retrofitting needing to be guided by other value chain key players. Occupants are inserted IN the value chain as a main actor playing role at every stage.
- **Architecture and Engineering Companies (A&E)** are the bodies that design and apply the EE retrofitting projects according to the needs of the building. Some A&E companies have high level of expertise and interest in EE building retrofitting sector while some others not. Whatever their expertise, A&E bodies take a very active role IN the EE retrofitting value chain.
- **Public administration and authorities (PubA)** are the main regularity bodies of EE retrofitting activities. They monitor and orientate these activities playing a non-active role in the flow chart, which can be considered as OUT of the value chain. National, regional and local authorities are involved in this description. Thus, PubA acts as enabling environment, with the support of **government (Gov)**, together with **Banks**, **Financial Agents**, **Promoters**, **Subsidizers (Finance)**, all being OUT of the value chain.
- **R&D institutes and universities (R&D)** generate the novel knowledge representing the R&D studies carried out on EE retrofitting area of study. They play also important role in the dissemination of such knowledge and experience. However, they are not actively playing part in EE retrofitting applications, so that they can be considered as OUT of the value chain.
- **Manufacturers of building elements, building materials (Manufacturer)** produce the elements and materials necessary for EE Retrofitting, as a service provider these companies can be considered OUT of the value chain.
- **Software developers (Software)** produce software to measure and predict the energy consumption of buildings, these software are also used to model and simulate the performance of buildings from EE aspects. Even though their presence is vital for the practitioners; these Companies are OUT of the value chain providing service.

- **Standardization bodies (Standard)** produce and update the technical standards that are necessary for EE building retrofitting applications. These facilitating standards constitute the enabling environment EE building retrofitting applications, the standardization bodies being OUT of the value chain.
- **Energy distributors (EDist)** are responsible for transporting energy to final customers or to distribution stations, **Renewable energy companies (RenewEn)** produce energy from renewable sources and **Electric Power Transmission Grid Operators (GridOp)** build, maintain and provide the necessary network for energy. These bodies are service providers being OUT of the value chain.
- **Life cycle assessment companies (LCA)** evaluate the total energy consumed in all steps from acquisition of the raw material to end product step and assess the sustainability of the buildings. This analysis also includes the direct and indirect embodied energy inputs. This analysis is not a must for every application, thus, it can be considered as OUT of the value chain.
- **Intellectual Property bodies and Patent offices (PO)** are also OUT of the value chain providing an important service for new EE building retrofitting ideas and novel application methods.

Classification of the value chain players into groups in a top-down approach is illustrated in Figure 5 below.

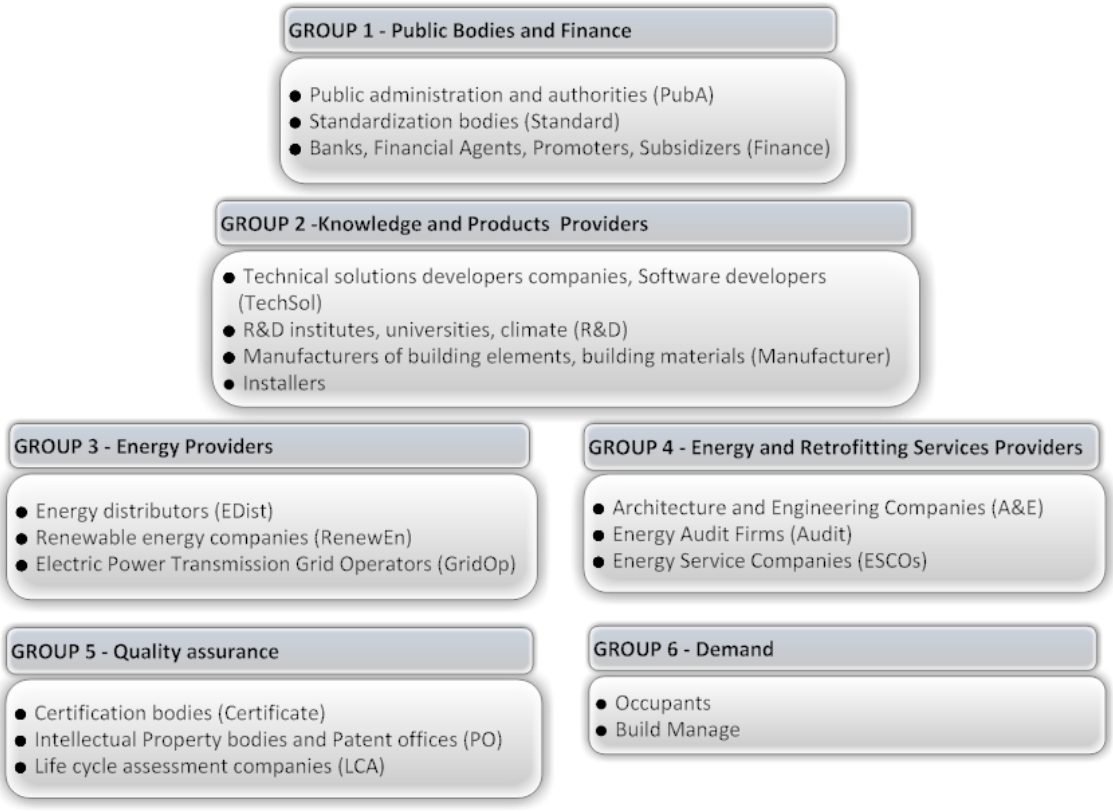


Figure 5 Value Chain Agents classified into groups

This report (Deliverable 3.1) will bring together the identified needs and barriers for knowledge transfer flow amongst each agent in the EE Retrofitting Value Chain. Also, an identification of best practices will be carried out with the final aim of proposing additional solutions to bridge the gaps in the knowledge transfer flows while meeting the needs detected for each value chain group.

1.3. Retrofitting Tendencies Amongst ee-WiSE Participating Countries

Although the ideal scenario of this project would be to create an efficient Knowledge Transfer Framework within the EE value chain for Building Retrofitting in the Mediterranean Area, one cannot expect all countries involved to be immediately open to change, to adopt new knowledge transfer frameworks readily and be flexible enough to introduce and support new initiatives without major delays and resistance. Therefore, one might be led to assess the readiness of each country to adopt a proposed change, possibly by assessing past events in the building construction regulation framework and evaluating the readiness of each country in adopting new legislations in the past.

In this regard, we face several unknowns that can be collated into the following questions:

- Does the country possess the infrastructure necessary to be able to assimilate the change that the European construction sector has experienced, moving from an expansive industry to retrofit-based construction?
- Are the country's users, producers, builders, technicians and government prepared and competent to be able to adapt and meet the requirements of the change?
- What are the country's strengths and weaknesses in adapting to new regulations?
- Is the country able to answer to the requirements of the new retrofit-based industry with the new energy efficiency parameters?
- And above all, what are the current trends for the country in the area of building construction? Are we on the right track?

Deliverable 2.1 contains the above mentioned information for each of the Mediterranean countries represented in the ee-WiSE consortium. The deliverable contains relevant descriptions with regards to the status of each of the countries, pointing out the most remarkable practices that set trends on energy efficiency retrofitting, and exposing the observed behavioural patterns of the governments and local authorities. The discussion and analysis of these factors will clarify the state of art on limitations and tendencies of each of the countries with regards to energy efficient retrofitting policies. It is recommended, for Work Packages succeeding to the completion of WP3, to refer to the findings of the analysis carried out in Deliverable 2.1 since the findings of the country-by-country analysis might dictate the limitations and opportunities for the method of implementation of the tools to be designed throughout the ee-WiSE project.

1.4. Methodology Utilised to Identify the Needs & Best Practices of EE Retrofitting Knowledge Transfer in and out of the Value Chain

An essential factor for the operation of a knowledge transfer value chain is to make sure that all groups in the value chain are aware of and kept up to date with the latest developments in their particular area. With regards to the EE retrofitting value chain, all groups both in and out of the value chain, must keep abreast with the latest developments. The latter include advances in materials technology, mode of application, applicability to particular climatic conditions, limitations of use, and many other factors. The availability of clear and holistic information will ensure that the best possible results are obtained when undergoing an EE retrofitting project.

Each group forming the EE retrofitting value has its own particular needs when it comes to acquisition of knowledge from other value chain groups, as well as for the communication process between them. Successful activation of knowledge transfer depends on having certain needs being met. Work Package 3 of the ee-WiSE project aims to identify these needs for each of the groups making up the value chain. Of course each group has different needs which could be in the form of specific and actualised knowledge about thematic areas of a technology, resources available for information acquisition, etc. All this is also true for those groups that are outside of the EE retrofitting value chain but that directly influence the activity in the retrofitting sector.

Best practice identification is an important factor in helping to improve and encourage efficient knowledge transfer. **Definition:** ***A best practice is a method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark. In addition, a "best" practice can evolve to become better as improvements are discovered.***This work package deals with the identification of existing best practices in the EE market obtained through gathering and analysis of information. The collected best practices will be classified with the aim of proposing the best knowledge transfer methods that will overcome the existing breakpoints in the system whilst also meeting the needs of each of the groups forming the value chain.

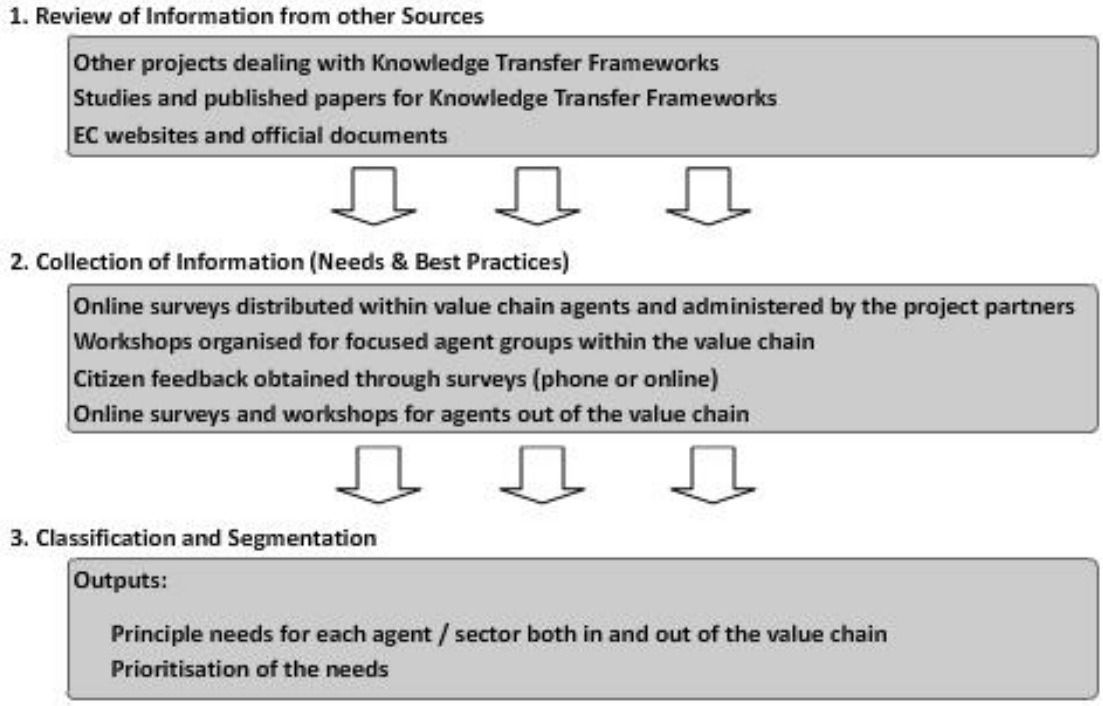


Figure 6 Methodology for Data Collection

Figure 6 shows the methodology that will be followed for the purpose of data collection with regards to the needs, actual barriers and best practices for knowledge transfer flow through the EE retrofitting value chain. The data collection process is split into three steps:

1. **Review of Information From Other Sources.**

   In order to obtain a sound understanding of methods for knowledge transfer, the work package activity will start off with a review of other published studies and papers dealing with knowledge transfer in various sectors and value chains, even those not directly related to EE or retrofitting. The basis of the background knowledge used in this work package is obtained through this research process. Appendix I contains a list of all material reviewed at this stage.

   This exercise provides a sound building block for the formulation of a set of possible needs that are required by each group in the value chain for efficient knowledge transfer. The result of this exercise feeds directly into the second step of the data collection process described in step 2 below.

2. **Collection of Information From The Value Chain Members.**

   Via the analysis stage described in stage 1 of the data collection process, it is possible to formulate the tools required for step 2 which relates to retrieval of the actual

needs/barriers/best practices from the members of the value chain themselves. The generic concepts of a knowledge transfer value chain, as collated in step 1, is presented to the EE retrofitting value chain members in order for them to discuss and feedback. In this way an overall picture of the flaws and needs for knowledge transfer that is specific to the EE retrofitting sector is obtained.

There are various possible methods through which this discussion and feedback process can be executed. The choice of method depends on the exigencies of the value chain group itself, together with the consideration of the different scenarios in each of the countries. These factors will dictate which method is most suited for the particular value chain groups.

Although workshops, phone surveys, seminars, etc are all possible methods for reaching the value chain group members, the main data collection technique envisaged for this work package is an online questionnaire (further details on the questionnaire can be found in Chapter 1.5.

3. **Classification and Segmentation of The Collected Information.**

The final stage of the data collection process is the analysis of the information obtained in order to establish the main barriers and needs related to knowledge transfer for each of the groups in the value chain. This process involves an exercise of classification and prioritisation of the needs and barriers for each of the value chain groups depending on the response obtained, giving particular attention to their individual experience within the value chain in order to ensure a proper representation of all the value chain and the interlinking mechanism between the various groups.

Furthermore, through the execution of step 2, it is envisaged that a proposal of possible best practices for knowledge transfer will be put forward by the value chain groups themselves. These proposals will be based on their personal experiences with knowledge transfer within the retrofitting sector. The aim of this exercise is to then analyse the experiences put forward, discuss them within the work package, expand them in view of the global picture related to the retrofitting value chain and propose a concrete best practice proposal as a solution to the gaps in the current EE retrofitting value chain.

1.5. Survey Methodology

The data collection tool that has been chosen to serve for the purpose of data collection in Work Package 3 is a standard survey methodology. The survey tool will be used to gather information about the characteristics, demographics, actions and opinions of members within the EE retrofitting value chain. The analysis of the survey responses obtained from value chain members from the project

participating countries, will be used to assess the needs, evaluate the barriers and examine the impact that insufficient knowledge flow has in relation to retrofitting EE activity.

The survey mechanism has been chosen in light of its capacity to obtain information from large samples of the population, be they individuals or organisations. Furthermore, since demographic data and positioning within the value chain is vital in this exercise, survey methodology was considered as the best option in view of the capability of its capacity to gather demographic and expertise data from the sample group.

The main form of the survey will be in online format since this methodology is wide reaching, with minimal cost for implementation and administration.

1.5.1. Summary of Survey Setup

The information collected from this questionnaire will be kept within the project and there will be no disclosure of information to outside parties. The data obtained from the questionnaire shall be presented in the public deliverables as aggregate data with no reference to specific persons or organisations unless otherwise authorised.

Survey Duration : from 3rd May to 21st June 2013 (7 weeks)

Distribution Groups & Target Number of Responses:
(groups that are active in the Retrofitting Value Chain as have been defined in Work Package 2)

	Target no of Responses per partner
Public Bodies & Finance	*5*
Public Administration (PubA)	
Standardization Body (Standard)	
Bank / Financial Agent / Promoter / Subsidizer / (Finance)	
Economist (Economy)	
Knowledge and Products Providers	*10*
Technical Solutions Developer / Software Developer (TechSol)	
R&D Institute / University / Meteorologist (R&D)	
Building Materials Manufacturer (Manufacturer)	
Building Materials Installer (Installer)	

Energy Providers	*10*
Energy Distributor (EDist)	
Renewable Energy Company (RenewEn)	
Electric Power Transmission Grid Operator (GridOp)	
Energy and Retrofitting Services Providers	*10*
Architecture and Engineering (A&E)	
Energy Auditing Firm (Audit)	
Energy Service Company (ESCO)	
Quality Assurance	*3*
Certification Body (Certificate)	
Intellectual Property Body / Patent office (PO)	
Life Cycle Assessment Company (LCA)	
Demand	*30*
Building/House Owner (Occupant)	
Occupant in a Rented House (Occupant)	
Condominium/Apartment Block Tenant (Occupant)	
Occupant in a Commercial Property (Occupant)	
Shared Offices (Occupant)	
Building Manager (BuildManage)	
TOTAL PER PARTNER	68

The specified targets set a minimum total number of responses of 68 for each of the 11 project partners, with approximate fixed targets within the various value chain actors.

Main Sections of the Survey

A. **Participant details:** This section will also include an identification of the participant's role within the retrofitting EE value chain.

B. **Retrofitting Technology:** Identification of the technologies/areas within which the participant is currently active within the value chain. The section will also identify whether there are any retrofitting technologies in which the participant has observed a lack of available information.

C. **Sources of Information of Retrofitting Technologies:** Depending on the agent group to which the participant forms part of, there is a need to identify which are the current sources of

knowledge that are being utilised. This section will allow for a better understanding of which knowledge transfer methods are currently performing well within the value chain by asking the participant to rank the effectiveness of the knowledge transfer frameworks to which he/she is exposed.

D. **Knowledge Barriers and Information Transfer Needs:** Depending on the agent group to which the participant forms part of, the survey will put forward a list of possible needs for and barriers to effective knowledge transfer related to the positioning within or out of the value chain. The participant will be allowed to classify / grade the needs and barriers and also give further input based on personal experience. Possible solutions to overcome the barriers and meet the needs of the participant will be put forward for discussion and feedback.

E. **Best Practice Identification:** The participant will be asked to provide a description of any knowledge transfer best practice scenarios in which the participant was involved in either as the information provider or receiver.

The survey questionnaire, and its translated versions, are presented in Appendix 2 to 7.

2. VALUE CHAIN KNOWLEDGE TRANSFER NEEDS – DESK RESEARCH FINDINGS

A successful EE retrofitting value chain should ensure that all participating members benefit from the knowledge on all retrofitting technologies. Furthermore, in order to be competitive in the retrofitting market, the value chain members need to improve their competences continually, which requires a continuous learning process. Thus, mutual learning, through knowledge sharing between the different members, is a necessary approach to increase the competence of each of the value chain members and thus also of the value chain as a whole.

The retrofitting industry value chain is globally wide-ranging and geographically dispersed in nature. Therefore, due to lack of knowledge transfer mechanisms, many of the value chain members are facing diverse opportunities and challenges in obtaining information related to retrofitting technologies.

This section will aim to identify the break points in the internal value chain where information transfer flow must be facilitated. The analysis of the value chain information flow will include upward suppliers of information and also downward information distribution channels through the value chain as has been depicted in Figure 3.

The methodology used for the study of the needs of each of the value chain groups has been described previously in Section 1.4.

2.1. Identification of Knowledge Transfer Needs Within The Value Chain Groups

Following the desk research on other non-retrofitting value chains and the studies pertaining to them, and to other studies related to knowledge transfer, an exercise of filtering out those needs that might be relevant for information transfer flow surrounding the various groups in the retrofitting value chain were compiled.

The needs for effective knowledge transfer through the retrofitting value chain have been classified into groups as is shown in Figure 7. These needs, as identified through the desk research, were categorised into groups related to:

(A) Skills & Awareness,
(B) Knowledge Management,
(C) Approach to R&D,
(D) Financial Conditions,
(E) Institutional & Administrative Conditions.

Each of these needs will be discussed within the work package, and solutions to meet each of the needs will be proposed. At this point it must be noted that the identified needs for knowledge transfer were found to be affecting agents that are found both IN and OUT of the value chain with overlapping of the requirements for effective knowledge transfer being common for many of the agents. Thus the analysis proceeded with identifying the needs and listings which agents are affected by each need without classifying them into IN and OUT of the value chain but instead as being needs that are general and apply to a group of agents forming the value chain.

Furthermore, these identified needs were also inserted into the questionnaire that was distributed to the value chain members in order for them to classify the importance of each need and its relevance as per their individual experience on working within the retrofitting value chain.

The results of the feedback obtained through the questionnaire are detailed in section 0 which gives a classification of the needs as obtained from the questionnaire results.

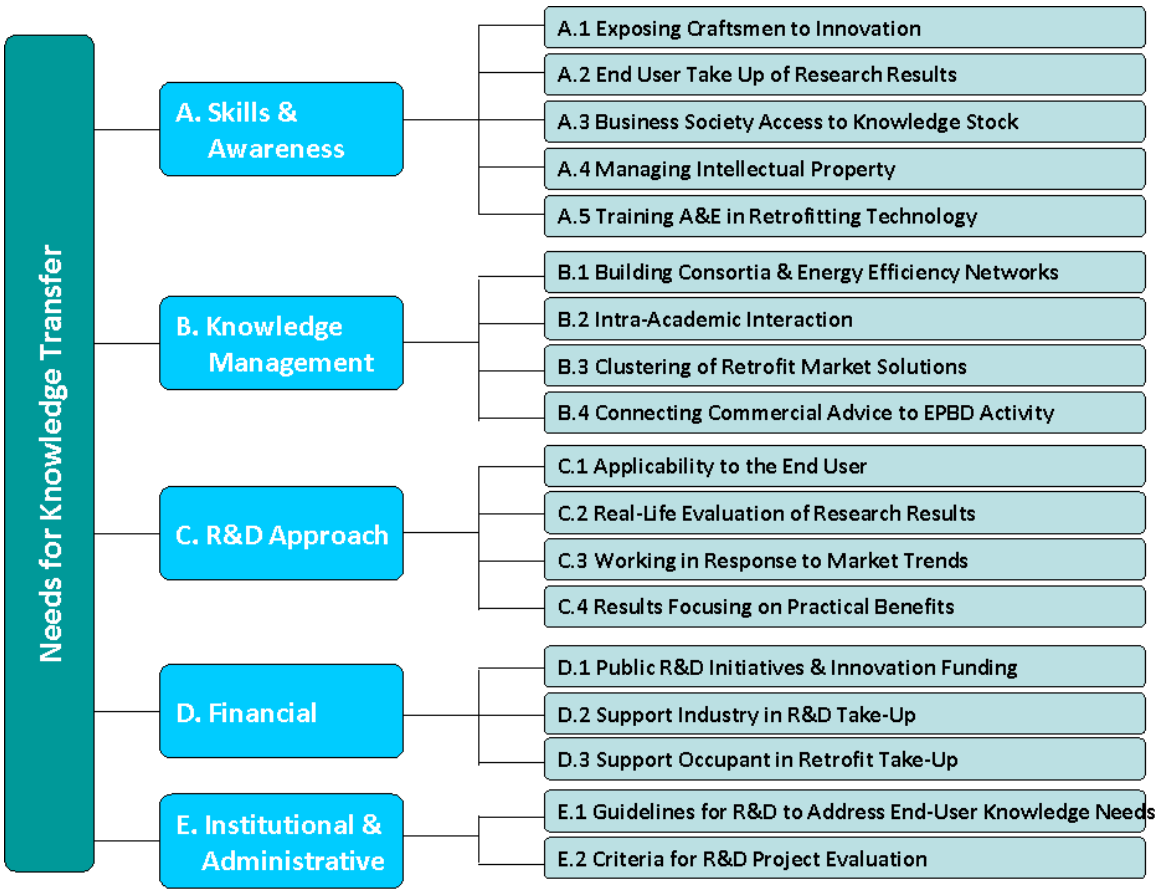
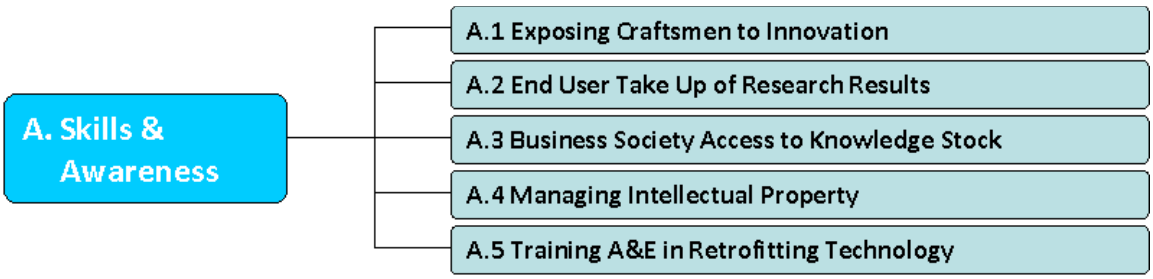


Figure 7 Classification of the Value Chain Knowledge Transfer Needs

The following sections discuss the possible needs for knowledge transfer in the retrofitting value chain as they have been inserted into the questionnaire with an explanation of the reasons why these needs

would facilitate the transfer of information. At this stage, the analysis also proposes a possible solution intended to aid each of the individual needs.

A. *Skills & Awareness Needs*



These are skills and awareness needs related to keeping abreast with the latest progress in retrofitting, and expertise in accessing this information. Undoubtedly, for the market to work well, correct and appropriate information is essential. Ambitious retrofitting projects comprise the taking of major decisions which can only work if the right advice and information is available, and that the energy efficiency service industries are capable of delivering those measures, and ultimately that sufficient satisfaction levels can be guaranteed for the consumer.

Needs for Knowledge Transfer	Value Chain Groups Directly Affected by this Need
A.1. Exposing Craftsmen to Innovation	
Traditional craftsmen need to have more exposure to retrofitting innovations. Most renovation activities in the residential sector consist of the maintenance, repair and refurbishment activities aimed at increasing the service life of components, increasing comfort or replacing components. These activities are mostly decided by owner-occupants and small contractors including traditional craftsmen. Therefore, it is necessary to disseminate information on available retrofitting solutions in the market and their relevance for implementation in the context. Also, it is essential to show the installers – in some cases the owners themselves – the way to install the product or system. For example, for the placement of thermal insulation, air tightness and windows a careful placement is required, e.g.	▪ TechSol ▪ A&E ▪ Manufacturer ▪ R&D ▪ RenewEn ▪ Occupants ▪ Installers

to avoid thermal bridges or air leakage, that can lead to structural damage.	

A.2. End User Take-Up of Research Results	
The end users need to have a better capacity and motivation to take up the results of the research organisations and use these results in their buildings. The R&D institutions might be producing substantial amounts of research results and documentation of EE retrofitting technologies, though this information is irrelevant unless it travels down the value chain especially to reach the installers, producers and building occupants who will adopt the new advances in the technology. For this to happen, the end users must be motivated to be in the lead of technological advances, either via the prospect of improved competitiveness, access to better performing products, increased energy saving, etc.	▪ R&D ▪ Software ▪ RenewEn ▪ A&E ▪ ESCO ▪ TechSol ▪ Occupant ▪ Installer ▪ Manufacturer

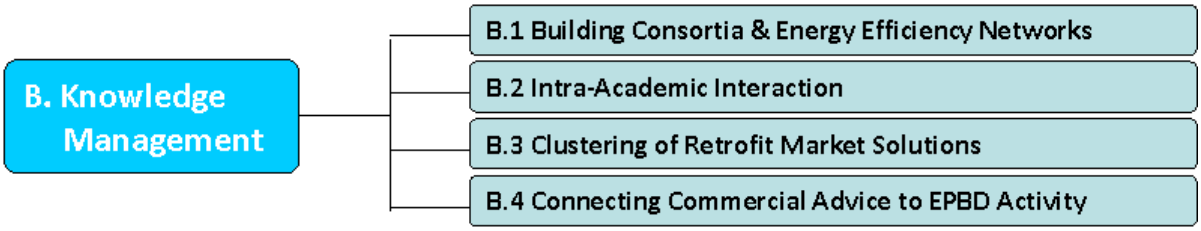
A.3. Business Society Access to Knowledge Stock	
The retrofitting business society needs to have a greater ability in knowing how to access the knowledge stock. In order for enterprises to access knowledge, they should have the corresponding ability in identifying the knowledge stock and knowledge absorption techniques. The personnel working on knowledge transfer must possess a wide range of skills in order to carry out their tasks effectively. However, relatively inexperienced staff is often appointed to such positions. If the personnel capabilities are weak, the result is a short board effect, which will not only reduce the efficiency of knowledge transfer, but also frustrate their enthusiasm in acquiring new knowledge and new technologies. This situation is inevitable in a realistic environment but can however be improved.	▪ TechSol ▪ Manufacturer ▪ Installers ▪ ESCO ▪ A&E ▪ Software ▪ RenewEn ▪ PubA

A.4. Managing Intellectual Property	
The business society needs to be aware of tools to manage intellectual property. The need to publish and make results freely available is often viewed as being	▪ R&D ▪ PubA ▪ Gov

incompatible with industry's need to keep information confidential and protected by intellectual property rights such as patents. However, experience shows that promoting innovation and disseminating new knowledge can be compatible, provided that intellectual property issues are understood and managed professionally.	▪ Manufacturer ▪ PO ▪ Software

A.5. Training Architects & Engineers in Retrofitting Technology	
The construction industry professionals need increased training and exposure to retrofit technologies. In cases where not enough importance is given to familiarising with retrofitting technologies at the educational stage, Architecture and Engineering professionals may be faced with a challenge to keep up to date with technology and to subsequently pass on the information to clients. Contractors will be confronted with more demanding customers requesting low energy housing retrofit and professionals might opt to charge higher fees to the consumer when dealing with unfamiliar retrofitting solutions. The increased price may also be due to complicated existing structures, lack of know-how and lack of readily available solutions. This price increase keeps the consumer back from implementing retrofitting solutions and thus does not give an impetus for knowledge acquisition. Regions having construction education on secondary school level, should also be able to offer a higher level of training or additional courses / workshops that include building retrofit as part of the curriculum.	▪ R&D ▪ PubA ▪ Gov ▪ A&E ▪ R&D

B. *Knowledge Management Needs*



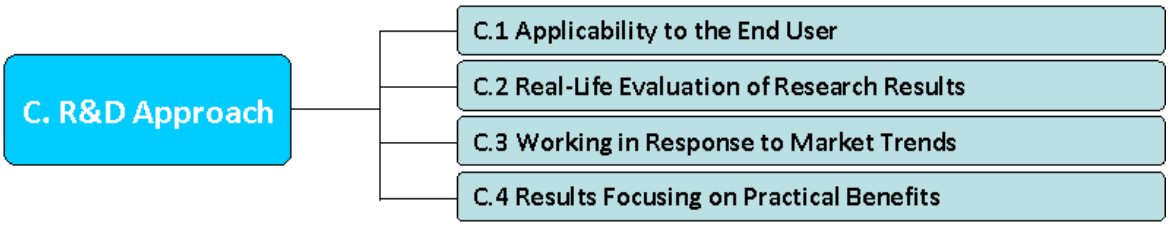
These needs relate to the need for knowledge management including knowledge transfer flow methods that will assist in the efficient operation of the knowledge transfer value chain.

Needs for Knowledge Transfer and Solutions to Meet the Needs	Value Chain Groups Directly Affected by this Need
B.1. Building Consortia & Energy Efficiency Networks	
Need to have a network organisation that will organise contacts with companies, knowledge transfer from innovation groups and guidance of building teams in order to implement innovation into daily building practice. The results of innovation in retrofitting systems need to be better diffused through the value chain in order to boost the sector and its potential for reducing energy dependency.	All groups within the value chain.
B.2. Intra-Academy Interaction	
Research institutions have staff who actively pursue links with industry, but need to increase interaction amongst themselves. Some research organisations do work actively together with an industry partner in providing technological improvements on particular materials or implantation methods. The agreement might also be in the form of a financial incentive to the R&D institution related to the increased return from sales or otherwise. However, apart from interaction with industry, it is also vital to have interaction with research peers in other R&D institutions. A balanced mix of both groups is necessary in order to further the technical improvement in the best possible ways.	▪ R&D ▪ PubA ▪ Gov
B.3. Clustering of Retrofit Market Solutions	
Need to cluster innovative solutions to address practical problems with integrated solutions From a technological point of view, it can be recommended to cluster technological solutions in integrated products and systems in order to avoid building damage. Clustering of technologies is also recommended to facilitate and diffuse	▪ Occupant ▪ Manufacturer ▪ TechSol ▪ ESCO ▪ A&E ▪ Software ▪ Installer ▪ R&D

information of retrofitting technologies with the added benefit of also increasing the possible market impact of technologies for low energy housing retrofit.	

B.4.Connecting Commercial Advice to EPBD Activity	
Increased connection between technical commercial advice and the energy performance and requirements of the actual buildings. With the implementation of the EPBD, its dissemination and increased enforcement for new and existing buildings, it is necessary for the building owner to have access to information about what is available on the market in order to allow for meeting the energy performance requirements of the building. With building energy certification becoming mainstream in the near future, this aspect of energy certification will definitely become an important factor in regulating the building market price.	▪ Occupant ▪ ESCO ▪ Audit ▪ TechSol ▪ A&E ▪ Installers ▪ Certificate ▪ Software ▪ PubA ▪ Gov

C. *Needs for Improved R&D Approach*



R&D institutions cannot operate in a vacuum but must be knowledgeable of the end-user scenario in order to move towards end products that are ideally suited to the real building scenarios. By having the R&D activity working together with the end-user groups, this will facilitate information flow and will ensure an efficient operation of the knowledge transfer value chain.

Needs for Knowledge Transfer and Solutions to Meet the Needs	Value Chain Groups Directly Affected by this Need

C.1.Applicability to the End User	
Scientists need to have increased contact with the end-users in order to understand	▪ R&D ▪ TechSol

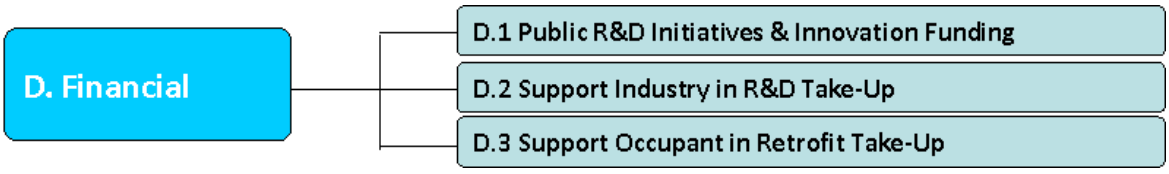
the applicability of their research. There is an observable gap between the world of science and the end-user groups in the value chain. This includes the manufacturing industry, the installer companies and society at large. In order to improve the building energy efficiency there needs to be a take up of the results of the research activity into the actual retrofit installations themselves. However, if the results of the R&D group cannot be applied in real life situations either in their totality or due to partial applicability, then there cannot be immediate application of the research results to the local building stock.	▪ Occupant ▪ Installer ▪ Manufacturer ▪ PubA

C.2.Real-Life Evaluation of Research Results	
Scientists need to evaluate the results of their research through actual implementation of the technology in real-life situations and not only in the laboratory. Due to the nature of the retrofitting technologies and the ambient for which they are intended to be implemented, i.e. whole buildings, there might be some aspects of the installation process or some variances in the energy reduction results that will not show up in a laboratory environment. These aspects can be varied and range from a particular problematic method of installation to a quality originating from the real life situation that interferes with the performance of the retrofitting technology.	▪ R&D ▪ TechSol ▪ Occupant ▪ Installer ▪ Manufacturer ▪ Certification ▪ PubA ▪ Gov ▪ Finance ▪ PO ▪ LCA

C.3.Working in Response to Market Trends	
The scientific society needs to be in increased contact with the end users in order be able to divert their activity rapidly in response to changes in the market. The established scientific research infrastructure and culture is not designed for rapid and responsive innovation. Thus a change observed in the market may not be transferred efficiently to the R&D group. This limits the effectiveness of EE retrofitting take-up and its ability to improve our building stock.	▪ R&D ▪ TechSol ▪ Occupant ▪ Installer ▪ Manufacturer ▪ Gov ▪ PubA ▪ BuildManage

C.4.Results Focusing on Practical Benefits	
When communicating research results, more focus needs to be given to the practical benefits of installing retrofit technology. Business experts in energy efficiency have noticed that prospective house builders are often primarily convinced by previous builders, especially when they visit the building and talk with the owners about their experiences. 'Peer-to-peer' information from a trusted source (previous builder/relative, non-profit organization, government, energy expert,..) is the most important driver to get innovative energy efficient technologies and concepts implemented.	▪ PubA ▪ Gov ▪ R&D ▪ ESCO ▪ A&E ▪ TechSol ▪ Manufacturer ▪ Installers ▪ RenewEn ▪ Occupants

D. *Financial Needs*



Undoubtedly, investment in retrofitting requires financing. The same goes for enabling knowledge transfer amongst the value chain groups. Lack of funds and/or inability to secure finance on acceptable terms is generally one of the most cited barriers opposing knowledge transfer. Although in some cases, the lack of information transfer may be due to the lack of awareness or lack of interest rather than the lack of funds, upfront funding will definitely have a positive impact on the extent of knowledge transfer.

Needs for Knowledge Transfer and Solutions to Meet the Needs	Value Chain Groups Directly Affected by this Need

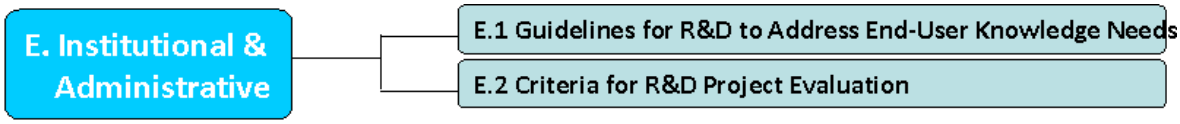
D.1. Public R&D Initiatives & Innovation Funding	
The need to increase business motivation through the availability of public R&D initiatives and innovation funding. The impact of commercial firms on technology diffusion is widely recognised to be an important factor in knowledge transfer within the value chain. But	▪ R&D ▪ Manufacturer ▪ Software ▪ Climate ▪ Installers

entrepreneurs do not operate in a vacuum and policies that are put into place by governments can strongly influence their business and the extent of their information dissemination. An increase in public R&D funding may be necessary for realizing the benefits of technological change, but at the same time the technological change, providing an opportunity to increase profits, may be the impetus to innovate a new institutional arrangement.	▪ RenewEn ▪ GridOp ▪ EDist ▪ TechSol ▪ ESCO ▪ A&E ▪ Occupant ▪ Economy

D.2. Support Industry in R&D Take-Up	
Need for financial support for the industry to take up results of scientific innovation. The ability for industry to take up and implement a new technology into their development or business line, may be limited by financial factors that might also include lack of human resources amongst other things.	▪ PubA ▪ Gov ▪ Finance ▪ ESCO ▪ TechSol ▪ Manufacturer ▪ Installers ▪ RenewEn ▪ LCA ▪ Occupant ▪ Certification

D.3. Support Occupant in Retrofit Take-Up	
Need for financial support for the occupants to be in a better position to invest in retrofitting technology. There is a need to increase the occupant's motivation towards an energy efficienct retrofitting. Many times, retrofit is ranked low on the list of the occupant's priorities since it involves a considerable expense and inconvenience to the residents.	▪ PubA ▪ Gov ▪ Finance ▪ Occupant ▪ Certification

E. *Institutional &Administrative Needs*



Institutional and administrative issues can have an effect on the rate and ambition of knowledge transfer. Backing from institutional organisations is an enabling factor when dealing with activities for knowledge transfer.

Needs for Knowledge Transfer and Solutions to Meet the Needs	Value Chain Groups Directly Affected by this Need
E.1. Guidelines for R&D to Address End-User Knowledge Needs	
The need for increased European Commission guidelines for the research organisations that address the needs of the end-users in terms of the knowledge that is required for uptake of the retrofitting technologies. There is a general lack of understanding within the R&D groups on how to carry out effective knowledge transfer to the other groups in the value chain. The target groups must be identified in a holistic manner, the technological information must be presented in a manner that reaches out to the target groups, the target groups must be drawn in to reach out for information from the R&D entities. All these are essential to encouraging a sound knowledge transfer that meets the needs of the retrofitting scenario. A substantial amount of research activity is being done within the various funding programs managed by the European Commission. This presents an opportunity to target these research projects with a set of guidelines aiming to improve the knowledge transfer for each of the R&D projects.	▪ PubA ▪ Gov ▪ R&D ▪ Certificate ▪ TechSol ▪ Manufacturer ▪ Installers ▪ Software
E.2. Criteria for R&D Project Evaluation	
The need for evaluating publicly funded research projects via it's applicability to the end-user.	▪ PubA ▪ Gov ▪ R&D

Publicly funded research agendas do not always address the needs of the end-users.	▪ BuildManage

3. CLASSIFICATION OF KNOWLEDGE TRANSFER NEEDS BOTH IN AND OUT OF THE VALUE CHAIN

The gaps between the world of science and end-user groups gives rise to a fundamental barrier to knowledge transfer – without open communication between researchers, policy makers and industry there can be no effective knowledge transfer.

Following the completion of Task 3.1 and 3.2, obtaining a diagnosis of the sector´s energy efficiency needs, in retrofitting issues, for the value chain and a diagnosis of the society´s energy efficiency needs out of the value chain, this information has been organized to formulate a segmentation and prioritization of the demand detected, that is, to prioritize the needs that are most relevant to the retrofitting knowledge transfer within the value chain.

This chapter presents the main statistical analysis results of the questionnaire responses as submitted by several stakeholders in EE sector and different Mediterranean countries (Spain, Greece, Italy, Malta, Cyprus, Turkey and Bulgaria). The analysis also takes into account variations amongst the participating countries and the characteristics of the various agents forming the value chain to identify the most important knowledge transfer needs.

The full report of the analysis methodology, the statistical analysis and prioritisations performed in Task 3.3 are detailed in a separate report ***"Task 3.3 Segmentation and prioritisation of the demand detected"*** with filename < eeWISE-WP3_T3 3-v4_06072013.docx >.

3.1. Questionnaire Response Rate

A total of 1057 surveys were collected and analysed. When reviewing the surveys it was found that a significant number of surveys were only partially filled in. This factor was attributed to questionnaire inputs conducted as tests by the internal project team and the public.

% of Voids	Nº
< 10%	265
< 10% y <20%	326
< 20% y <30%	111
< 30% y <40%	59
< 40% y <50%	56
< 50% y <60%	54
< 60% y <70%	27
< 70% y <80%	34
< 80% y <90%	17
< 90% y <100%	11
100%	97
Total	1057

Figure 8 Distribution of surveys by questions filled

Figure 8 lists the percentage of voids, i.e. percentage of unfilled questions, for all of the collected questionnaire responses. Following discussions with WP3 partners, it was agreed to remove those surveys that had not completed a minimum of 50% of the options of the sections from questionnaire section B.2 to D. This resulted in a total of 817 valid surveys. This large number of valid surveys for analysis led us to opt for the employment of the "IBM SPSS Statistics" software version 21 to produce statistical results.

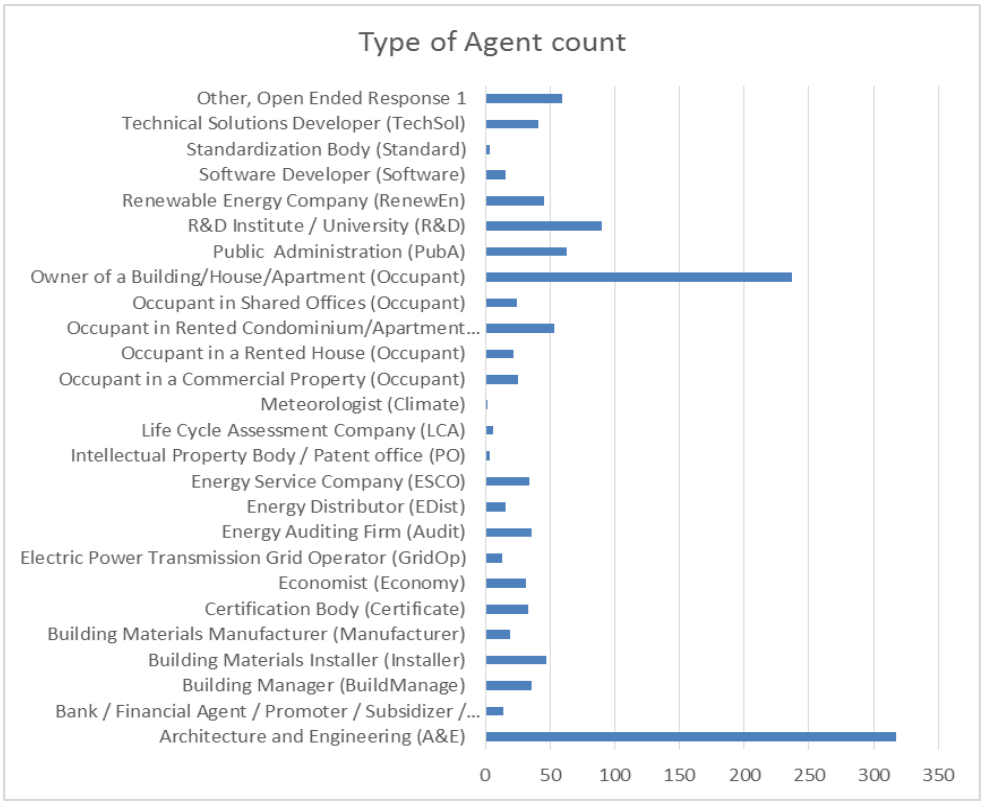


Figure 9 Number of questionnaire submissions for the various value chain agents

The distribution of the questionnaire participants population has not been homogeneous, with homeowners and Architecture and Engineering groups having a clear lead. Many of the participants have submitted questionnaires in a dual role; e.g. as a professional and homeowner, resulting in a superior submission from the homeowners group. In some sections of the analysis the predominance of architects and engineers was deemed to possibly create a bias in the survey results. Therefore, to avoid such problems, the responses for each question were filtered by the type of agent.

Table 2 lists the questionnaire response rate for each of the participating countries. The table indicates the total number of questionnaires that have been collected for each of the countries together with the total number of value chain agents reached. By means of this data, the factor of dual roles is made clear where one participant has selected multiple roles within the value chain groups. Taking Spain as an example one can observe that while 403 questionnaires have been collected, this exercise has reached the opinions of 688 value chain agents giving an increase of 72% in the response rate. However, it must be noted that notwithstanding this increase in response multiplication, the target for data collection was throughout defined as total questionnaires collected.

			Public Bodies & Finance (5)	***Knowledge and Products Providers (10)***	***Energy Providers (10)***	***Service Providers (10)***	***Quality Assurance (3)***	***Demand (30)***	
	total responses	agents reached	(PubA) (Standard) (Finance) (Economy)	(TechSol) (R&D) (Manufacturer) (Installer)	(EDist) (Renew En) (GridOp)	(A&E) (Audit) (ESCO)	(Certificate) (PO) (LCA)	(Occupant) (BuildManage)	*others*
Spain	403	688	51	117	29	253	30	179	29
Italy	94	173	10	35	9	63	11	33	12
Bulgaria	77	164	11	30	9	9	21	27	57
Turkey	84	140	7	26	8	41	3	54	4
Greece	173	253	26	44	18	71	3	86	5
Cyprus	154	212	23	24	14	51	4	79	12
Malta	72	87	11	10	11	14	4	34	3

Table 2 Questionnaire responses per country

3.2. Analysis of the transfer of knowledge between the agents of the value chain

WP2 had created a "Knowledge Transfer Flow" based on desk research and WP Leader research and experience. By means of the information obtained from the questionnaire responses it was

possible to reconstruct and verify if the "Knowledge Transfer Flow" obtained matches with that predicted through desk research.

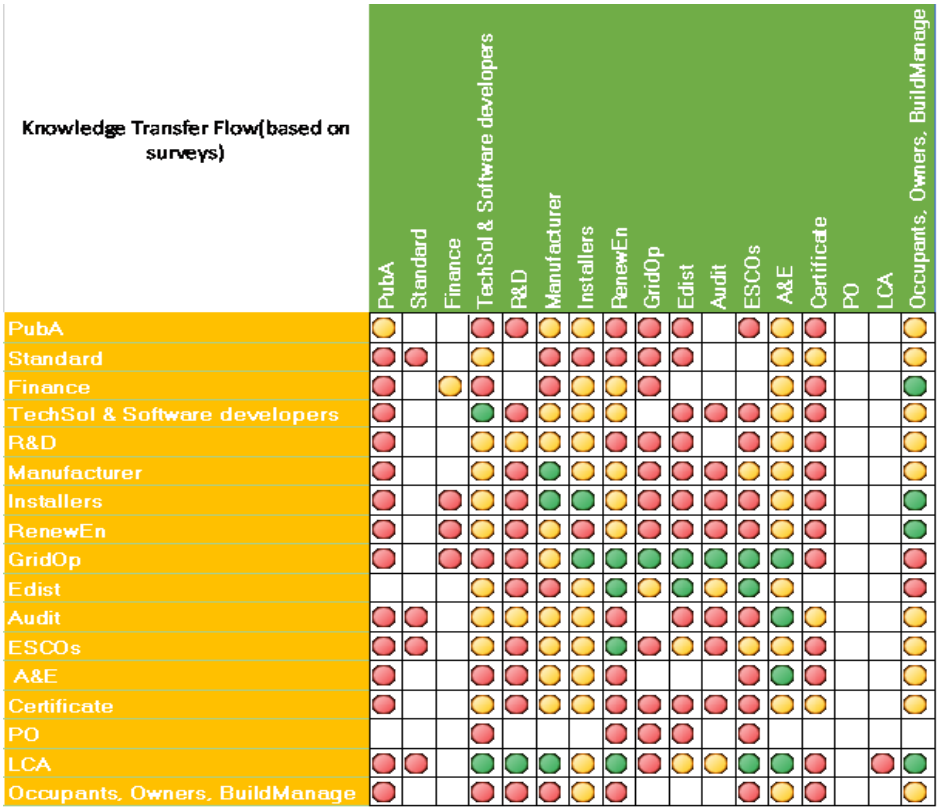


Figure 10 Knowledge Transfer Flow as Indicated from Questionnaire Responses

Figure 11 Knowledge Transfer Flow as defined in previous Work Packages

Referring to Figure 10 and Figure 11 indicating the transfer flow status, the red cross-tabs indicate an inexistent knowledge transfer flow while the green cross-tabs indicate a healthy flow of information between two value chain groups. The yellow indication is used to indicate a knowledge transfer flow that is present but that requires improvement.

Comparing Figure 10 to Figure 11 one can see that the status of knowledge transfer is not as positive as one had originally predicted. There are many user-identified situations of barriers to information flow based on the personal experience of the value chain agents.

3.3. Analysis of the Retrofitting Technologies Employed by the Value Chain Agents

Figure 12 shows the results of the survey responses with regards to the retrofitting technologies that are currently being used in buildings and those techniques that remain unexplored. The percentages on the x-axis correspond to the level of activity for the various retrofitting technologies that are either installed in homes, or promoted for utilisation or which are employed for business purposes.

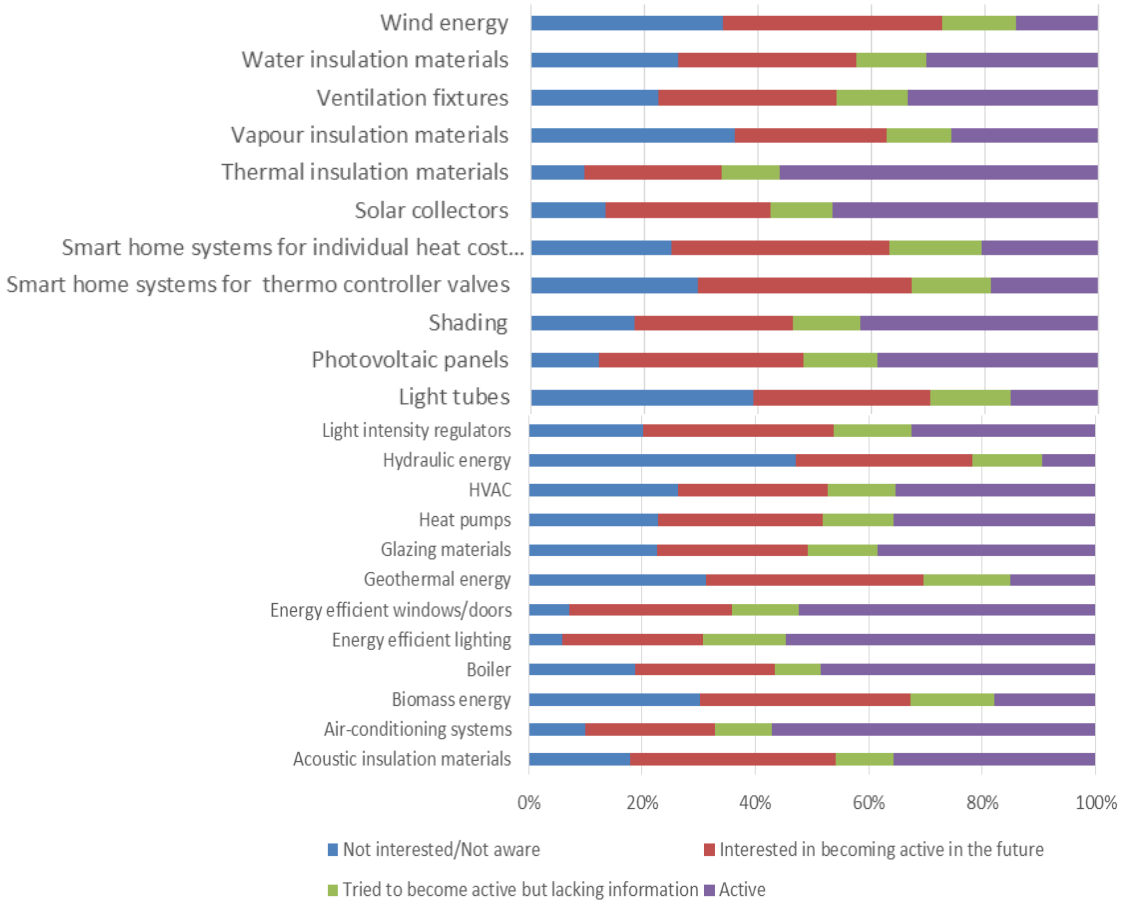


Figure 12 Trends in Retrofitting Technologies as per Questionnaire Feedback

Based on the responses obtained, the technologies that are most active are:

- Air-Conditioning Systems at 57% activity
- Thermal Insulation Materials at 56% activity
- Energy efficient lighting at 55% activity
- Energy Efficient Windows/Doors with 52% activity

By contrast, technologies that users are not interested/not aware of are:

- Hydraulic Energy with 47% of responses
- Light Tubes with of 39% responses
- Vapour Insulation Materials with 36% of responses
- Wind Energy with 34% of responses

The other technologies, for which value chain agent usage was measured, have discrete percentages and can be ignored.

3.4. Sources of Information Utilised by the Questionnaire Respondents

Figure 13 depicts those value chain agents within the retrofitting value chain which the respondents have contacted with the purpose of obtaining information about retrofitting technologies.

As a general rule, the majority of the questionnaire participants have indicated the response "Did not approach" for each of the value chain groups. This shows a general lack of confidence amongst the participants in obtaining information from the other value chain agents, mostly the Intellectual Property Body/Patent office, Meteorologist, Life Cycle Assessment Company and Economist groups, with percentages of over 70% of the participants - suggesting a reluctance in asking for information from these agent groups.

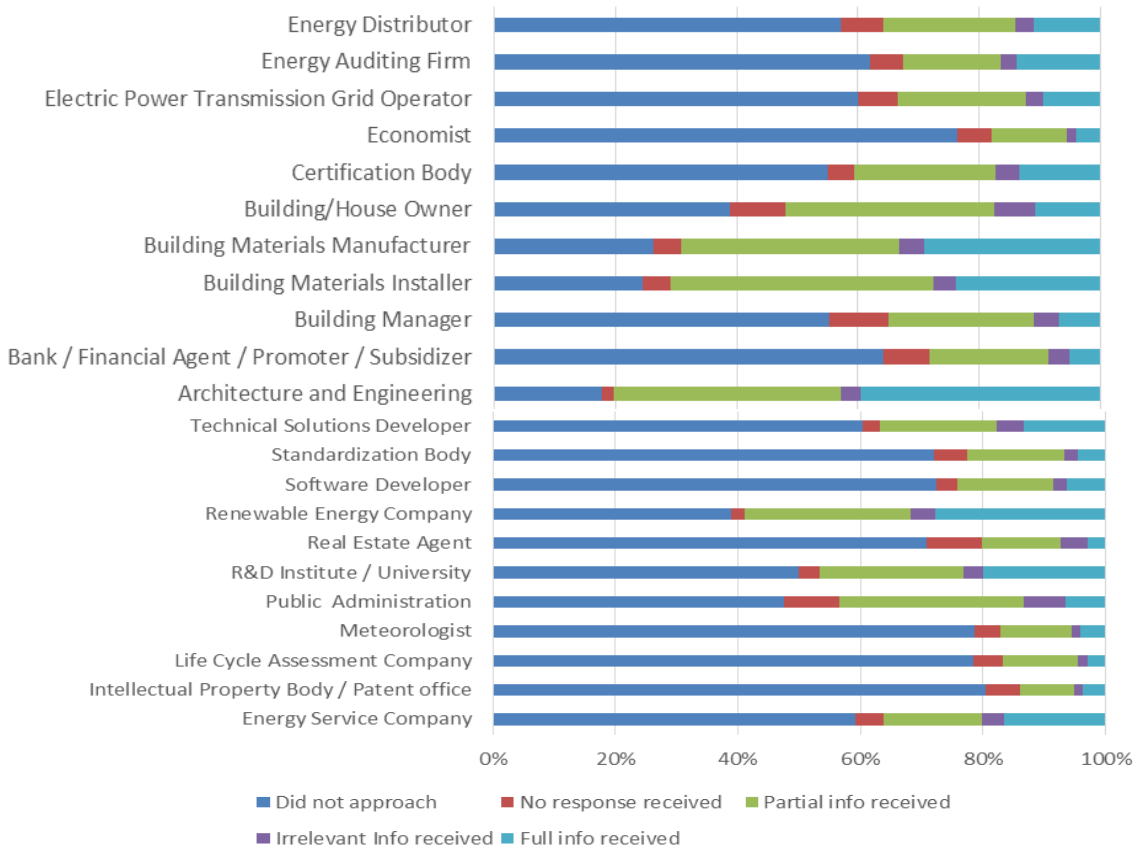


Figure 13 Sources of information utilised by the questionnaire participants

In conclusion one can say that the Architecture and Engineering group is the one that has provided the most information to the participants, followed by the Building Materials Manufacturer, Building Materials Installer and Renewable Energy Company groups.

The participants were also asked to rate the means of information that they have utilised when searching for information on retrofitting technologies. The results are shown in Figure 14 where the most effective source of information for respondents has been: Communication with professionals in the building sector, i.e. architect/engineer, followed closely by Demonstration/exhibitions of retrofitting technology on actual buildings and Training programs with hands-on experience of retrofitting in real-life situations. The other sources of information do not exceed the 25% mark on the "Very Effective" Rating.

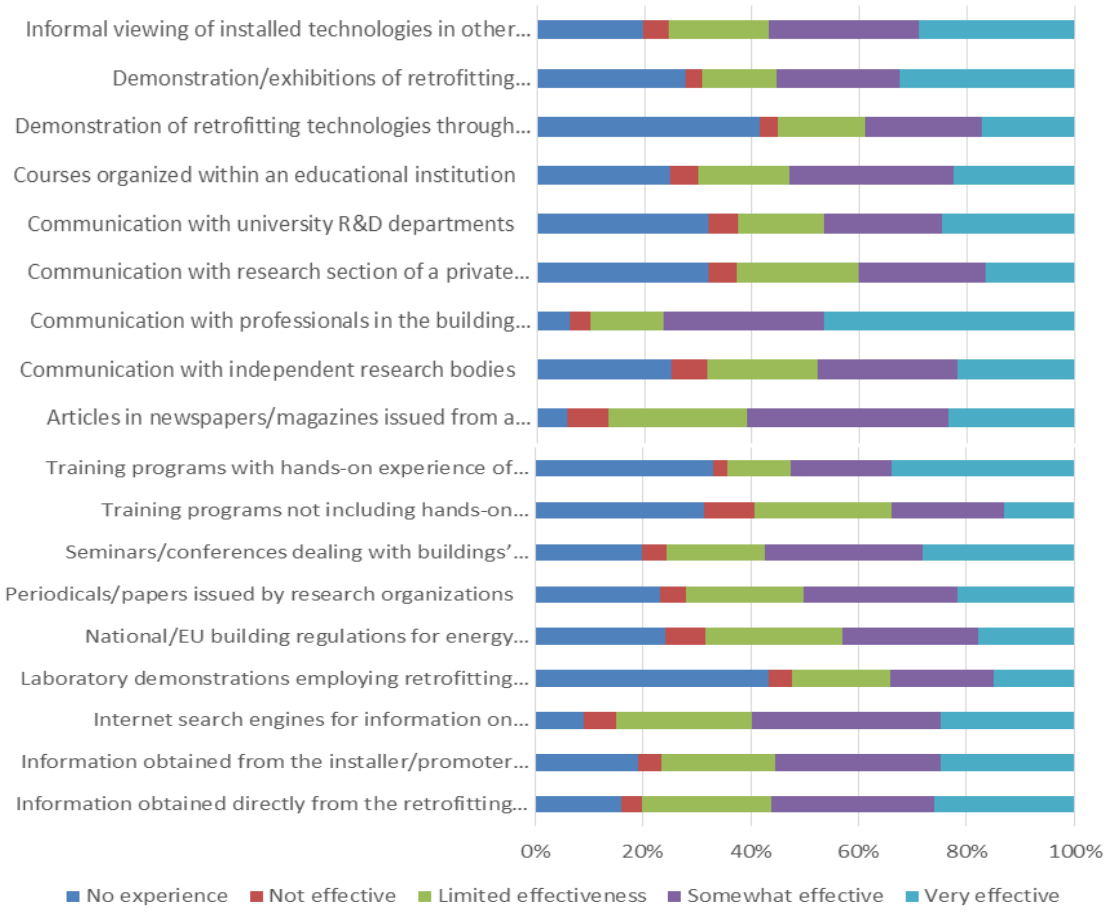


Figure 14 Rating of the means of information

Again it is clear that the professional and technical construction sectors are those who have more knowledge within the EE retrofitting value chain. The less tangible information sources for respondents were those which have been least consulted.

Figure 15 indicates what information was sought for, and the level of success in the quest for information - with the greatest activity being registered in search for Technical characteristics of a particular technology.

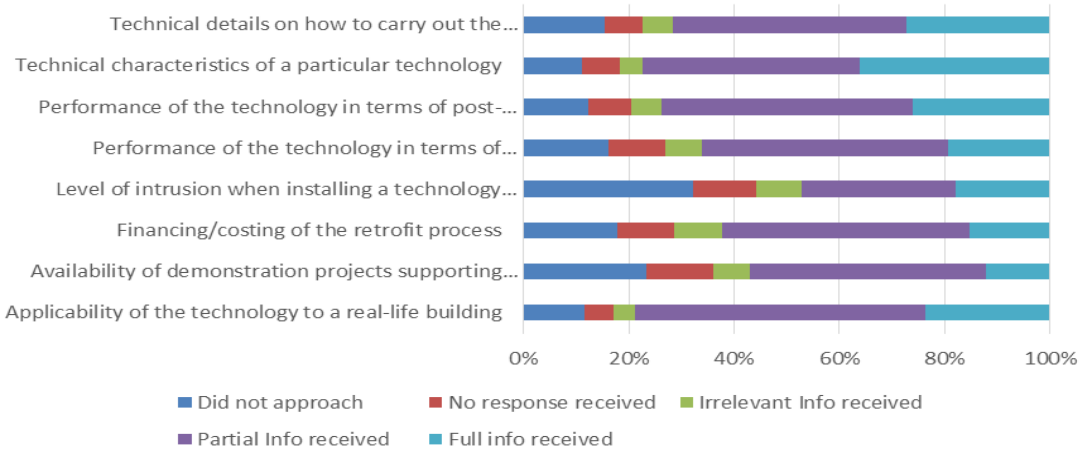


Figure 15 Type of information requested from the information sources

As a general summary, the data analysis clearly shows that the highest percentage of the participants' responses refer to partial information received, regardless of the information sought, so it leads us to infer that within the value chain there still exist barriers to efficient knowledge transfer.

3.5. Participants' Perceived Barriers to Knowledge Transfer

Further to the desk research that had identified barriers to knowledge transfer consisting of 5 main categories:

A. Skills & Awareness
B. Knowledge Management
C. R&D Approach
D. Financial
E. Institutional & Administrative

as discussed in Chapter 2.1, the questionnaire participants were asked to rate the importance of each of the needs depending on their personal experience and exposure within the EE retrofitting value chain. The questionnaire feedback on each of these categories shall be discussed herewith.

3.5.A Skills & Awareness Needs : Questionnaire Feedback

The measure which participants have considered to be the most important is **training of construction professionals in retrofit technologies** as shown in Figure 16. Having technical professionals who are well trained in energy retrofit technologies, will ensure that retrofit concepts are reflected in construction projects. The end user will be assured of being well informed throughout the whole project via communication with the building professionals.

The second measure that participants have considered as most important is the **training of traditional construction workers.** Overall it can be deduced that training of the members of the value chain (whether technical or traditional workers) is regarded as a "Very Important" aspect to be addressed in the opinion of most of the participants.

Figure 16 Participant Rating of the Skills & Awareness Needs

3.5.B Knowledge Management : Questionnaire Feedback

Figure 17 Participant Rating of the Knowledge Management Needs

Within this category (Knowledge Management Needs) the participants have rated all the four measures with almost the same importance, with a minimal percentage difference between them. Refer to Figure 17. **Therefore all four needs are considered to be significant.**

Comparing to the Skills & Awareness needs discussed previously, the percentage of "very important " results for Knowledge Management Needs is less than the "very important" measures of the previous block, so that the Skills & Awareness needs are considered to be more relevant for the questionnaire participants overall.

3.5.C R&D Approach : Questionnaire Feedback

Referring to Figure 18, the questionnaire participants believe that all needs are of high importance. The highest rating has been given to the need to have a **real case evaluation of the research results**.

The second most important knowledge transfer need is that to **communicate research results while paying more attention to the practical benefits of retrofitting technology,** which has slightly lower rating than that of the afore-mentioned need.

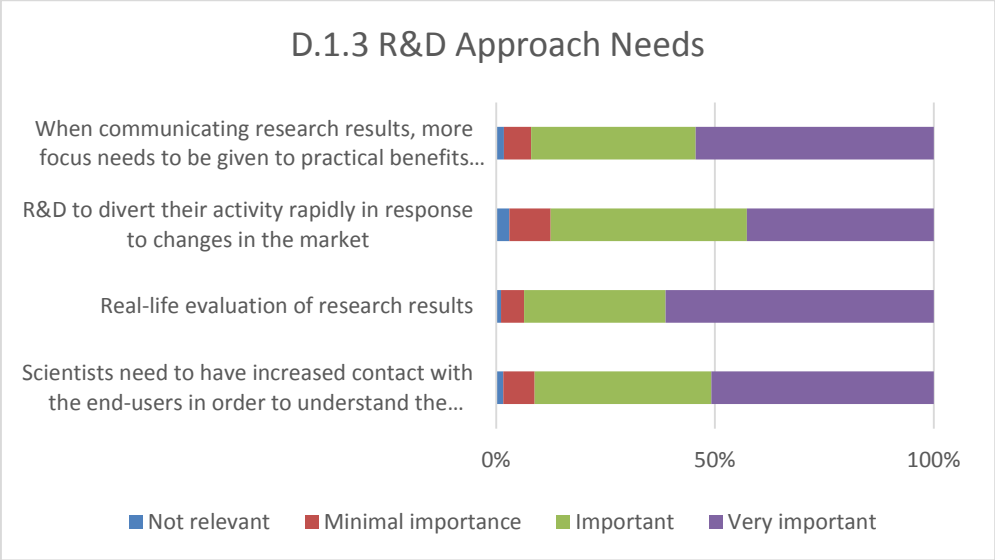


Figure 18 Participant Rating of the R&D Approach Needs

Overall, this category of needs is considered less important than those highlighted in the Skills and Awareness category, but remains more important than the Knowledge Management category.

3.5.D Financial : Questionnaire Feedback

The most important need from this category (refer to Figure 19) as identified by the questionnaire participants, is that for **'building users to receive financial assistance for investment in rehabilitation technologies'**.

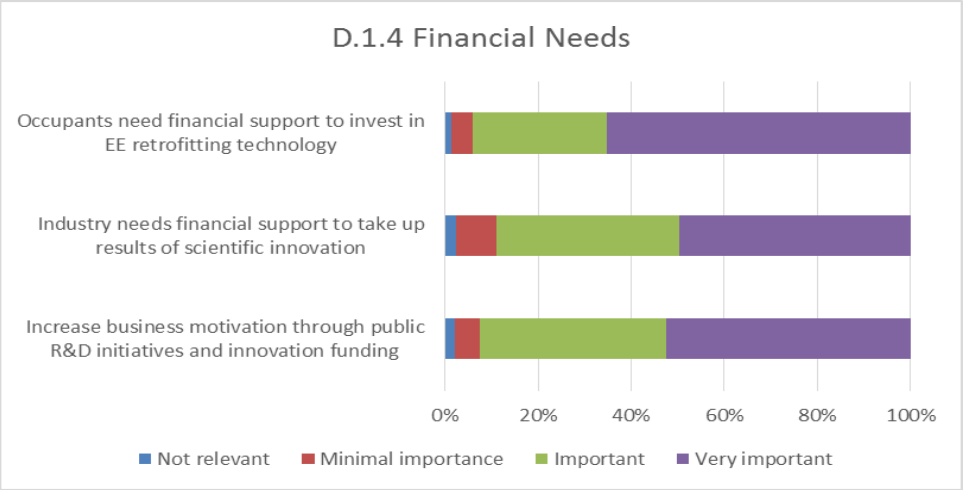


Figure 19 Participant Rating of the Financial Needs

Participants have given similar but somewhat greater importance to the Financial category over the R&D Approach category, and is rated second after the Skills and Awareness category.

3.5.E Institutional & Administrative : Questionnaire Feedback

Within this category of Institutional and Administrative needs (refer to Figure 20), respondents have considered the **evaluation of research projects in terms of their applicability for the end user** to be the most important. The drafting of guidelines for knowledge transfer are also considered important but less so.

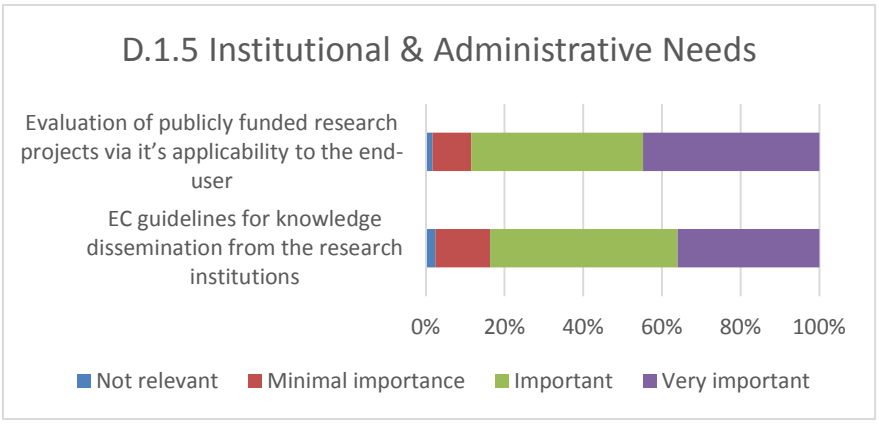


Figure 20 Participant Rating of the Institutional & Administrative Needs

With respect to other needs categories, this category is consider to be less important and has the lowest percentage of "very important" votes compared to the other categories.

3.6. General Comments on the Variation of the Perceived Needs by Country

On a general level, the needs for effective knowledge transfer within the EE retrofitting value chain are valued similarly across all participating countries. However, one can see variations in some needs categories which shall be discussed.

In **category A (Skills and Awareness)** it is observed that Turkish respondents valued all items with a greater importance compared to other countries. There is a great discrepancy in the Turkish respondents on "Training the business society to access the knowledge stock" shown in Figure 21 and "Exposing the end users to the technological results of the research organizations" shown in Figure 22, with almost twice as many people considering these barriers as very important compared to respondents from the other countries.

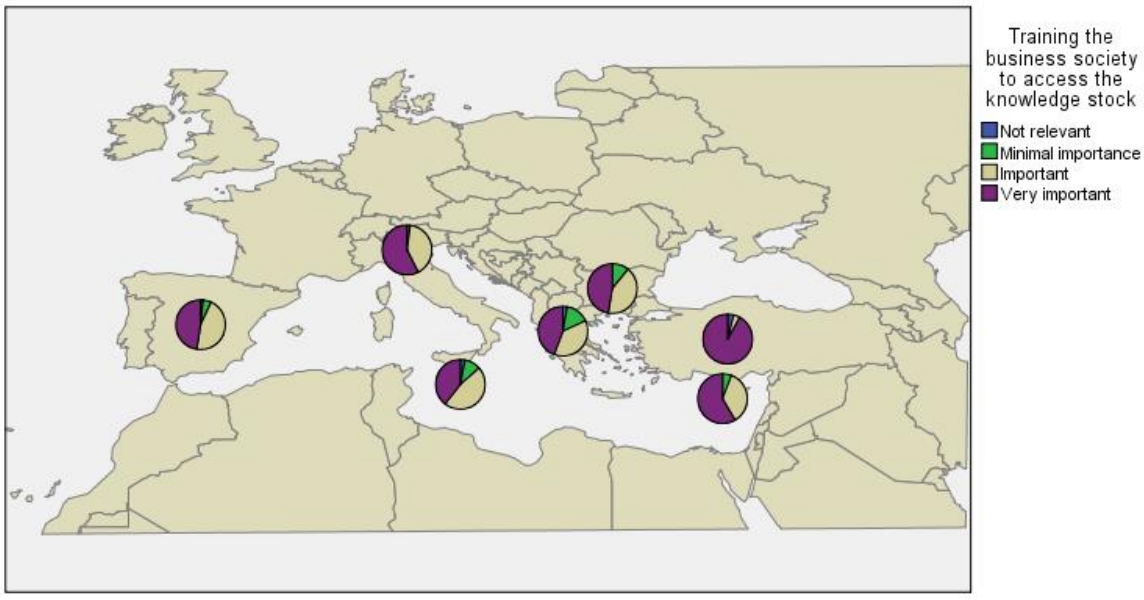


Figure 21 Variation across countries for "Training the business society to access the knowledge stock"

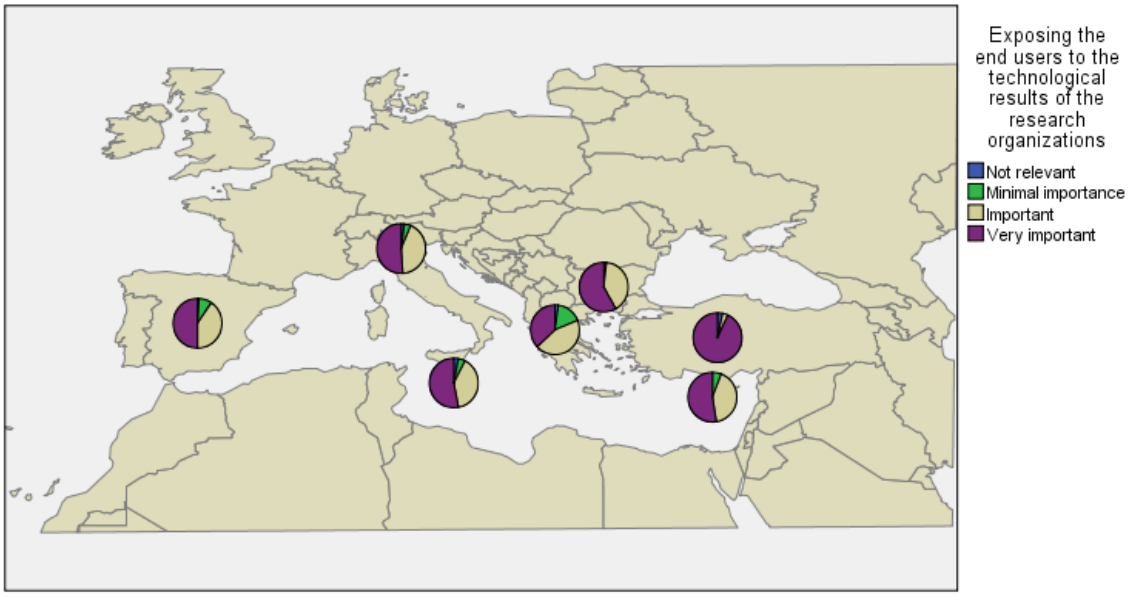


Figure 22 Variation across countries for "Exposing the end users to the technological results of the research organisations"

In **category B (Knowledge Management),** the Greek respondents show a significantly lower rating of importance for the need "Connecting commercial technical advice to EPBD - energy performance and Requirements of the current buildings". As shown in Figure 23, over 20% of respondents considered this to be of minimal importance or not relevant whereas these values are reduced by half in the other countries.

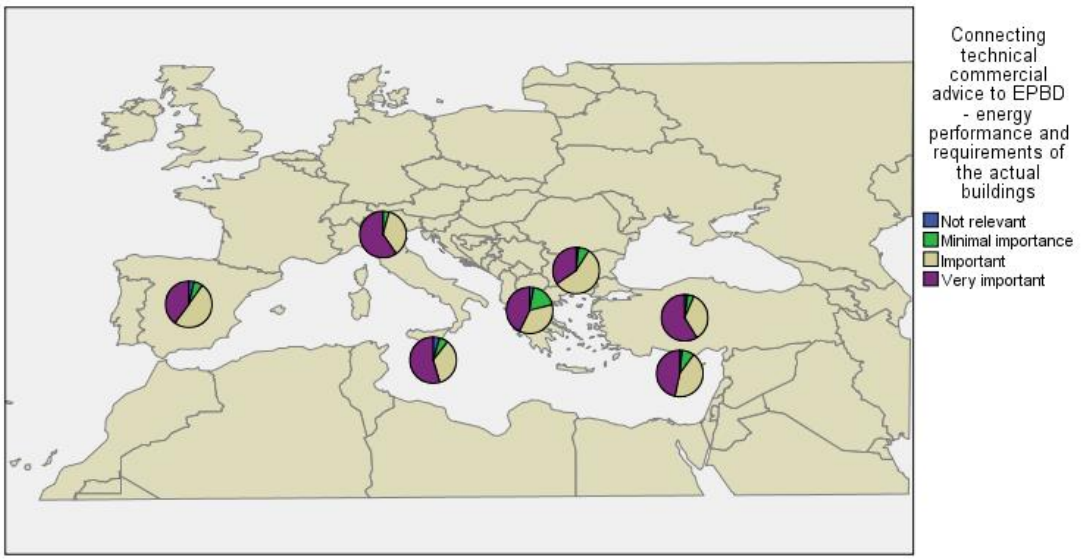


Figure 23 Variation across countries for "Connecting technical commercial advice to EPBD requirements"

In **category C (R&D Approach),** the Greek participants registered an overall minor relevance for all the needs in this category when compared to the rest of the countries. Figure 24 gives an example of one of the needs in this category showing this difference observed from the Greek responses.

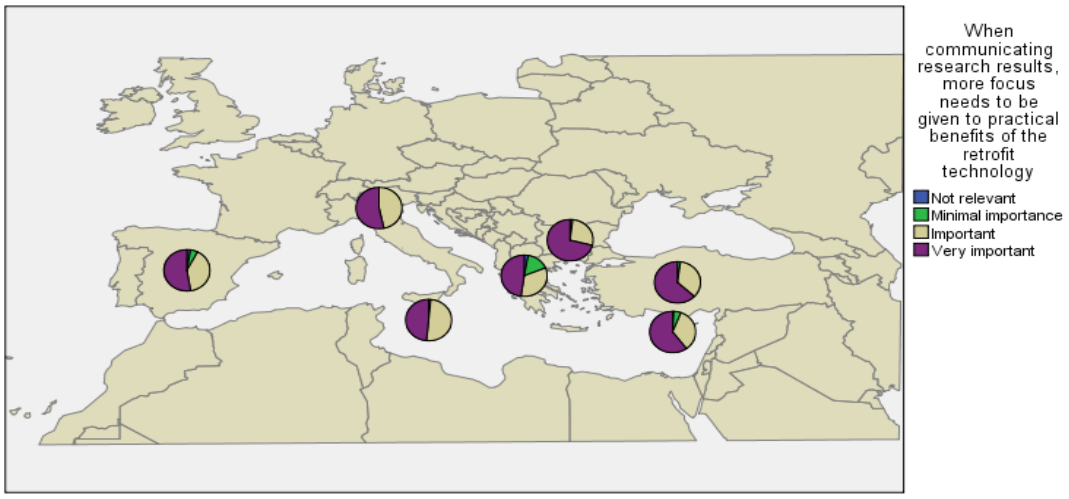


Figure 24 Variation across countries for "When communicating research results, more focus needs to be given to practical benefits of the retrofit technology"

In **category D (Financial)** no significant differences were noted between the countries with all having similar valuation of the knowledge transfer needs.

In **category E (Institutional & Administrative)** there is a observed difference from amongst participants from Turkey and Malta who value much less the "EC guidelines for knowledge Dissemination from the research institutions" compared to the rest of the countries. This is shown in Figure 25.

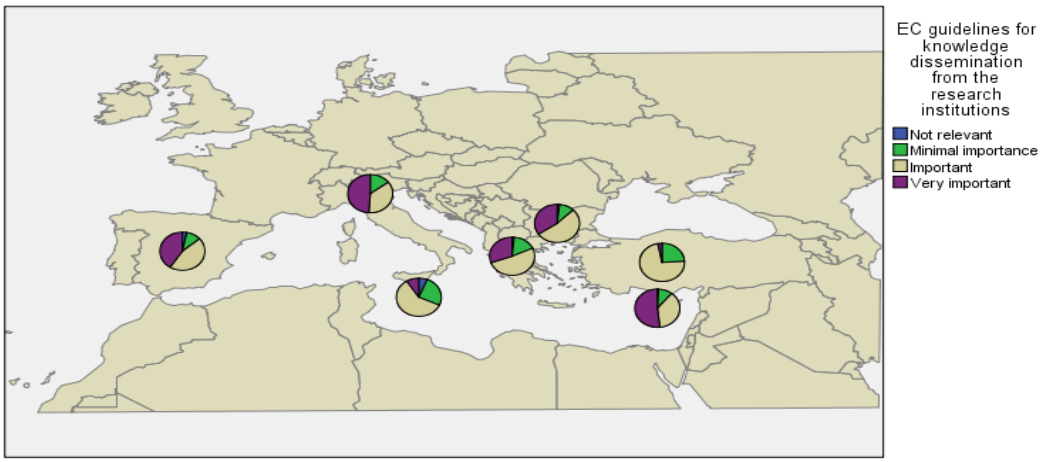


Figure 25 Variation across countries for "EC guidelines for knowledge dissemination from the research institutions"

Likewise, there is a greater scepticism about the need "Evaluation of publicly funded research projects via it's applicability to the end-user" from Malta and Greece participants as shown in Figure 26.

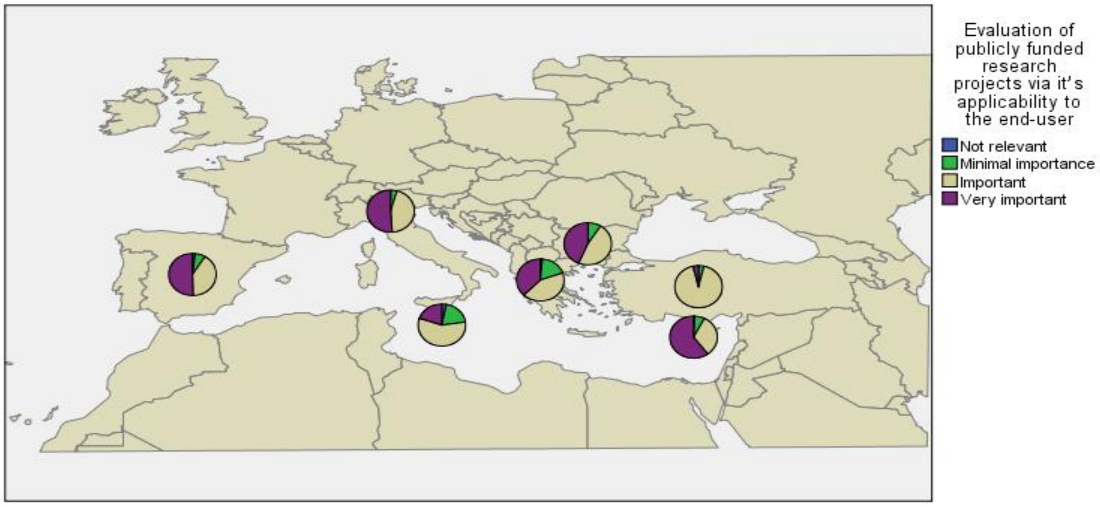


Figure 26 Variation across countries for "Evaluation of publicly funded research projects via it's applicability to the end-user"

3.7. Prioritisation of Knowledge Transfer Needs Following Questionnaire Feedback

The report ***"Task 3.3 Segmentation and prioritisation of the demand detected"*** contains a detailed analysis of each of the individual knowledge transfer needs that have been identified in this work package. These are detailed in Section 4.1 of the aforementioned report.

Following this individual assessment, the general conclusions on the prioritisation of the knowledge transfer needs based on frequency of the responses are:

- The frequency of the knowledge transfer needs has been obtained through the responses of the questionnaires by different members of the value chain.

- After analysing the data obtained from the knowledge transfer needs, it should be noted that all respondents considered all the needs that have been proposed in the questionnaire as very important.

- All knowledge transfer needs have obtained more than 80% of the responses classified as "important" or "very important" (sum of both responses). None of them were considered as "unimportant" or "irrelevant".

- **The most important knowledge transfer need** as classified by the questionnaire participants is the *training of the technical community* (including craftsmen, architects, project managers, etc) in retrofitting construction techniques, with a total vote that is by far superior to the rest of the needs. Next in line is the need to financially support the end-users to invest in retrofitting technologies.

- **The least important knowledge transfer need** as classified by the questionnaire participants is that *society is made aware of the tools governing intellectual property*.

- None of the questionnaire participants have classified any knowledge transfer need as irrelevant, so any future work on designing new knowledge transfer tools would have to take into account all of the identified needs, to a greater or lesser extent depending on the frequency of the results, together with their potential and feasibility as shall be analysed in this report.

Following the quantitative assessment of all the knowledge transfer needs the analysis moved on to frequency of response analysis. For this analysis, the knowledge transfer needs have been assigned a numerical value depending on whether the barriers were considered "not relevant", with "minimal importance", "important" or "very important". The results, tabulated in Table 3, are derived from an analysis of the questionnaires responses and the reasons mentioned previously.

	KNOWLEDGE TRANSFER NEED	FREQUENCY
A1	Training of traditional craftsmen on EE retrofitting innovations.	8,2
A2	Exposing the end users to the technological results of the research organizations.	7,9
A3	Training the business society to access the knowledge stock.	7,9
A4	The business society needs to be aware of tools to manage intellectual property.	6,7
A5	Training of construction professionals (including architects, civil engineers, building services engineers, project managers, building designers, etc) in retrofit technologies.	9,4
B1	Establishing network organisations that will coordinate knowledge transfer from innovation groups and assist in implementing innovation into daily building practice.	7,6
B2	Increased interaction amongst research institutions.	7,5
B3	Clustering within the retrofit market to provide integrated solutions.	7,4
B4	Connecting technical commercial advice to EPBD - energy performance and requirements of the actual buildings.	7,6
C1	Scientists need to have increased contact with the end-users in order to understand the applicability of their research.	8
C2	Real-life evaluation of research results.	8,4
C3	R&D to divert their activity rapidly in response to changes in the market.	7,5
C4	When communicating research results, more focus needs to be given to practical benefits of the retrofit technology.	8,1
D1	Increase business motivation through public R&D initiatives and innovation funding.	8,1
D2	Industry needs financial support to take up results of scientific innovation.	7,9
D3	Occupants need financial support to invest in EE retrofitting technology.	8,6
E1	EC guidelines for knowledge dissemination from the research institutions.	7,2
E2	Evaluation of publicly funded research projects via it's applicability to the end-user.	7,7

Table 3 Assessment of knowledge transfer needs based on frequency

Following the frequency analysis of all the knowledge transfer needs, we shall next consider their potential and feasibility. These results are derived from experience, together with several related studies that are detailed in the Task 3.3 report.

	KNOWLEDGE TRANSFER NEED	POTENTIAL	FEASIBILITY
A1	Training of traditional craftsmen on EE retrofitting innovations.	10	10
A2	Exposing the end users to the technological results of the research organizations.	5	3
A3	Training the business society to access the knowledge stock.	8	7
A4	The business society needs to be aware of tools to manage intellectual property.	9	6
A5	Training of construction professionals (including architects, civil engineers, building services engineers, project managers, building designers, etc) in retrofit technologies.	10	9
B1	Establishing network organisations that will coordinate knowledge transfer from innovation groups and assist in implementing innovation into daily building practice.	9	6
B2	Increased interaction amongst research institutions.	6	8
B3	Clustering within the retrofit market to provide integrated solutions.	5	5
B4	Connecting technical commercial advice to EPBD - energy performance and requirements of the actual buildings.	4	3
C1	Scientists need to have increased contact with the end-users in order to understand the applicability of their research.	9	6
C2	Real-life evaluation of research results.	8	8
C3	R&D to divert their activity rapidly in response to changes in the market.	7	8
C4	When communicating research results, more focus needs to be given to practical benefits of the retrofit technology.	9	10
D1	Increase business motivation through public R&D initiatives and innovation funding.	10	10
D2	Industry needs financial support to take up results of scientific innovation.	10	10
D3	Occupants need financial support to invest in EE retrofitting technology.	10	10
E1	EC guidelines for knowledge dissemination from the research institutions.	6	9
E2	Evaluation of publicly funded research projects via it's applicability to the end-user.	8	9

Table 4 Assessment of Knowledge Transfer Needs based on Potential and Feasibility

Therefore the knowledge transfer needs that require the most urgent attention are:

- Training of the traditional construction sector workers in retrofitting technologies.

- Training of all professionals involved in the retrofitting process (from the technical to the worker), establishing a knowledge transfer technique between them.

- Evaluation of research case studies are a clear example of what needs to be done if it is a good solution, or else, know the mistakes that should not be committed.

- Financing innovation in the private sector with public funds.

- Financing the transformation of R&D tangible outcomes (systems, materials, products ...), so that the research does not remain on paper.

- Financial support for the end-users who are involved in energy efficient retrofitting will exponentially increase the rate of retrofitting implementation.

Putting together the results of the prioritisation and classification of the knowledge transfer needs creates a global ranking of the needs as shown in Table 5. This prioritisation is based on the frequency, potential and feasibility that have been scaled according to their importance factor as per the below equation:

$$BKTimp = 0,5*Fr + 0,25*P + 0,25*Fe$$

Where: BKTimp= Importance of Knowledge Transfer Needs; P = Potential; Fe= Feasibility; Fr= Frequency

KNOWLEDGE TRANSFER NEED		TOTAL ASSESSMENT
A1	Training of traditional craftsmen on EE retrofitting innovations.	9,10
A2	Exposing the end users to the technological results of the research organizations.	5,97
A3	Training the business society to access the knowledge stock.	7,71
A4	The business society needs to be aware of tools to manage intellectual property.	7,10
A5	Training of construction professionals (including architects, civil engineers, building services engineers, project managers, building designers, etc) in retrofit technologies.	9,43
B1	Establishing network organisations that will coordinate knowledge transfer from innovation groups and assist in implementing innovation into daily building practice.	7,57
B2	Increased interaction amongst research institutions.	7,26
B3	Clustering within the retrofit market to provide integrated solutions.	6,22
B4	Connecting technical commercial advice to EPBD - energy performance and requirements of the actual buildings.	5,57
C1	Scientists need to have increased contact with the end-users in order to understand the applicability of their research.	7,74
C2	Real-life evaluation of research results.	8,22
C3	R&D to divert their activity rapidly in response to changes in the market.	7,52
C4	When communicating research results, more focus needs to be given to practical benefits of the retrofit technology.	8,81
D1	Increase business motivation through public R&D initiatives and innovation funding.	9,04
D2	Industry needs financial support to take up results of scientific innovation.	8,93
D3	Occupants need financial support to invest in EE retrofitting technology.	9,29
E1	EC guidelines for knowledge dissemination from the research institutions.	7,35
E2	Evaluation of publicly funded research projects via it's applicability to the end-user.	8,09

Table 5 Final assessment of the importance of the knowledge transfer needs

Classifying the above results in order of importance, produces the list as shown in Table 6

KNOWLEDGE TRANSFER NEED		TOTAL ASSESSMENT
A5	Training of construction professionals (including architects, civil engineers, building services engineers, project managers, building designers, etc) in retrofit technologies.	9,43
D3	Occupants need financial support to invest in EE retrofitting technology.	9,29
A1	Training of traditional craftsmen on EE retrofitting innovations.	9,10
D1	Increase business motivation through public R&D initiatives and innovation funding.	9,04
D2	Industry needs financial support to take up results of scientific innovation.	8,93
C4	When communicating research results, more focus needs to be given to practical benefits of the retrofit technology.	8,81
C2	Real-life evaluation of research results.	8,22
E2	Evaluation of publicly funded research projects via it's applicability to the end-user.	8,09
C1	Scientists need to have increased contact with the end-users in order to understand the applicability of their research.	7,74
A3	Training the business society to access the knowledge stock.	7,71
B1	Establishing network organisations that will coordinate knowledge transfer from innovation groups and assist in implementing innovation into daily building practice.	7,57
C3	R&D to divert their activity rapidly in response to changes in the market.	7,52
E1	EC guidelines for knowledge dissemination from the research institutions.	7,35
B2	Increased interaction amongst research institutions.	7,26
A4	The business society needs to be aware of tools to manage intellectual property.	7,10
B3	Clustering within the retrofit market to provide integrated solutions.	6,22
A2	Exposing the end users to the technological results of the research organizations.	5,97
B4	Connecting technical commercial advice to EPBD - energy performance and requirements of the actual buildings.	5,57

Table 6 Knowledge transfer needs ranking

It is observed that the most important knowledge transfer need is #5 **"Training of construction professionals (including architects, civil engineers, building services engineers, project managers, building designers, etc) in retrofit technologies".**

The second most important is #16 **"Occupants need financial support to invest in EE retrofitting technology"** and the third one is #1 **"Training of traditional craftsmen on EE retrofitting innovations".**

4. PROPOSALS OF SOLUTIONS FOR AN EFFECTIVE KNOWLEDGE TRANSFER FRAMEWORK IN THE EE RETROFITTING SECTOR

The desk research for WP3 has identified 5 main categories of knowledge transfer needs as discussed in Chapter 2. These needs are now prioritised following the questionnaire responses and analysis of the feasibility and potential implementation for solutions to the needs (refer to Chapter 3). This chapter shall now present solutions to the needs for each of the categories in the order of their computed priority.

4.1. Solutions to Meet the Knowledge Transfer Needs

Each of the categories of knowledge transfer needs have their own particularities and must all be addressed in order to ensure a comprehensive formulation of the global proposed solution(s) for an effective knowledge transfer framework. Within each of the categories, solutions to meet each of the knowledge transfer needs will be presented in the order of which they have been prioritised and classified in the previous analysis.

4.1.A Solutions : Skills & Awareness Needs

Priority Ranking	Knowledge Transfer Needs & Solutions - Skills & Awareness Needs
1 (A5) *(Score: 9,43)*	**Knowledge Transfer Need**
	Training of construction professionals (including architects, civil engineers, building services engineers, project managers, building designers, etc) in retrofit technologies.
	Solution
	The solution to meet this need is to implement a higher level of education for construction professionals (i.e. architects, civil engineers, building services engineers, project managers, building designers, etc.) that includes advanced energy analysis methodologies and know-how of retrofit technologies and their adaptations. Increased and adapted curriculum for Bachelors and Masters degrees in energy efficient construction technology will be necessary. Furthermore, short-courses together with other informal learning events such as seminars and workshops would serve to provide further educational opportunities.

2 (A1) *(Score: 9,10)*	**Knowledge Transfer Need**
	Traditional craftsmen need to have more exposure to retrofitting innovations.
	Solution
	One solution for this is to expose the traditional craftsmen to demonstration projects that will expose the retrofitting technologies and aid in the dissemination of information. These demonstration projects could also present tools for the home-owner and traditional craftsman that will aid in the decision making process on which retrofitting technologies are most suited for a particular residence. This dissemination will lead to an increased level of education and access to EE retrofitting technologies and their implementation. The providers of these educational opportunities could be the retrofitting solutions manufacturers themselves who offer technical application solutions and transfer vital information to the craftsmen.
3 (A3) *(Score: 7,71)*	**Knowledge Transfer Need**
	The retrofitting business society needs to have a greater ability in knowing how to access the knowledge stock.
	Solution
	It is necessary to improve the learning ability by providing training for staff and enterprises in the goals of knowledge transfer value chains and in creating an operation pattern to narrow the gap of knowledge sharing among groups in the value chain. With the deepening of knowledge transfer cooperation through the value chain and the increased need of innovation, continuous professional development is necessary to constantly build on the staff training program. This will in turn improve the overall quality of employees, their professional level and working enthusiasm. An added solution to counter-meet this need is to build an educational framework that will provide a qualification to the new generation of knowledge transfer officers. This qualification will be mutually recognised by all groups in the knowledge transfer value chain.

4 (A4) *(Score: 7,10)*	**Knowledge Transfer Need**
	The business society needs to be aware of tools to manage intellectual property.
	Solution
	EU member states have a role in supporting the development of awareness initiatives for knowledge sharing. This includes partnership agreements amongst R&D entities and other approaches including open access, open publications, open software, etc. These mechanisms can ensure a more effective dissemination of results although in certain cases formal protection (e.g. design rights, patents or material transfer agreements) may be necessary if a product is to be brought to market successfully. It is therefore important to ensure that researchers are aware of the benefits of both approaches and that decisions are made on the basis of socio-economic impact. Given that the rules governing the ownership of publicly-funded R&D results still vary across Europe, it may be appropriate to revisit in the near future the question of a single European ownership model especially for publicly funded research. Furthermore, initiatives originating from third-party organisations providing consultancy on knowledge sharing would be of further benefit to the business society.
5 (A2) *(Score: 5,97)*	**Knowledge Transfer Need**
	The end users need to have a better capacity and motivation to take up the results of the research organisations and use these results in their buildings.
	Solution
	Although motivation is important, it is only part of the struggle to information accessibility since the end user must have the capacity and possibility to access the information. Increased availability of the information generated by the R&D institutions and service companies is necessary for this information take-up. This may be done through marketing, educational events and more diffused availability of information. This promotion of the latest technological innovations will increase the end users' awareness of new retrofitting technologies and motivate them to choose products with the best energy efficiency and the best comfort parameters.

Conclusion: Skills & Awareness Needs

Improvement in the Skills & Awareness category is ultimately based on the improvement of currently available and new educational qualifications and opportunities at all levels of the value chain ranging from academic qualifications for construction professionals and knowledge transfer champions, also technical qualifications of the implementers of the retrofitting technology and last but not least, to increase awareness amongst the end users with regards to what can be done in terms of building retrofitting. Learning tools are vast and wide ranging from traditional classroom methods to e-learning, podcasts, video tutorials, educational games, blog based learning, social networking educational campaigns and community portals.

4.1.B Solutions: Knowledge Management Needs

Priority Ranking	Knowledge Transfer Needs & Solutions - Knowledge Management Needs
1 (B1) *(Score: 7,57)*	**Knowledge Transfer Need**
	Establishing network organisations that will coordinate knowledge transfer from innovation groups and assist in implementing innovation into daily building practice.
	Solution
	The formation of consortia and energy-efficiency networks connecting policy makers, governments, non-governmental organizations, universities, companies and other institutions involved in research and innovation would offer the potential of increasing the information flow. Many possibilities would exist for information transfer through media exposure, organisation of exhibitions, documentation archiving, demonstration projects, training plans, networking, etc. A scenario could also be created in which it would be obligatory for governments, non-governmental organizations, universities, companies and other institutions to join these networks through an EU-wide recognised standardisation body.
2 (B2) *(Score: 7,26)*	**Knowledge Transfer Need**
	Increased interaction amongst research institutions.
	Solution
	One solution for this would be the movement of academic staff between R&D institutions. This may be short-term with part-funding programs to support the

	exchange or long-term through the establishment of new research posts within the receiving organisation. Another way to increase long-term interaction between research institutions is through the creation of knowledge banks, setting up of online forums, organisation of brokerage events for creating collaborative joint research activities on specific retrofitting topics.
3 (B3) *(Score: 6,22)*	**Knowledge Transfer Need** Clustering within the retrofit market to provide integrated solutions to practical problems. **Solution** It is recommended to create regional networking of companies working in retrofitting innovation, since this can lead to a diffusion of innovative technologies due to its social impact. Networking in itself can also create synergies to stimulate innovation. The level of clustering is not only limited to the higher levels of the value chain such as producer, technical solutions company, etc. but is also important at the level of the traditional craftsmen. Having clustering at this level will encourage improved take-up of retrofit solutions with information flowing more easily to the end-user.
4 (B4) *(Score: 5,57)*	**Knowledge Transfer Need** Connecting technical commercial advice to EPBD requirements - energy performance and requirements of the actual buildings. **Solution** When a building goes through the building certification process that includes advice on methods to improve the building energy consumption, there must be a connection between the technical commercial advice available and the technical auditing and marketing advice provided in order for the owner to better relate to the technologies available for improving the building energy performance. The commercial advice that is made available to the end user must be in line with the national EPBD requirements and the national action plan for each country. Where possible, technical commercial jargon should also include examples of energy performance observed reductions for actual buildings in order to better

	connect to the energy certification. One method for implementing this solution is to have a network, clustering framework, in which the public authority could guide the business society about what information is required by the building owners. It will then be in the business society's interest to keep competitive by offering the relevant and complete information to the consumers.

Conclusion: Knowledge Management Needs

Knowledge banks are usually localised within an organisation and sharing of information is rare. However, what might be lacking in this aspect might not be the willingness to share information but rather the lack of methodologies and incentives to govern and promote the knowledge transfer. This is where knowledge management plays a huge part in regulating and facilitating the flow of knowledge through the value chain.

The proposed solutions require the involvement of value chain agents that might be large and complex organisations in their nature, for example public administration bodies, universities, and ultimately cluster frameworks that will involve a large number of entities of different natures and different capacities and interests. Therefore, when implementing any of the knowledge management solutions, it is necessary to define strict working areas and modes of operation in order to safeguard the knowledge management rights of each of the individual agents themselves.

4.1.C R&D Approach Needs: Solutions

Priority Ranking	Knowledge Transfer Needs & Solutions - R&D Approach Needs
1 (C4) *(Score: 8,81)*	**Knowledge Transfer Need**
	When communicating research results, more focus needs to be given to practical benefits of the retrofit technology.
	Solution
	The first step to showcasing the practical benefits is to have such information readily available from product and technology data sheets. Furthermore, a more effective solution to address this aspect for peer-to-peer knowledge transfer through the value chain might be a role for institutions and public administrations to provide further dissemination via encouraging and

	incentivising knowledge sharing events where the owners and supporting agents of the new retrofit technology will have the opportunity to present the results of the new technology advances to the rest of the value chain.
2 (C2) *(Score: 8,22)*	**Knowledge Transfer Need**
	Real-life evaluation of research results.
	Solution
	Scientists need to evaluate the results of their research through actual implementation of the technology in real-life situations and not only in the laboratory. This can be achieved by exposing the advances of the research activity to the end users through the creation of a collaboration effort in which the end users put forward a stock of buildings that can be used for real-life testing by the R&D community. Depending on the building criteria required by the R&D activity, the building will be chosen and the retrofitting technology implemented while offering the building owners reduced rates for the material procurement and installations through government funds or reduced rate loans. The end user should obviously be made aware that the technology is to some extent in experimental stage and should therefore know the limitations and regulations of consumer rights as applied to this scenario.
3 (C1) *(Score: 7,74)*	**Knowledge Transfer Need**
	Scientists need to have increased contact with the end-users in order to understand the applicability of their research.
	Solution
	To address this issue, training of scientists to improve their communication skills is essential. This training will give them clear objectives of knowledge transfer clusters together with tools to identify and reach out to their potential audience. Above all, there is the need to ensure that the communication efforts of the academic scientists are recognized as valid tasks by the universities themselves since the time utilised for communication is taken away from the time from research. However, this communication is vital in order to allow the researcher to know what his target audience require in terms of technology and innovation and can thus also shape the direction of the research activity. The collection of feedback from industry and other value chain members could be added as a

	criteria for evaluation of the researcher's activity by the administering body.
4 (C3) *(Score: 7,52)*	**Knowledge Transfer Need**
	R&D to divert their activity rapidly in response to changes in the market.
	Solution
	Each of the value chain agents have their own motivations, agendas, time-scales, and aspirations and without the development of open channels of communication this barrier of a cultural divide will remain. There is a need to continually build networks and develop platforms to strengthen partnerships for knowledge transfer. Modifications and improvements to the innovation that are resulting from a change originating in response to market feedback, will also lead to improving the competitiveness of the innovation. Thus it is also in the interest of the commercial sector to form academic-industry collaborations to improve the effectiveness of the innovation process.

Conclusion: R&D Approach Needs

Having R&D organisations operating in a vacuum with little, if no contact, with the actual end users is limiting the flow of knowledge through the value chain and also hindering the take up and final implementation of the retrofitting technology in buildings. If end-users are not aware of the innovations being produced by the R&D entities they will not be encouraged to implement new technologies in their buildings. Vice versa, the R&D entities must open their feedback channels in order to get information from the actual users of the technology about the real-life usage of the retrofit, the problems associated with it and the performance ratings when applied to real-life situations far from the laboratory. This communication and exchange of information between R&D agents and the rest of the value chain, especially the manufacturers, installers and consumers, will promote a healthy knowledge transfer flow and also ensure that the new technologies are adapted to best suit the real-life situations and produce the optimum results possible with regards to energy saving.

4.1.D Financial Needs: Solutions

Priority Ranking	Knowledge Transfer Needs & Solutions - Financial Needs
1 (D3) *(Score: 9,29)*	**Knowledge Transfer Need**
	Occupants need financial support to invest in EE retrofitting technology.
	Solution
	The development of appropriate financial instruments to promote the installation of energy efficient housing retrofit technologies that utilise the latest technological advances is recommended. These instruments can for example include the set up of beneficial grants, green loans and tax revisions (value added tax, property tax, income tax). Control of the eligibility to make use of the financial benefits in each country could be done through a measurement of the building energy efficiency level as assessed by the certification bodies in line with the EPBD standards for the country. There could also be a ratio between the EE level and the amount of the financial benefits granted to the occupant where the higher the level to be obtained through implementing retrofit the more financial benefits could be offered. This will also be serve as a motivation for the end user to aim for a higher level of energy efficiency.
2 (D1) *(Score: 9,04)*	**Knowledge Transfer Need**
	Increase business motivation through public R&D initiatives and innovation funding.
	Solution
	There is the need for master plans involving public and private actors in R&D activity. It is recommended to have both national and EU wide R&D plans that support R&D activity and that also focus on international cross learning, demonstration projects and market development to further improve the information transfer within the value chain.
3 (D2) *(Score: 8,93)*	**Knowledge Transfer Need**
	Industry needs financial support to take up results of scientific innovation.
	Solution
	The development of appropriate financial instruments to foster cooperation between industry and R&D entities. These instruments can for example include the setting up of grants for promotion of innovative products, tax revisions on items related to innovation sourcing (e.g. attendance to expo fairs, seminars, patent

	fees). To control financial benefits, it might be appropriate to install an associated quality assurance scheme to ensure the actual diffusion and implementation of the retrofit.

Conclusion: Financial Needs

Financial support is always a crucial factor for enabling activities related to knowledge transfer flow. The most important factor when making financial tools available to any category of actors in the value chain is to have an associated control mechanism that regulates and ensures that the finance is allocated to the right entities and that it is used to produce the desired results.

The source of the financial tools does not necessarily have to be the public administration bodies (through tax incentives and grants) but might also originate from the private sector with for example banks offering specific funds to meet the financial needs of the knowledge transfer activities.

4.1.E Solutions: Institutional & Administrative Needs

Priority Ranking	Knowledge Transfer Needs & Solutions - Institutional & Administrative Needs
	Knowledge Transfer Need
	Evaluation of publicly funded research projects via their applicability to the end-user.
	Solution
1 (E2) *(Score: 8,09)*	A solution to meet this need is to involve the end users in the evaluation of research projects by including a project evaluation criteria that will rate the use of the final results of the project from the end user perspective. For this to be possible, the end user(s) of the project must be defined at project proposal stage. Furthermore, involving the end users and relevant stakeholders at all stages of the research lifecycle, including the research agenda, will ensure that the research activity meets their needs. A specific percentage of the budget granted to a publicly funded research project should be allocated to knowledge transfer and it will not be allowed to transfer that budget to any other activity. This budget allocation could also be

	used for the publication of patents if desired, thus making the technology and results made accessible to the end-users.
2 (E1) *(Score: 7,35)*	**Knowledge Transfer Need**
	EC guidelines for knowledge dissemination from the research institutions.
	Solution
	A substantial amount of research activity is being done within the various funding programs managed by the European Commission. This presents an opportunity to target these research projects with a set of guidelines aiming to improve the knowledge transfer for each of the R&D projects. The set of guidelines regulating the information flow within a EU funded research project could include: - having professional knowledge brokers available to assist in the organization of dialogue events to pass on results of research projects - strategies to implement knowledge transfer at a cluster level and not only at project level - a clear definition of the end-user/target groups for a particular project defining their needs and potential in order to be able to provide coherent knowledge resulting from a research project that will be included in the public deliverables.

Conclusion: Institutional & Administrative Needs

The institutional and administrative solutions described require a substantial change to the mindset and operation of the organisations involved in the research projects. However, although hefty to implement, the results will be long term and will be beneficial to all value chain agents since they promote and support the transfer of knowledge throughout the value chain.

4.2. General Comments on the Solutions to Facilitate Knowledge Transfer

Following the classification and prioritisation of knowledge transfer needs as discussed in Chapter 0, the most urgent and feasible solutions that require implementation are:

- Implementing a higher level of **education for construction professionals** (i.e. architects, civil engineers, building services engineers, project managers, building designers, etc.) that includes advanced energy analysis methodologies and know-how of retrofit technologies and their adaptations. This would include increased and adapted curriculums for Bachelors and Masters degrees in energy efficient construction technology. Additionally, further awareness should be directed towards existing support and educational instruments directed towards these value chain agents such as the BUILD UP initiative. Originally designed and implemented by the **European Commission** in 2009 to support EU Member States in implementing the Energy Performance of Buildings Directive (EPBD), the **BUILD UP portal**, funded under the Intelligent Energy Europe Programme 2007-2013, has become a focal point for professionals, public officials and homeowners alike to acquire knowledge on energy reduction in buildings. While bringing together practitioners and professional associations, the portal aims at exchanging best working practices and knowledge, improving skills and at transferring tools, resources, and guidelines.

- Developing appropriate **financial instrumentsfor the end-user** to promote the installation of energy efficient housing retrofit technologies that utilise the latest technological advances. These instruments can for example include the set up of beneficial grants, green loans and tax revisions (value added tax, property tax, income tax).
  - »Control of the eligibility to make use of the financial benefits in each country could be done through a measurement of the building energy efficiency level as assessed by the certification bodies in line with the EPBD standards for the country. There could also be a ratio between the EE level and the amount of the financial benefits granted to the occupant where the higher the level to be obtained through implementing retrofit the more financial benefits could be offered. This will also serve as motivation for the end user to aim for a higher level of energy efficiency. However, with the current economic crisis across a number of Member States, subsidies and grants are drying up and it has become increasingly difficult for public authorities to finance home energy improvements – while at the same time there is a growing realisation of the size of the investment needed to achieve carbon targets, and avoid a future upsurge in energy poverty.
  - »In order to increase the levels of investment, volume funds could be increasingly mobilised from the business sector to finance large scale low carbon retrofit investments in the houses. There are a range of financial products available to home owners, but the market has failed as yet

to deliver products at scale to address the need to significantly improve home energy performance. For example:

- »Mortgages may be offered at competitive rates, but set up costs tend to be high making them less more suitable for the price of a home than the (far lower) cost of home improvements.
- »Commercial unsecured loans are available, but tend to be at rather high rates
- »Lower rate commercial loans are available for those with a good credit rating, but not for everyone, and tend to be short term, designed to enable middle to upper income households to buy consumer goods. To this end, it can be recommended to further develop and replicate local or regional authority led 'pay as you save' type loans to finance retrofit in owner occupied homes: loans for which repayments are offset (to a lesser or greater extent) by anticipated savings on energy bills. This means that little or no grant funding is required, and programmes can be scaled up as confidence grows. Loan effectiveness is further enhanced by use of products such as guarantees to soften risk and reduce costs/increase household eligibility.
- »These are successful, proven and innovative finance mechanisms, implemented by local authorities, private financiers, third party financiers and governments, such as the UK Pay as You Save (the emerging Green Deal programme is based on this), Estonian Credit and Export Guarantee Fund (KredEx), Hungarian Energy Efficiency Co-Financing fund (HEECP) and Revolving Retrofit Loan Guarantee Fund (RRGF), which addresses the above mentioned financial barriers.

- **Exposing the traditional craftsmen to demonstration projects** that will expose the retrofitting technologies and aid in the dissemination of information. These demonstration projects could also present tools for the home-owner and traditional craftsman that will aid in the decision making process on which retrofitting technologies are most suited for a particular residence. This dissemination will lead to an increased level of education and access to EE retrofitting technologies and their implementation. As previously mentioned, further awareness should be directed towards existing innovative mechanisms in order to address this knowledge transfer need. One such mechanism is the BUILD UP SKILLS initiative funded by the European Commission which aims to map the areas of growth and investment for the entire construction and energy efficiency workforce in the built environment. Implemented in all EU Member States and various regions, BUILD UP SKILLS aims to ensure that employers in the built environment (specifically craft and technical workers) have the skills required to meet EU 2020 targets to:
  - » Reduce energy consumption by 20%
  - » Reduce greenhouse gas emissions by 20%
  - » Meet 20% of energy needs through renewable resources

- The first stage, or pillar, of BUILD UP SKILLS focuses on a piece of research to establish the current state of the workforce in each country or region and develop a roadmap to illustrate skills gaps and barriers to training. This analysis will involve four distinct phases:
- Engaging with all relevant stakeholders involved with training and qualification of the national built environment workforce regarding energy efficiency and renewable technologies.
- Identify and quantify all relevant professions and skills levels and discuss necessary changes to the current system and training measures.
- Produce a 2020 Skills Roadmap which illustrates the training gaps and barriers to learning.
- Endorsement of the roadmap by the industry and relevant training sectors.

Although these are the most important solutions identified by the questionnaire analysis and results prioritisation, all the knowledge transfer needs identified in Work Package 3 require attention and efforts towards tackling the issues identified. One cannot aim to achieve a healthy flow of information throughout the value chain without tackling all knowledge transfer needs with a holistic approach. Whereas some of the solutions affect a large number of value chain agents, for example that of increasing the communication between the R&D society and the end-user, other solutions are more specific in their target and are limited to a smaller number of value chain agents, for example the training of building professionals in retrofit technologies. However all solutions have their unique contribution to improving the state of knowledge transfer through the value chain.

5. REVIEW OF GENERAL BEST PRACTICES FOR KNOWLEDGE TRANSFER

This chapter provides a discussion of best practices for knowledge transfer, starting off with definition of a best practice and the steps to be taken to develop a system that could qualify as one worthy of being an established best practice. A review of the best practices that were encountered during the desk review stage of WP3 are also presented in relation to their applicability to the EE Retrofitting value chain.

5.1. Best Practice Definition

In order to provide a definition of what constitutes a best practice for effective knowledge transfer, one must first define knowledge.

Knowledge comes in two forms:

1. **Tacit Knowledge**; this is the knowledge possessed by a person that is acquired through ideas, experiences, people and places and is thus not easily captured and difficult to share.
2. **Explicit Knowledge**; knowledge that has been recorded
    - **Structured**; data elements that have been organised and referenced for future retrieval, e.g. documents, databases, etc.
    - **Unstructured**; information that is not referenced for retrieval, e.g. email, audio, etc.

In order to facilitate the process of sharing knowledge, the knowledge must both be learned (tacit) as well as useable (explicit and structured). It is only in such instances that the creation of a best practice scenario for effective knowledge transfer is possible.

A generally accepted definition of a best practice for knowledge transfer is a method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark. Consequently, a best practice must have a measureable success in order to be in a position to evaluate its success rate.

5.2. Steps to Developing an Effective Knowledge Transfer Framework (Best Practice)

Below is the methodology to be used when setting up a knowledge transfer method that is to be effective in reaching its goals of providing information to the user.

What knowledge is lacking?	1. Determine what knowledge must be transferred. ▪ Which are the technologies for which the end-user lacks knowledge? ▪ What knowledge is lacking? (technical, practical, technology adaptability, financial, environmental, policy, etc.)
Why is the knowledge needed?	2. Be able to articulate why the knowledge must be transferred. ▪ Why is this knowledge needed? ▪ Will it improve retrofitting take-up? ▪ Will it increase competence of the service providers to provide a better service to the customer? ▪ Will it ensure that the technology is applied in the best possible way?
Knowledge demand & supply.	3. Identify to whom the knowledge needs to be transferred. ▪ Which are the agent groups that need to receive this knowledge? ▪ Consider all value chain agents are determine which of them would benefit by receiving the knowledge to be transferred. ▪ Make sure to create a system that will reach out to, invite and disseminate information to all those who would benefit from the knowledge transfer. ▪ Identify the knowledge providers.
Knowledge transfer methods.	4. Determine how the knowledge will be transferred. ▪ What is the best method for the knowledge transfer considering the knowledge being dealt with? ▪ Does the information need to be demonstrated practically? ▪ Can the knowledge be stored for future reference in a central repository accessible to all the receiving value chain groups?
Execute the knowledge transfer.	5. Transfer the knowledge. ▪ Invite the relevant knowledge providers and receivers to become actively engaged in the knowledge transfer process. ▪ Provide knowledge transfer tools that are easily available and

	easy to employ. ▪ Ensure that all agents are skilled enough to be able to use the knowledge transfer tool effectively. ▪ Promote the knowledge transfer mechanism.
Test the effectiveness of the measures.	6. Test knowledge transfer by observing its recall and use. ▪ Actively monitor and quantify the knowledge transfer activity. ▪ How many of the knowledge providers were willing to share information? ▪ What are the reasons for their lack of participation? ▪ Collect feedback from the knowledge providers and receivers. ▪ How many knowledge receivers were actively receiving information? ▪ Where they satisfied with the information provided? ▪ Did they have the possibility to ask for further information on the subject matter? ▪ Was the information provided relevant to the receiver? ▪ Did the information provided make an impact on the receiver's outlook and take-up of retrofitting technologies?

5.3. Review of Best Practices Identified by Questionnaire Respondents

Amongst the questionnaire responses, some participants have highlighted a number of knowledge transfer tools which, in their opinion, are possible best practice scenarios. These submissions have been reviewed, analysed and categorised into their purpose as per the subdivision of knowledge transfer needs defined in Section 2.1. However in order to provide a more comprehensive review of existing best practices, a thorough desk review was undertaken using google searches and the research database of academic journals and papers called EBSCO Information Services. This is detailed in Section 5.4.

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Schneider Electric – Energy University
Web Address	www2.schneider-electric.com/sites/corporate/en/products-services/training/energy-university/energy-university.page
Administering Organisation	Schneider Electric SA
Contact Details	35 rue Joseph Monier 92500 Rueil Malmaison - France Phone: +33 (0) 1 41 29 70 00 Fax: +33 (0) 1 41 29 71 00
Country of Origin	France
Other countries participating	worldwide
Agents involved	TechSol, R&D, Manufacturer, Installer, A&E, Audit, ESCO, BuildManage
Summary of the Initiative	The Energy University is a FREE, online, educational resource, offering vendor-neutral courses on energy efficiency topics to help the user identify, implement, and monitor efficiency improvements within an organization. Courses are self paced and available on demand. Using the experience and knowledge within Schneider Electric the university offers a set of e-learning courses focusing on the major areas of energy efficiency. The courses provide the information needed to identify, monitor and manage energy usage and find new ways to simply and effectively create efficiency in any building or structure. Courses include amongst others: - Boiler types and energy efficiency - Building Control Systems - Calculation of Building Envelope - Combined Heat and Power - Energy Auditing - HVAC
Commendable Points (reasons why this is considered to be a Best Practice)	- Course content is based on the real life experience of the company. - Courses are free. - A wide range of courses are available. - Excellent accessibility and available to all countries.

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	INTEGER Millennium House
Web Address	www.ecbcs.org/docs/Annex_38_UK_Watford.pdf
Administering Organisation	INTEGER Intelligent & Green Ltd
Contact Details	Building 9, Bucknalls Lane, Garston, Watford, WD25 9XX Tel: 01923 665955 Fax: 01923 665956
Country of Origin	Watford, UK
Other countries participating	no
Agents involved	TechSol, Manufacturer, Installer, RenewEn, A&E, Audit, LCA, Occupant, BuildManage
Summary of the Initiative	A high profile Demonstration house designed in 10 weeks and built in another 13 without any form of Contract and the materials for building donated by suppliers. The Integer Millennium House resulted from a request by the UK Department of Trade & Industry (DTI) to put R&D results into tangible terms through a sustainable design and living conditions. The house was built to demonstrate how constructional, environmental, sustainable and technological applications available today can be used to provide a better home and lifestyle using available technology. Environmental Features: - Solar PV Panels - Solar Water Panels - Wind Turbine - Timber Frame - Green Roof - Grey Water Recycling - Surface Water Harvesting - Geothermal Heat Pump - Remote Metering

	- Reed Bed - CAT 5 Cabling - Home Networked - Electronic Locking - Managed Construction Waste - High Insulation Levels: 0.2W/m2oC - Passive Stack Ventilation
Commendable Points (reasons why this is considered to be a Best Practice)	- The house was featured extensively on TV with documentaries detailing its construction. - There were no prototypes or experimental components used in the construction of the house. All technologies were available in the market at the time of construction. - The house won many design awards in the years following its completion.

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	TRAINENERGY
Web Address	www.trainenergy-iee.eu/english/
Administering Organisation	AIDICO
Contact Details	Asociación de Investigación de las Industrias de la Construcción AIDICO C/ Benjamín Franklin nº17, Parque Tecnológico 46980 PATERNA , Spain
Country of Origin	Spain
Other countries participating	Ireland, UK, France, Germany, Spain and Denmark
Agents involved	PubA, Standard, TechSol, Manufacturer, Installer, A&E, Audit, LCA, BuildManage
Summary of the Initiative	The Trainenergy project ran from September 2009 to September 2011, the project's objective was to produce a training programme about the EU Energy Performance of Building Directives 2002 and Energy End-Use Efficiency and Energy Services 2006 for tradesmen in the construction industry. The project achieved the following goals: - Produced training materials for tradesmen consisting of common European core modules with country specific modules for each of the

	countries involved. - Produced training resources in the languages of the project: English, German, Danish, French and Spanish for educational institutes. - Trained teachers to teach these modules. - Promoted the issues of energy efficiency and sustainable energy amongst tradesmen in the construction sector.
Commendable Points (reasons why this is considered to be a Best Practice)	- During the project 30 teachers and 500 tradesmen were trained from the participant countries. - Training materials and course notes are online and accessible to the general public.

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	CASH, Cities Action for Sustainable Housing
Web Address	urbact.eu/en/projects/low-carbon-urban-environments/cash/homepage/
Administering Organisation	City of Echirolles, France
Contact Details	Thierry Monel - Lead Partner t.monel@ville-echirolles.fr +33 (0) 6 74 48 93 79 Stéphanie Abrial - Echirolles elected member in charge of CASH stephanie.abrial@ville-echirolles.fr
Country of Origin	France
Other countries participating	Netherlands, Hungary, Denmark, Italy, United Kingdom, Germany, Bulgaria, Greece.
Agents involved	PubA, Standard, A&E, Audit, Certificate, LCA, Occupant, BuildManage
Summary of the Initiative	CASH is a network of 11 partners (10 cities and one region) led by Echirolles City. As a contribution to Climate Change issue, the network seeks to reduce the energy consumption of buildings and in buildings. It looks for new solutions to renovate social and affordable housing units, in order to improve their energy efficiency (EE) and to influence users' behaviour through citizens' involvement.
Commendable Points (reasons why this is considered to be a Best Practice)	The CASH Base line Study updated in November 2012 provides a snapshot of the state-of-the-art on energy efficiency in social housing, and related legislation/policy in Europe, to provide a basis for action to address energy issues in social housing.

☒ Skills & Awareness ☐ Knowledge Management ☒ R&D Approach ☐ Financial ☐Instit& Admin

Title	A post-occupancy evaluation of energy-efficient measures in the housing sector: a case study for Malta
Web Address	www.buildup.eu/system/files/content/Energy%2520Efficient%2520Social%2520Housing%2520in%2520Malta%2520-%2520Birkirkara%2520Tal-Ftieh,%2520a%2520Pilot%2520Study.pdf+&cd=2&hl=en&ct=clnk&gl=mt
Administering Organisation	Department of Architecture and Urban Design, Faculty of Architecture and Civil Engineering, University of Malta
Contact Details	E-mail: vincent.buhagiar@um.edu.mt 2 Institute for Energy Technology, University of Malta, E-mail: charles.yousif@um.edu.mt
Country of Origin	Malta
Other countries participating	N/A
Agents involved	PubA, Standard, Finance, Economy, TechSol, R&D, Manufacturer, Installer, A&E, ESCO, Occupant, BuildManage
Summary of the Initiative	The Housing Authority in Malta is constantly being pressured to provide an adequate supply of housing units at affordable prices. Land was not always readily available, hence older dwellings had to make way for new build. In many instances, this led to the quasi-extinction of traditional building features that were reasonably sound moderators of the local climate. As a result modern units and apartment blocks led to a higher demand for heating and cooling in the dwellings. This project aimed at implementing specific features that will not only improve the thermal performance of the building, but will also provide a lower energy intensity value that respects the Environment and Aesthetics.
Commendable Points (reasons why this is considered to be a Best Practice)	Interesting case study of relevance to Malta, and other temperate countries.

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	PassREg Passive House Regions with Renewable Energies
Web Address	www.passreg.eu/

Administering Organisation	Plate-forme Maison Passive asbl - Belgium
Contact Details	info@maisonpassive.be
Country of Origin	Belgium
Other countries participating	Austria, Belgium, Bulgaria, Croatia, Germany, Italy, Latvia, Netherlands, United Kingdom
Agents involved	PubA, Standard, TechSol, R&D, Manufacturer, Installer, RenewEn, A&E, Audit, ESCO, Certificate, LCA, Occupant, BuildManage
Summary of the Initiative	Several European municipalities/regions are already committed to energy efficient Passive House principles (dictating maximum heating and cooling demands of 15 kWh/(m²a) each in new builds) and to covering the very low remaining energy demand in these buildings, to a significant extent and where logical, by energy from renewable energy sources. Along with other best practice examples, the experiences from these front runner regions, or PassREgs, will help pave the way for other EU regions to achieve the targets set out in the EU's Energy Performance in Buildings Directive (EPBD) by 2020. This project is thus based on European regions/municipalities that either are already PassREg regions (front runners) or are striving to become such regions (aspiring regions). Through PassREg, the front runner regions that have already implemented successful, cost effective strategies will be optimized and made visible. Lessons learnt on supporting the implementation of PassREg concepts through both successful regional models and best practice examples will serve as a basis to be adapted and implemented in aspiring regions. PassREg aims to trigger the successful implementation of Nearly Zero Energy Buildings (NZEBs) throughout the EU, using Passive House supplied as much as possible by renewable energies as the foundation.
Commendable Points (reasons why this is considered to be a Best Practice)	The section dedicated to solutions and another to Beacons is particularly relevant since it provides quite a bit of detail on the retrofitting interventions used. www.passreg.eu/index.php?page_id=292 www.passreg.eu/index.php?page_id=70

☐ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	RehabiMed Project
Web Address	www.rehabimed.net
Administering Organisation	Universitat Politècnica de Catalunya Collegi d'Aparelladors, Arquitectes Tècnics i Enginyers d'Edificació de Barcelona Ecole d'Avignon
Contact Details	rehabimed@apabcn.cat
Country of Origin	Spain
Other countries participating	North and the South of the Mediterranean
Agents involved	PubA, Standard, TechSol, R&D, Manufacturer, Installer, RenewEn, A&E, Audit, ESCO, Occupant, BuildManage
Summary of the Initiative	The main objective of the Association is to promote the sustainable rehabilitation of the building stock and the social and economic revitalisation of historic centres, both in Europe and in the developing Mediterranean countries. To achieve this goal, RehabiMed will : - impulse research and training of experts in rehabilitation - disseminate a multidisciplinary working methodology - increase the management capacity of local and national governments - contribute to improving the living conditions of the population - boost the awareness on the preservation of heritage as a factor of sustainable development.
Commendable Points (reasons why this is considered to be a Best Practice)	Although this project doesn't seem to have any recent activity, it contains a good back-bone for the sharing of ideas and knowledge transfer in keeping all participating entities up-to-date and motivated to perform building retrofitting,

☐ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	ENEA – Italian National Agency for New Technologies, Energy and Sustainable Economic Development
Web Address	www.enea.it
Administering Organisation	ENEA

Contact Details	Lungotevere Thaon di Revel, 76 - 00196 ROMA – Italia
Country of Origin	Italy
Other countries participating	None
Agents involved	PubA, Standard, Finance, Economy, TechSol, R&D, Manufacturer, Installer, RenewEn, A&E, ESCO, PO, LCA
Summary of the Initiative	ENEA provides its support to national enterprises to enhance their technologies, increase their competitiveness and make them more environmentally friendly. With this aim, ENEA provides technology transfer and dissemination aimed at promoting the use of expertise, facilities and results of the Agency and its participated companies. The Agency: - proposes agreements to enterprises so that they can use ENEA patents and share scientific knowledge, set up research laboratories and realize technology innovation projects; - ENEA allows enterprises to use its laboratories and experimental facilities where they can perform qualification tests of components, devices and systems; - promotes and fosters ways to meet innovation supply and demand even by participating in national and international networks and in EU research projects; - provides its partnership in national and international research projects; - provides its support to creating high-tech initiatives, such as spin-offs; - provides remote and on-the-job training aimed at transferring know-how and creating new professionals.
Commendable Points (reasons why this is considered to be a Best Practice)	- knowledge is distributed and sharing of patented information is encouraged. - Access to R&D equipment and results is available. - Pool of technically competent persons involved.

☐ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	EDEA Project / Experimental Architecture
Web Address	www.proyectoedea.com/en/
Administering Organisation	Ministry of Public Works of the Regional Government of Extramadura

Contact Details	Tfno. 924 33 20 20 - Fax: 924 33 23 83 - info@proyectoedea.com
Country of Origin	Spain
Other countries participating	N/A
Agents involved	PubA, Standard, Finance, Economy, TechSol, R&D, Manufacturer, Installer, RenewEn, A&E, Audit, Occupant, BuildManage
Summary of the Initiative	The construction sector is an important player in the design, erection, maintenance, renovation and demolishing of buildings, and has a part to play in the protection of the environment while contributing to the economical and social "benefits" of towns/cities and citizen´s quality of life. Consequently the Ministry of Public Works of the Regional Government of Extremadura has addressed the need to develop a design and building methodology for social housing in Extremadura, in order to inform houses that want to reach sustainability criteria with a better energy performance and using new renewable energy resources, while improving building quality.
Commendable Points (reasons why this is considered to be a Best Practice)	The materialization of this project was established via the construction of two single-family isolated dwelling units. The project features which support its singularity and novelty are: ▪ It is tailor-made specifically for the particular weather conditions of the Extremadura region. ▪ It is focused on a specific housing typology and low income populations ▪ It provides reliable and comparable data towards efficiency obtained from an "experimental dwelling unit" against the typical "dwelling unit" used in Extremadura social housing. The EDEA technical report is particularly useful. www.proyectoedea.com/pdf/2011.10.06_Memoria_Tecnica.pdf

☐ Skills & Awareness ☐ Knowledge Management ☒ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Construction21 Europe. The European platform for green building practitioners
Web Address	www.construction21.eu
Administering Organisation	IFPEB
Contact Details	12, Place de la Bourse

	33076 BORDEAUX CEDEX FRANCE TEL : +33(0)9 82 53 49 06
Country of Origin	France
Other countries participating	Germany, Italy, Lithuania, Romania and Spain
Agents involved	PubA, Standard, Finance, Economy, TechSol, R&D, Manufacturer, Installer, EDist, RenewEn, GridOp, A&E, Audit, ESCO, Certificate, PO, LCA, Occupant, BuildManage
Summary of the Initiative	Construction21 is a collaborative platform dedicated to all professionals active in the sustainable building sector. One can exchange information and get feedback, develop a network and engage in the thematic communities. Access to the Website is totally free and content is created by users and moderated by recognized experts.
Commendable Points (reasons why this is considered to be a Best Practice)	The platform is multi-lingual. All six language platforms are linked together via a central platform in English connected to Build Up, the European Commission website dedicated to Energy efficiency in buildings. The platform contains extensive discussions on retrofitting technologies and products with many case studies being documented.

☐ Skills & Awareness ☐ Knowledge Management ☒ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Maimona Foundation
Web Address	www.maimona.org
Administering Organisation	Maimona Foundation
Contact Details	Center "Diego Hidalgo" Business Innovation Ctra Spot The Nava, s / n 06230 Maimona Badajoz Phone: (+34) 924 57 21 28 E-Mail: fundacion@lossantos.org
Country of Origin	Spain
Other countries participating	none
Agents involved	PubA, Standard, Finance, TechSol, R&D, Manufacturer, Installer, EDist, RenewEn, A&E, Audit, Certificate, LCA, BuildManage
Summary of the Initiative	This organization aims to support the development of business plans and strategic plans in all project types. It assists in finding partners for

	projects as well as relevant information to move the project forward together with risk capital procurement and financial resources sourcing. The organization also offers training on specific and general management issues aimed at professionals.
Commendable Points (reasons why this is considered to be a Best Practice)	This organization brings together many agents from the value chain and could be utilized as a good platform for knowledge transfer.

☐ Skills & Awareness ☐ Knowledge Management ☒ R&D Approach ☐ Financial ☐Instit& Admin	
Title	CIC Start Online
Web Address	www.cicstart.org
Administering Organisation	Glasgow Caledonian University
Contact Details	70 Cowcaddens Road Glasgow G4 0BA
Country of Origin	Scotland
Other countries participating	none
Agents involved	Finance, TechSol, R&D, Manufacturer, Installer, RenewEn, A&E, PO, LCA, BuildManage
Summary of the Initiative	This project is a collaborative effort between Glasgow Caledonian University in partnership with Edinburgh Napier University, Glasgow School of Art, Heriot Watt University, the Robert Gordon University, University of Edinburgh and University of Strathclyde Glasgow. The partnership provides academic consultancy on sustainable building design and refurbishment. Outcomes of studies are presented in seminars and web conferences and the academic laboratories are made available for testing of innovative products.
Commendable Points (reasons why this is considered to be a Best Practice)	- Consortium of R&D institutes working together - Vast database of academic material available online. - Possibility to organise feasibility studies on new technologies.

☐ Skills & Awareness ☐ Knowledge Management ☒ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Smart Energy Efficient Middleware for Public Spaces
Web Address	seempubs.polito.it/

Administering Organisation	Politecnico di Torino
Contact Details	++39 011 564 7042 seempubs@polito.it
Country of Origin	Italy
Other countries participating	STMicroelectronics, Centro Ricerche Fiat, Fraunhofer-FIT, CNet Svenska AB, Katholieke Universiteit Leuven, Universite Claude Bernard Lyon 1, Sinovia SA, Istituto Superiore Mario Boella, ENI Servizi
Agents involved	Finance, TechSol, R&D, Manufacturer, Installer, RenewEn, Occupant
Summary of the Initiative	SEEMPubS will provide control of appliances to effortlessly optimise energy efficiency usage without compromising comfort or convenience and offering decision makers strategies and tools needed to plan energy saving measures. SEEMPubS will make use of the service-oriented middleware for embedded systems being developed in the Hydra project and use its huge potential to create services and applications across heterogeneous devices to develop an energy-aware platform. The SEEMPubS platform will provide necessary functionality and tools to add energy efficiency features to monitor dynamic sensor data in real time, taking advantage of natural resources (like daylight and solar energy) and controlling the operation of both passive and active environmental systems to ensure the best possible comfort conditions with the most efficient use of energy.
Commendable Points (reasons why this is considered to be a Best Practice)	

☐ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☒ Financial ☐Instit& Admin	
Title	1200 BUILDINGS
Web Address	www.melbourne.vic.gov.au/1200buildings/Pages/Home.aspx
Administering Organisation	City of Melbourne (Government Authority)
Contact Details	90-120 Swanston Street Melbourne VIC 3000 Phone: +61 3 9658 9658
Country of Origin	Melbourne, Australia
Other countries	No

participating	
Agents involved	PubA, Finance, Economy, TechSol, Manufacturer, Installer, RenewEn, A&E, Occupant, BuildManage
Summary of the Initiative	The 1200 Buildings program aims to encourage and support building owners, managers and facility managers to improve the energy/water efficiency and reduce waste to landfill of commercial buildings in the municipality of Melbourne. The website contains tools for Building Owners as well as Tenants to assess their building performance, develop a retrofit plan, perform the works with all necessary approvals, review and re-rate the building energy performance.
Commendable Points (reasons why this is considered to be a Best Practice)	By enrolling to the 1200 Buildings program the end-user obtains access to financing through a dedicated Sustainable Melbourne Fund. All information is online with extensive information on retrofitting principles. Such a network could be developed at European level focusing on the Mediterranean Area. The user of the site could get general information on energy efficiency retrofitting issues either from published research documents or any case studies in the Mediterranean Area. Then each user of the site will be able to choose his country and obtain information about particular programs that can be proposed and developed by various municipalities in each country. Information like financial benefits for retrofitting, available retrofitting technologies or Availability of demonstration projects supporting the technology etc will be available to the site user whatever his role in retrofitting value chain.

☐ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☒ Financial ☐Instit& Admin	
Title	Programme for energy-efficient retrofitting of Bulgarian households
Web Address	fund.corpbank.bg/
Administering Organisation	Fund for renovation of Buildings/Фондзажилищнообновяване
Contact Details	+359 /0/ 700 1 8888; contact@corpbank.bg
Country of Origin	Bulgaria
Other countries participating	NA

Agents involved	PubA, Standard, Finance, Economy, TechSol, R&D, Manufacturer, Installer, RenewEn, A&E, Audit, ESCO, Certificate, LCA, Occupant, BuildManage
Summary of the Initiative	End-users for this project are: Association ofcondominium owners; Ownersof individual residential units. The project covers36urban centers for three years period (2012-2015). Financial assistancefor the implementation ofenergy efficiency measureswill be provided tohomeowner associationsregistered under theActof condominium management. Partof the preparatoryactivities related to themeasureswill be conductedentirelyfrom the programme: - investigationto establish thetechnical characteristicsof the buildingand preparation oftechnicalpassport; - energy audit; - costsforprojectmanagers.
Commendable Points (reasons why this is considered to be a Best Practice)	Each approved project will receive a grant of 75% of the total value of the project. There is option for low interest loan/4.5%/ for the difference to 100%. This is the best financial tool for achieving higher level of energy efficient retrofitting of multifamily buildings.

☐ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☒Instit& Admin	
Title	CLIMACTREGIONS PROJECT
Web Address	www.climactregions.eu
Administering Organisation	Rhônalpénergie-Environnement (RAEE)
Contact Details	10 rue des archers, 69002 LYON Etienne VIENOT Tel : +33 (0)4 72 56 33 67 etienne.vienot@raee.org
Country of Origin	France
Other countries participating	Italy, UK, Romania, Sweden, Germany, Czech Republic, Spain
Agents involved	PubA, TechSol, R&D
Summary of the Initiative	The ClimactRegions project aims to strengthen regional capacity to

	develop and implement policies to reduce greenhouse gas emissions (GHG). Objectives : - enable Regions to efficiently monitor and observe greenhouse gases - develop regional policies for greenhouse gas mitigation using good governance processes - strengthen the dialogue between Regions and the EU on climate change policies and their implementation in the field.
Commendable Points (reasons why this is considered to be a Best Practice)	The project provides a platform for the sharing of good practices in the field of GHG control

5.4. Review of Best Practices Identified Through Desk Research

☒ Skills & Awareness ☐ Knowledge Management ☒ R&D Approach ☒ Financial ☐Instit& Admin	
Title	Knowledge Transfer Office, University of Malta
Web Address	www.um.edu.mt/knowledgetransfer
Administering Organisation	University of Malta
Contact Details	Knowledge Transfer Office, Ground Floor, 30, Triq l-Esperanto, Msida MSD 2011, Malta, Tel: 356 2340 2340
Country of Origin	Malta
Other countries participating	none
Agents involved	PubA, Finance, TechSol, R&D, Manufacturer, Installer, RenewEn, A&E, PO
Summary of the Initiative	The Corporate Research and Knowledge Transfer Office was set up in September 2009 to assist in with the transformation of the University into a modern-day 3rd Generation University built on three pillars, namely: teaching, corporate research, and direct and active participation in sustainable socio-economic development. The main purposes of the Office are: 1. to drive the Corporate Research agenda of the University in harmony

	with and in response to national, social and economic requirements the needs of the local industry, emerging expertise and intellectual property, funding opportunities 2. to assist the University and academic members of staff: to define and protect intellectual property and commercially exploit research results, to participate in externally funded and collaborative research projects, to seek financing for corporate research initiatives.
Commendable Points (reasons why this is considered to be a Best Practice)	The office provides a databank of technical experts to assist industry in the development of new technologies, new applications, etc. The University R&D labs are made available to the research needs of the business community. The office offers the possibility to work together with industry through publicly funded projects. It reaches out to the industry for support and collaboration in commercialising results of research. Mentoring services and funding opportunities are made available for start-up companies in new technology operations.

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	take your energy back
Web Address	www.takeyourenergyback.eu
Administering Organisation	European Renewable Energy Council (EREC)
Contact Details	info@takeyourenergyback.eu Tel.: +32 2 546 1946
Country of Origin	EU
Other countries participating	EU associations
Agents involved	RenewEn, TechSol, R&D, Manufacturer, Installer, A&E, PubA, Climate, EDist, Audit, ESCO, BuildManage, Finance
Summary of the Initiative	This campaign involves the participation of leading EU associations, agencies and companies specialised in renewable energy, energy efficiency and sustainable communication: • EREC (European Renewable Energy Council) • EuroACE (European Alliance of Companies for Energy Efficiency in Buildings) • CEETB (European Energy Efficiency Installers – Committee for the

	Construction Industry) • FEDARENE (European Federation of Regions and Agencies for Energy and the Environment) • Energy Cities (The European Association of local authorities inventing their energy future) • Climate Alliance (Association of European local authorities committed to climate protection) • ADEME (French Environment and Energy Management Agency) • eclareon (energy consultancy) • Ketchum Pleon (communications consultancy) The Smart-e Buildings campaign aims to mobilise Europeans through an interactive web portal linked to the main social networks like Twitter and Facebook. The portal thus acts as a platform, providing building owners and users, guidance into the world of energy efficient buildings. The campaign is backed by a network of Parliamentarians and is strengthened through events in national and European Parliaments. This will plug the gap of political understanding in some EU member states on the great potential of the building sector.
Commendable Points (reasons why this is considered to be a Best Practice)	• Web portal is available in 6 European languages. • Web portal includes a "Good Practices" section with building examples from various European countries. The examples showcase solutions and applications in the EE and RE field. You will also find examples of interesting policy programs, financing opportunities and communication campaigns. • One can access many energy saving, renewable energy tips and financing options depending on the building type.

☒ Skills & Awareness ☐ Knowledge Management ☒ R&D Approach ☒ Financial ☐Instit& Admin	
Title	Energy Efficiency in Low Income Housing in the Mediterranean
Web Address	www.elih-med.eu/Layout/elih-med/
Administering Organisation	MED Programme
Contact Details	CMCI – 2 rue Henri Barbusse 13241 MARSEILLE Cedex 01, France Tel: 00 33 4 91 31 5195

	Mail: m.dioudonnat@ins-med.org / a.seon@ins-med.org
Country of Origin	France
Other countries participating	Cyprus, Greece, Italy, Malta, Spain, Slovenia
Agents involved	Audit, ESCOs, Certificate, A&E, PubA, R&D, Standard, LCA,PO
Summary of the Initiative	ELIH-MED aims to test and identify feasible cost-effective technical solutions and innovative financial mechanisms. It does so through large scale pilot actions backed by the ERDF (European Regional Development Fund). The project shall be extended throughout the whole of the Mediterranean region, whilst taking into account the different needs and differences of a particular region in relation to the rest of Europe. This strategic project aims to develop and get a political consensus on a transnational operational program on energy efficiency in low-income buildings. This should be a significant component of a macro regional strategy in the Mediterranean area. **The main actions** • Development of integrated policies to promote energy efficiency in LIH in the Mediterranean through project result capitalisation • Implementation of a large scale pilot experimentation of technical and financial solutions in 420 low incoming dwellings to improve energy efficiency • Promotion of intelligent energy management systems at local and regional level through the experimentation of multi-energy smart meters in 135 low incoming dwellings
Commendable Points (reasons why this is considered to be a Best Practice)	To ensure the success of the pilot projects, a participative process is exploited to actively involve local relevant stakeholders in the large scale pilot experimentation. The analysis, guidelines and the database developed throughout ELIH-med project are available not only for target groups but also for public. ELIH-med provides also helpful tools such as questionnaires, energy audit advice or checklists, etc.

☒ Skills & Awareness ☐ Knowledge Management ☒ R&D Approach ☐ Financial ☒Instit& Admin	
Title	MARIE; Mediterranean Building Rethinking For Energy Efficiency Improvement
Web Address	www.marie-medstrategic.eu/en/success-stories-or-best-practices/best-practices.html

Administering Organisation	MARIE
Contact Details	Carrer de la Diputació, 92, 08015 Barcelona, Spain jaumefornt@gencat.cat
Country of Origin	Spain
Other countries participating	Portugal, France, Italy, Slovenia, Montenegro, Greece, Cyprus, Malta
Agents involved	Audit, ESCOs, TechSol, A&E, PubA, R&D, Manufacturer, Standard, EDist, LCA, Finance
Summary of the Initiative	23 partners spread across 9 Mediterranean countries have responded and committed themselves to participate in the MARIE project. The mission of the MARIE project is to co-construct a strategy for energy efficiency in existing buildings in the Mediterranean region. To succeed in this task, MARIE faces three major challenges: • To develop and adopt new regulatory requirements and new institutional tools to achieve the goals established by the new European Directive (EPBD). • Find new financial mechanisms that can be used to stimulate the thermal rehabilitation of buildings. • Give further support to local businesses, in particular SMEs, so as to provide them with appropriate products and services for the thermal rehabilitation of buildings
Commendable Points (reasons why this is considered to be a Best Practice)	• Have been implemented and the results are visible • Energy savings are of at least a 20% of the three last years' consumption • The return of the investment occurs in less than 10 years • Can generate a procedure replicable in similar buildings anywhere in the Mediterranean basin

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☒Instit& Admin	
Title	IRH-Med, Innovative Residential Housing for the Mediterranean
Web Address	www.irh-med.eu
Administering Organisation	IRH-Med
Contact Details	Email: isidresala@acc10.cat; Tel: +34 93 484 96 05; Address: Passeig de Gràcia 129 (08008) Barcelona
Country of Origin	Spain

Other countries participating	Greece, France, Croatia
Agents involved	Audit, TechSol, Certificate, A&E, PubA, RenewEn, Manufacturer, Installer
Summary of the Initiative	IRH-Med seeks to improve the competitiveness of innovative and sustainable models for housing that respond to the challenges of a growing population, water scarcity, solar radiation, combined with the possible effects of climate change and the consequences of earlier building construction methods. To this end, the specific objectives that the project aims to achieve are to facilitate the development of common guidelines and policy approaches to assessing Mediterranean residential buildings. The approach shall boost the use of sustainable and responsible models of housing, while developing market opportunities for SMEs in this field.
Commendable Points (reasons why this is considered to be a Best Practice)	Building of a retrofitted tower in Nice, France comprising of 106 social dwellings with consideration of assessment parameters in: • Territory and Site • Materials • Energy • Water • Health and Comfort • Socio economic aspects • Management

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Passive Solar Retrofitting of the School of Philosophy Building at University of Ioannina, Greece
Web Address	www.annex36.com/eca/uk/03viewer/case_studies/gr_2_data.html
Administering Organisation	University of Ioannina
Contact Details	University of Ioannina Campus, Ioannina, Greece
Country of Origin	Greece
Other countries participating	no
Agents involved	TechSol, Certificate, A&E, PubA, R&D, Standard, LCA, RenewEn
Summary of the Initiative	The aim of this project has been to show that a combination of passive solar energy collection and storage systems can cover most year-round

	heating and cooling problems of this University building, while presenting quite attractive prospects of low maintenance cost, durability and simplicity of operation. These advantages, combined with the high liveability of covered courtyard spaces in the winter, should render this system quite appropriate to a Higher Education setting in this part of the country.
Commendable Points (reasons why this is considered to be a Best Practice)	Present energy consumption for heating: 104.6 kWh/m2. Energy consumption for lighting: 7 W/m2. Energy gains from the project are estimated at 33kWh/m² for this section of the building, or 30% of its yearly energy requirements.

☐ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☒ Financial ☐Instit& Admin	
Title	Case Study: Aid System for Thermal Refurbishment of Social Housing Stock in Champagne Ardenne Region
Web Address	www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecasestudies_pi3%5Bid%5D=106
Administering Organisation	ARCA - Union Sociale pour l'Habitat Champagne Ardenne
Contact Details	38, Rue Cérès, 51100, Reims, Champagne Ardenne, France
Country of Origin	France
Other countries participating	no
Agents involved	TechSol, A&E, Finance, Standard, LCA
Summary of the Initiative	In May 2009, in the context of the revision procedure of the Article 7 of the ERDF Regulation, the European Union allowed to use 4% of the national ERDF amounts to improve energy efficiency in social housing. In France, this has been integrated to the objectives of the social housing organisations and to the commitments they had made in the context of the French Grenelle plan. The budget of 320M euro allocated to energy performance and sustainable energy in social housing enable the organisations to implement projects that are exemplary and repeatable. At the local level, the Regional Associations for social housing were mobilized to enable this implementation and to help the SHO developing new projects. They lead different types of actions: - Identifications of needs.

	- Implementation of the partnership. - Support to project managers. - Financial engineering. - Funding and monitoring of projects. The aid system developed in The Champagne Ardenne Region can be linked to Financing engineering kind of action. In the Champagne Ardenne Region, the SGAR, the Caisse des Depôts et Consignations, the Region and the Regional Association for social housing worked on a common system with an eco-loan at 0% for 15 years and an additional grant from the ERDF and the Region. Both procedures are almost identical and there is a single contact point.
Commendable Points (reasons why this is considered to be a Best Practice)	2707 homes have been rehabilitated with the support of this common system. The average consumption is 304 KW/m²/an before and estimated at 146 KW/m²/an after renovation work. The energy gain is estimated at 29,959,020 KW / m²/year and 5243 tonnes of CO2 will be saved. In France, the mobilisation to implement the ERDF measure should have strong effects on energy performances of the retrofitted housing stock.

☒ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Case Study: ARTE Genova pilot Via Sertoli, 9 - SHELTER Project
Web Address	www.powerhouseeurope.eu/nc/cases_resources/case_studies/single_view/?tx_phecasestudies_pi3%5Bid%5D=114
Administering Organisation	A.R.T.E. Genova - AziendaRegionaleTerritoriale per l'EdiliziadellaProvincia di Genova
Contact Details	TulliolaGuglielmi , ARTE Genova E-mail: t.guglielmi@arte.ge.it, Phone: +39 (0) 10 53 901
Country of Origin	Italy
Other countries participating	no
Agents involved	Certificate, Occupants, Audit, A&E, R&D, PubA
Summary of the Initiative	This 1930's building is composed of 84 public housing units. The aim of the project is to provide the building with 52 dwellings of various sizes, cellars for all single units and 2 commercial premises, along with the roof renovation with eco-friendly materials and window enlargements with the installation of double paned, gas filled, PVC framed windows. In this operation, ARTE has worked with residents, listening their needs

	and making them stay (temporarily) in other blocks in the neighbourhood. ARTE's aim is to optimize the building's thermal performances and in particular: - reduce energy consumption for heating and hot water production; - reduce the operating costs; - maintain the thermal comfort conditions inside the units; - reduce heat loss; - integrate the central heating, using solar thermal and/or photovoltaic systems; - assess, the energy efficiency of each dwelling. The partnerships involved are Regional Council, ARTE, an expert engineer in Renewable Energy.
Commendable Points (reasons why this is considered to be a Best Practice)	The residents will be the lower income groups The external insulation will be realised with natural end innovative material

☒ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Promoting Renovation of Schools in a Mediterranean Climate up to Nearly Zero-Energy Buildings
Web Address	www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=2642
Administering Organisation	ZEMEDS
Contact Details	FundacióAscamm ParcTecnològic del Vallès, Av. UniversitatAutònoma, 23 08290 Cerdanyola del Vallès (Barcelona), Spain Tel. (+34) 93 594 47 00, info@ascamm.com
Country of Origin	Spain
Other countries participating	Greece
Agents involved	TechSol, R&D, Software, Finance, PubA, Manufacturer, Installer, ESCO, Climate
Summary of the Initiative	EU energy policy encourages member states to start converting building stock into nearly zero-energy buildings (NZEB) and public authorities to adopt exemplary actions. ZEMEDS responds to EU objectives by assisting

	public sector on going beyond the proposed 3% renovation target and bringing together industry elements to provide packaged solutions. The action focuses on renovating schools from EU regions on the Mediterranean region. Schools represent an important part of the building stock. In the Mediterranean regions of Italy, Greece, Spain and France, around 87.000 schools consume around 2 Mtoe/year. NZEB require combining high energy efficiency and renewable energy sources. NZEB models have been developed for North-Centre European climates. But Mediterranean coastal climate (with different climate conditions) has not been studied enough. There are several barriers that hinder nowadays school buildings renovation leading to NZEB. The action aims to cover two of them. 1. Lack of knowledge within the building industry to develop NZEB renovation models in a Mediterranean climate. 2. Public sector doesn't have enough tools to achieve NZEB renovation.
Commendable Points (reasons why this is considered to be a Best Practice)	• Implementation of 5 new NZEB tendering specifications • Development of a series of NZEB Toolkits which focus on technical and financial aspects of NZEB renovation of schools buildings in Mediterranean coastal climate • Training 4650 school policy makers and building designers on NZEB refurbishment of schools in Mediterranean climate • Participation on 8 international conferences • Dissemination of the NZEB concept and schools retrofitting to more than 100.000 school users and participation in 8 international events to promote the concept beyond the Mediterranean region.

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Actions in low income Households to Improve energy efficiency through Visits and Energy diagnosis
Web Address	www.achieve-project.eu
Administering Organisation	ACHIEVE
Contact Details	CLER, Network for the energy transition, France E-mail: marie.moisan@cler.org Tel: 0033155868007
Country of Origin	France
Other countries	Bulgaria, Germany, Slovenia, United Kingdom

participating	
Agents involved	Occupants, Finance, Audit, TechSol, PubA, ESCO
Summary of the Initiative	The aim of ACHIEVE is to contribute to practical (energy uses and behaviours) and structural (retrofitting buildings) solutions for reduction of fuel poverty in Europe. This overarching aim of the action will be supported by the following specific objectives: - to analyse the situation in order to have a solid basis for further action; - to shape appropriate measures, tools and communication for working with the target groups and key actors in order to lead them on saving energy; - to equip new groups of people ("multiplicators") with knowledge and skills for implementing practical measures in households, linked to energy and water savings; - to put practical measures in place and inform the low-income households how to implement further practical measures for saving energy; - to coordinate actors into a concerted effort for formulating long-term solutions and develop a network for implementing these.
Commendable Points (reasons why this is considered to be a Best Practice)	• Focus groups have been held on each pilot territory, gathering a variety of local actors such as local authorities (municipalities, county councils), social housing providers, social welfare and charity organisations, energy agencies and services, schools, and obviously households themselves • Each partner defined the scope of the devices they will use during the visits, depending on: - the time needed to install the devices; - the fact that devices must adapt to the household's situation; - the availability and the costs of each of the devices on the respective national markets (linked to the willingness of transferability and reproducibility of the project activities); - targets on Energy and CO2 reductions; - the quality of the devices. • Visits have started yet in each pilot area. Since February 2012, 588 visits have been performed by 94 trained advisers (targets for the project duration: 2600 visits and 52 advisers)

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Energy Training For Builders
Web Address	www.buildupskills.eu/en
Administering Organisation	Build Up Skills

Contact Details	Tel:08448 549 004; Email:lradford@buildupskillsuk.org
Country of Origin	EU
Other countries participating	All EU countries
Agents involved	Finance, Audit, TechSol, Certificate, ESCOs, A&E, PubA, R&D, Occupants, Gov, Manufacturer, Software, Standard, GridOp, LCA, RenewEn
Summary of the Initiative	In all countries national teams have been formed. Each country team first works on a detailed analysis of the national status quo. The aim is to assess and quantify supply and demand in the building sector until 2020 and beyond, and to identify specific skills shortages by craft occupation as well as key barriers. The majority of status quo reports are expected by June 2012. This analysis will be the basis for broad discussions with public and private stakeholders about current gaps, future needs and priorities, leading to the elaboration and endorsement of a national roadmap of priority measures to up-skill the qualification of craftsmen, other on-site workers and system installers of buildings. The identified measures should aim at reaching the 2020 targets in the building sector.
Commendable Points (reasons why this is considered to be a Best Practice)	• Throughout the whole BUILD UP Skills initiative, regular exchange activities are organised at EU level to underline the European dimension and to foster the learning among countries. • Until end of 2013 representatives of the national teams constituted within phase I of the initiative will meet twice a year to exchange on challenges they face as well as on findings, best practices, common ways forward, etc. Flexible working group formats allow in-depth exchange and learning. • Groups of four countries have been formed that support each other throughout the whole 18 months of work on the roadmaps. • Key results such as the national status quo reports and the national roadmaps will each be summarised into an EU-wide publication.

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Energy retrofitting of existing social housing: A case study in Spain
Web Address	www.sci-network.eu/fileadmin/templates/sci-network/files/Resource_Centre/Leticia_Ortega_Alicante_social_housing.pdf

Administering Organisation	GeneralitatValenciana
Contact Details	Leticia Ortega Madrigal; lortega@five.es ; www.five.es
Country of Origin	Spain
Other countries participating	No
Agents involved	LCA, Certificate
Summary of the Initiative	The main goal of the project was the renovation of facades and roofs to improve the quality, comfort and energy efficiency of buildings. The study developed by the IVE was to provide an environmental assessment of the buildings in their current state and in their final state, after the energy efficiency improvements. The study considered different options for saving energy in terms of making the project as cost-effective as possible.
Commendable Points (reasons why this is considered to be a Best Practice)	The neighbourhood chosen for the renovation has high social problems and high proportions of low-income people. Specifications and results are available for the public

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☒ Financial ☐Instit& Admin	
Title	Development and marketing of integrated concepts for energy efficient and sustainable retrofitting of social Housing
Web Address	www.rosh-project.eu
Administering Organisation	ROSH
Contact Details	BodoGrimmig Target GmbH, Germany E-mail: steege@targetgmbh.de, Tel: 0049 511 39 47 302
Country of Origin	Germany
Other countries participating	Austria, Bulgaria, Ireland, Italy, Poland
Agents involved	Finance, ESCOs, TechSol, PubA, Gov, Occupants, Installer, A&E, R&D
Summary of the Initiative	The instruments of ROSH are information, training and communication measures. Interested institutions are provided with helpful tools and materials to support their sustainable retrofitting activities. At the centre of ROSH are activities directed at those providing social housing and at the tenants. But the further relevant stakeholders of authorities (subsidy

	schemes), energy service companies (ESCOs) and planners are included as well. ROSH aims at developing guidelines for sustainable retrofitting and financing schemes. Demonstration projects will be used to verify these concepts. This project looked at energy efficiency and sustainable retrofitting in social housing in specific regions in six EU countries. It was based on integrated programmes combining information, training and communication. Guidelines on financing schemes were also being drafted, while demonstration projects serve to evaluate practices. The wider aim was to stimulate the market for these solutions, and increase comfort levels and quality of life for tenants.
Commendable Points (reasons why this is considered to be a Best Practice)	• Brochure "Market analysis of Social Housing in the ROSH partner regions" available in four languages. • Market analysis of social housing retrofitting needs conducted in four regions and countries based on questionnaires which also investigated existing regulatory frameworks. • Spread new technologies, posters on results of thermography and blower doors measurements have been put together in four languages. • A list of financial partnership schemes was compiled in an attempt to overcome the lack of available finance. • A check-list for building managers and owners were put together to help them decide if they need to refurbish their multi-family dwellings, again in four languages.

☐ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☒ Financial ☒Instit& Admin	
Title	ESCOLIMBURG2020
Web Address	www.limburg.be;http://www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=2600
Administering Organisation	Province of Limburg
Contact Details	Province of Limburg, Belgium E-mail: pboucneau@limburg.be
Country of Origin	Belgium
Other countries participating	No

Agents involved	ESCOs, Audit, TechSol, A&E, PubA, RenewEn, Finance, GridOp, Occupant
Summary of the Initiative	The project ESCOLIMBURG2020 deals with the translation of the ambition of the province of Limburg (Belgium) to become climate neutral by 2020 to the local Limburg context focussing on accelerating, province wide, large scale retrofitting (energy efficiency and renewable energy) of the public building stock of the 44 municipalities and the province itself. The project aims to accelerate and up-scale the concrete implementation of energy efficiency and renewable energy measures in the public building stock by making use of an ESCO-model, relieving the local authorities from complex investment processes. In 2010, the provincial energy grid operator Infrax started with an experimental ESCO-offer, but is now experiencing difficulties in enlarging and structuring this new service. This service is necessary to meet the amount and the complexity of projects already ordered by the municipalities. The ESCO offer consists in the management of the whole energy retrofitting process on behalf of the municipality, from the feasibility analysis to the tendering and implementation of the works. The investments are either paid upfront by the municipality or deferred. The project will develop the capacity of Infrax's ESCO-department (financial & technical engineering, working processes, templates contracts…) in order to deliver large-scale investments of an estimated €19.8M. In parallel, municipalities will be engaged through the definition of detailed renovation plans for their building stocks, leading to the signature of contracts with Infrax.
Commendable Points (reasons why this is considered to be a Best Practice)	• 40 Local authorities with a customized Retrofit and Renewables action plan for their public building stock • Development and roll-out of a performing ESCO-model taking into account scaling, bundling, repeatability, quality, comfort for the end user, cost efficiency, cost transparency, communicability of the processes, improved collaboration, allocation of risks etc. • 'Future proofing' the construction sector through capacity building (affecting growth of the number of skilled actors in the construction sector, promoting the generation of new green jobs related to the implementation of energy facilities estimated a total amount of 100)

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☒Instit& Admin	
Title	Energy Efficiency Paths in Educational Buildings
Web Address	www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=1519
Administering Organisation	EDUCA RUE
Contact Details	Provincia Di Potenza, Italy E-mail: enrico.spera@provinciapotenza.it Tel: 0039 -0971-417252
Country of Origin	Italy
Other countries participating	Germany, Spain, United Kingdom
Agents involved	Certificate, PubA, Gov, Finance, R&D, Installer, Economy, EDist, ESCO
Summary of the Initiative	Educa-RUE, through a number of interconnected actions, will develop an optimal process to be applied and replicated at local level. The project will develop actions for the qualification of the technicians and certifiers which will have a key role in the implementation of the Directive on local building. Educa-RUE will study possible improvements in the applicative procedures of the Directive, supporting and enhancing specific financial tools and procedural incentives to promote the more efficient use of energy in buildings. As the project will act upon a range of problem areas such as legislation, certification, education, economic and financial issues, training, information and dissemination, the first direct beneficiaries of the project results will be local policy makers. The involvement of local government players is ensured by the composition of the partnership belonging to 4 EU countries and the attention focused on the issue of energy efficiency at local level. The Local levels will act, where existing, through the collaboration of Local energy agencies, ensuring technical support and eventually training capacity.
Commendable Points (reasons why this is considered to be a Best Practice)	• Strengthen the role of local authorities in the implementation of European and national legislation • Increasing the awareness of local players and public institutions vis-à-vis the sustainable use of energy as a result of both "strong" highly technical project actions and "soft" actions of communication and information dissemination • Increase the adoption of social behaviours environmentally friendly, developing and updating the technical skills of energy sector operators by involving all the partners in joint actions

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Energy Intelligent Education for Retrofitting of Social Houses
Web Address	www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=1527
Administering Organisation	EI-EDUCATION
Contact Details	Aarhus School of Architecture, Department of Supplementary Education, Germany E-mail: elsebeth.terkelsen@aarch.dk, Tel: 0045 89 36 01 57
Country of Origin	Germany
Other countries participating	Austria, Bulgaria, Denmark, France, Netherlands, Slovenia
Agents involved	PubA, R&D, Standard, Occupant
Summary of the Initiative	Social housing companies, municipalities and other housing stock owners were targeted by an education programme with the aim of helping them carry out energy-intelligent retrofitting. Renovations can lead to potential energy savings of 30%. The programme used mixed learning techniques adapted to the varying circumstances in participant countries. Teaching tools included an Internet platform, a guidebook and e-learning material.
Commendable Points (reasons why this is considered to be a Best Practice)	• To inspire social housing companies to practise energy intelligent retrofitting, a guidebook has been compiled. • Education programmes for social housing companies were developed in six participating countries. • National training courses were organized for over 150 representatives from about 90 social housing companies. • An awareness raising international seminar for Housing Associations in the EU was arranged in collaboration with CECODHAS, the European Liaison Committee for Social housing, gathering 80 participants from 14 countries, representing about 50 social housing organisations and a number of researchers and experts. • As a result of EI-Education, a project of energy intelligent retrofitting of 250 row houses has already started in Denmark.

☒ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☒ Financial ☐Instit& Admin	
Title	Energy-Conscious HOuseholds in ACTION
Web Address	www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=1513; www.echoaction.net
Administering Organisation	ECHO ACTION
Contact Details	Agenzia Veneziana per l'Energia, Italy E-mail: tognon@veneziaenergia.it Tel: 0039 041 5094250
Country of Origin	Italy
Other countries participating	Bulgaria, Germany, Lithuania, Portugal, Sweden, United Kingdom
Agents involved	Audit, Certificate, Occupants, A&E, PubA, Finance, LCA, Economy
Summary of the Initiative	ECHO ACTION aims at creating a model of active and voluntary involvement of families, local economic actors and financial institutes, co-ordinated by the local energy agency, who will contribute towards the implementation of local energy plans. This goal was achieved by dividing families into thematic working groups. The project ran on a double track. On one side it addressed families as final users to shift the "demand side" towards more responsible energy use. On the other side it aimed to organise companies and financial institutes to provide relevant services and products to the families. A first round of actions looked at a critical revision of lifestyles and a revision of consumptions, a second one focused on the implementation of low cost solutions and a third one helped those families who intend to realise more complex and expensive actions.
Commendable Points (reasons why this is considered to be a Best Practice)	• Involving and raising awareness of around 1,700 households in an active process of turning their lifestyles and energy consumptions towards sustainability, encompassing high efficiency technologies, renewable energy and alternative solutions for personal mobility • Realisation of substantial retrofit interventions on building envelopes and heating plants, and/or interventions for self production of energy at home and/or substantial shift in personal mobility patterns. • Creation of local networks of specialised market actors • Development of a consistent network of at least 40 cities as project 'observer partners' willing to replicate the project in their own territory.

☒ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Fostering Efficient long term Supply Partnerships
Web Address	www.forestprogramme.com/
Administering Organisation	FOREST
Contact Details	The University of Exeter, United Kingdom E-mail: g.s.j.hitchcock@exeter.ac.uk Tel: +44 1392 264141
Country of Origin	United Kingdom
Other countries participating	Austria, Ireland, Italy, Poland, Spain, Sweden
Agents involved	ESCOs, EDist, Manufacturer, A&E, TechSol, Installer, Occupant, R&D
Summary of the Initiative	FOREST's objective is to work directly with businesses in the biomass supply chain, from farmers and foresters to architects and designers, to develop and consolidate long-term supply partnerships that will increase end-user confidence and so encourage greater investment renewable biomass heat.. The project will support businesses through three main types of activities: 1. a best practice tool-kit focused on supply chain business models and contracts; 2. business-to-business networking to facilitate knowledge exchange and the development of partnerships; 3. direct capacity building to pilot new supply chain models and partnerships
Commendable Points (reasons why this is considered to be a Best Practice)	• The development of an extensive interactive online toolkit of best practice resources and training materials to support the development of more efficient supply chain businesses; • Three regional trade fairs and 6 cross-regional business exchange visits to allow direct networking between businesses in the supply chain to exchange knowledge and foster the development of new supply partnerships. • Capacity building in the supply chains through training with the tool-kit materials and direct support actives to pilot new supply partnerships and help consolidate existing ones. • A comprehensive project website providing extensive access to all the tools and services developed in the project and supporting wider business networking activities and knowledge exchange.

☐ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☒ Financial ☐Instit& Admin	
Title	FinSH - Financial and Support Instruments for Fuel Poverty in Social Housing
Web Address	www.finsh.eu;www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=1586
Administering Organisation	FinSH
Contact Details	Groupe Energies Renouvelables Environnement et Solidarités, France E-mail: ma.quadrio@geres.eu
Country of Origin	France
Other countries participating	Germany, Italy, Poland, United Kingdom
Agents involved	Audit, PubA, Finance, Occupant, ESCO, RenewEn, TechSol
Summary of the Initiative	The aim of the FinSH project was to develop relevant support schemes to address financial and social barriers to access to energy efficiency retrofitting in social housing. It contributed to the reduction of fuel poverty and to the increase of energy saving in social housing in Europe. One key of the project is to combine financial, social and energy approaches. The project includes both analysis of financial products to foster energy efficiency retrofitting and development of practical support guidelines to increase the access to these financial products for fuel-poor households and social housing companies. This will aid organisations throughout Europe working with social housing tenants who are at risk of fuel poverty, to encourage them to participate in energy efficiency programmes and measures. The project will work closely with banks, energy and social experts and with relevant current EU and national initiatives. The project will be widely disseminated.
Commendable Points (reasons why this is considered to be a Best Practice)	• Financial products and related necessary social schemes to increase energy efficient retrofit in social housing • Enhanced communication and networking between actors from various expertises: finance, social, energy. • Increased information on existing financial possibilities to increase the use of energy efficient equipment and retrofit • Contribution from the project to the increase of energy savings and CO2 reduction.

☒ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Improving the energy performance of step-by-step refurbishment and integration of renewable energies
Web Address	passiv.de/en/;www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=2648
Administering Organisation	EUROPHIT
Contact Details	PassiveHouse Institute, Germany E-mail: jan.steiger@passiv.de, Tel: +49 (0) 6151 8269 99-47
Country of Origin	Germany
Other countries participating	Bulgaria, Czech Republic, Denmark, France, Ireland, Italy, Slovakia, Spain, Sweden, United Kingdom
Agents involved	Audit, TechSol, Certificate, PubA, Finance, R&D, Standard
Summary of the Initiative	The EuroPHit project aims to significantly increase the quality and energy efficiency of step-by-step refurbishments throughout the EU by developing a comprehensive and integrated methodology, implementing uniform quality assurance of both design and construction, encouraging implementation by key actors and fostering knowledge dissemination through new and existing project networks.
Commendable Points (reasons why this is considered to be a Best Practice)	• Creation of certification criteria, a balancing tool, a handbook and training module syllabi for designers and craftsmen on the topic of step-by-step energy retrofits including renewable energy sources; • Provision of full step by step refurbishment plans for 10 case studies in 8 countries, and implementation of the first step in each plan for the 10 pilot sites; • Training for designers and craftsmen on step-by-step refurbishments and deep energy retrofits as well as documentation of findings from successful case studies in the form of reports, recommendations, videos or product lists

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	New Integrated Renovation Strategy to improve Energy Performance of Social housing
Web Address	www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=1646
Administering	NIRSEPES

Organisation	
Contact Details	GOVERNMENT OF NAVARRA, DEPARTMENT OF HOUSING , Spain E-mail: la.ayesa.ajona@cfnavarra.es Tel: 00 34 848 42 7200
Country of Origin	Spain
Other countries participating	Germany, Greece, Italy
Agents involved	Audit, TechSol, Certificate, Occupants, Finance, Standard, LCA, PubA, LCA
Summary of the Initiative	This project set itself the goal of increasing thermal efficiency by at least 30% by developing an integrated strategy for energy renovation in social housing across the EU. It analysed existing typical buildings in Spain, Greece and Germany, with a view to comparing technological solutions for retrofitting and its cost-effectiveness. Local forums, tailor-made financing schemes, awareness-raising campaigns, education, training, and retrofitting plans were all part of the integrated approach.
Commendable Points (reasons why this is considered to be a Best Practice)	• Tool developed for calculating capital value and annuity of invest in energy-efficient retrofitting in social housing. • Overview developed of existing financial incentives with a view to promoting best energetic renovation for all types of housing. • Recommendations for successful energy retrofitting from technical, social and economic points of view, targeting both policy-makers and individuals. • Nationally tailored training campaigns for owners, property managers, occupants and social housing organisations have taken place in Spain, Greece and Germany • Six pilot retrofitting plans developed as best practice examples.

☐ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☒ Financial ☒Instit& Admin	
Title	Newcastle Investment in Housing Retrofit - NEWINRETRO
Web Address	www.warmupnorth.com/;www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=2533
Administering Organisation	Newcastle City Council
Contact Details	Newcastle City Council, United Kingdom E-mail: martin.walker@newcastle.gov.uk, Tel: 00441912115347

Country of Origin	United Kingdom
Other countries participating	no
Agents involved	Audit, Occupants, A&E, PubA, Gov, Finance
Summary of the Initiative	Newcastle City Council (NCC) is a signatory of the Covenant of Mayors since January 2008. Following the City Climate Change strategy and the Sustainable Energy Action plan (SEAP) both approved in October 2010, the Council is actively involved in developing and implementing actions to meet the SEAP targets. Technical assistance is provided for the delivery of a large scale, city wide, cross tenure housing retro fit programme of energy efficiency and renewable measures. The investment and financing model is based on 10,000 to 15,000 homes to be retrofitted and will start with a first phase on targeting 5,000 homes over the 3-year project period. The investment scheme is based on the UK Green Deal and the project will set up a delivery body to carry out the retrofitting programme. NCC is leading on this development work as a "pathfinder" for all the Local Authorities in the North East of England Region.
Commendable Points (reasons why this is considered to be a Best Practice)	The financial model and lessons learnt from this project will be interesting for other local authorities that aim to set up housing retrofit schemes.

☐ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☒ Financial ☐Instit& Admin	
Title	POWER HOUSE NEARLY ZERO CHALLENGE
Web Address	www.powerhouseeurope.eu;www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=2542
Administering Organisation	Power House Europe
Contact Details	The European Liaison Committee for Social Housing, Belgium E-mail: sorcha.edwards@housingeurope.eu, Tel: +32 2 541 0561
Country of Origin	Belgium
Other countries participating	Austria, Bulgaria, Estonia, France, Germany, Italy, Spain, Sweden, United Kingdom
Agents involved	Audit, TechSol, Certificate, PubA, Finance, Standard, LCA, Climate
Summary of the Initiative	Through the consolidation of existing analysis and the compilation of cost and consumption data in selected pilots, Four Inter-EU Taskforces will build capacity and confidence among Europe's social, cooperative and

	public housing providers ahead of NZEB obligations. The taskforce working on cold, continental climates will address, in particular, concerns on hidden cost implications of increased air tightness linked to ventilation and air quality through monitoring and reporting of costs for works carried out, maintenance and consumption during the use-phase in ten exemplary developments. This data, coupled with field studies, will be a key component for confidence building. In parallel, in warm, Mediterranean climates where meeting NZEB requirements requires a different approach, the taskforce will use the same methodology, to mainstream effective solutions. The third joint taskforce will showcase exemplary financing and organisational solutions used to reach nearly zero standards in existing housing in divided ownership. The forth taskforce will address the need to make the business case for nearly-zero housing and for maximum mobilisation of public and private finance.
Commendable Points (reasons why this is considered to be a Best Practice)	Data Based Reality Check Ready to go live! 30 pilot projects have been selection for monitoring and are being uploaded to the on-line energy tracker. This data will present a mine of very useful information for the formulation of implementable NZEB policies Real Input to Policy at EU level: Findings from the financial needs analysis have been used to feed high-level consultation from the European Commission and the European Investment Bank.

☐ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☒ Financial ☐Instit& Admin	
Title	PadovaFIT!
Web Address	www.padovanet.it;www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=2599
Administering Organisation	Council of Padova
Contact Details	Comune di Padova, Italy E-mail: luised@comune.padova.it, Tel: +39 049 80 22 488
Country of Origin	Italy
Other countries participating	N/a
Agents involved	ESCOs, Finance, TechSol, A&E, PubA, Gov, R&D, Occupant
Summary of the Initiative	The Municipality of Padova (PADOVA) is a signatory of the Covenant of Mayors since 2009 and its SEAP was approved by the City Council in June 2011 and officially approved by the JRC in 2012. PADOVA is

	actively pushing local policies to support the implementation of EE and RES measures to retrofit the public and private building stock. The MLEI PadovaFIT! project aims to boost this local commitment by delivering a large scale, housing retrofit programme of EE and RES measures sustained by an innovative financing scheme allowing all interested householders to have access to the measures. In its launching phase, lasting 36 months (the scheme is made to stay beyond the end of the Project Development Assistance), the investment will target ca. 2250 apartments, a population of ca. 4500, that is over 2% of total population of the Municipality. Bundled investment projects will sum up to €15,8M with a leverage factor of over 20. To do so, PADOVA has brought together a team of experienced local private stakeholders (an ESCO, a cooperative bank, a higher education non-profit foundation and an engineering company) willing to risk and invest in the creation of the PadovaFIT! scheme. The consortium has also strong networking potential which will be used to inspire other Municipalities in replicating this shining example.
Commendable Points (reasons why this is considered to be a Best Practice)	• 15.800.000,00 € of foreseen investments launched in the private housing building sector (with possibility of a share of 20% of public housing and service facility buildings) • Monitoring and Evaluation of the experience with recommendations for National and EU policy makers and motivational communication towards other Municipalities in Italy and EU to replicate the PadovaFIT! scheme.

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Promotion of cool roofs in the EU
Web Address	www.coolroofs-eu.eu/;www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=1801
Administering Organisation	CoolRoofs
Contact Details	National and Kapodistrian University of Athens, Greece E-mail: msantam@phys.uoa.gr, Tel: +302107276847
Country of Origin	Greece
Other countries participating	Belgium, France, Italy, Netherlands, United Kingdom
Agents involved	ESCOs, TechSol, A&E, Gov, Finance, R&D, Standard, PubA, Manufacturer,

	Installer, Audit, Certificate, Occupant
Summary of the Initiative	The proposed action aims to create and implement an Action Plan to promote cool roofs technology in EU. The specific objectives are: to support policy development by transferring experience and improving understanding of the actual and potential contributions by cool roofs to heating and cooling consumption in the EU; to remove market barriers and simplify the procedures for cool roofs integration in construction and building's stock; to change the behaviour of decision-makers and stakeholders so to improve acceptability of the cool roofs; to disseminate and promote the development of innovative legislation, codes, permits and standards, including application procedures, construction and planning permits concerning cool roofs. The work will be developed in four axes, technical, market, policy and end-users.
Commendable Points (reasons why this is considered to be a Best Practice)	• Five cool roofs pilot studies to serve as examples of cool roofs benefits, a database of cool roofing materials and manufacturers, a handbook and a toolkit to assist the better understanding of the technical aspects of cool roofs technology • Organisation of workshops and seminars and participation to an EU Conference and an exhibition to disseminate the results of the project. Creation of a web portal providing visitors with information about the project and EU-CRC

☒ Skills & Awareness ☐ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	Social Housing Action to Reduce Energy Consumption
Web Address	www.socialhousingaction.com;www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=1724
Administering Organisation	SHARE
Contact Details	Severn Wye Energy Agency Limited, United Kingdom E-mail: catrin@swea.co.uk, Tel: 0044 01594 545 360
Country of Origin	United Kingdom
Other countries participating	Bulgaria, Estonia, France, Germany, Ireland, Slovenia, Sweden
Agents involved	TechSol, PubA, R&D, Finance, Standard, Occupant, A&E, Manufacturer, Installer
Summary of the Initiative	This project aimed to increase the sustainability of energy use, minimise carbon emissions, limit uncomfortable temperatures and reduce fuel bills

	in social housing. To achieve these goals it raised awareness of economic benefits, developed retrofitting methods that address energy concerns, examined possible changes in behaviour, maximised financial and technical resources, promoted good practices and encouraged the sharing of experiences.
Commendable Points (reasons why this is considered to be a Best Practice)	• SHARE Forums were set up for each of the eight countries involved • Training sessions took place, involving over 1 000 participants, mainly residents, but also energy experts, building managers, housing funds, local authorities, teachers and architecture students. • Awareness and advice plans on existing materials and good practices for each participating country were produced. • A series of case studies covering the forums, training and awareness campaigns has been made available on the project website.

☒ Skills & Awareness ☐ Knowledge Management ☒ R&D Approach ☐ Financial ☐Instit& Admin	
Title	A System for Quality Assurance when Retrofitting existing buildings to Energy efficient buildings
Web Address	www.iee-square.eu;www.eaci-projects.eu/iee/page/Page.jsp?op=project_detail&prid=1738
Administering Organisation	SQUARE
Contact Details	SP Sveriges Tekniska Forsningsinstitut, Sweden E-mail: kristina.mjornell@sp.se
Country of Origin	Sweden
Other countries participating	Austria, Bulgaria, Finland, Netherlands, Spain
Agents involved	TechSol, Certificate, PubA, Finance, R&D, LCA, Occupant, Audit, Installer
Summary of the Initiative	The SQUARE project aims to assure energy efficient retrofitting of multifamily housing with good indoor environment, in a systematic and controlled way. To achieve this, a quality assurance (QA) system for retrofitting and maintenance has been adopted to conditions in several European countries and implemented in four pilot projects in Austria, Spain, Sweden and Finland. The QA system supports decision-making and ensures that the most suitable energy efficient retrofitting measures are chosen for each case. The QA system has been spread in several European countries by the use in pilot projects and in other renovation projects. These experiences have been used to improve the QA system.

	The pilot projects act as good examples to inspire and encourage other multifamily housing owners and housing associations to carry through energy efficient retrofitting projects. A number of dissemination activities have been carried out in the project in order to spread knowledge and experience to owners, contractors, consultants, national authorities, municipalities, tenants etc. on local, national and international level.
Commendable Points (reasons why this is considered to be a Best Practice)	• Up-to-date knowledge, good examples of successful energy-intelligent solutions tailored to the multifamily housing sector have been collected from the participating countries and disseminated throughout Europe. • A number of multifamily housing blocks in Austria, Finland, Spain and Sweden have been retrofitted to a higher standard of energy and indoor environmental performance by applying the QA system. • Experience from pilot projects in the participating countries applying the QA system has been collected. The SQUARE project has provided visible and marketable data on savings and indoor air quality performance of the retrofitted pilot projects, which will be disseminated all over Europe and in international forums.

5.5. Best Practice Summary

By means of the analysis of the identified best practices, both through the desk research and via those examples that were suggested by the questionnaire respondents, a total of 43 best practices have been recorded, 16 of them identified by the questionnaire feedback and the other 27 identified through desk research.

Ranking the best practices between themselves is not an easy task since an equal footing or basic criteria is difficult to define. In the definition of a best practice as defined at the start of this chapter, it was stated that a best practice must be measureable in its nature. In this case we are dealing specifically with best practices in EE retrofitting knowledge transfer through the value chain and thus the measureable criteria has been set to be **the number of value chain actors that are being exposed to the knowledge transfer by means of a particular best practice**.

The top ranked best practice, considering the mentioned criteria, is the **Construction21 Europe** platform that reaches out to 19 of the value chain actors, i.e. all of the actors except for the Climate agent group. Thus, this platform has a huge potential in being the catalyst for a high quality of knowledge transfer activity throughout the EE retrofitting value

chain. Although being dedicated mostly to the professional sector that is active in retrofitting, the platform has its usefulness to all of the other value chain actors through the extensive databank of documented case studies and discussions on retrofitting technologies. Currently, six countries are actively participating in this project with multi-lingual facilities offered to actors from all countries.

Interestingly enough, the Construction21 Europe platform is connected to the second ranked best practice that is **Build Up Skills**, an energy efficient training platform for actors involved in the construction sector. Reaching out to 16 of the value chain actors, the Build Up Skills program is implemented in all of the EU countries. The nature of this project is to analyse each of the country's status quo in building construction and then discuss road-maps, best practices and common ways forward to reach the 2020 targets in the building sector.

In the same ranking position as the Build Up Skills project, at second place, we find the **Programme for EE Retrofitting of Bulgarian Households**. Although operating solely within Bulgaria, with no other participating countries, this best practice reaches out to the agents involved in retrofitting of 36 urban centres within the country and offer extensive financial benefits and assistance to ensure high-end EE retrofit.

At this stage of the analysis, it must be documented that the ee-WiSE project in itself is a top ranked best practice. Considering the work description of the project, all of the value chain actors are considered in the analysis process, the questionnaire for Work Package 3 has been distributed to representatives from all of the value chain agent groups, and public deliverables will be made available to all questionnaire participants and others too who were not involved in the early stages of the project. All the best practices and tools for knowledge transfer that have been identified in this work package shall be available on the project website and can be used to direct value chain members to other best practices for knowledge transfer when they can obtain actual information to assist in the retrofitting process.

☐ Skills & Awareness ☒ Knowledge Management ☐ R&D Approach ☐ Financial ☐Instit& Admin	
Title	EE-WISE; Energy Efficiency Knowledge Transfer Framework for Building Retrofitting in the Mediterranean Area
Web Address	www.ee-wise.eu
Administering Organisation	Instituto INTROMAC
Contact Details	mjbohorquez@intromac.com

	tel: 00 34 927 005 086
Country of Origin	Spain
Other countries participating	Greece, Malta, Cyprus, Italy, Bulgaria, Turkey
Agents involved	all
Summary of the Initiative	ee-WiSE aims to develop an EE Knowledge Transfer Framework (KTF) in building retrofitting with especial attention to SMEs, applied to a specific geographic area, the Mediterranean. The project focuses on retrofitting rather than new building for the greatest potential of EE measures in existing buildings, the high incidence in CO2 emissions of the buildings stock and the large number of SMEs participating in this activity in construction sector. Throughout its WP of conceptualization and definitions, information and best practices gathering and analysing, design of the KTF and its tools, and finally its validation, EE-wise will provide a useful methodology to imagine, design and validate EE enhancement measures in the Mediterranean environment to develop EE market and related business.
Commendable Points (reasons why this is considered to be a Best Practice)	ee-WiSE will be focused on the Mediterranean because its particular weather conditions require EE to be analyzed by considering specific and not generic solutions.

6. CONCLUSIONS

The outcomes of the work carried out in Work Package 3 include an identification of the knowledge transfer needs that are classified and categorised accordingly. Proposed solutions to meet the needs and identification of existing best practices that would serve as a guide and essential resource to what information and tools are existing to assist knowledge transfer throughout the EE retrofitting value chain. Figure 27 shows a structural illustration of the Work Package 3 outcomes, where each of the knowledge transfer categories are detailed with:

- a description of the category,
- best practices that fall under each category,
- a ranking of the knowledge transfer needs for the category,
- a description of each of the needs,
- solutions to overcome the needs.

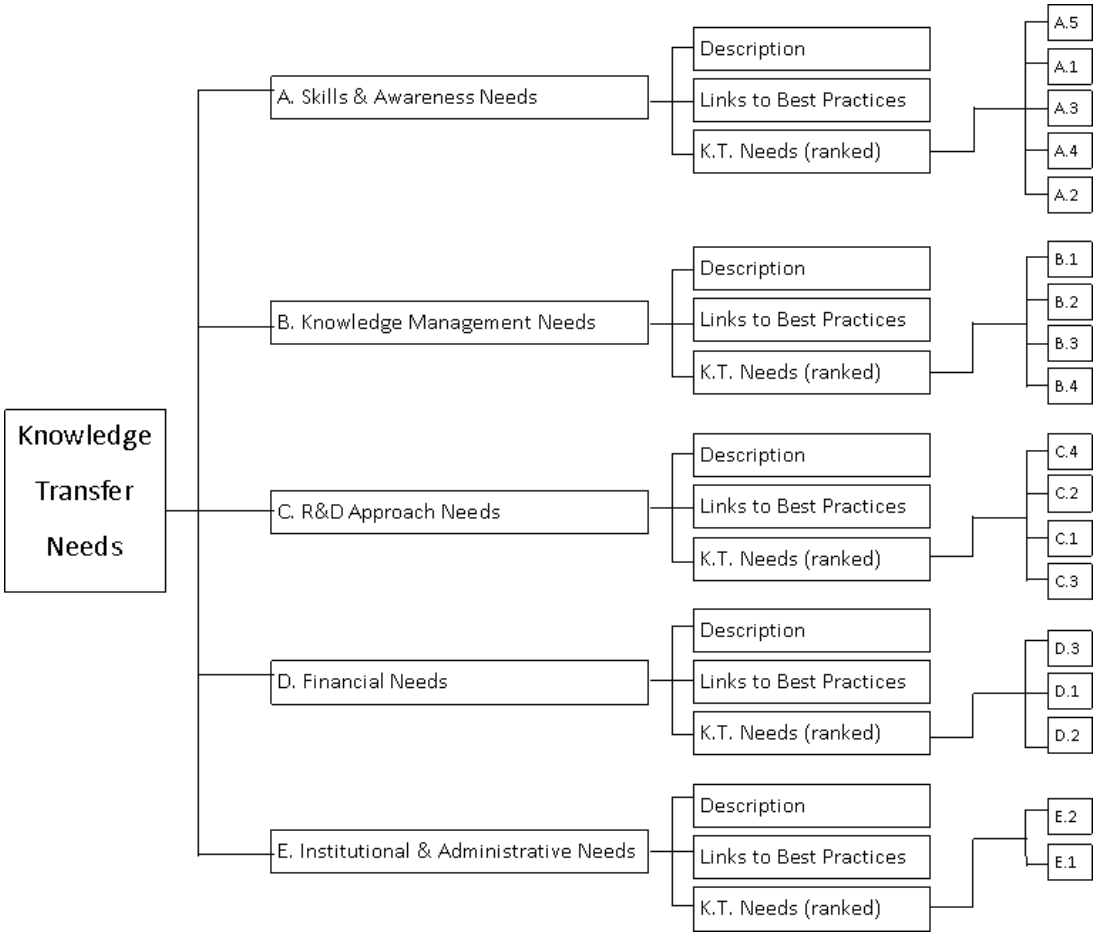


Figure 27 Structure of Work Package 3 outcomes

All of these outcomes shall be inserted in the ee-WiSE project website where the user will have the possibility to view the prioritisation of the knowledge transfer needs for each category, get insights

into the proposed solutions and also be presented with web links to other organisations or projects that have been identified as Best Practices in knowledge transfer within the retrofitting sector.

An open source software (http://driven-by-data.net/about/interactive-bubbletree/) that could be utilised for presenting all of this information has been identified and passed on to the web designers, plus a visual of how the outcomes will be presented is shown in Figure 28. The online tool will be dynamic and will allow the user to browse through the information pertaining to the knowledge transfer needs and identified solutions together with a databank of links to other best practices for knowledge transfer within the EE retrofitting sector.

A detailed visual representation of each of the five knowledge transfer needs categories is depicted in Figure 29 to Figure 33. Within each of these sections, the user will be able to read through the description of the knowledge transfer needs in the order of which they have been ranked together with a selection of links to the identified best practices for each of the knowledge transfer needs categories.

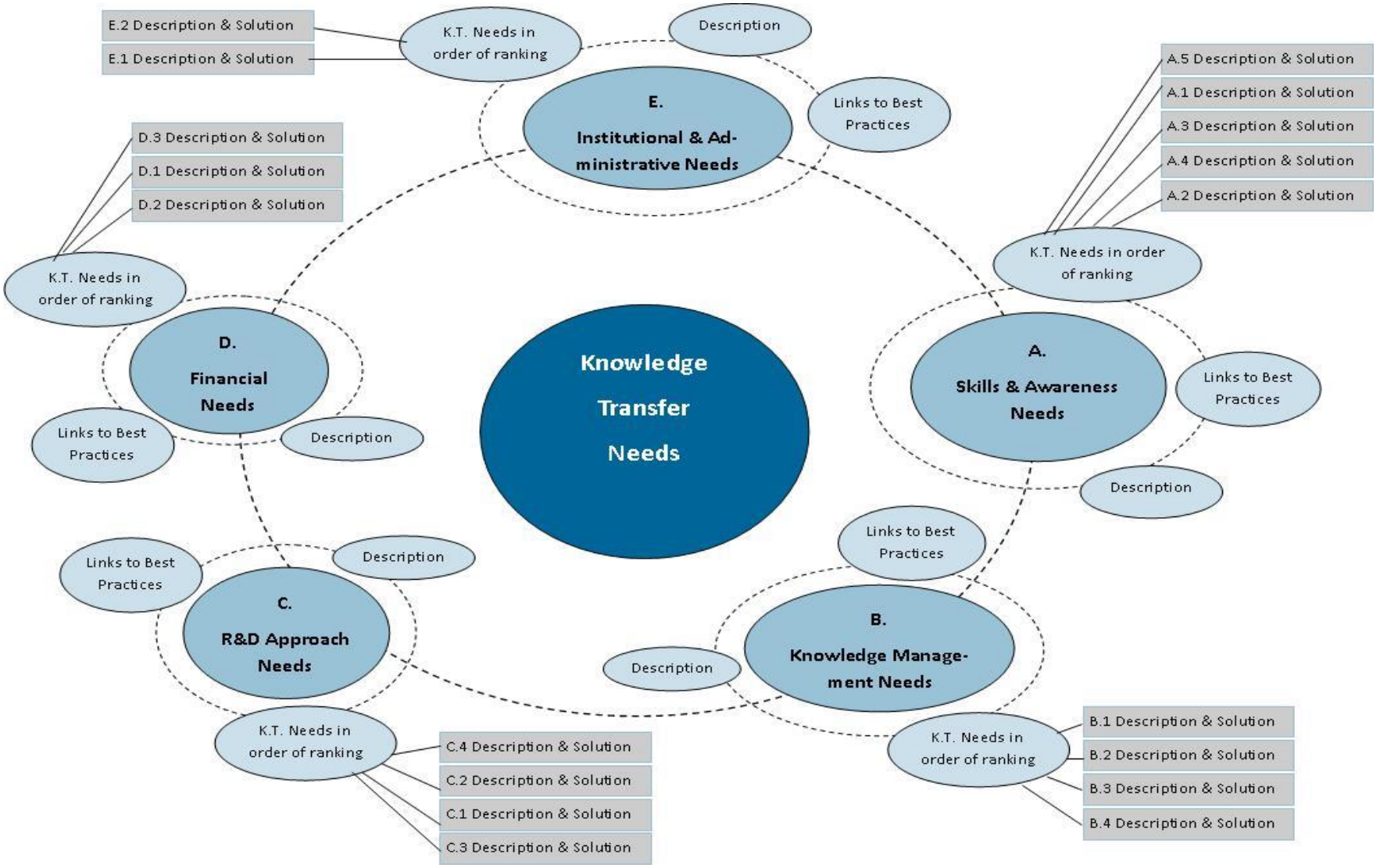


Figure 28 Visual of the web based tool

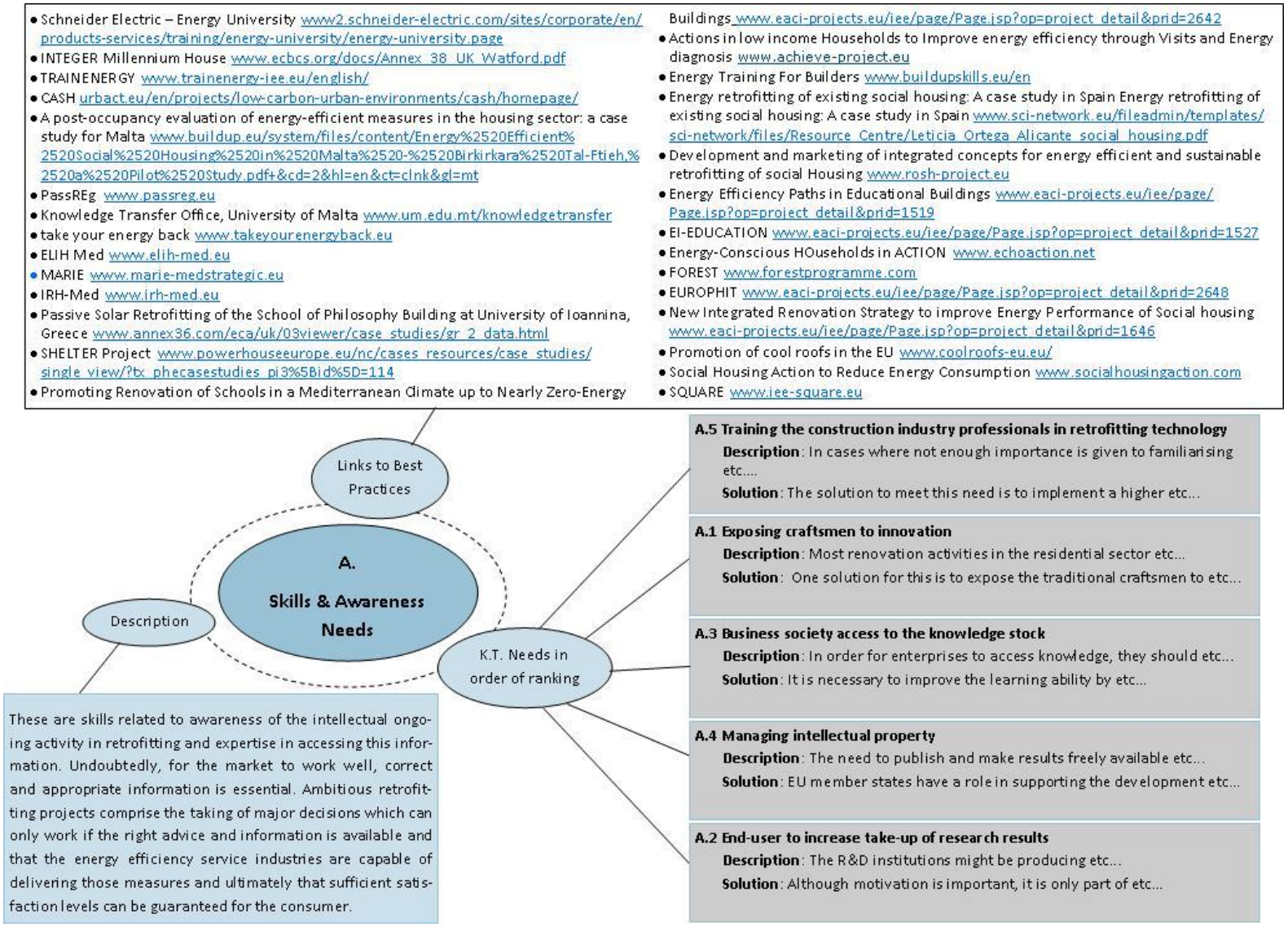


Figure 29 Visual of the Skills & Awareness Needs Category

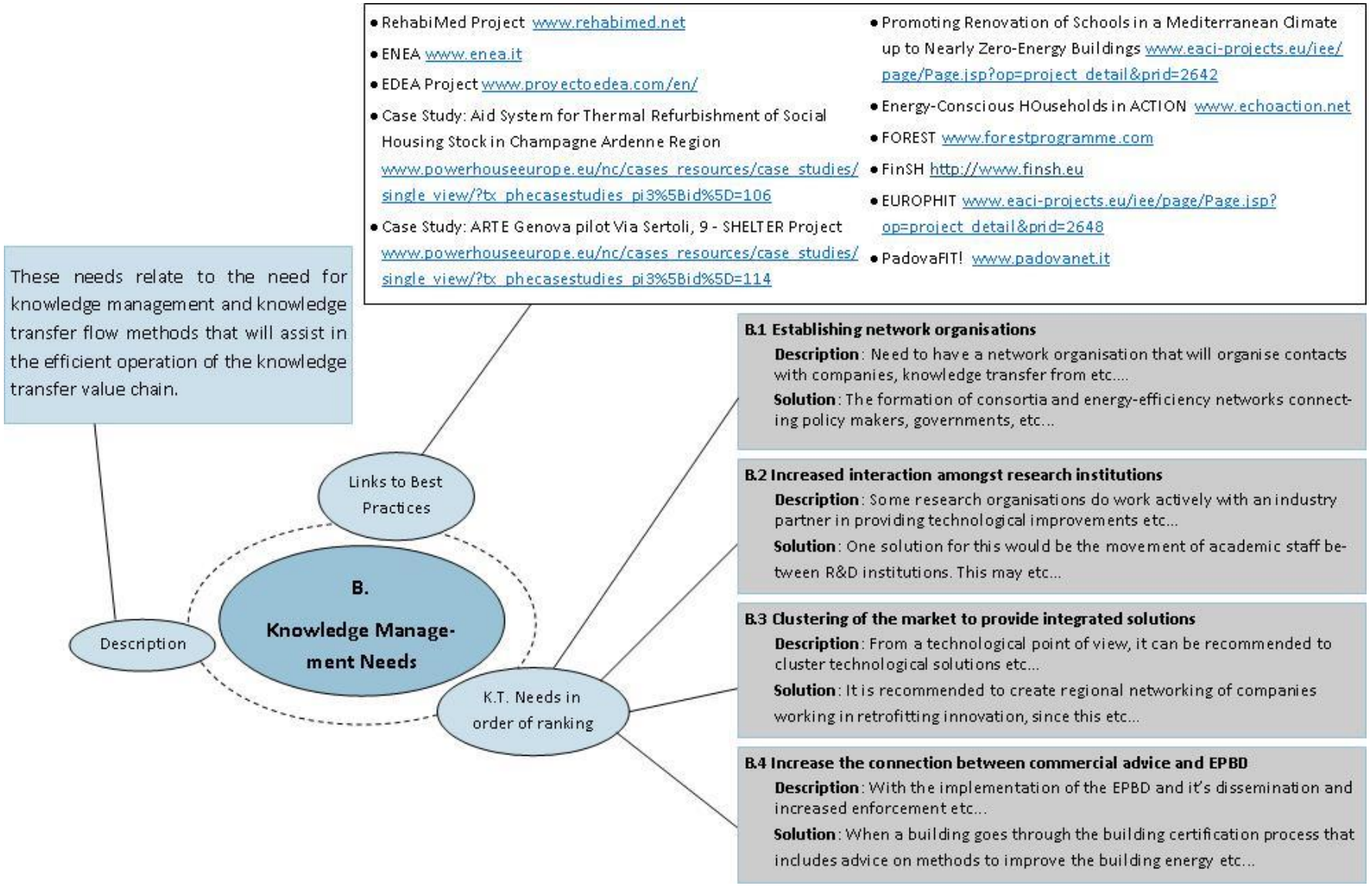


Figure 30 Visual of the Knowledge Management Needs category

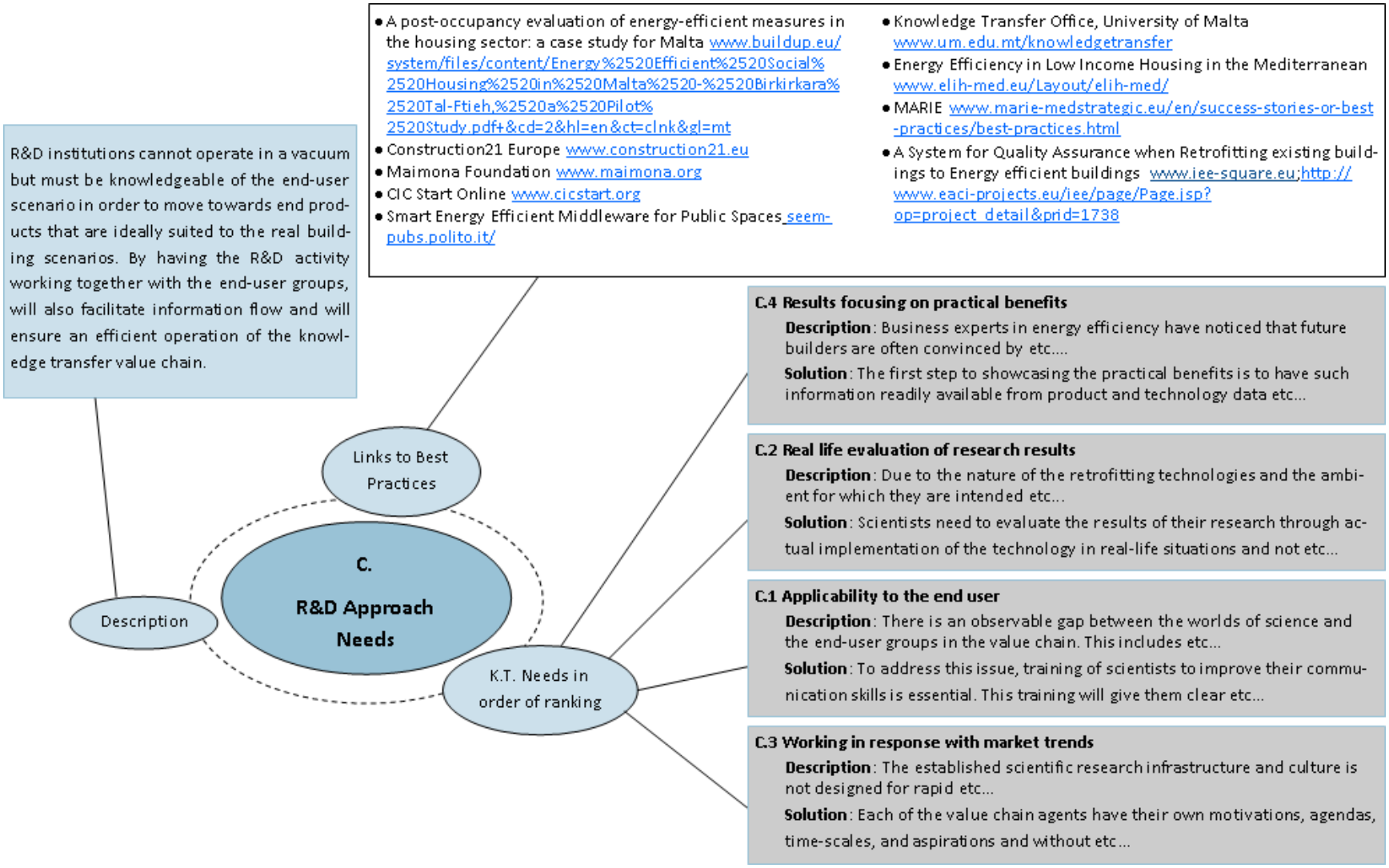


Figure 31 Visual of the R&D Approach Needs category

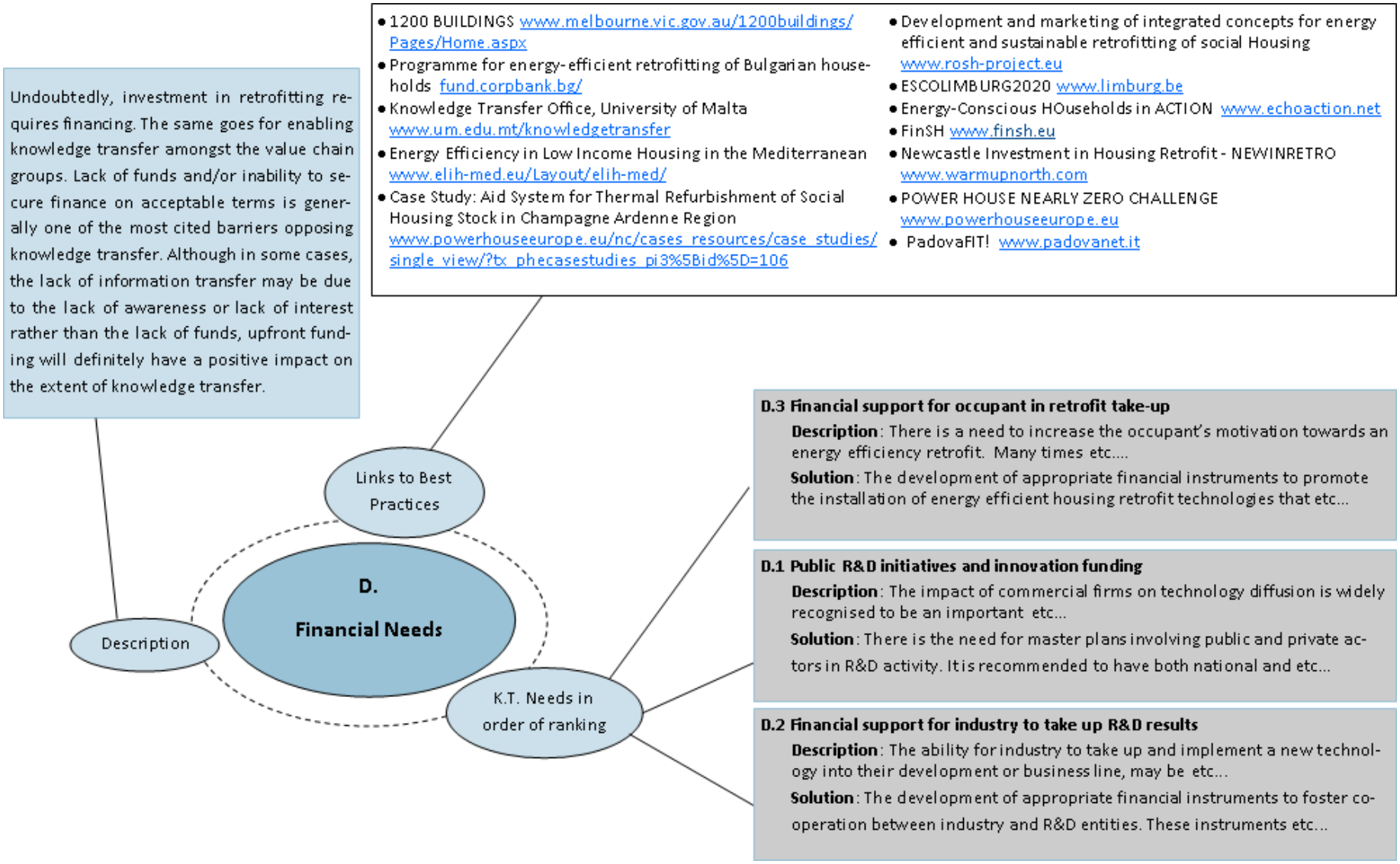


Figure 32 Visual of the Financial Needs category

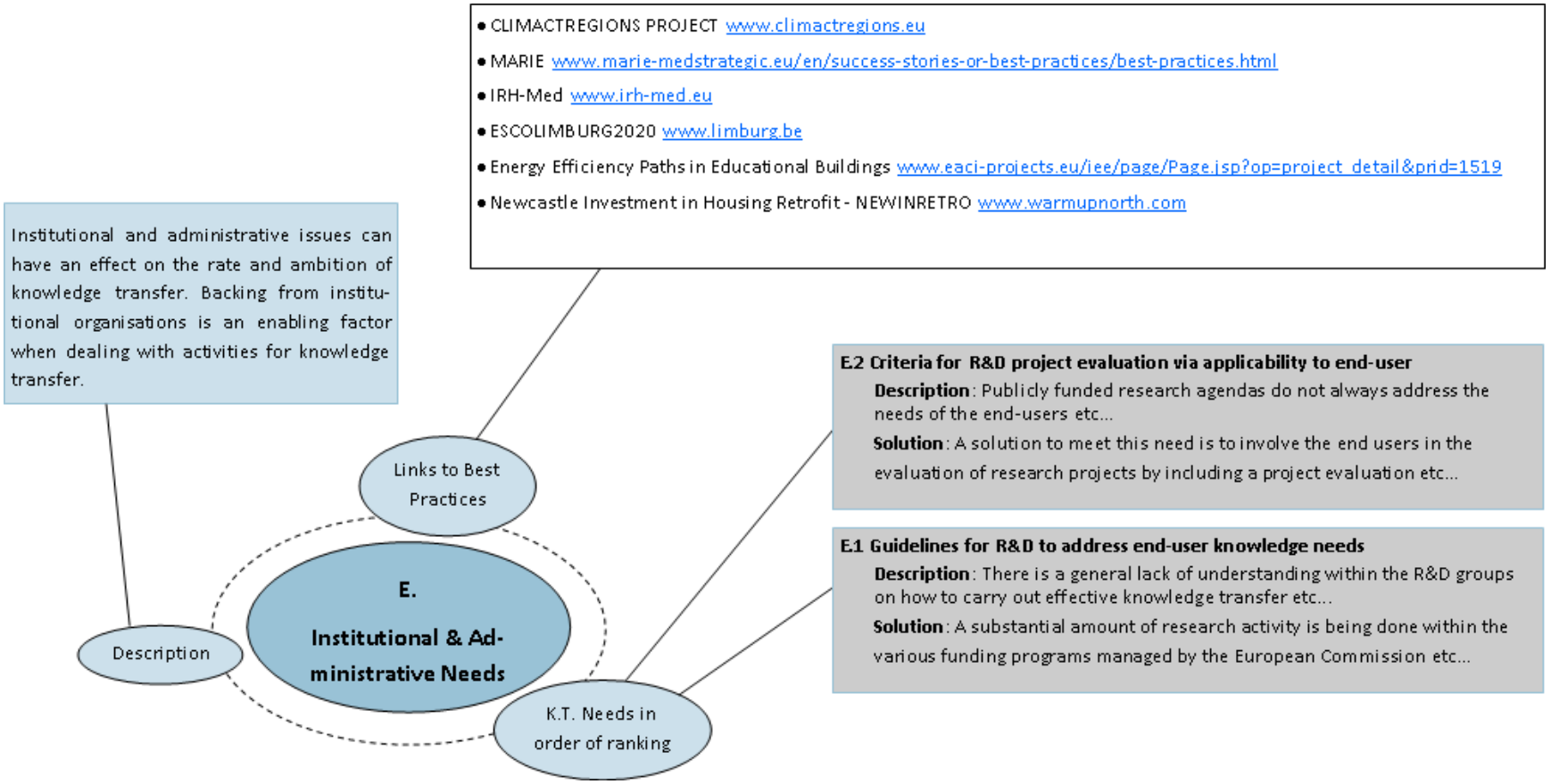


Figure 33 Visual of the Institutional & Administrative Needs category

Going through all the various knowledge transfer needs in each of the knowledge transfer categories together with the associated solutions leads one to appreciate that the establishment of a coherent, functional best practice knowledge transfer tool is quite a cumbersome and delicate task.

Inserting the outcomes of Work Package 3 onto the ee-WiSE project website, in a format that allows for easy searching and offering links to well documented best practice examples, will serve the purpose of allowing each of the value chain actors to get an insight into the opportunities of knowledge transfer and the advantages to be gained by participating in knowledge transfer mechanisms.

1 (APPENDIX 1) MATERIAL REVIEWED IN PHASE 1 OF THE INFORMATION TRANSFER FLOW NEEDS ANALYSIS

- **MarineTT,** FP7 Support Action, www.marinett.eu

- **Developing a Sustainable Supply Chain Strategy,** C. Tyssen et al., Sustainable Supply Chain Management, DOI 10.1007/978-3-642-12023-7_2, # Springer-Verlag Berlin Heidelberg 2011 http://www.springer.com/cda/content/document/cda_downloaddocument/9783642120220-c1.pdf?SGWID=0-0-45-1059742-p173962035

- **Analysis of Knowledge Management Barriers in Enterprise Supply Chain and Its Countermeasures,** Yuan Jin-ming, Coll. of Tourism, Central South Univ. of Forestry & Technol., Changsha, China, 2011, http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=5975037&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D5975037

- **Multiple benefits of investing in energy efficient renovation of buildings,** Commissioned by Renovate Europe, 5 October 2012 http://www.renovate-europe.eu/uploads/Multiple%20benefits%20of%20EE%20renovations%20in%20buildings%20-%20Report%20only.pdf

- **Barriers to Knowledge Acquisition, Transfer and Management in Regional Knowledge Economy Development,** Eileen M. Trauth, The Pennsylvania State University, College of Information Sciences & Technology,PA,USA

- **The Global Transfer of Management Knowledge**", Academy of Management Executive, 2005, Vol. 19, No. 2 http://kimboal.ba.ttu.edu/MGT%205384%20FL%202010/Theglobal%20transfer%20of%20knowledge.pdf

- I**mproving knowledge transfer between research institutions and industry across Europe,** EUROPEAN COMMISSION, Directorate-General for Research, Directorate-General for Enterprise and Industry,http://ec.europa.eu/invest-in-research/pdf/download_en/knowledge_transfe_07.pdf

- **Enhancing the Role of SMEs in Global Value Chains,** OECD BACKGROUND REPORT, Tokyo, 2007, http://www.oecd.org/cfe/smesandentrepreneurship/enhancingtheroleofsmesinglobalvaluechainsgvcs.htm

- **Value chains, SMEs and public policies. International experiences and lessons for Latin America and the Caribbean, Forum on the design of public policies: SMEs insertion into global and regional value chains,** Caracas, Venezuela September 2012 SP/FDPP: IPYMESCVGR-DT N° 2-12,http://www.sela.org/attach/258/default/DT_2-12-Value_chains_SMEs_Public_policies_International_Experiences_Lesson_LAC.pdf

- **The Analysis on Collaborative Knowledge Creation in Supply chains,** Liu mingxia, Economic and Management School, Wuhan University, P.R.China, 430072 http://www.seiofbluemountain.com/upload/product/201001/1264736097ny1vcqpv.pdf

- Europe's buildings under the microscope, **A country-by-country review of the energy performance of buildings,** Published in October 2011 by Buildings Performance Institute Europe (BPIE), ISBN: 9789491143014, http://www.europeanclimate.org/documents/LR_%20CbC_study.pdf

- **Retrofit Industry Needs Assessment Study,** Public White Paper, Rocky Mountain Institute, RetroFit Depot, published 3Q 2010, http://www.rmi.org/cms/Download.aspx?id=4977&file=2010-22_RetrofitIndustryNeedsAssessment.pdf&title=Retrofit+Industry+Needs+Assessment+Study

- **Going DEEPer: A new approach for encouraging retrofits,** Institute for Building Efficiency & Rocky Mountain Institute, September 2011http://www.rmi.org/cms/Download.aspx?id=5448&file=2011-19_GoingDeeperEncouragingRetrofits.pdf&title=Going+Deeper%3a+A+New+Approach+for+Encouraging+Retrofits

- **Recovery Through Retrofit,** OCTOBER 2009, IDDLE CLASS TASK FORCE, COUNCIL ON ENVIRONMENTAL QUALITY http://www.whitehouse.gov/assets/documents/Recovery_Through_Retrofit_Final_Report.pdf

- **CREATING A VIABLE ENERGY RETROFIT SECTOR, A proposed model to mobilize a well-trained national energy retrofit workforce and expand good green job opportunities** University of Central Missouri, http://www.ucmo.edu/neri/resources/documents/UCM_Energy_Retrofit_Whitepaper_000.pdf

- **Achieving Passivhaus Standard in North America: Lessons Learned,** James Scott Brew, FCSI, AIA, LEED BD+C, CPHC, Rocky Mountain Institute in Boulder, Colorado., 2011, http://www.rmi.org/cms/Download.aspx?id=5789&file=2011-20_AchievingPassivhausStandard.pdf&title=Achieving+Passivhaus+Standard+in+North+America%3a+Lessons+Learned

- **Final Report: Low Energy Housing Retrofit,** LEHR, P2/00/06, PROGRAMME TO STIMULATE KNOWLEDGE TRANSFER IN AREAS OF STRATEGIC IMPORTANCE, TAP2,Published in 2010 by the Belgian Science Policy http://www.belspo.be/belspo/organisation/publ/pub_ostc/P2/rappP2-06_en.pdf

- **Construction Stakeholder Management,** John Wiley & Sons Ltd, Jan 2010

- **Energy Efficiency Plan 2011,** Communication from the commission to the European Parliament, the council, the European economic and social Committee and the committee of the regions, European Commission, 2011.

- **Improving knowledge transfer between research institutions and industry across Europe: embracing open innovation,**COMMISSION OF THE EUROPEAN COMMUNITIES, Brussels, 4.4.2007, {SEC(2007) 449}

2 (APPENDIX 2) SURVEY QUESTIONNAIRE FOR DATA COLLECTION IN WP3 - ENGLISH

Knowledge Transfer in the

Building Retrofitting Value Chain

Scope of the Questionnaire

This questionnaire is part of the ee-Wise Project which aims to develop a knowledge transfer framework within the energy efficiency value chain for building retrofitting in the Mediterranean area. www.ee-wise.eu.

Statistics show that the building stock is responsible for 40% of the EU's overall energy consumption and 36% of the EU CO¬2 emissions. Reducing energy consumption via the energy performance of buildings represents a huge potential towards becoming more energy efficient and is also one of the most profitable ways for reductions in CO2 emissions. The realisation of energy efficient measures in building retrofitting reduces energy consumption, saves money to the households and economy, minimises the dependence on imported fuels from outside the EU, boosts the economy growth, and provides workplaces and procurement for construction firms. However, the knowledge transfer of retrofitting technologies is not flowing effectively amongst agents in the energy efficiency (EE) value chain. Thus knowledge sharing is needed to overcome technological and economic barriers.

This questionnaire aims to identify the main stumbling blocks present in the value chain, highlight any current best practices within the sector, and provide invaluable information to aid in the identification of proposals for solutions to address the barriers. The ee-Wise project will ultimately produce a tool that will aid with effective communication to facilitate knowledge transfer.

You are kindly invited to participate in this project in your capacity as a member of the value chain. It is estimated that the questionnaire will take around 10 to 15 minutes to complete. Any information collected from this questionnaire will be kept within the project and there will be no disclosure of information to outside parties. The data acquired from the questionnaire shall be presented in the public deliverables as aggregate data with no reference to specific persons or organizations unless otherwise authorized. The public deliverables can be accessed on the ee-WiSE website after July 2013.

This project is part-funded by the European Commission under the NMP theme of the 7th Framework

programme.

Section A

Participant details

A.1 Please enter your contact details.

Salutation:

Name & Surname:

Name of Organisation:

(leave blank if individual)

Email:

Website:

Country:

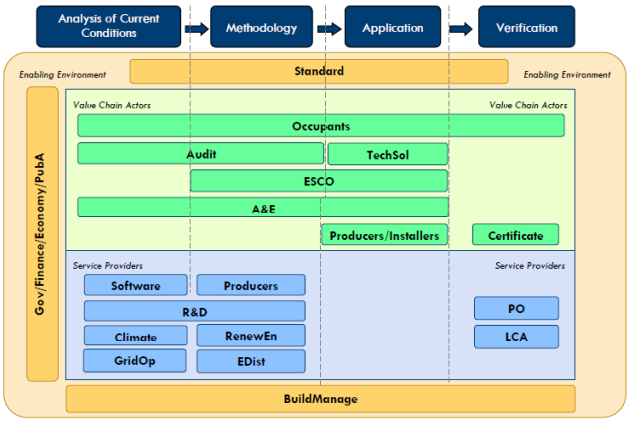
A.1.1 Which ee-WiSE partner has invited you to complete the questionnaire?

- ☐ AIDICO (Spain)
- ☐ ANCE (Italy)
- ☐ AVACA (Greece)
- ☐ BCC (Bulgaria)
- ☐ EGE UNIVERSITY (Turkey)
- ☐ ENERCYA (Spain)
- ☐ EOLAS (Spain)
- ☐ Harbour of Rafina (Greece)
- ☐ IMA ARCHITECTURE (Cyprus)
- ☐ INTROMAC (Spain)
- ☐ ISTEDIL (Italy)
- ☐ Positive Energy (Greece)
- ☐ Projects in Motion (Malta)
- ☐ X-PANEL (Cyprus)
- ☐ None of the above

A.1.2

☐ would you like to be added to the ee-WiSE mailing list? (tick if yes)

☐ are you interested in participating in ee-WiSE workshops where knowledge transfer tools will be presented? (tick if yes)



A&E: Architecture and engineering companies (civil, mechanical, electrical, environmental),
Audit: Energy auditing firms,
BuildManager: Real Estate agents and householders and building managers,
Certificate: Certification bodies,
Climate: Meteorologists,
Economy: Economists,
EDist: Energy distributors,
ESCO: Energy service companies,
Finance: Banks, Financial Agents, Promoters, Subsidizers,
Government: Government,
GridOp: Electric Power Transmission Grid Operators (GridOp)
Installers: Installers of building systems, building materials,
LCA: Life cycle assessment bodies,
Occupants: Homeowners and building users, occupants,
PO: Intellectual property bodies and patent offices.
Manufacturers: Manufacturers of building elements, building materials,
PubA: Public administration and authorities (ministries, municipalities, etc.),
R&D: R&D institutes, universities,
RenewEn: Renewable energy companies,
Software: Software developers,
Standard: Standardization bodies,
TechSol: Technical solutions developers companies.

Value Chain for Building Retrofitting in the Mediterranean Area

A.2 The below is a list of all the different entities that make up the EE retrofitting value chain. Please indicate which group you belong to.

- ☐ Architecture and Engineering (A&E)
- ☐ Bank / Financial Agent / Promoter / Subsidizer / (Finance)
- ☐ Building Manager (BuildManage)
- ☐ Building Materials Installer (Installer)
- ☐ Building Materials Manufacturer (Manufacturer)
- ☐ Certification Body (Certificate)
- ☐ Economist (Economy)
- ☐ Electric Power Transmission Grid Operator (GridOp)
- ☐ Energy Auditing Firm (Audit)
- ☐ Energy Distributor (EDist)
- ☐ Energy Service Company (ESCO)
- ☐ Intellectual Property Body / Patent office (PO)
- ☐ Life Cycle Assessment Company (LCA)
- ☐ Meteorologist (Climate)
- ☐ Occupant in a Commercial Property (Occupant)
- ☐ Occupant in a Rented House (Occupant)
- ☐ Occupant in Rented Condominium/Apartment Block (Occupant)
- ☐ Occupant in Shared Offices (Occupant)

- ☐ Owner of a Building/House/Apartment (Occupant)
- ☐ Public Administration (PubA)
- ☐ R&D Institute / University (R&D)
- ☐ Renewable Energy Company (RenewEn)
- ☐ Software Developer (Software)
- ☐ Standardization Body (Standard)
- ☐ Technical Solutions Developer (TechSol)
- ☐ Other (please specify): _____

Section B

Energy-Efficient Retrofitting Technology

Definition: The term "retrofitting" refers to the exercise of renewal or reparation of an existing building to improve the current conditions by adding new equipment or application of new materials. Energy-efficient retrofitting suppose the improvement of the building's energy performance.

Retrofitting technologies are being promoted in the market via various sources, with some technologies being more relevant to the Mediterranean climate than others. This section serves to identify the building retrofitting technologies that are currently being utilized in today's building stock and those that are still left unexplored.

B.1 Depending on your role in the retrofitting value chain (as indicated in the previous section), please indicate your activity with the various **retrofitting technologies** listed below.

Being active in a technology refers to situations where the retrofitting technology is:

- installed in your residence (if you are a building occupant)
- promoted for utilisation
- in your line of work

	Active	Tried to become active but lacking information	Interested in becoming active in the future	Not interested / Not aware
Acoustic insulation materials	☐	☐	☐	☐
Air-conditioning systems	☐	☐	☐	☐
Biomass energy	☐	☐	☐	☐
Boiler	☐	☐	☐	☐
Energy efficient lighting	☐	☐	☐	☐
Energy efficient windows/doors	☐	☐	☐	☐
Geothermal energy	☐	☐	☐	☐
Glazing materials	☐	☐	☐	☐
Heat pumps	☐	☐	☐	☐
HVAC	☐	☐	☐	☐
Hydraulic energy	☐	☐	☐	☐
Light intensity regulators	☐	☐	☐	☐

Light tubes	☐	☐	☐	☐
Photovoltaic panels	☐	☐	☐	☐
Shading	☐	☐	☐	☐
Smart home systems for thermo controller valves	☐	☐	☐	☐
Smart home systems for individual heat cost allocators	☐	☐	☐	☐
Solar collectors	☐	☐	☐	☐
Thermal insulation materials	☐	☐	☐	☐
Vapour insulation materials	☐	☐	☐	☐
Ventilation fixtures	☐	☐	☐	☐
Water insulation materials	☐	☐	☐	☐
Wind energy	☐	☐	☐	☐
Other (*please specify*):_____	☐	☐	☐	☐

B.2 Throughout your experience whilst searching for information on EE retrofitting technology which group, amongst the different groups forming the retrofitting value chain, did you consult for information and what was the result?

	Did not approach	No response received	Partial info received	Irrelevant information received	Full info received
Architecture and Engineering	☐	☐	☐	☐	☐
Bank / Financial Agent / Promoter / Subsidizer	☐	☐	☐	☐	☐
Building Manager	☐	☐	☐	☐	☐
Building Materials Installer	☐	☐	☐	☐	☐
Building Materials Manufacturer	☐	☐	☐	☐	☐
Building/House Owner	☐	☐	☐	☐	☐
Certification Body	☐	☐	☐	☐	☐
Economist	☐	☐	☐	☐	☐
Electric Power Transmission Grid Operator	☐	☐	☐	☐	☐
Energy Auditing Firm	☐	☐	☐	☐	☐
Energy Distributor	☐	☐	☐	☐	☐
Energy Service Company	☐	☐	☐	☐	☐
Intellectual Property Body / Patent office	☐	☐	☐	☐	☐
Life Cycle Assessment Company	☐	☐	☐	☐	☐
Meteorologist	☐	☐	☐	☐	☐
Public Administration	☐	☐	☐	☐	☐
R&D Institute / University	☐	☐	☐	☐	☐

Real Estate Agent	☐	☐	☐	☐	☐
Renewable Energy Company	☐	☐	☐	☐	☐
Software Developer	☐	☐	☐	☐	☐
Standardization Body	☐	☐	☐	☐	☐
Technical Solutions Developer	☐	☐	☐	☐	☐
Other (please specify): _____	☐	☐	☐	☐	☐

If possible, please provide further details about your experience in requesting for information?

Section C

Sources of Information on Retrofitting Technologies

Considering that rate of technological improvements in retrofitting, it is important to be well informed about the latest research studies, the advances in installation techniques and manufacture, as well as testimonials from post-installation.

This section serves to identify the effectiveness of the various information sources that are/have been utilised when searching for information on retrofitting technologies

C.1 Which, in your opinion, are the most effective sources of information from amongst the sources listed below? Kindly rate each of the sources that you have employed during your research on retrofitting technologies, on the scale provided.

	No experience	Not effective	Limited effectiveness	Somewhat effective	Very effective
Articles in newspapers/magazines issued from a trustworthy source.	☐	☐	☐	☐	☐
Communication with independent research bodies.	☐	☐	☐	☐	☐
Communication with professionals in the building sector, i.e. architect/engineer	☐	☐	☐	☐	☐
Communication with research section of a private company.	☐	☐	☐	☐	☐
Communication with university R&D departments.	☐	☐	☐	☐	☐
Courses organised within an educational institution.	☐	☐	☐	☐	☐
Demonstration of retrofitting technologies through Building Information Modelling (digital representations of physical and functional characteristics)	☐	☐	☐	☐	☐
Demonstration/exhibitions of retrofitting technology on actual buildings.	☐	☐	☐	☐	☐
Informal viewing of installed technologies in other buildings.	☐	☐	☐	☐	☐
Information obtained directly from the retrofitting	☐	☐	☐	☐	☐

materials manufacturer.					
Information obtained from the installer/promoter of retrofitting technologies.	☐	☐	☐	☐	☐
Internet search engines for information on retrofitting.	☐	☐	☐	☐	☐
Laboratory demonstrations employing retrofitting technologies in simulated environments.	☐	☐	☐	☐	☐
National/EU building regulations for energy efficiency.	☐	☐	☐	☐	☐
Periodicals/papers issued by research organisations.	☐	☐	☐	☐	☐
Seminars/conferences dealing with buildings' energy efficiency.	☐	☐	☐	☐	☐
Training programs not including hands-on experience of retrofitting implementation.	☐	☐	☐	☐	☐
Training programs with hands-on experience of retrofitting in real-life situations.	☐	☐	☐	☐	☐
Other (please indicate):	☐	☐	☐	☐	☐

C.1.1 What information were you looking for and what was the result of your quest for information?

	Full info obtained	No response received	Did not approach	Irrelevant info received	Partial info received
Applicability of the technology to a real-life building.	☐	☐	☐	☐	☐
Availability of demonstration projects supporting the technology.	☐	☐	☐	☐	☐
Financing/costing of the retrofit process.	☐	☐	☐	☐	☐
Level of intrusion when installing a technology (whether the resident needs to leave the building or not)	☐	☐	☐	☐	☐
Performance of the technology in terms of financial payback duration.	☐	☐	☐	☐	☐
Performance of the technology in terms of post-retrofit energy savings.	☐	☐	☐	☐	☐
Technical characteristics of a particular technology.	☐	☐	☐	☐	☐

Technical details on how to carry out the installation process.	☐	☐	☐	☐	☐
Other (*please specify*): _____	☐	☐	☐	☐	☐

Section D

Knowledge Barriers and Information Transfer Needs

Energy efficient building solutions are often technically demanding and put high knowledge requirements on the parties involved. However, it has already been acknowledged that information flow within the retrofitting value chain is hindered.

Depending on your personal experience within the retrofitting sector, this section aims to identify the major stumbling blocks that are being encountered as well as the needs for effective knowledge transfer.

D.1 The below is a list of possible **knowledge transfer needs** that might be required in order to facilitate the flow of information between the various components of the value chain. Kindly rate the importance of each need according to your personal opinion and experience within the retrofitting value chain.

D.1.1 Skills and Awareness Needs

	Not relevant	Minimal importance	Important	Very important
Training of traditional craftsmen on retrofitting innovations.	☐	☐	☐	☐
Exposing the end users to the technological results of the research organisations.	☐	☐	☐	☐
Training the business society to access the knowledge stock.	☐	☐	☐	☐
The business society needs to be aware of tools to manage intellectual property.	☐	☐	☐	☐
Training of construction professionals (including architects, civil engineers, building services engineers, project managers, building designers, etc) in retrofit technologies.	☐	☐	☐	☐
Other (please indicate):	☐	☐	☐	☐

D.1.2 Knowledge Management Needs

	Not relevant	Minimal importance	Important	Very important
Establishing network organisations that will coordinate knowledge transfer from innovation groups and assist in implementing innovation into daily building practice.	☐	☐	☐	☐
Increased interaction amongst research institutions.	☐	☐	☐	☐
Clustering within the retrofit market to provide integrated solutions.	☐	☐	☐	☐
Connecting technical commercial advice to EPBD - energy performance and requirements of the actual buildings.	☐	☐	☐	☐
Other (please indicate):	☐	☐	☐	☐

D.1.3 R&D Approach Needs

	Not relevant	Minimal importance	Important	Very important
Scientists need to have increased contact with the end-users in order to understand the applicability of their research.	☐	☐	☐	☐
Real-life evaluation of research results.	☐	☐	☐	☐
R&D to divert their activity rapidly in response to changes in the market.	☐	☐	☐	☐
When communicating research results, more focus needs to be given to practical benefits of the retrofit technology.	☐	☐	☐	☐
Other (please indicate):	☐	☐	☐	☐

D.1.4 Financial Needs

	Not relevant	Minimal importance	Important	Very important
Increase business motivation through public R&D initiatives	☐	☐	☐	☐

and innovation funding.				
Industry needs financial support to take up results of scientific innovation.	☐	☐	☐	☐
Occupants need financial support to invest in retrofitting technology.	☐	☐	☐	☐
Other (please indicate):	☐	☐	☐	☐

D.1.5 Institutional & Administrative Needs

	Not relevant	Minimal importance	Important	Very important
EC guidelines for knowledge dissemination from the research institutions.	☐	☐	☐	☐
Evaluation of publicly funded research projects via it's applicability to the end-user.	☐	☐	☐	☐
Other (please indicate):	☐	☐	☐	☐

Section E

Best Practice Identification

Definition: *A **best practice** is a method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark.*

This section aims to identify any best practice techniques that might be existent in the retrofitting value chain for assisting efficient knowledge transfer.

Kindly provide a description of any knowledge transfer method which you have come across through your dealing with retrofitting technology and which in your opinion is considered as a good example of a best practice. In these scenarios of best practices you could either be acting as the information provider or receiver.

☐ I am not aware of any best practice scenarios for knowledge transfer.

☐ Yes I have been involved / am aware of a best practice scenario.

If yes, please provide details:

Web Address (if applicable): _____

Type of Organisations involved: _____

Comments: _____

.

ee-Wise

Thank You for Your Contribution to The Questionnaire

The ee-Wise project team would like to thank you for your time dedicated to filling up the questionnaire.

Further details on the ee-Wise project can be obtained from www.ee-wise.eu

Should you have any concerns or inquiries about the way in which the questionnaire has been conducted, or would like to have more information on the project, please do not hesitate to contact us.

Thank you

Date: 30th April 2013

Do you think this questionnaire would be interesting to any of your contacts?

If yes, please provide us with their contact details

Contact:_____ ***Email:*** _____

Contact:_____ ***Email:*** _____

Contact:_____ ***Email:*** _____

3 (Appendix 3) Survey Questionnaire for Data Collection in WP3 – BULGARIAN

Трансферназнаниявъвверигатанастойно сттазаенергийноефективнообновяванена сгради

Обхватнавъпросника

Тозивъпросникечастотпроекта „ee-Wise", изпълняваниотконсорциумот 13 партньориотЕС, сцелдасеразработирамказатрансферназнанияврамкитенаверигатанастойностт азаенергийноефективнообновяваненасградивСредиземноморскиярегион.

Статистикатапоказва, чесградниятфонде „отговорен" за 40% отобщотоенергийнопотреблениенаЕСиза 36% отемисиитена CO2 вЕС. Намаляванетонапотреблениетонаенергиячрезподобряваненаенергийнитехарак теристикинасградитепредставляваогроменпотенциалзаповишаваненаенергийн атаефективностиесъщоединотнай-доходоноснитеначинизанамаляваненаемисиитена CO2. РеализациятанамеркизаенергийноефективнообновяваненасградатанамаляваП отреблениетонаенергия, спестявапаринадомакинстватаиикономиката, намалявазависимосттаотвносанагориваотстраниизвънЕС, стимулираикономиката, растежаиосигуряваработниместаиобществениПоръчкизастроителнитефирми.

Въпрекитова, трансферътназнаниязатехнологиитезаенергийноефективнообновяваненетечее фективномеждуагентитеотверигатанастойността. Порадитазипричина,

енеобходимосподелянетоназнания, задасепреодолеяттехническитеиикономическитебариери. Тозивъпросникимазацелдаидентифицираосновнитепречки, присъстващивъввериганатанастойността, даобърневниманиетовърхувсичкиналичнивмоментанай-добрипрактикивсектора, идапредоставиценнаинформация, задапомогневидентифициранетонапредложениязарешениязапреодоляваненап речките. Катокраенрезултатпопроект "ee-Wise" щесепроизведеинструментариум, койтощепомогнезаефективнатакомуникациязаулесняваненатрансфераназнани я.

КанимВинай-учтиводаучастватевтозипроект, вкачествотосиначленнаверигатанадобавенатастойност. ПопълванетонавъпросникащеВиотнемеоколо 10 до 15 минути.

Всякаинформация, събранаоттозивъпросник, щебъдезапазенаврамкитенапроектаинямадаимаразкриваненаинформациянавъншнил ица. Данните, полученотвъпросника, севключватвобщитерезултатикатообобщениданнибезпозоваванеконкретнилицаилио рганизации, освенаконесапредоставенипълномощиязатова.

Общественитерезултатищебъдатдостъпнинауебсайтанапроекта „ee-WiSE" следюли 2013 г.

РазделАДетайлизаучастника

A.1 Моля, въведетевашитеданнизаконтакт.

Обръщение:

Име&фамилия:*

Именаорганизацията:(оставетегопразно, акопопълватекатофизическолице)

E-mail:*

Уебсайт:

Държава:*

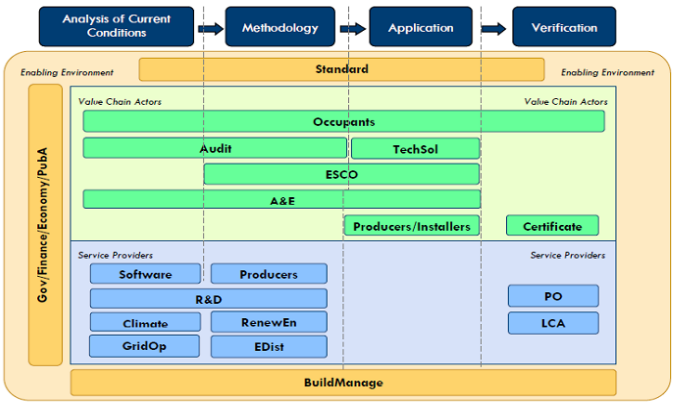
A.1.1 Кой ee-WiSE партньорВипоканидапопълнитевъпросника?

- ☐ AIDICO (Spain)
- ☐ ANCE (Italy)
- ☐ AVACA (Greece)
- ☐ BCC (Bulgaria)
- ☐ EGE UNIVERSITY (Turkey)
- ☐ ENERCYA (Spain)
- ☐ EOLAS (Spain)
- ☐ Harbour of Rafina (Greece)
- ☐ IMA ARCHITECTURE (Cyprus)
- ☐ INTROMAC (Spain)
- ☐ ISTEDIL (Italy)
- ☐ Positive Energy (Greece)
- ☐ Projects in Motion (Malta)
- ☐ X-PANEL (Cyprus)
- ☐ None of the above

A.1.2

☐ Бихтелижелалидабъдетедобавенивсписъкасел. адресинапроекта? (отметнете, акоотговорътВие „да”)

☐ Интересувателисеотучастиевуъркшоповетенапроект ee-WiSE, къдетощебъдатпредставениинструментитезатрансферназнания? (отбележете, акоискатедаучаствате)



Използвани абревиатури в графиката на веригата на стойността:
A&E: архитектурни бюра и строителни предприятия – инженерингови фирми
Audit: фирми за енергийно обследване/одит
BuildManager: агенти по недвижими имоти и собственици на сгради и строителни мениджъри
Certificate: сертифициращи органи
Climate: метеоролози
Economy: икономисти
EDist: дистрибутори на енергия
ESCO: компании за услуги в областта на енергетиката, ESCO компании за енергоспестяващи услуги
Finance: банки, финансови агенти, търговски представители (промоутъри, субсидиращи органи
Government: правителство
GridOp: оператори на електроразпределителната мрежа
Installers: фирми за монтаж на строителни системи, строителни материали
LCA: органи за оценка на жизнения цикъл
Occupants: собственици и ползватели на сграда, наематели
PO: органи за право на интелектуална собственост и патентно ведомство
Manufacturer: производители на строителни елементи, строителни материали
PubA: публична администрация и власти (министерства, общини и др.)
R&D: изследователски & развойни институти, университети
RenewEn: фирма за възобновяема енергия
Software: фирма, разработваща софтуер
Standard: органи по стандартизацията
TechSol: компании, разработващи технически решения

Веригатанастойносттазаобновяваненасградивсредиземноморскиярегион

A.2 По-долуеписъкътнаразличнитеинституции, коитоформиратверигатанастойносттазаенергийноефективнообновяваненасгра дите. Моля, посочетегрупата, къмкоятопринадлежите.

- ☐ Публичнаадминистрация (ПубА)
- ☐ Организастандартизация (Стандарт)
- ☐ Банка/Финансовагент/Търговскипредста вител (промоутър)/Субсидиращорган/ (Финансов)
- ☐ Икономист (Икономика)
- ☐ Разработващ/итехническирешения (ТехРеш)
- ☐ Софтуер (софтуер)
- ☐ Изследователски&развоенинститут/унив ерситет (И&Р)
- ☐ метеоролог (климат)
- ☐ Производителнастроителниматериали (Производител)
- ☐ Архитектурнибюраиинженеринговифи рми (A&E)
- ☐ Фирмазаенергийнообследване (Audit)
- ☐ Компаниязаенергоспестяващиуслуги (ESCO)
- ☐ Сертифициращорган (Certificate)
- ☐ Органзаправотонаинтелектуалнасобс твеност / Патентноведомство (PO)
- ☐ Компаниязаоценканажизнениянцикъл (LCA)
- ☐ Собственикнасграда/къща/апартамен т (Обитател)

☐ Монтажник/монтажнафирма/ настроителниматериали (Монтажник)

☐ Дистрибуторинаенергия (ЕДист)

☐ Компаниязавъзобновяемаенергия (RenewEn)

☐ Операторнаелектрическапреносна мрежа (GridOp)

☐ Обитателнакъщаподнаем (Наемател)

☐ Етажнасобственост/ Наемателвжилищенблок (Наемател)

☐ Наемателвтърговскасграда (Наемател)

☐ Споделениофиси (Наемателивадминистративнасграда)

☐ Управителинаетажнасобственост/сграда (BuildManage)

Друго (моля, посочете): ☐

РазделБТехнологиязаенергийноефективнообновяване.

Дефиниция: Терминът“обновяване” сеотнасядообновяванеилиремонтираненасъществуващасграда, подобряваненанейнотосъстояниечрездобавяненановооборудванеиливлаганенановим атериали.

Енергийноефективнотообновяванепредполагаподобряваненаенергийнитехарактеристикинасградата.

Технологиитезаенергийноефективномодернизиранесепредлагатнапазарачрезразличниизточници, катонякоитехнологиисапо-приложими, тъйкатосапо-адаптираникъмсредиземнорскияклиматвсравнениесдруги.
Тозиразделцелидаидентифицират ехнологиитезаенергийноефективнообновяване/санираненажилищнияфонд, коитосеприлагатвмомента, кактоитези, коитоняматвсеощетолковаширокоилимасовоприложение.

Б.1 Взависимостотролятавивъввериг атанастойността (посоченаевпредишнияраздел), моляпосочетевашатадейноствприложенияпо-долусписъкнаразличнитетехнологиизаобновяване.

Дабъдешактивенпоотношениенатехнологиитезаобновяванесеотнасязаслучаите, вкоитодаденатехнологияе:

- свързанасизгражданенаинсталациивъввашетожилище;

- свързанасмеркизанасърчаваненаенергоспестяванетокаточастоткомуналнитеуслуги;

- свързанаспрофесионалнатавидейност.

	Активен	Опитал се е да стане активен,но липсва информация	се, за да предприеме такива дейности в бъдеще	Не се интересува/ Не е запознат
Звукоизолационни материали	○	○	○	○
Климатични системи, климатизация	○	○	○	○
Енергия от биомаса	○	○	○	○
Котел	○	○	○	○
Енергийно ефективно осветление	○	○	○	○
Енергийно ефективни прозорци/врати	○	○	○	○
Геотермална енергия	○	○	○	○
Материали за осветителни системи, стъклопакети	○	○	○	○
Термопомпи	○	○	○	○
ОВК (Отопление, вентилация и климатизация)	○	○	○	○
Хидро енергия	○	○	○	○
Регулатор за интензитета на осветлението	○	○	○	○
Осветителни пури – луминисцентни, халогенни	○	○	○	○
Фотоволтаични панели	○	○	○	○
Системи за защита от слънчева светлина	○	○	○	○
Умни системи за термоконтролиращи вентили	○	○	○	○
Умни битови системи за индивидуално разпределяне на разходите за отопление	○	○	○	○
Соларни колектори	○	○	○	○
Топлоизолационни материали	○	○	○	○
Пароизолационни материали	○	○	○	○
Вентилационни тела	○	○	○	○
Водоизолационни материали	○	○	○	○
Вятърна енергия	○	○	○	○

Друго (моля, посочете):

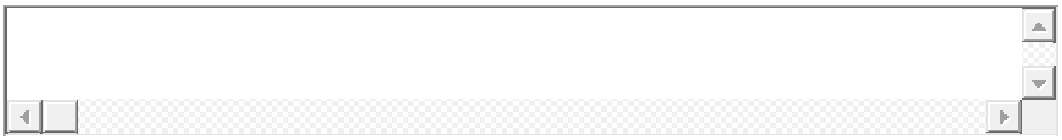
Б.2

Съобразновашияопитвтърсенетонаинформациязатехнологиязаенергийноефективноса ниране, коягрупаформираверигатанастойността ? Намерихтелиинформацияикакъвбешерезултатът ?

	Не успях да достигна до информацията	Не получих отговор	Получих частична информация	Получих нерелавантна информация	Получих пълна информация
Архитектурна и инженерингова дейност	○	○	○	○	○
Банка/Финансов агент/Търговски представител (промоутър)/Субсидиращ орган/ (Финансов)	○	○	○	○	○
Строителен мениджър	○	○	○	○	○
Монтажник на строителни материали	○	○	○	○	○
Производител на строителни материали	○	○	○	○	○
Собственик на сграда/къща	○	○	○	○	○
Сертифициращ орган, организация	○	○	○	○	○
Икономист	○	○	○	○	○
Оператор на електроразпределителна мрежа	○	○	○	○	○
Фирма за енергийно обследване, одит	○	○	○	○	○
Дистрибутор на енергия	○	○	○	○	○
Фирма за услуги в областта на енергетиката	○	○	○	○	○
Орган за интелектуална собственост / патентно ведомство	○	○	○	○	○
Компания за оценка на жизнения цикъл	○	○	○	○	○
Метеоролог	○	○	○	○	○
Публична администрация	○	○	○	○	○
Изследователски & развоен институт / Университет	○	○	○	○	○
Агент, посредник по недвижима собственост	○	○	○	○	○
Компания за възобновяема енергия	○	○	○	○	○
Разработващ софтуер	○	○	○	○	○
Орган по стандартизацията	○	○	○	○	○
Разработващ технически решения	○	○	○	○	○

Друго (моля, посочете):

Акоевъзможно, моляпосочетеощеподробностизавашияопитвтърсененаинформация.



РазделВИзточницинаинформациязатехнологииизаенергийноефективнообновяване

Имайкипредвидмножествотовъзможнитехнологичнимодернизацииииподобрениянасградите, еважнодабъдетедобреинформиранизапоследнитепроучвания, напредъкавмонтажнитетехнологииипроизводствотонаматериали, кактоиспрепоръките, вследствиенаексплоатациятанаинсталациите.

Тозиразделслужизаидентифицираненаефективносттанаразличнитеизточницинаинформация, коитосаизползванипритърсенетонаинформациязатехнологиитезаенергийноефективно саниране.

B.1 Споредваскоисанай-ефективнитеизточницинаинформацияоттези, изброенипо-долу? Моля, дакласиратевсекиотизточниците, коитостеизползвалиповременавашетопроучванезатехнологиитезаенергийноефективно обновяване, спрямоприложенатаскала.

	Няма опит	Не е ефективен	Ограничена ефективност	Ефективен до известна степен	Много ефективен
Статии във вестници/списания, издавани от надеждни източници.	○	○	○	○	○
Комуникация с независими изследователски организации.	○	○	○	○	○
Връзки със специалисти от строителния сектор, напр. архитект/инженер.	○	○	○	○	○
Комуникация с изследователски отдел на частна фирма.	○	○	○	○	○
Комуникация с изследователски & развойни университетски отдели.	○	○	○	○	○
Курсове, организирани от образователни институции.	○	○	○	○	○
Демонстрации на технологии за саниране посредством информационни технологии за моделиране на сградата (дигитално представяне, изобразяване на физическите и функционалните характеристики на сградите).	○	○	○	○	○
Демонстрации/изложби на технологии за обновяване на реални сгради.	○	○	○	○	○
Неформално разглеждане на инсталирани технологии в други сгради.	○	○	○	○	○
Информация, получена директно от производител на строителни материали.	○	○	○	○	○
Информация, получена от фирма за монтаж /дистрибутор на строителни технологии.	○	○	○	○	○
Интернет търсачки за информация за саниране.	○	○	○	○	○
Демонстрации в лаборатории, използващи технологии за саниране в симулирана среда.	○	○	○	○	○
Национално/ЕС законодателство за енергийната ефективност на сградите.	○	○	○	○	○
Периодични издания/публикации, издавани от изследователски организации.	○	○	○	○	○
Тематични семинари/конференции - в областта на енергийната ефективност на сградите.	○	○	○	○	○
Програми за квалификация, които не включват практика/придобиване на практически опит за изпълнение на саниращи дейности.	○	○	○	○	○
Квалификационни програми с прилагане на реални примери, ситуации от практиката.	○	○	○	○	○

Друго (моля, посочете):

В 1.1 Каквааинформациятърсихтеикакъвбешерезултатътотвашетопроучване?

	Не успях да достигна до информацията	Не получих отговор	Получих частична информация	Получих нерелавантна информация	Получих пълна информация
Приложимост на технологията спрямо съществуваща сграда.	○	○	○	○	○
Наличност на демонстрационни проекти, подпомагащи технологията.	○	○	○	○	○
Финансиране/калкулация, остойностяване на процеса на саниране.	○	○	○	○	○
Ниво на причиняване на неудобства при инсталиране на технологията (дали има нужда обитателите да напуснат сградата или няма).	○	○	○	○	○
Ефикасност на технологията от гледна точка на продължителност на периода на възвръщаемост на финансовите средства.	○	○	○	○	○
Ефективност на технологията от гледна точка на спестената енергия след санирането.	○	○	○	○	○
Технически характеристики на конкретната технология.	○	○	○	○	○
Технически подробности как да се реализира процеса на саниране, инсталиране на определени ВЕИ напр.	○	○	○	○	○

Друго (моля, посочете):

РазделГБариерипредтрансфераназнаниеипотребностиоттрансфернаинформация

Решенията, технологиитезаенергийнаефективностнасградитечестоизискваттехническипознанияип оставятвисокикритериизазнаниянаучастващитестрани. Вечебешеконстатирано, чеинформационниятпоток, врамкитенаверигатанастойносттавобновяванетонасградите, езатруднен.

Взависимостотвашияличенопитвсекторанасанирането, тозиразделенасоченкъмидентифицираненаосновнитепречки, скоитосесблъсквате, кактоикъмпотребноститеотефективентрансферназнания.

Г.1 По-надолуесписъкътнавъзможнитепотребностиоттрансферназнания, откоитоможедаиманужда, задасеподпомогнеинформационнияпотокмеждуразличнитекомпонентинаверигатанастойността. Най-учтивоВимолимдаподредитепозначимоствсякаотпотребноститесъгласновашетолично мнениеиопитвъввериганастойносттанаобновяванетонасгради.

	Не е релевантно	Ниска значимост	Важно е	Много е важно
Обучение на „традиционните" занаятчии/квалифицирани специалисти по иновации в областта на енергийно ефективното саниране.	○	○	○	○
Представяне пред крайните потребители на резултатите от внедрени технологии, разработени от развойни организации.	○	○	○	○
Обучение на бизнес обществото за достъп до наличните знания.	○	○	○	○
Бизнес обществото има нужда да е наясно с инструментите за управление на интелектуалната собственост.	○	○	○	○
Обучение на специалисти от строителния сектор (включително архитекти, строителни инженери – ПГС, инженери с др. специалности – транспортно стр-во, В и К, ръководители на проекти, проектанти на сгради и т. н.) в областта на технологиите за обновяване на сгради.	○	○	○	○

Друго (моля, посочете):

Г.1.2 Нуждиотуправлениеназнанията

	Не е релевантно	Ниска значимост	Важно е	Много е важно
Създаване на мрежа от организации, които ще координират трансфера на знания от групата, създаваща иновации и ще подпомагат практическото им приложение в ежедневната строителна дейност.	○	○	○	○
Повишаване на взаимодействието между изследователските институции.	○	○	○	○
Създаване на клъстери на пазара на обновяването на сгради, за предоставяне на интегрирани решения.	○	○	○	○
Свързване на техническите съвети, идващи от търговски субекти, с изискванията на Директивата за енергийните характеристики на сградите и изискванията към реалните сгради.	○	○	○	○

Друго (моля, посочете):

* Г.1.3 Потребностотподходспрямоизследователскатаиразвойнатадейност

	Не е релевантно	Ниска значимост	Важно е	Много е важно
За да разберат приложимостта на проучванията си, учените имат нужда от интензивен контакт с крайните потребители.				
Оценка на резултатите от проучванията от гледна точка на реалната практика.				
Изследователските и развойни институции да съобразяват своята дейност, отговаряйки бързо на промените в пазара.				
Когато се представят резултатите от изследванията, трябва да се поставя по-голям акцент върху практическите ползи от технологията за обновяването на сгради.				

Друго (моля, посочете):

* Г.1.4 Финансовинужди

	Не е релевантно	Ниска значимост	Важно е	Много е важно
Повишаване на мотивацията за бизнес чрез публични инициативи за развойна и изследователска дейност и финансиране на иновационни дейности.				
Индустрията има потребност от финансова подкрепа, за да използва резултатите от иновациите в науката.				
Обитателите се нуждаят от финансова подкрепа за инвестиции в енергийно ефективни технологии за обновяване на жилищата.				

Друго (моля, посочете):

*Г.1.5 Институционални&административнинужди

	Не е релевантно	Ниска значимост	Важно е	Много е важно
Насоки на ЕК за разпространение на знания от изследователските институции.	○	○	○	○
Оценка на изследователските проекти, финансирани с публични средства чрез тяхната приложимост от крайните потребители.	○	○	○	○

Друго (моля, посочете):

РазделДИдентифицираненадобрапрактика

Дефиниция: добрапрактикаеметодилитехника, коятопоследователнопоказварезултати, превъзхождащитези, постигнатисдругисредства, икоятосеизползвакатобазазасравнение.

Тозиразделимазацелдаидентифицираврсичкитехники, коитосадобрапрактика, наличнивъввериrатанастойносттазаподпомаганенаефективнотопредаваненазнания. Моля, предоставетеописаниенавсекиметоднатрансферназнания, накойтостесенатъквали, занимавайкисестехнологиизасанираненасградиикойтосчитатезапримернаеднад обрапрактика. Въввъзможнитесценариинанай-добрипрактикиможедабъдетеиливкачествотосинадоставчикнаинформация, илинаприемник.

○ Азнесъмнаясноскакватоидабиладобрапрактиказатрансферназнания.

○ Да, участвалсъм /знамзадобрапрактика.

Акостеотговорилиутвърдително, моля, дайтеподробности:

Адреснауебсайт (акоеналичен):

Виднаучаствщатаорганизация:

Коментари:

ee-Wise

Благодарязавашияприносзапопълванетонавъпросника !

Екипътнапроект ee-Wise бижелалдаВиблагодаризаотделенотоотвасвремезапопълваненавъпросника.

Повечеинформациязапроект „ee-Wise" можедабъдеполученана www.ee-wise.eu.

Акоиматенякаквисъображенияилизапитванияотноснотозивъпросник, илибихтеискалидаполучитеповечеинформациязапроекта, молянесеколебайтедасесвържетеснас.

БлагодаримВи !

Смятатели, четозивъпросникбипредставлявалинтересзанякоиотвашитеконтакти ? (Моля, отбележете „да" или „не")

- да
- не

Акостеотговорилис „да", моляпосочетенитезиданнизаконтакт:

e-mail:

4 (APPENDIX 4) SURVEY QUESTIONNAIRE FOR DATA COLLECTION IN WP3 - ITALIAN

Trasferimento delle conoscenze di efficienza energetica nel caso di riqualificazioni in ambito mediterraneo

Scopo del Questionario

Questo questionario è parte del progetto ee-Wise, gestito da un consorzio di 13 partner europei con l'obiettivo di sviluppare un programma quadro di trasferimento delle conoscenze all'interno della filiera dell'efficienza energetica nell'ambito di ristrutturazioni nell'area del Mediterraneo.

Le statistiche mostrano che il settore edilizio è responsabile del 40% del consumo energetico globale dell'Unione Europea e del 36% di emissioni di CO2. Ridurre il consumo energetico attraverso l'efficienza energetica degli edifici rappresenta un enorme potenziale di miglioramento, ed è anche uno dei modi più redditizi per la riduzione delle emissioni di CO2. La realizzazione di misure di efficienza energetica nelle riqualificazioni edilizie riduce il consumo energetico, consente un forte risparmio di denaro per le famiglie e per l'economia, riduce al minimo la dipendenza dai combustibili importati da fuori l'UE, stimola la crescita dell'economia e offre posti di lavoro e appalti per le imprese di costruzione.

Tuttavia, il trasferimento di conoscenze per quanto riguarda le tecnologie di retrofitting non avviene in modo efficace tra soggetti della filiera dell'efficienza energetica. Pertanto è necessaria la condivisione delle conoscenze per superare le barriere tecnologiche ed economiche. Il questionario si propone di individuare i principali ostacoli presenti nella filiera, evidenziare eventuali "best practices" esistenti nel settore, e fornire preziose informazioni per permettere l'individuazione di proposte e soluzioni per eliminare le barriere. Il progetto ee-Wise, in ultima analisi, produrrà uno strumento che sarà di aiuto per una comunicazione efficace, facilitando il trasferimento delle conoscenze.

Ti invitiamo a partecipare a questo progetto in quanto membro della filiera. Il tempo stimato per la compilazione del questionario è di 10-15 minuti.

Tutte le informazioni raccolte da questo questionario saranno conservate al fine del progetto e non avverrà la divulgazione a terze parti. I dati acquisiti dal questionario saranno presentati all'interno dei documenti pubblici come dati aggregati senza riferimento ad alcuna persona o organizzazione, salvo diversa autorizzazione.

I documenti pubblici saranno accessibili sul sito ee-Wise dopo luglio 2013.

Sezione A Dettagli del partecipante

A.1 Dati personali

Titolo:	
Nome & Cognome:*	
Nome dell'Organizzazione(lasciare vuoto se individuale):	
Email:*	
Sito internet:	
Paese:*	

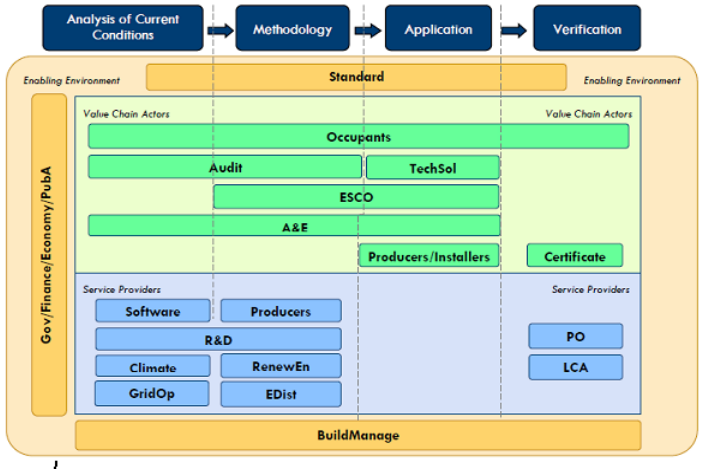
A.1.1 Quale ee-WiSE partner ti ha invitato a compilare il questionario?

- ○ AIDICO (Spain)
- ○ ANCE (Italy)
- ○ AVACA (Greece)
- ○ BCC (Bulgaria)
- ○ EGE UNIVERSITY (Turkey)
- ○ ENERCYA (Spain)
- ○ EOLAS (Spain)
- ○ Harbour of Rafina (Greece)
- ○ IMA ARCHITECTURE (Cyprus)
- ○ INTROMAC (Spain)
- ○ ISTEDIL (Italy)
- ○ Positive Energy (Greece)
- ○ Projects in Motion (Malta)

- X-PANEL (Cyprus)
- Nessuno dei precedenti

A.1.2

- Vuoi essere aggiunto alla mailing list ee-Wise?
- Sei interessato a partecipare ai workshops di ee-WiSE nei quali saranno presentati gli strumenti per il trasferimento delle conoscenze?



Abbreviazioni utilizzate nel grafico della filiera:
A&E: Studi di architettura e Ingegneria (civile, meccanica, elettrica, ambientale)
Audit: Società di revisione energetica
BuildManager: Agenti immobiliari, building managers e proprietari di immobili
Certificate: Organismi di certificazione
Climate: Meteorologi
Economy: Economisti
EDist: Distributori di energia
ESCO: Energy Service Company
Finance: Banche / Agenti finanziari / Promotori / Sovvenzionatori
Government: Governo
GridOp: Operatori della rete di trasmissione dell'energia elettrica
Installers: Installatori di materiali da costruzione
LCA: Aziende di Life Cycle Assessment
Occupants: Proprietari o occupanti di alloggi
PO: Istituti di Proprietà intellettuale / Patent office
Manufacturers: Produttori di materiali da costruzione
PubA: Amministrazioni e autorità pubbliche
R&D: Istituti di Ricerca e Sviluppo / Università
RenewEn: Renewable Energy Companies
Software: Sviluppatori di software
Standard: Enti di standardizzazione
TechSol: Sviluppatori di soluzioni tecniche

Filiera per la riqualificazione energetica degli edifici nella zona del Mediterraneo

A.2 Qui di seguito puoi leggere una lista di tutti i diversi enti che fanno parte della filiera del retrofitting in ambito di efficienza energetica: Indica a quale gruppo appartieni.

- Amministrazione Pubblica (PubA)
- Ente di standardizzazione (Standard)
- Banca / Agente finanziario / Promotore / Sovvenzionatore / (Finance)
- Economista (Economy)
- Sviluppatore di soluzioni tecniche (TechSol)
- Architettura e Ingegneria (A&E)
- Società di valutazione energetica (Audit)
- Società di servizi energetici (ESCO)
- Organismo di certificazione (Certificate)
- Proprietà intellettuale / Patent Office (PO)
- Azienda di valutazione del ciclo di vita (LCA)

- ☐ Sviluppatore di software (Software)
- ☐ Istituto di Ricerca e Sviluppo / Università (R&D)
- ☐ Metereologo (Climate)
- ☐ Produttore di materiali da costruzione (Manufacturer)
- ☐ Installatore di materiali da costruzione (Installer)
- ☐ Distributore di energia (EDist)
- ☐ Produttore di energia rinnovabile (RenewEn)
- ☐ Operatore della rete di trasmissione dell'energia elettrica (GridOp)
- ☐ Proprietario di Edificio / Casa / Appartamento (Occupant)
- ☐ Occupante in una casa in affitto (Occupant)
- ☐ Inquilino in Condominio (Occupant)
- ☐ Occupante in proprietà commerciale (Occupant)
- ☐ Uffici condivisi (Occupant)
- ☐ Amministratore dell'edificio (BuildManage)

Altro (specificare): _____

Sezione B. Tecnologie di retrofitting ad alta efficienza energetica

Definizione: Il termine "retrofitting" si riferisce all'esercizio di riqualificazione o riparazione di un edificio esistente per migliorarne le condizioni attraverso l'aggiunta di nuove attrezzature o l'applicazione di nuovi materiali. Il "retrofitting" ad alta efficienza energetica presuppone il miglioramento della performance energetica.

Le tecnologie di retrofitting sono state promosse sul mercato attraverso varie fonti, con alcune tecnologie particolarmente rilevanti per il clima mediterraneo. Questa sezione ha lo scopo di identificare quali tecnologie di retrofitting sono già utilizzate nel mondo delle costruzioni e quali invece sono ancora inesplorate.

B.1 Durante la tua esperienza nel corso della ricerca di informazioni sulle tecnologie di retrofitting ad alta efficienza energetica, quali gruppi di stakeholders hai contattato e quali sono stati i risultati?

L'essere attivi rispetto ad una tecnologia si riferisce a situazioni in cui la tecnologia è:

- Installata nella tua residenza (se sei un occupante)
- Promossa per l'utilizzo
- Nella tua linea di lavoro

	Attivo	Interessato a essere attivo, ma privo di informazioni	Interessato a diventare attivo in futuro	Non interessato / Non informato
Materiali di isolamento acustico				
Sistemi di condizionamento dell'aria				
Energia a biomasse				
Caldaia				
Illuminazione ad alta efficienza				
Infissi ad alta efficienza				
Energia geotermica				
Vetrature efficienti				
Pompe di calore				
HVAC (riscaldamento, ventilazione, condizionamento dell'aria)				
Energia idraulica				
Regolatori di intensità della luce				
Light tubes				
Pannelli fotovoltaici				
Schermature solari				
Sistemi domotici per valvole di controllo termico				
Sistemi domotici per contabilizzatori di calore autonomi				
Collettori solari				
Materiali per l'isolamento termico				
Materiali per l'isolamento al vapore				
Apparecchi di ventilazione				
Materiali impermeabilizzanti				
Energia eolica				
Altro (specificare)				

B.2 Durante la tua esperienza nel corso della ricerca di informazioni sulle tecnologie di retrofitting ad alta efficienza energetica, quali gruppi di stakeholders hai contattato e quali sono stati i risultati?

	Nessun approccio	Nessuna risposta ricevuta	Informazioni parziali	Informazioni irrilevanti	Informazioni adeguate
Architettura e Ingegneria					
Banca / Agente finanziario / Promotore / Sovvenzionatore					
Amministratore dell'edificio					
Installatore di materiali da costruzione					
Produttore di materiali da costruzione					
Proprietario di casa / edificio					
Organismo di certificazione					
Economista					
Operatore della rete di trasmissione dell'energia elettrica					
Società di valutazione energetica					
Distributore di energia					
Società di servizi energetici (ESCO)					
Ente della proprietà intellettuale / Patent office					
Azienda di valutazione del ciclo di vita					
Meteorologo					
Amministrazione pubblica					
Istituto di Ricerca e Sviluppo / Università					
Agente Immobiliare					
Produttore di energia rinnovabile					
Sviluppatore di software					
Ente di standardizzazione					
Sviluppatore di soluzioni tecniche					

Altro (specificare)

Se è possibile, ti preghiamo di fornirci maggiori dettagli sulla tua esperienza di richiesta di informazioni.

Sezione C. Fonti di informazione sulle tecnologie di retrofitting ad alta efficienza energetica

Quando si tratta di tecnologie di retrofitting, così come di altre tecnologie, è importante tenersi informati attraverso gli ultimi studi, i progressi della tecnica, della ricerca e della produzione, così come attraverso le testimonianze di post-installazione.

Questa sezione ha lo scopo di identificare le fonti di informazione che sono/sono state utilizzate durante la ricerca di informazioni riguardanti le tecnologie di retrofitting ad alta efficienza energetica.

C.1. Quali, secondo la tua opinione, sono le fonti di informazione più efficaci tra quelle elencate in seguito? Per ciascuna delle fonti, ti preghiamo di valutare la tua esperienza sulla base della scala fornita.

	Nessuna esperienza	Non efficace	Efficacia limitata	Buona efficacia	Molto efficace
Articoli di giornale/rivista scritti da una fonte attendibile	○	○	○	○	○
Comunicazione con enti di ricerca indipendenti	○	○	○	○	○
Comunicazione con professionisti del settore edile (architetti, ingegneri)	○	○	○	○	○
Comunicazione con la sezione di ricerca di una società privata	○	○	○	○	○
Comunicazione con dipartimenti universitari di Ricerca e Sviluppo (R&S)	○	○	○	○	○
Corsi organizzati all'interno di un istituto di formazione	○	○	○	○	○
Dimostrazione delle tecnologie di retrofitting attraverso Building Information Modelling (BIM) (rappresentazioni digitali di caratteristiche fisiche e funzionali)	○	○	○	○	○
Dimostrazioni di tecnologie di retrofitting su edifici reali	○	○	○	○	○
Visione informale di tecnologie installate in altri edifici	○	○	○	○	○
Informazioni direttamente ottenute dal produttore di materiali di retrofitting	○	○	○	○	○
Informazioni ottenute dall'installatore/promotore di materiali di retrofitting	○	○	○	○	○
Ricerche su internet per informazioni sul retrofitting	○	○	○	○	○
Simulazione in laboratorio dell'impiego di tecnologie di retrofitting	○	○	○	○	○
Norme edilizie nazionali/europee per l'efficienza energetica	○	○	○	○	○
Periodici/Articoli scientifici pubblicati da organismi di ricerca	○	○	○	○	○
Seminari/Conferenze riguardanti l'efficienza energetica degli edifici	○	○	○	○	○
Programmi di formazione che non includono esperienze pratiche di retrofitting in situazioni reali	○	○	○	○	○
Programmi di formazione che includono esperienze pratiche di retrofitting in situazioni reali	○	○	○	○	○
Altro (specificare)					

C.1.1 Quali informazioni stavi cercando e qual'é stato il risultato della tua ricerca di informazioni?

C.1.1 Quali informazioni stavi cercando e qual'é stato il risultato della tua ricerca di informazioni?

	Nessun approccio	Nessuna risposta ricevuta	Informazioni parziali	Informazioni irrilevanti	Informazioni adeguate
Applicabilità della tecnologia ad un determinato edificio	○	○	○	○	○
Disponibilità di progetti dimostrativi di supporto alla tecnologia	○	○	○	○	○
Finanziamento/Costo del processo di retrofitting	○	○	○	○	○
Livello di intrusione durante l'installazione della tecnologia (se il residente deve lasciare l'edificio o no)	○	○	○	○	○
Prestazione della tecnologia in termini di durata di ammortamento finanziario	○	○	○	○	○
Prestazione della tecnologia in termini di risparmio energetico	○	○	○	○	○
Caratteristiche tecniche della tecnologia	○	○	○	○	○
Dettagli tecnici sul processo di installazione	○	○	○	○	○

Altro (specificare)

Sezione D Barriere alla conoscenza e necessità di trasferimento delle informazioni

Le soluzioni edilizie ad alta efficienza energetica sono spesso tecnicamente impegnative e richiedono, alle parti coinvolte, elevati requisiti di conoscenza. Tuttavia, è già stato confermato che il flusso di informazioni all'interno della filiera del retrofitting è spesso ostacolato.

A seconda della tua personale esperienza all'interno del settore del retrofitting, questa sezione identificherà le cause che frenano il trasferimento di conoscenze in tutta la filiera del retrofitting.

D.1 La lista seguente raccoglie le possibili esigenze di trasferimento di conoscenze che potrebbero essere necessarie al fine di facilitare il flusso di informazioni tra le varie componenti della filiera. Ti preghiamo di valutare l'importanza di ogni necessità secondo il tuo parere personale e la tua esperienza all'interno della filiera.

D.1.1 Competenze e necessità di sensibilizzazione

	Non rilevante	Minima importanza	Importante	Molto importante
Formazione di artigiani sulle strategie di retrofitting energetico				
Presentazione agli utenti finali dei risultati tecnologici degli organismi di ricerca				
Formazione per le imprese nell'ambito delle tecnologie di retrofitting				
Formazione per le imprese nell'ambito degli strumenti per gestire la proprietà intellettuale				
Formazione dei professionisti delle costruzioni (inclusi architetti, ingegneri, project managers, progettisti, ecc.) sulle tecnologie di retrofitting				

Altro (specificare)

D.1.2 Necessità di gestione delle conoscenze

	Non rilevante	Minima importanza	Importante	Molto importante
Creazione di una rete che coordinerà il trasferimento di conoscenze dai gruppi di innovazione e assisterà l'attuazione delle innovazioni nelle pratiche costruttive tradizionali				
Maggiore interazione tra gli istituti di ricerca				
"Clustering" all'interno del mercato del retrofitting per fornire soluzioni integrate				
Connessione tra le consulenze tecnico commerciali e i valori di prestazione energetica richiesti agli edifici di nuova costruzione				

Altro (specificare)

D.1.3 Approccio degli istituti di Ricerca e Sviluppo (R&S)

	Non rilevante	Importanza minima	Importante	Molto importante
Maggiore contatto tra i ricercatori e gli utenti finali, in modo da poter comprendere l'applicabilità delle ricerche	○	○	○	○
Valutazioni sull'applicabilità dei risultati delle ricerche alla vita reale	○	○	○	○
Capacità degli organismi di ricerca di indirizzare rapidamente le attività in risposta ai cambiamenti del mercato	○	○	○	○
Maggiore attenzione ad evidenziare i vantaggi pratici delle tecnologie di retrofit durante la comunicazione dei risultati di ricerca	○	○	○	○

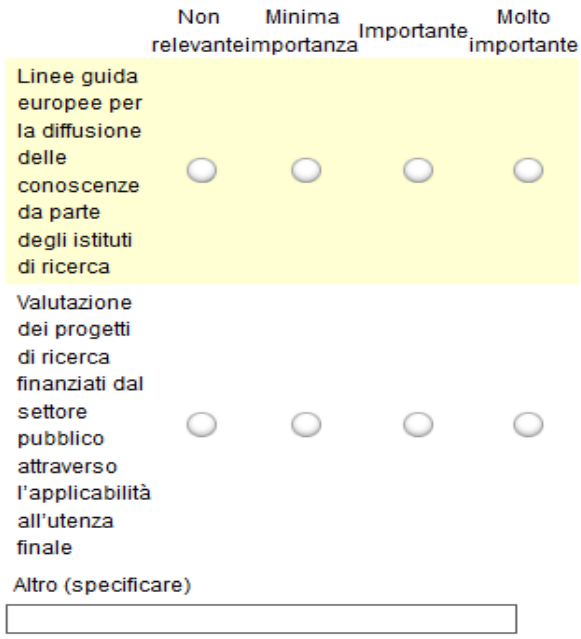
Altro (specificare)

D.1.4 Fabbisogni finanziari

	Non rilevante	Minima importanza	Importante	Molto importante
Aumento degli stimoli alla ricerca attraverso iniziative pubbliche di Ricerca e Sviluppo e finanziamenti alle innovazioni	○	○	○	○
Supporto finanziario all'industria per l'utilizzo dei risultati della ricerca scientifica	○	○	○	○
Supporto finanziario agli utenti finali per investimenti nell'ambito del retrofitting energetico	○	○	○	○

Altro (specificare)

D.1.5 Fabbisogni istituzionali e amministrativi



Sezione E Identificazione di Best Practices

Definizione: una Best Practice è un metodo o una tecnica che mostra risultati superiori a quelli raggiunti con altri mezzi, e che viene utilizzato come parametro di riferimento.

Questa sezione ha lo scopo di individuare eventuali best practice che potrebbero essere ricomprese nella filiera del retrofitting per favorire un efficiente trasferimento di conoscenze.

Ti chiediamo di fornire una descrizione di un metodo di trasferimento delle conoscenze che hai incontrato durante la tua esperienza con le tecnologie di retrofitting e che a tua opinione è un buon esempio di best practice. In questo scenario di best practice tu puoi agire come fornitore o destinatario di informazioni.

Non sono a conoscenza di eventuali scenari di best practice per il trasferimento delle conoscenze.

Sì, sono stato coinvolto/conosco uno scenario di best practice.

Se sì, ti preghiamo di fornirci maggiori dettagli:

Indirizzo Web:

Tipo di Organizzazione coinvolta:

Commenti:

ee-Wise

Grazie per la tua partecipazione!

Il team di progetto ee-Wise desidera ringraziarti per il tempo dedicato alla compilazione del questionario.
Potrai trovare maggiori dettagli sul progetto all'indirizzo www.ee-wise.eu
Per eventuali dubbi o richieste di informazioni sul questionario o, in generale, sul progetto, non esitare a contattarci.

Grazie

Data: 30th April 2013

Pensi che questo questionario possa essere interessante per alcuni dei tuoi contatti?

- Sì
- No

Se sì, ti preghiamo di fornirci maggiori dettagli:

email:

5 (APPENDIX 5) SURVEY QUESTIONNAIRE FOR DATA COLLECTION IN WP3 - SPANISH

Transferencia de Conocimiento en la Cadena de Valor de la Rehabilitación Energética de Edificios

Objetivo del Cuestionario

Este cuestionario es parte del Proyecto ee-WiSE, un proyecto formado por un consorcio de 13 socios de la UE con el objetivo de desarrollar un marco de transferencia de conocimiento dentro de la cadena de valor de la Eficiencia Energética en el sector de la rehabilitación de edificios en la región mediterránea.

Los datos estadísticos muestran que el parque de edificios es responsable del 40% del consumo total de energía de la UE, y del 36% de las emisiones de CO2 de la UE. La reducción del consumo energético a través de la mejora de la eficiencia energética de los edificios representa un enorme potencial y es también una de las formas más provechosas de reducción de las emisiones de CO2. La implementación de medidas de Eficiencia Energética en la rehabilitación de edificios reduce el consumo energético, ahorra dinero a los hogares y a la economía de cada país, minimiza la dependencia de los combustibles importados de fuera de la UE, contribuye al crecimiento de la economía, y promueve la creación de puestos de trabajo y la contratación de empresas de construcción.

Sin embargo, la transferencia de conocimiento de tecnologías de rehabilitación, no fluye correctamente entre los agentes de la cadena de valor del sector de la EE. Por tanto, compartir el conocimiento es fundamental para superar las barreras tecnológicas y económicas. Este cuestionario tiene como objetivo identificar los principales obstáculos existentes en la cadena de valor, señalar las mejores prácticas actuales del sector, y facilitar una valiosa información que ayudará a detectar soluciones que permitan salvar estas barreras. Finalmente, el proyecto ee-Wise, proporcionará una herramienta de apoyo para facilitar la transferencia de conocimiento a través de una comunicación eficaz.

Les invitamos a participar en este proyecto, en su calidad de miembro de la cadena de valor. Completar el cuestionario sólo le llevará entre 10 y 15 minutos.

Cualquier información obtenida de este cuestionario se mantendrá dentro del proyecto y no se cederá información a terceros. Los datos obtenidos a partir del cuestionario se incluirán en las presentaciones y documentos públicos como datos agregados, sin referencia a personas u organizaciones salvo autorización específica.

Se podrá acceder a los resultados públicos en el sitio web ee-WiSE a partir de julio de 2013.

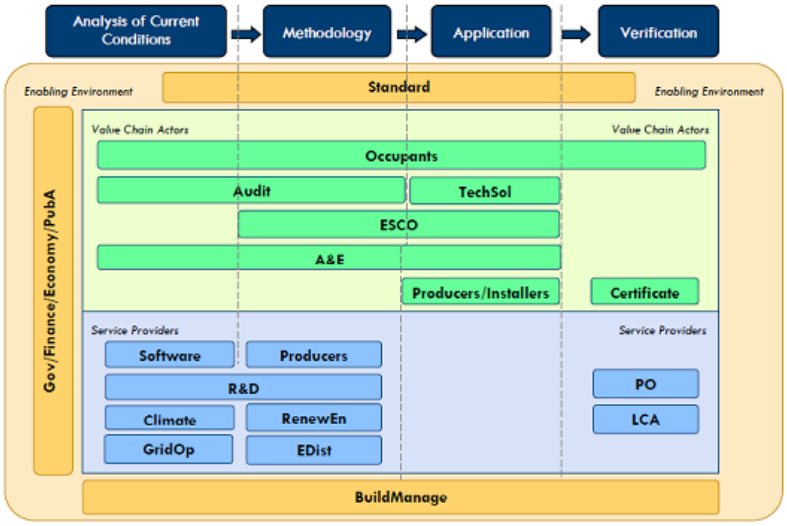
Sección A Información sobre el participante

A.1.1 ¿Qué socio del ee-Wise le ha invitado a completar el cuestionario?

- ○ AIDICO (Spain)
- ○ ANCE (Italy)
- ○ AVACA (Greece)
- ○ BCC (Bulgaria)
- ○ EGE UNIVERSITY (Turkey)
- ○ ENERCYA (Spain)
- ○ EOLAS (Spain)
- ○ Harbour of Rafina (Greece)
- ○ IMA ARCHITECTURE (Cyprus)
- ○ INTROMAC (Spain)
- ○ ISTEDIL (Italy)
- ○ Positive Energy (Greece)
- ○ Projects in Motion (Malta)
- ○ X-PANEL (Cyprus)
- ○ Ninguno de los anteriores

A.1.2

☐ ¿Estaría interesado en unirse a la lista de correo del proyecto ee-WiSE? (marcar er caso afirmativo)



☐ ¿Está usted interesado en participar en las talleres del ee-Wise, donde se presentarán las herramientas para la transferencia de conocimiento? (marcar en caso afirmativo)

Cadena de Valor del sector de la Rehabilitación de Edificios en el Área Mediterránea

A.2 La siguiente lista muestra todas entidades distintas que conforman la cadena de valor de la rehabilitación energética de edificios. Por favor, indique qué papel desempeña usted.

☐ Administraciones Públicas (PubA)

☐ Arquitectura e Ingeniería (A&E)

☐ Organismos de Normalización (Standard)

☐ Compañías de Auditores Energéticos (Audit)

☐ Bancos / Agentes Financieros / Promotores / Financiadores (Finance)

☐ Empresas de Servicios Energéticos, ESES (ESCO)

☐ Economistas (Economy)

☐ Entidades de Certificación (Certificate)

☐ Desarrolladores de Soluciones técnicas (TechSol)

☐ Entidades de Propiedad Intelectual / oficinas de patentes (PO)

☐ Desarrolladores de Software (Software)

☐ Organismos de Análisis de Ciclo de Vida/ Impacto ambiental (LCA)

☐ Institutos de I+D / Universidades (R&D)

☐ Propietario de Edificio / Casa / Apartamento

☐ Meteorólogos (Climate)

☐ Fabricantes de materiales de construcción (Manufacturer)

☐ Instaladores de materiales y sistemas (Installer)

☐ Distribuidores de Energía (EDist)

☐ Empresas de Energías Renovables (RenewEn)

☐ Operadores y Gestores de la Red Electrica (GridOp)

☐ (Occupant)

☐ Residente en alquiler de viviendas unifamiliares (Occupant)

☐ Residente en alquiler de apartamentos (Occupant)

☐ Usuario en alquiler de Locales Comerciales (Occupant)

☐ Usuario en alquiler de Oficinas (Occupant)

☐ Agentes Inmobiliarios, Administradores de Fincas (BuildManage)

Otro (por favor, especifique): _____

Sección B Tecnología de Rehabilitación Energética

Definición: El término "rehabilitación" se refiere a la actividad mediante la cual se renueva o repara un edificio existente para mejorar las condiciones actuales mediante la incorporación de nuevos equipos o la aplicación de nuevos materiales. La rehabilitación energética supone la mejora del comportamiento energético del edificio.

Las tecnologías de rehabilitación se están promocionando en el mercado a través de distintas fuentes, siendo alguna de ellas más relevantes que otras para la región mediterránea. Esta sección tiene como objetivo identificar las tecnologías de rehabilitación que se están empleando actualmente en los edificios y aquellas que aún quedan por explorar.

B.1 Considerando su papel en la cadena de valor (según ha señalado en la sección anterior), por favor indique su nivel de actividad con las diversas tecnologías de rehabilitación que se muestran a continuación.

Ser activo en una tecnología se refiere a situaciones donde:

- La tecnología se encuentra instalada en su residencia (si usted es usuario del edificio – Occupant)
- Usted fomenta el uso de esa tecnología
- La tecnología está en su línea de trabajo

	Activo	Ha intentado ser activo pero carece de información	Está interesado en ser activo en un futuro	No está interesado / Desconoce esta tecnología
Materiales de aislamiento acústico				
Sistemas de aire acondicionado				
Energía de biomasa				
Calderas				
Iluminación de alta eficiencia energética				
Ventanas o puertas eficientes energéticamente				
Energía Geotérmica				
Materiales de Acristalamiento				
Bombas de calor				
Climatización (HVAC)				
Energía hidráulica				
Reguladores de intensidad lumínica				
Lumiductos				
Paneles fotovoltáicos				
Sistemas de sombreamiento				
Domótica para válvulas de control térmico				
Domótica para medidores de consumo en unidades de calefacción				
Colectores solares térmicos				
Materiales de aislamiento térmico				
Barreras de vapor				
Aparatos de Ventilation				
Materiales de aislamiento de humedad				
Energía Eólica				

Otro (por favor, especifique):

B.2 A lo largo de su experiencia, al buscar información sobre tecnologías de rehabilitación energética, ¿con qué grupos contactó de los citados en la cadena de valor?, y ¿cuáles fueron los resultados?

	No consultó	No obtuvo respuesta	Recibió información parcial	Recibió información irrelevante	Recibió información completa
Arquitectura e Ingeniería					
Bancos / Agentes Financieros / Promotores / Financiadores					
Administradores de Fincas					
Instaladores de sistemas					
Fabricantes de Materiales de Construcción					
Usuarios de viviendas					
Entidades de Certificación					
Economistas					
Operadores y Gestores de la Red eléctrica					
Compañías de Auditores Energéticos					
Distribuidores de Energía					
Empresas de Servicios Energéticos (ESES)					
Entidades de Propiedad Intelectual / Oficinas de Patentes					
Organismos de análisis de ciclo de vida (balance ambiental)					
Meteorólogos					
Administraciones Públicas					
Institutos de I+D / Universidades					
Agentes Inmobiliarios					
Empresas de Energías Renovables					
Empresas de desarrollo de Software					
Entidades de normalización					
Desarrolladores de Soluciones Técnicas					

Otro (por favor, especifique):

Si es posible, por favor proporcione más detalles acerca de su experiencia al solicitar información.

Section C. Fuentes de Información en Rehabilitación Energética

Teniendo en cuenta el progreso de las mejoras tecnológicas en rehabilitación, es importante estar al tanto de los últimos estudios de investigación, los avances en técnicas de implantación y fabricación, así como de testimonios post-ejecución.

Esta sección sirve para identificar la efectividad de las distintas fuentes de información que son/han sido utilizadas en la búsqueda de información sobre tecnologías de rehabilitación energética.

C.1 En su opinión, ¿cuáles son las fuentes de información más efectivas de las mostradas a continuación? Por favor, valore el grado de efectividad de las fuentes que ha utilizado en su búsqueda sobre tecnologías de rehabilitación energética.

	No consultó	Nada efectivas	Poco efectivas	Algo efectivas	Muy efectivas
Artículos en periódicos/revistas publicados de una fuente fiable.					
Comunicación con organismos de investigación independientes.					
Comunicación con profesionales del sector de la edificación (arquitectos/ingenieros).					
Comunicación con el departamento de I+D de una empresa privada.					
Comunicación con universidades y departamentos de I+D.					
Cursos organizados por centros de formación.					
Demostración de tecnologías de rehabilitación a través del método BIM – Building Information Modeling, (representación digital de características físicas y funcionales)					
Demostración/exposición de tecnología de rehabilitación en edificios existentes.					
Observación de tecnologías instaladas en otros edificios.					
Información obtenida directamente de fabricantes de materiales.					
Información obtenida directamente de instaladores/promotores de tecnologías de rehabilitación.					
Buscadores de internet para información en rehabilitación.					
Demostraciones de laboratorio aplicando tecnologías en medios de simulación.					
Normativas nacionales/UE para Eficiencia Energética de edificios.					
Publicaciones/artículos emitidos por organizaciones de I+D.					
Seminarios/conferencias relacionados con Eficiencia Energética de edificios.					
Programas de formación sin incluir experiencias prácticas en la ejecución de rehabilitación.					
Programas de formación con experiencias prácticas de rehabilitación en casos reales.					

Otro (por favor, especifique):

C.1.1 ¿Qué información buscaba y cuál fue el resultado de esta búsqueda de información?

	Recibió información completa	No obtuvo respuesta	Recibió información parcial	Recibió información irrelevante	No consultó
Aplicación de la tecnología de rehabilitación. a un edificio existente.	○	○	○	○	○
Disponibilidad de proyectos de demostración que incorporen la tecnología.	○	○	○	○	○
Financiación/cálculo de costes del proceso de rehabilitación.	○	○	○	○	○
Grado de molestia de las obras debido a la implantación de una tecnología (si el usuario debe abandonar el edificio o no).	○	○	○	○	○
Comportamiento de la tecnología en cuanto al periodo de amortización.	○	○	○	○	○
Comportamiento de la tecnología en cuanto a ahorros energéticos después de la rehabilitación.	○	○	○	○	○
Características técnicas de una tecnología particular.	○	○	○	○	○
Detalles técnicos sobre cómo ejecutar el proceso de instalación.	○	○	○	○	○

Otro (por favor, especifique):

Sección D Barreras de conocimiento y necesidades de transferencia de información

Las soluciones constructivas de eficiencia energética suelen ser técnicamente exigentes y exigir un alto grado de conocimiento de las partes involucradas. Sin embargo, se ha observado que el flujo de información dentro de la cadena de valor de la rehabilitación está obstaculizado.

Dependiendo de su experiencia dentro del sector de la rehabilitación, esta sección identificará los principales obstáculos que se han encontrado así como las necesidades para una transferencia de conocimiento efectiva.

D.1 La siguiente lista muestra las posibles necesidades de transferencia de conocimiento que se podrían emplear para facilitar el flujo de información entre los distintos agentes de la cadena de

valor. Por favor, puntúe la importancia de cada necesidad según su opinión y experiencia personal dentro de la cadena de valor del sector de la rehabilitación.

	Irrelevante	Mínima importancia	Importante	Muy importante
Formación de obreros tradicionales sobre innovación en la rehabilitación energética.				
Exposición de los resultados tecnológicos de organismos de investigación a los usuarios finales.				
Formación de la sociedad empresarial para acceder al stock de conocimiento.				
La sociedad empresarial necesita estar al tanto de las herramientas para la gestión de la propiedad intelectual.				
Formación de profesionales de la construcción (incluyendo arquitectos, ingenieros civiles y de construcción, jefes de proyecto y diseñadores de edificios, etc.) en tecnologías de rehabilitación.				

Otro (por favor, especifique):

D.1.2 Necesidades de Gestión de Conocimiento

	Irrelevante	Mínima importancia	Importante	Muy importante
Establecer organizaciones de redes que coordinen la transferencia de conocimiento de grupos de innovación y ayuden a implementar la innovación en la práctica diaria de la construcción.	○	○	○	○
Aumento de la interacción entre las instituciones de investigación.	○	○	○	○
Agrupamiento en el Mercado de rehabilitación para ofrecer soluciones integradas.	○	○	○	○
Conectar el asesoramiento técnico comercial con la EPBD (Directivas de eficiencia energética)- eficiencia energética y requerimientos actuales de los edificios.	○	○	○	○

Otro (por favor, especifique):

D.1.3 Necesidades de enfoque de I+D

	Irrelevante.	Mínima importancia	Importante.	Muy importante
Los investigadores necesitan tener mayor contacto con los usuarios finales con el objetivo de comprender la aplicabilidad de sus investigaciones.	○	○	○	○
Evaluación en casos reales de resultados de investigación.	○	○	○	○
Desviar la actividad de la I+D con rapidez en respuesta a los cambios en el mercado.	○	○	○	○
Al comunicar los resultados de investigación, se necesita poner mayor atención a los beneficios prácticos de la tecnología de rehabilitación.	○	○	○	○

Otro (por favor, especifique):

D.1.4 Necesidades Financieras

	Irrelevante	Mínima importancia	Importante	Muy importante
Aumentar la motivación empresarial a través de iniciativas públicas de I+D y financiación de la innovación.				
La industria necesita ayuda financiera para asumir resultados de la innovación científica.				
Los usuarios de los edificios necesitan ayuda financiera para invertir en tecnología de rehablitación energética.				

Otro (por favor, especifique):

D.1.5 Necesidades institucionales y administrativas

	Irrelevante	Mínima importancia	Importante	Muy importante
Guías de la Comisión Europea para la difusión de conocimiento de las instituciones de investigación.				
Evaluación de proyectos de investigación financiados con fondos públicos en cuanto a su aplicabilidad para el usuario final.				

Otro (por favor, especifique):

Sección E Identificación de buenas prácticas

Definición: Una buena práctica es un método o técnica que ha demostrado los mejores resultados frente a aquellos obtenidos con otros medios, y que se utilizan como punto de referencia.

Esta sección pretende identificar buenas prácticas en cuanto a técnicas que podrían existir en la cadena de valor de la rehabilitación para ayudar a que la transferencia de conocimiento sea eficaz.

Por favor, proporcione una descripción de cualquier método de transferencia de conocimiento que haya experimentado a través de su relación con tecnologías de rehabilitación y que, en su opinión considere como buen ejemplo de "buena práctica". En estos escenarios de buenas prácticas, usted podría estar actuando como emisor de la información o como receptor.

○ No tengo conocimiento de ningún escenario de buenas prácticas para la transferencia de conocimiento.

○ Sí, he estado involucrado / soy consciente de un escenario de buenas prácticas.

En caso afirmativo, indique los detalles:

Dirección Web (si procede): _____

Tipo de organizaciones involucradas: _____

Comentarios:

_____

ee-Wise

Gracias por su contribución al cuestionario

El equipo del proyecto ee-WiSE le gustaría agradecerle el tiempo dedicado a rellenar el cuestionario.
Para más detalles sobre el proyecto, diríjase a: www.ee-wise.eu
Si tiene cualquier duda o pregunta acerca de la forma en que se ha realizado el cuestionario, o le gustaría obtener más información sobre este proyecto, por favor no dude ponerse en contacto con nosotros.

Gracias

¿Cree que este cuestionario puede ser interesante para alguno de sus contactos?

- Si
- No

En caso afirmativo, por favor introduzca las direcciones de los contactos a los que desee invitar

email:

6 (APPENDIX 6) SURVEY QUESTIONNAIRE FOR DATA COLLECTION IN WP3 - GREEK

ΗΜεταφοράΤεχνογνωσίαςσταΕμπλεκόμενα μέληγιατηνΑναβάθμισηΕνεργειακής ΑπόδοσηςΥφιστάμενωνΚτηρίων

ΣκοπόςτουΕρωτηματολογίου

Το παρόνερωτηματολόγιοείναιμέροςτουΠρογράμματοςee-Wise πουλειτουργείαπότηνκοινοπραξία 13 ευρωπαϊκώνσυνεταίρωνμεαντικείμενοτηνανάπτυξηενός πλαισίουγνώσηςμεταξύτωνεμπλεκόμενωνμελώνγιατηνενεργειακήαναβάθμισηυφιστάμενωνκτι ρίωνστην περιοχήτηςΜεσόγειου.

Οιστατιστικέςκαταδεικνύουνότιτοκτιριακόαπόθεμαείναιυπεύθυνογιατο 40% τηςσυνολικήςκατανάλωσηςενέργειαςκαιγιατο 36% τωνεκπομπώνCO¬2 στηνΕυρωπαϊκήΈνωση.
Μειώνονταςτηνκατανάλωσηενέργειαςμέσωτηςκτιριακήςενεργειακήςαπόδοσηςτωνκτιρίων, δημιουργείταιένατεράστιοδυναμικόέτσιώστεναγίνεταιενεργειακάαποδοτικόκαιεπιπροσθέτωςα ποτελείέναναπότους πιοεπικερδήςτρόπουςμείωσηςτονεκπομπώνCO2. Ηεφαρμογήτωνμέτρωνενεργειακήςαπόδοσηςστηνανακαίνισηκτιρίουμειώνειτηνκατανάλωσηεν έργειαςεξοικονομείχρήματαστανοικοκυριάκαιστηνγενικότερηΟικονομίαμειώνειτηνεξάρτησηστ ηνεισαγωγήκαυσίμωναπόχώρεςεκτόςτηςΕ.Ε., εκτινάσσειτηνανάπτυξητηςοικονομίαςκαι παρέχεινέεςθέσειςεργασίαςκαι προμήθειεςστιςκατασκευαστικέςεταιρείες.

Παρόλααυτάημεταφοράγνώσηςόσοαφοράτιςτεχνολογίεςανακαίνισηςδενλειτουργείαποδοτικά ανάμεσασταμέλη πουαπαρτίζουντηναλυσίδαενεργειακήςαπόδοσης. Συνεπώςηανταλλαγή/διάδοσηγνώσηςείναιαπαραίτητηγιαναξεπεραστούντατεχνολογικάκαιοικ ονομικάεμπόδια. Το παρόνερωτηματολόγιοσκοπεύειστονα προσδιορίσειταβασικάεμπόδια πουεμφανίζονταιστηνμεταφοράγνώσηςμεταξύτωνεμπλεκόμενωνμελών, ναυπογραμμίσειτιςτρέχουσεςβέλτιστες πρακτικέςεάνυφίστανταιτέτοιεςνα παρέχει πολύτιμες πληροφορίες πουθασυνδράμουνστηνταυτοποίησητων προτάσεωνγιαλύσειςκαινααναδείξειταεμπόδια.

Το πρόγραμμαee-Wiseεντέλειθα παράξειέναεργαλείο πουθασυνδράμειμεαποδοτικήεπικοινωνίαστηνδιευκόλυνσητηςμεταφοράγνώσης.

Σας προσκαλούμενασυμμετέχετεσεαυτότο πρόγραμμαμετηνιδιότητάσαςωςμέλοςτηςαλυσίδαςενεργειακήςαπόδοσης. Τοερωτηματολόγιοθαδιαρκέσει περίπου 10 έως 15 λεπτάγιαναολοκληρωθεί.

Οι πληροφορίες πουσυλλέγονταιαπότο παρόνερωτηματολόγιοθα πρέπεινατηρούνταιστο πλαίσιοτουέργουκαιδενθαυπάρξεικαμίααποκάλυψη πληροφοριώνσετρίτα πρόσωπα. Ταδεδομένα πουαποκτήθηκαναπότοερωτηματολόγιοθαείναιστοδημόσιο παραδοτέαωςσυγκεντρωτικάστοιχείαχωρίςαναφοράσεσυγκεκριμένα πρόσωπαήοργανισμούς, εκτόςεάνάλλωςεπιτρέπεται.

Πρόσβασησταδημόσια παραδοτέαθαείναιεφικτήαπότηνιστοσελίδαee-WiseιστοσελίδαμετάτονΙούλιοτου 2013.

ΜέροςΑΣτοιχείαΣυμμετέχοντος

Α. 1 Παρακαλώόπωςεισάγετεστοιχείαεπαφής.

Προσφώνηση:

Όνομα&Επίθετο:*

ΕπωνυμίαΟργανισμού:(Παραμένεικενόσε περίπτωσημεμονωμένωνατόμων)

ΗλεκτρονικόΤαχυδρομείο:*

Ιστοσελίδα:

Χώρα:*

Α.1.1 Ποίοςσυνεργάτηςτου προγράμματοςeeWISEσαςζήτησενασυμπληρώσετετοερωτηματολόγιο;

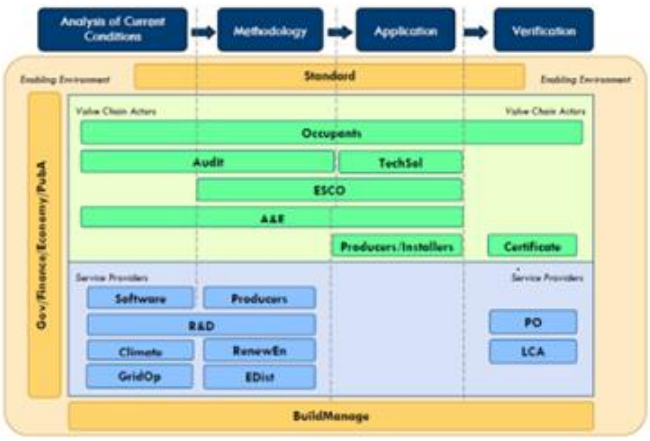
- AIDICO (Ισπανία)
- ANCE (Ιταλία)
- AVACA (Ελλάδα)
- BCC (Βουλγαρία)
- EGEUNIVERSITY (Τουρκία)
- ENERCYA (Ισπανία)

- EOLAS (Ισπανία)
- HarbourofRafina (Ελλάδα)
- IMAARCHITECTURE (Κύπρος)
- INTROMAC (Ισπανία)
- ISTEDIL (Ιταλία)
- Positive Energy (Ελλάδα)
- Projects in Motion (Μάλτα)
- X-PANEL (Κύπρος)
- Κανέναζαπότους παραπάνω

A.1.2

☐ Επιθυμείτενασυμπεριληφθείτεστηνλίσταηλεκτρονικούταχυδρομείουτουee-WiSE? (εάνναιεπιλέξτε)

☐ Ενδιαφέρεστενασυμμετέχετεσταεργαστήριατουee-WiSEόπουθα παρουσιαστούνταεργαλείαμεταφοράςγνώσης? (εάνναιεπιλέξτε)



Συντομογραφίες που χρησιμοποιούνται στην Γραφική Παράσταση των εμπλεκόμενων μελών:
A&E: Architecture and engineering companies (civil, mechanical, electrical, environmental),
Audit: Energy auditing firms,
BuildManager: Real Estate agents and householders and building managers,
Certificate: Certification bodies,
Climate: Meteorologists,
Economy: Economists,
EDist: Energy distributors,
ESCO: Energy service companies,
Finance: Banks, Financial Agents, Promoters, Subsidizers,
Government: Government,
GridOp: Electric Power Transmission Grid Operators (GridOp)
Installers: Installers of building systems, building materials,
LCA: Life cycle assessment bodies,
Occupants: Homeowners and building users, occupants,
PO: Intellectual property bodies and patent offices.
Manufacturers: Manufacturers of building elements, building materials,
PubA: Public administration and authorities (ministries, municipalities, etc.),
R&D: R&D institutes, universities,
RenewEn: Renewable energy companies,
Software: Software developers,
Standard: Standardization bodies,
TechSol: Technical solutions developers companies.

ΑλυσίδαΕνεργειακήςΑπόδοσηςστηνΑνακαίνισηΚτιρίουστηνΠεριοχήτηςΜεσογείου

A.2 Τοκάτωθιαποτελείμίαλίσταδιαφορετικώνοντοτήτων πουαποτελούνταεμπλεκόμεναμέληγιατηνενεργειακήαναβάθμισηυφιστάμενωνκτιρίωνμετάαπό

ανακαίνιση.

Παρακαλώυποδείξτεσε ποιαομάδαανήκετε.

- ☐ ΔημόσιαΔιοίκηση
- ☐ ΟργανισμόςΠιστοποίησης (Πρότυπο)
- ☐ Τράπεζα / ΟικονομικόςΜεσολαβητής / προωθητής / Χορηγός (Οικονομικό)
- ☐ Οικονομολόγος (Οικονομία) Economist (Economy)
- ☐ ΚατασκευαστήςΤεχνικώνΛύσεων (TechSol)
- ☐ ΚατασκευαστήςΛογισμικού (Software)
- ☐ ΙνστιτούτόΈρευνας&Ανάπτυξης (R&D) /Πανεπιστήμιο
- ☐ Μετεωρολόγος(Climate)
- ☐ ΚατασκευαστήςΟικοδομικώνΥλικών
- ☐ ΕγκαταστάτηςΟικοδομικώνΥλικών
- ☐ ΔιανομείςΕνέργειας
- ☐ ΕταιρείαΑνανεώσιμηςΕνέργειας
- ☐ ΔιαχειριστήςτουΔικτύουΜεταφοράςΕνέργειας
- ☐ Αρχιτέκτονας καιΜηχανικός
- ☐ ΕλεγκτικήΕταιρείαΕνέργειας
- ☐ ΕταιρείαΥπηρεσιώνΕνέργειας
- ☐ ΦορέαςΠιστοποίησης (Πιστοποίηση)
- ☐ ΦορέαςΠνευματικήςΙδιοκτησίας /ΓραφείοΕυρεσιτεχνίας
- ☐ ΕταιρείαΑξιολόγησηςΚύκλουΖωής (LCA)
- ☐ Κτίριο / Οικεία / Διαμέρισμαιδιοκτήτη (Εκμισθωτής)
- ☐ ΈνοικοσεΜισθωμένηΟικία (Εκμισθωτής)
- ☐ Συγκρότημα / ΜπλοκΔιαμερισμάτωνΕνοικιαστών (Εκμισθωτής)
- ☐ ΕκμισθωτήςΕμπορικήςΙδιοκτησίας (Εκμισθωτής)
- ☐ ΑπόκοινούΧρήσηςΓραφεία (Εκμισθωτής)
- ☐ ΔιαχειριστήςΚτιρίου

Άλλο (παρακαλώ προσδιορίστε):

ΜέροςΒΤεχνολογίαΑνακαίνισης

Ορισμός: Ούρος «ανακαίνιση» αναφέρεταιστηνεφαρμογήανανέωσηςήαποκατάστασηςενόςυφιστάμενουκτιρίουγιατηνβελτίωση τωντρεχουσώνσυνθηκώνμετην προσθήκηνέουεξοπλισμούήτηνεφαρμογήτωννέωνυλικών.

Οιτεχνολογίεςανακαίνισης που προωθούνταιστηναγοράαπόδιάφορες πηγές, εμπεριέχουνορισμένεςτεχνολογίες πουείναι πιοσυναφείςμετομεσογειακόκλίμααπόό, τιάλλες.

Το παρόνΜέροςχρησιμεύειγιατον προσδιορισμότωντεχνολογιώνανακαίνισηςκτιρίου πουεπίτου παρόντοςχρησιμοποιούνταιστακτίριατουσήμερακαισεεκείνα πουέχουν παραμείνειανεξερεύνητα.

B.1 Ανάλογαμετορόλοσαςστηναλυσίδαενεργειακήςαπόδοσης (όπωςαναφέρεταιστην προηγούμενηενότητα), παρακαλείσθενααναφέρετετηδραστηριότητάσαςσχετικάμετιςδιάφορεςτεχνολογίεςανακαίνισης πουαναφέρονται παρακάτω.

Ασχολούμενοςενεργάμετεχνολογίεςανακαινίσεωνοιοποίες:

- είναιεγκατεστημένεςστηνκατοικίασας (εάνείστεχρήστηςτουκτιρίου)
- προωθούνται προςαξιοποίηση

είναιμέροςτουεπαγγελματικούσαςαντικειμένου

	Ενεργός	Προσπαθείτε να γίνεται ενεργός αλλά υπάρχει έλλειψη πληροφόρησης	Ενδιαφέρεστε να γίνετε ενεργός μελλοντικά	Δεν ενδιαφέρεστε
Μονωτικά υλικά ακουστικής	○	○	○	○
Συστήματα κλιματισμού	○	○	○	○
Ενέργεια Βιομάζας	○	○	○	○
Μπόιλερ	○	○	○	○
Φωτισμός Ενεργειακής Απόδοσης	○	○	○	○
Παράθυρα/Πόρτες Ενεργειακής Απόδοσης	○	○	○	○
Γεωθερμική ενέργεια	○	○	○	○
Υλικά υαλοπινάκων	○	○	○	○
Αντλίες θερμότητας	○	○	○	○
HVAC	○	○	○	○
Υδροδυναμική ενέργεια	○	○	○	○
Ρυθμιστές έντασης φωτός	○	○	○	○
Light tubes	○	○	○	○
Φωτοβολταϊκά πάνελς	○	○	○	○
Σκίαστρα	○	○	○	○
Έξυπνα συστήματα Οικίας υδραυλικής βαλβίδας Θέρμανσης controller valves	○	○	○	○
Έξυπνα συστήματα Οικίας για ατομικούς καταναλωτές κόστους θερμότητας	○	○	○	○
Ηλιακοί συλλέκτες	○	○	○	○
Θερμομονωτικά υλικά	○	○	○	○
Μονωτικά υλικά σωλήνων	○	○	○	○
Εξαρτήματα εξαερισμού	○	○	○	○
Μονωτικά υλικά νερού	○	○	○	○
Αιολική ενέργεια	○	○	○	○
Άλλο (παρακαλώ προσδιορίστε):				

B.2 Σύμφωναμετηνεμπειρίασας, ενώψάχνατε πληροφορίεςσχετικάμετηντεχνολογίαανακαίνισης ποιαομάδα, μεταξύτωνδιαφόρων πουαποτελούντηναλυσίδαενεργειακήςαπόδοσηςέχετε προσεγγίσειγια πληροφορίεςκαι ποιοήταντοαποτέλεσμα;

	Δεν υπήρξε προσέγγιση	Δεν λάβατε καμία απάντηση	Λάβατε μέρος της πληροφορίας	Οι πληροφορίες που λάβατε δεν ήταν σχετικές	Λάβατε πλήρη πληροφόρηση
Αρχιτέκτονας και Μηχανικός					
Τράπεζα / Χρηματοοικονομικός Πράκτορας / Προωθητής / Χορηγός					
Διαχειριστής Κτιρίου					
Εγκαταστάτης Οικοδομικών Υλικών					
Κατασκευαστής Οικοδομικών Υλικών					
Ιδιοκτήτης Κτιρίου / κατοικίας					
Φορέας Πιστοποίησης					
Οικονομολόγος					
Διαχειριστής του Δικτύου Μεταφοράς Ηλεκτρικού Ρεύματος					
Ελεγκτική Εταιρεία Ενέργειας					
Διανομέας Ενέργειας					
Εταιρεία Ενεργειακών Υπηρεσιών					
Φορέας Πνευματικής Ιδιοκτησίας / Γραφείο Ευρεσιτεχνίας					
Εταιρεία Ανάλυσης Κύκλου Ζωής					
Μετεωρολόγος					
Δημόσια Διοίκηση					
Ινστιτούτο Έρευνας & Ανάπτυξης / Πανεπιστήμιο					
Μεσιτικό Γραφείο					
Εταιρεία Ανανεώσιμων Πηγών ενέργειας					
Προγραμματιστής Λογισμικού					
Αρχή Τυποποίησης					
Προγραμματιστής Τεχνική Λύσεων					

Άλλο (παρακαλώ προσδιορίστε):

Εάνείναιδυνατόν, παρακαλείστεναδώσετεεπιπλέονλεπτομέρειεςσχετικάμετηνεμπειρίασαςσε περίπτωση πουσαζητηθεί

ΤμήμαΓΕνημερωτικές πηγέςγιαΤεχνολογίεςΑνακαίνισης

Όταν ασχολούμαστε με τις τεχνολογίες ανακαίνισης, όπως και με άλλες τεχνολογίες, είναι σημαντικό να παραμένουμε ενημερωμένοι για τις τελευταίες μελέτες και εξελίξεις

πουπραγματοποιούνταιστιςτεχνικέςεφαρμογής, την πρόοδοστηνέρευνακαιτηνκατασκευή, καθώςκαιτηνεμπειρία που προέρχεταιαπότηνεγκατάσταση.

Γιατηναγοράτηςανακαίνισηςυπάρχουνδιάφορες πηγές πληροφοριών. Αυτότοτμήμαχρησιμεύειγιανα προσδιορίσει ποιεςείναιοι πηγές πληροφόρησηςαπότιςοποίεςμπορείτενααντλήσετε πληροφορίεςσχετικάμετιςτεχνολογίεςανακαίνισης, προκειμένουναξιολογήσετετηναποτελεσματικότητάτουςγιατην περιοχήτηςΜεσογείου.

Γ.1 Η παρακάτωλίστασυγκεντρώνειτις πηγέςτων πληροφοριώνγιατηναλυσίδαενεργειακήςαπόδοσης. Γιακάθεμίααπότις πηγές πουέχετεχρησιμοποιήσεικατάτηδιάρκειατηςέρευνάςσαςσχετικάμετιςτεχνολογίεςανακαίνισης, παρακαλείστεναυποδείξετεστονκάτωθι πίνακατοβαθμότηςχρησιμότητας/αποτελεσματικότητας. Απότηναξιολόγησηθα πρέπεινα προκύπτειηχρησιμότητα/αποτελεσματικότηταήοιελλείψειςτωνσχετικών πληροφοριών πουεντοπίσατεστις πηγέςαυτές.

	Καμία Εμπειρία	Καμία αποτελεσματικότητα	Περιορισμένη Αποτελεσματικότητα	Λίγο αποτελεσματική	Πολύ αποτελεσματική
Άρθρα σε εφημερίδες/περιοδικά που έχουν εκδοθεί από αξιόπιστη πηγή	○	○	○	○	○
Επικοινωνία με ανεξάρτητες ερευνητικές πηγές	○	○	○	○	○
Επικοινωνία με επαγγελματίες του οικοδομικού κλάδου, π.χ. αρχιτέκτονες/μηχανικούς	○	○	○	○	○
Επικοινωνία με ερευνητικά τμήματα ιδιωτικών εταιρειών	○	○	○	○	○
Επικοινωνία με τμήματα Έρευνας και Ανάπτυξης Πανεπιστημίων	○	○	○	○	○
Μαθήματα που οργανώνονται στο πλαίσιο ενός ερευνητικού ιδρύματος	○	○	○	○	○
Επίδειξη των τεχνολογιών ανακαίνισης μέσα από μοντέλα κτιρίων (ψηφιακές αναπαραστάσεις των φυσικών και λειτουργικών τους χαρακτηριστικών)	○	○	○	○	○
Επίδειξη/έκθεση της τεχνολογίας ανακαίνισης σε πραγματικά κτίρια.	○	○	○	○	○
Άτυπη προβολή των εγκατεστημένων τεχνολογιών σε άλλα κτίρια.	○	○	○	○	○
Οι πληροφορίες που λαμβάνονται απευθείας από τον κατασκευαστή των υλικών για την ανακαίνιση	○	○	○	○	○
Οι πληροφορίες που συγκεντρώνονται από τον εγκαταστάτη/promoter των τεχνολογιών ανακαίνισης.	○	○	○	○	○
Μηχανές αναζήτησης Ίντερνετ για πληροφορίες σχετικά με την ανακαίνιση.	○	○	○	○	○
Επιδείξεις σε εργαστήρια που χρησιμοποιούν τεχνολογίες ανακαίνισης σε προσομοιωμένα περιβάλλοντα.	○	○	○	○	○
Εθνικοί/Ευρωπαϊκοί οικοδομικοί κανονισμοί για την ενεργειακή απόδοση.	○	○	○	○	○
Περιοδικά/έγγραφα που εκδίδονται από ερευνητικούς οργανισμούς.	○	○	○	○	○
Σεμινάρια/συνέδρια για την ενεργειακή απόδοση των κτιρίων	○	○	○	○	○
Τα προγράμματα εκπαίδευσης μη συμπεριλαμβανομένης της πρακτικής εμπειρίας στην εφαρμογή της ανακαίνισης.	○	○	○	○	○
Τα εκπαιδευτικά προγράμματα με πρακτική εμπειρία στην ανακαίνιση, σε πραγματικές συνθήκες υλοποίησης.	○	○	○	○	○
Άλλο (παρακαλώ προσδιορίστε):					

Γ.1.1 Τιείδους πληροφορίεςσαςενδιαφέρουνκαι ποιοήταντοαποτέλεσματης προσπάθειάςσαςότανναζητήσατεαυτέςτις πληροφορίες;

	Πλήρης πληροφόρηση	Καμία πληροφόρηση	Μερική πληροφόρηση	Οι πληροφορίες ήταν άσχετες	Δεν εφαρμόζεται
Εφαρμογή της τεχνολογίας σε πραγματικό κτίριο	○	○	○	○	○
Έργα προς επίδειξη που υποστηρίζουν την τεχνολογία.	○	○	○	○	○
Χρηματοδότηση/κοστολόγηση της ανακαίνισης	○	○	○	○	○
Επίπεδο διείσδυσης κατά την εγκατάσταση μιας τεχνολογίας (αν ο κάτοικος θα πρέπει να εγκαταλείψουν το κτίριο ή όχι)	○	○	○	○	○
Επιδόσεις της τεχνολογίας σχέση με την οικονομική διάρκεια της αποπληρωμής.	○	○	○	○	○
Επιδόσεις της τεχνολογίας, σε σχέση με την εξοικονόμηση ενέργειας μετά την ανακαίνιση.	○	○	○	○	○
Τεχνικά χαρακτηριστικά της συγκεκριμένης τεχνολογίας.	○	○	○	○	○
Τεχνικές λεπτομέρειες σε σχέση με την υλοποίηση της εγκατάστασης.	○	○	○	○	○

Άλλο (παρακαλώ προσδιορίστε):

ΤμήμαΔΕμπόδιαστην πληροφόρησηκαιτημεταβίβασητων πληροφοριών

Οιενεργιακάαποδοτικέςλύσεισγιαένακτίριοείναισυχνάτεχνικάαπαιτητικέςκαιαπαιτούνυψηλόεπίπεδογνώσηςτωνεμπλεκόμενωνμερών. Ωστόσο, έχει παρατηρηθείότιηροήτων πληροφοριώνστο πλαίσιοτηςαλυσίδαςενεργειακήςαπόδοσης, παρεμποδίζεται.

Ηενότηταυτήέχειωςστόχονα προσδιορίσειτασημαντικότεραεμπόδια πουεντοπίζονταιστημεταφοράτηςγνώσηςκαθώςκαιτιςανάγκεςγιατηναποτελεσματικήμεταφορά της.

Μεβάσητις προσωπικέςσαςεμπειρίες,ηενότηταυτήθα προσδιορίσειταεμπόδια που προκύπτουνκαθώςκαιτιςανάγκες πουυπάρχουνγιααποτελεσματικήροήτηςγνώσης(μεταξύτωνεμπλεκόμενωνμελών).

Δ.1 Παρακάτω παρατίθεταιλίστατων πιθανώναναγκώνμεταφοράςγνώσης πουενδέχεταινααπαιτούνται προκειμένουναδιευκολυνθείηροήτων πληροφοριώνμεταξύτωνδιαφόρωνμελώντηςαλυσίδαςενεργειακήςαπόδοσης. Παρακαλείστεναυποδείξετετοβαθμόσημαντικότηταςκάθεανάγκηςσύμφωναμετηγνώμηκαιτηνεμπειρίασαςστηναλυσίδαενεργειακήςαπόδοσηςτηςανακαίνισης.

Γιακάθεέναναπόταστοιχεία πουακολουθούν, θα παρέχετεένα «κουμπί» μετοοποίοοσυμμετέχονταςθαμπορείναβαθμολογήσεικάθεαντικείμενο.

Δ.1.1 Ανάγκεςγιαδεξιότητεςκαιενημέρωση

	Καθόλου σχετικό	Λίγο σημαντικό	Σημαντικό	Πολύ σημαντικό
Εκπαίδευση των παραδοσιακών μαστόρων στις καινοτομίες των ανακαινίσεων.	○	○	○	○
Έκθεση των τελικών χρηστών στα τεχνολογικά αποτελέσματα των ερευνητικών οργανισμών.	○	○	○	○
Κατάρτιση των επιχειρήσεων για να έχουν πρόσβαση στα αποθέματα γνώσης.	○	○	○	○
Οι επιχειρήσεις πρέπει να γνωρίζουν τα εργαλεία διαχείρισης πνευματικής ιδιοκτησίας.	○	○	○	○

Άλλο (παρακαλώ προσδιορίστε):

Δ.1.2 Ανάγκεςδιαχείρισηςγνώσης

	Καθόλου σχετικό	Λίγο σημαντικό	Σημαντικό	Πολύ σημαντικό
Σύσταση ενός δικτύου οργανισμών που θα συντονίζει τη μεταφορά γνώσης από τις ομάδες της καινοτομίας και θα βοηθά στην εφαρμογή της καινοτομίας στην καθημερινή πρακτική στα κτίρια.	○	○	○	○
Αυξημένη αλληλεπίδραση μεταξύ των ερευνητικών ιδρυμάτων.	○	○	○	○
Ομαδοποίηση εντός της αγοράς ανακαίνισης για την παροχή ολοκληρωμένων λύσεων.	○	○	○	○
Σύνδεση τεχνικών εμπορικών συμβούλων με το EPBD - ενεργειακή απόδοση και απαιτήσεις πραγματικών κτιρίων.	○	○	○	○

Άλλο (παρακαλώ προσδιορίστε):

Δ.1.3 ΈρευνακαιΑνάπτυξη (R&D) – Ανάγκες

	Καθόλου σχετικό	Λίγο σημαντικό	Σημαντικό	Πολύ σημαντικό
Οι επιστήμονες πρέπει να έχουν αυξημένη επαφή με τους τελικούς χρήστες, προκειμένου να ελέγχουν την εφαρμογή της έρευνάς τους.	○	○	○	○
Αξιολόγηση των αποτελεσμάτων της έρευνας σε πραγματικές συνθήκες.	○	○	○	○
Το R&D (έρευνα και ανάπτυξη) να έχει την ευελιξία να ανταποκρίνεται στις εκάστοτε ανάγκες της αγοράς.	○	○	○	○
Κατά την κοινοποίηση των αποτελεσμάτων της έρευνας, μεγαλύτερη έμφαση πρέπει να δοθεί στα πρακτικά οφέλη των τεχνολογιών ανακαίνισης.	○	○	○	○

Άλλο (παρακαλώ προσδιορίστε):

Δ.1.4 Οικονομικέςανάγκες

	Καθόλου σχετικό	Λίγο σημαντικό	Σημαντικό	Πολύ σημαντικό
Αύξηση των κινήτρων των επιχειρήσεων μέσω δημοσίων πρωτοβουλιών έρευνας και ανάπτυξης και τη χρηματοδότηση της καινοτομίας.	○	○	○	○
Η βιομηχανία χρειάζεται οικονομική στήριξη για να υλοποιήσει τα αποτελέσματα της επιστημονικής καινοτομίας.	○	○	○	○
Οι ένοικοι χρειάζονται οικονομική στήριξη για να επενδύσουν στην τεχνολογία ανακαίνισης.	○	○	○	○

Άλλο (παρακαλώ προσδιορίστε):

*Δ.1.5 Θεσμικέςκαιδιοικητικέςανάγκες

	Καθόλου σχετικό	Λίγο σημαντικό	Σημαντικό	Πολύ σημαντικό
EC(European Commission)Κατευθυντήριες γραμμές από την Ευρωπαϊκή Επιτροπή.	○	○	○	○
Αξιολόγηση των δημόσια χρηματοδοτούμενων ερευνητικών έργων μέσω της εφαρμογής στον τελικό χρήστη.	○	○	○	○

Άλλο (παρακαλώ προσδιορίστε):

ΤμήμαΕΕντοπισμόςΚαλώνΠρακτικών

Ορισμός: Ηκαλή πρακτικήείναιμιαμέθοδοςήτεχνική πουέχειδείξειεπανειλημμένωςαποτελέσματαανώτερααπόεκείνα πουεπιτυγχάνονταιμεάλλασυνήθημένα, καιχρησιμοποιείταιωςσημείοαναφοράς. Μια "καλή" πρακτική, μπορείναβελτιωθείσταδιακά.

Ηενότηταυτήέχειωςστόχοναεντοπίσειτιςτεχνικέςκαλής πρακτικής που πιθανάυπάρχουνστηναλυσίδαενεργειακήςαπόδοσηςτηςαγοράςανακαίνισηςαλλάδεντουςέχει δοθείακόμηησημασία που πρέπειγιαναλειτουργήσουνωςκαθιερωμένο παράδειγμα πουθαβοηθήσειστηναποτελεσματικήμεταφοράτηςγνώσηςμέσωτηςαλυσίδαςενεργειακήςαπόδ

οσης.

Παρακαλείστενα παρέχετεμια περιγραφήτηςκάθεμεθόδουμεταφοράςγνώσης πουέχετεσυναντήσειμέσααπότιστεχνολογίεςανακαίνισης πουέχετεχρησιμοποιήσεικαικατάτηγνώμησαςθεωρείταισανένακαλό παράδειγμακαλής πρακτικής. Σεαυτάτασενάριακαλών πρακτικών πουθα παραθέσετε, μπορείτεναενεργείτεείτεσαν πάροχοςτων πληροφοριώνείτεωςδέκτης.

- Δενγνωρίζωκάποιο παράδειγμακαλής πρακτικής
- Ναιέχωαξιοποιήσει /γνωρίζωκάποιο παράδειγμακαλής πρακτικής

Ανγνωρίζετε, παρακαλείστενα παραθέσετετιςσχετικέςλεπτομέρειες:

Διεύθυνση Web (ανυπάρχει):

Τύποςεμπλεκόμενουοργανισμού:

Σχόλια:

ee-Wise

Ευχαριστούμεγιατησυμβολήσαςμετησυμπλήρωσητουερωτηματολογίου Ηομάδατουeee-Wiseσαςευχαριστείγιατοχρόνο πουαφιερώσατεγιατησυμπλήρωσητουερωτηματολογίου

Περισσότερες πληροφορίεςγιατοee-WiseprojectστοwWw.ee-wise.eu Σε περίπτωση πουχρειάζεστε περαιτέρω πληροφορίεςή/καιδιευκρινίσειςσεσχέσημετοντρόπο πουδιεξάγεταιηέρευναήθέλετε περισσότερηενημέρωσησεσχέσημετοέργο, μηδιστάσετεναεπικοινωνήσετεμαζίμας.

Ευχαριστούμε

Ημερομηνία: 30 Απριλίου 2013

Πιστεύετεότιαυτότοερωτηματολόγιοθαενδιέφερεκάποιααπότιςεπαφέςσας?

- Ναι
- Όχι

Ανναι, παρακαλώσυμπληρώστεταστοιχείατου:

Διεύθυνση e-mail:

7 (APPENDIX 7) SURVEY QUESTIONNAIRE FOR DATA COLLECTION IN WP3 - TURKISH

Enerji Etkin Bina Iyileştirme

(Retrofitting) Deger Zincirinde Bilgi Akış Şeması

Anketin Amacı

Bu anket 13 AB ortagı ile yürütülen, Akdeniz Bölgesi'ndeki binalarda enerji etkin iyileştirme (retrofitting) akış şeması kapsamında bilgi transferi çerçevesi geliştirmeyi amaçlayan ee-Wise projesinin bir parçasını oluşturmaktadır Istatistikler göstermektedir ki, bina stoku AB'deki toplam enerji tüketiminin %40'ını ve CO2 emisyonlarının %36'sını oluşturmaktadır. Binaların enerji performansları aracılıgıyla enerji tüketimlerini azaltmak, enerjinin daha etkin kullanımı konusunda büyük bir potansiyel taşımaktadır. Ayrıca CO2 emisyonlarının azaltılması konusunda da en uygun yöntemlerden biridir. Binalarda enerji etkin uygulamaların benimsenmesi, enerji tüketimlerini düşürerek hem mikro hem de makro ekonomide tasarruf yapılmasına olanak saglar. Aynı zamanda AB'nin dışarıya petrol bagımlılıgını azaltır, ekonomik büyümeyi ivmelendirir ve inşaat firmalarına çalışma alanlarıyla kaynak saglar.

Ancak, enerji etkin deger zinciri aktörleri arasında yeterli bilgi akışı bulunmamaktadır. Bu yüzden de bilgi paylaşımı teknolojik ve ekonomik engelleri aşmak için bir gereklilik halini almıştır. Bu anket deger zincirinde bulunan engelleyici faktörleri belirlemeyi, sektör içindeki en iyi uygulamaların altını çizmeyi, engelleri ele alan çözüm önerilerinin belirlenmesine yardımcı olacak son derece degerli bilgileri saglamayı hedeflemektedir. ee-Wise projesi sonucunda ise etkin bir iletişim kurulmasına yardımcı olarak bilgi transferini kolaylaştıracak bir yazılım geliştirilecektir.

Deger zincirindeki yeriniz ölçüsünde bu projeye katılımınız bizi mutlu edecektir. Anketin cevaplanmasının yaklaşık olarak 10-15 dakika sürecegi öngörülmektedir.

Ankette vereceginiz bilgilerin tümü gizli tutulacak ve herhangi bir şekilde paylaşılmayacaktır. Anketten elde edilecek veriler tersi beyan edilmedigi sürece herkese açık raporlarda özel veya tüzel dahil olmak üzere direkt kaynagı belirtilmeksizin tamamlayıcı bilgi olarak yer alacaktır. Herkese açık raporlar ee-WiSE projesi web sayfasında Temmuz 2013 itibariyle yayınlanacaktır.

Bölüm A Katılımcı Bilgileri

*

A.1 Lütfen iletişim bilgilerinizi girini.

Ünvan:

Ad & Soyad:*

Kurum Adı:(bireysel ise boş bırakınız)

Email:*

Web sitesi:

Ülke:*

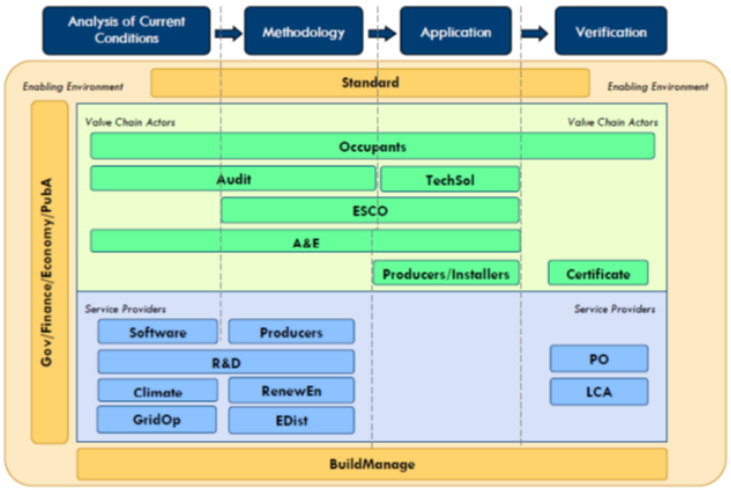
A.1.1 ee-WISE projesinin hangi ortağı tarafından anketi tamamlamak üzere davet edildiniz?

- AIDICO (Spain)
- ANCE (Italy)
- AVACA (Greece)
- BCC (Bulgaria)
- EGE UNIVERSITY (Turkey)
- ENERCYA (Spain)
- EOLAS (Spain)
- Harbour of Rafina (Greece)
- IMA ARCHITECTURE (Cyprus)
- INTROMAC (Spain)
- ISTEDIL (Italy)
- Positive Energy (Greece)
- Projects in Motion (Malta)
- X-PANEL (Cyprus)
- Yukarıdakilerin hiçbiri

A.1.2

☐ ee-WiSE e-mail listesine eklenmek ister misiniz? (Cevabınız evet ise lütfen işaretleyiniz).

☐ Bilgi transfer araçlarının tanıtılacagı ee-WiSE atölye çalışmalarına katılmak ister misiniz? (Cevabınız evet ise lütfen işaretleyiniz).



Deger Zinciri Grafiginde Kullanılan Kısaltmalar:
A&E: Mimarlar ve Mühendisler,
Audit: Enerji denetim kurumları,
BuildManager: Gayrimenkul kurumları, bina sahipleri ve bina yöneticileri,
Certificate: Sertifikalandırma kurumları,
Climate: Meteorologlar,
Economy: Ekonomistler,
EDist: Enerji dagıtımcıları
ESCO: Enerji servisi şirketleri
Finance: Bankalar, Finans kurumları, Müteşebbisler, Mali destekçiler
Government: Devlet
GridOp: Elektrik enerjisi nakil şebekesi operatörleri
Installers: Bina sistemleri, yapı malzemeleri kurulumcuları
LCA: Yaşam döngüsü degerlendirme kurumları
Occupants: Ev sahipleri, bina kullanıcıları ve sakinleri
PO: Fikri haklar ofisleri, Patent ofisleri
Manufacturer: Bina bileşenleri, Yapı malzemeleri üreticileri
PubA: Kamu kuru ve kuruluşları (Bakanlıklar, Belediyeler, vs.),
R&D: Araştırma Gelistirme enstitüleri, Üniversiteler,
RenewEn: Yenilenebilir enerji şirketleri,
Software: Yazılım gelistiriciler,
Standard: Standartları belirleyen kurumlar,
TechSol: Teknik çözüm geliştiren şirketler.

Akdeniz Bölgesi'ndeki Binalarda Enerji Etkin Iyileştirme Deger Zinciri

A.2 Aşagıdaki liste enerji etkin iyileştirme (retrofitting) deger zincirini oluşturan tüm farklı tüzel kişileri içermektedir. Lütfen hangi grupta oldugunuzu belirtiniz.

☐ Kamu Kurumları (PubA)

☐ Standartları belirleyen kurumlar(Standard)

☐ Bankalar / Finans Şirketleri / Müteşebbisler / Mali Destekçiler / (Finance)

☐ Ekonomistler (Economy)

☐ Teknik Çözüm Üreticileri (TechSol)

☐ Yazılım Geliştiriciler (Software)

☐ Araştırma&Geliştirme Enstitüleri / Üniversite

☐ Mimar ve Mühendisler (A&E)

☐ Enerji Denetim Firmaları (Audit)

☐ Enerji Servis Şirketleri (ESCO)

☐ Sertifikalandırma Kurumları (Certificate)

☐ Fikri Haklar Ofisleri / Patent Ofisleri (PO)

☐ Yaşam Döngüsü Degerlendirme Kurumları (LCA)

☐ Bina/EV Sahipleri (Occupant)

(R&D)

☐ Meteorologlar(Climate)

☐ Yapı Malzemesi Üreticileri (Manufacturer)

☐ Yapı Malzemesi Montaj Ekibi (Installers)

☐ Enerji Dagıtıcıları (EDist)

☐ Yenilenebilir Enerji Şirketleri (RenewEn)

☐ Elektrik Enerjisi Nakil Şebekesi Operatörleri (GridOp)

☐ Müstakil bir evde kirada oturan (Occupant)

☐ Müşterek kullanım/Site/Apartman kiracısı (Occupant)

☐ Ticari bir mülk sakini (Occupant)

☐ Ortak ofisler (Occupant)

☐ Bina yöneticisi (BuildManage)

Diger (lütfen belirtiniz): ☐

Bölüm B Enerji Etkin Iyileştirme (Retrofitting) Teknolojisi

Tanım: Enerji Etkin Iyileştirme; mevcut binaların tadilat/onarım aracılıgı ile yeni malzeme/araç uygulaması ile halihazır durumlarının enerji verimliligi açısından iyileştirilmesidir.Enerji etkin iyileştirme, binanın enerji performansının geliştirilmesini kapsamaktadır.

Enerji etkin iyileştirme piyasaya farklı kaynaklar aracılıgıyla girmiştir; ancak bazı teknolojiler, digerlerine kıyasla Akdeniz Bölgesi için daha uygundur. Anketin bu bölümü, günümüzde sıklıkla kullanılan enerji etkin iyileştirme teknolojileriyle henüz keşfedilmemiş olanları tanımlamak için oluşturulmuştur.

B.1 Bir önceki bölümde tanımladıgınız enerji etkin iyileştirme deger zincirindeki rolünüze baglı olarak, lütfen aşagıda listelenen enerji etkin iyileştirme teknolojileri için aktivite seviyenizi seçiniz. Enerji etkin iyileştirme teknolojisi konusunda aktif olmaktan kasıt, bu teknolojiler ile ilgili aşagıdaki durumlardan birini içermektedir. Söz konusu enerji etkin iyileştirme teknolojisi:

- Meskenimde uygulandı (bina/ev sahipleri için),
- Uygulama tanıtımı yapıldı,
- Iş kolumu tanımlar.

	Aktif	Aktif olmak istiyorum ancak bilgi eksikligi mevcut	Gelecekte aktif olmak ile ilgileniyorum	İlgilenmiyorum / Haberim yok
Ses yalıtım malzemeleri				
Havalandırma sistemleri				
Biyokütle enerjisi				
Kazan				
Enerji etkin aydınlatma				
Kapı/pencere yalıtımı				
Jeotermal enerji				
Sırlama malzemeleri				
Isı pompaları				
Isıtma Havalandırma ve İklimlendirme				
Hidrolik enerji				
Işık yogunlugu düzenleyiciler				
Işık tüpleri				
Güneş pili panelleri				
Gölgelendirme elemanları				
Isı kontrol valfleri için akıllı ev sistemleri				
Isı maliyet dönüştürücüleri için akıllı ev sistemleri				
Güneş kollektörleri				
Isı yalıtım malzemeleri				
Su buharı yalıtım malzemeleri				
Havalandırma donanımı				
Nem yalıtım malzemeleri				
Rüzgar enerjisi				

Diger (lütfen belirtiniz):

B.2 Enerji etkin iyileştirme teknolojileri konusunda bilgi edinirken iyileştirme deger zincirini oluşturan farklı gruplardan hangisinden bilgi aldınız? Nasıl sonuçlandı?

	Bilgi almadım	Cevap alamadım	Kısmi bilgi edindim	Aldığım bilgi ihtiyacıma yönelik değildi	Aldığım bilgi iklim koşullarına uygun değildi	Fikri haklar gizliliği sebebiyle bilgi eksikliği vardı	Tam bilgi edindim
Mimar ve Mühendis							
Banka / Finans Kurumu / Müteşebbis / Mali Destekçi							
Bina Yöneticisi							
Yapı Malzemesi Montaj Ekibi							
Yapı Malzemesi Üreticisi							
Bina/Ev Sahibi							
Sertifikalandırma Kurumu							
Ekonomist							
Elektrik Enerjisi Nakil Şebekesi Operatörü							
Enerji Denetim Şirketi							
Enerji Dagıtıcı							
Enerji Servis Şirketi							
Fikri Haklar Ofisi / Patent Ofisi							
Yaşam Döngüsü Degerlendirme Kurumu							
Meteorolog							
Kamu Kurumları							
Araştırma&Geliştirme Enstitüsü / Universite							
Gayri Menkul Kurumu							
Yenilenebilir Enerji Şirketi							
Yazılım Geliştirici							
Standartlandırma Kurumu							
Teknik Çözüm Geliştiricler							

Diger (lütfen belirtiniz):

Eger mümkünse bilgi edinmeniz sırasındaki tecrübenizi daha detaylı paylaşınız.

Bölüm C Enerji Etkin Iyileştirme Teknolojileri Hakkında Bilgi Kaynakları

Enerji etkin iyileştirmedeki teknolojik gelişme hızı göz önüne alındıgında, önceki uygulamalardan elde edilmiş referans bilgiler kadar son araştırma çalışmaları, uygulama teknikleri ve üretimdeki yeniliklerle ilgili bilgi sahibi olmak oldukça önem arz etmektedir.

Enerji Etkin Iyileştirme senaryolarında çeşitli bilgi kaynakları bulunmaktadır. Bu bölüm iyileştirme teknolojilerinin bilgi edinilmesi sırasında kullanılmış/kullanılan bilgi kaynaklarını belirlemek için oluşturulmuştur.

C.1 Size aşagıda listelenen kaynaklardan hangisi bilgi almak için en uygun olanıdır?

	Bilgi edinme teorübesi yok	Yeterli degil	Yeterliligi kısıtlı	Bir dereceye kadar yeterli	Oldukça yeterli
Güvenilir bir kaynak aracılıgı ile gazete/dergilerdeki makaleler					
Bagımsız araştırma kurumlarıyla iletişim					
Yapı sektöründeki profesyonellerle iletişim (mimar/mühendis vb)					
Özel bir şirketin araştırma birimiyle					
Üniversite Araştırma & Geliştirme birimleriyle iletişim					
Egitim kurumlarında düzenlenen kurslar kapsamında					
Bina Bilgi Modellemelerindeki enerji etkin iyileştirme teknolojileriyle ilgili tanıtımlar aracılıgı ile ilgili (Fiziksel ve fonksiyonel özelliklerle ilgili dijital temsili sunular)					
Gerçek binalar üzerinde enerji etkin iyileştirme teknolojileriyle ilgili tanıtım/sergiler					
Diger binalarda uygulanmış teknolojileri gayri resmi olarak inceleme					
Enerji etkin iyileştirmede kullanılan malzemelerin üreticilerinden alınan direkt bilgi					
Enerji etkin iyileştirme teknolojileri uygulayıcı/ müteşebbislerinden edinilen bilgi.					
Enerji etkin iyileştirme ile ilgili internetteki araştırma sitelerinden					
Simulasyonlarda uygulanmış enerji etkin iyileştirme teknolojilerinin laboratuvar gösterimlerinde					
Enerji etkinlikle ilgili ulusal/AB bina yönetmelikleri					
Araştırma kurumlarınca yayınlanan düzenli yayınlar					
Binalarda enerji etkinlik konulu seminer/konferanslar					
Enerji etkin iyileştirme uygulamalarında uygulamalı egitim içermeyen kurslar					
Uygulamalı egitimi de içeren gerçek uygulamaların oldugu egitim programları					

Diger (lütfen belirtiniz):

C.1.1 Ne tür bir bilgi edinmek istediniz ve araştırmanızın sonucu ne oldu?

	Ilgili degil	fazla önemli değil	önemli	çok önemli
Enerji etkin iyileştirme yenilikleriyle ilgili geleneksel ustalardan alınan egitim				
Araştırma organizasyonlarında teknolojik sonuçların son kullanıcıya aktarılması				
Iş çevrelerinin bilgiye ulaşmaları konusunda egitilmesi.				
Iş çevrelerinin fikri hakların kullanımı konusunda farkındalık sahibi olması gereksinimi				
Inşaat sektöründe uzmanların enerji etkin iyileştirme konusunda egitimi (mimarlar, inşaat müh., yapı işletme müh., proje yöneticileri, bina tasarımcıları vs. de dahil olmak üzere)				

Diger (lütfen belirtiniz):

Bölüm D Bilgi Edinmeye Engel Teşkil Eden Hususlar ve Bilgi Transfer Ihtiyacı

Enerji etkin bina çözümlerinin çogunlukla teknik olarak gerekleri yüksektir ve dahil olan grupların yüksek derecede bilgiye sahip olmaları gerekmektedir. Ancak enerji etkin iyileştirme deger zinciri içindeki bilgi akışında aksaklıklar oldugu da bilinmektedir.

Bu bölüm, süreçte karşılaşılan engel teşkil eden ana kısımları ve etkin bilgi transferi için gereksinimleri belirlemeyi amaçlamaktadır.

Enerji etkin iyileştirme sektöründe kişisel deneyiminize dayanarak, bu bölümde deger zinciri içerisinde bilgi akışına engel teşkil eden kısımlar belirlenecektir.

D.1 Aşagıdaki liste deger zinciri bileşenleri arasında bilgi akışını kolaylaştırması muhtemel bilgi akış gereksinimlerini göstermektedir. Lütfen kişisel görüşleriniz ve tecrübeleriniz dogrultusunda enerji etkin iyileştirme deger zinciri içerisinde her gereksinimi degerlendiriniz.

D.1.1 Beceri ve Farkındalık Gerekleri

	Ilgili degil	fazla önemli değil	önemli	çok önemli
Enerji etkin iyileştirme yenilikleriyle ilgili geleneksel ustalardan alınan egitim	○	○	○	○
Araştırma organizasyonlarında teknolojik sonuçların son kullanıcıya aktarılması	○	○	○	○
Iş çevrelerinin bilgiye ulaşmaları konusunda egitilmesi.	○	○	○	○
Iş çevrelerinin fikri hakların kullanımı konusunda farkındalık sahibi olması gereksinimi	○	○	○	○
Inşaat sektöründe uzmanların enerji etkin iyileştirme konusunda egitimi (mimarlar, inşaat müh., yapı işletme müh., proje yöneticileri, bina tasarımcıları vs. de dahil olmak üzere)	○	○	○	○
Diger (lütfen belirtiniz):				

D.1.2 Bilgi Yönetimi Gerekleri

	Ilgili degil	fazla önemli değil	önemli	çok önemli
Iletişim agı organizasyonun oluşturulmasında, bilgi akışının yaratıcı gruplardan başlarak koordine edilmesi ve teknolojik yeniliklerin günlük bina uygulamalarına aktarılmasına yardımcı olunmalıdır	○	○	○	○
Araştırma kurumları arasında ilişki arttırılmalı.	○	○	○	○
Enerji etkin iyileştirme pazarını entegre çözümler sunacak şekilde oluşturmak.	○	○	○	○
Teknik ticari önerilerin Binalarda Enerji Performansı Yönetmeligine baglanması – mevcut binaları enerji performansı ve gereklilikleri	○	○	○	○

Diger (lütfen belirtiniz):

*D.1.3 Araştırma & Geliştirme Yaklaşım Gerekleri

	Ilgili degil	fazla önemli değil	önemli	çok önemli
Bilim insanları, araştırmalarının uygulanabilirligi anlamak için son kullanıcı ile ilişkilerini arttırmak durumundadır.	○	○	○	○
Araştırma sonuçlarının gerçek hayata uygulanması.	○	○	○	○
Araştırma&Geliştirme birimleri etkinliklerini pazarın degişimine göre yönlendirebilmelidir	○	○	○	○
Araştırma sonuçlarının paylaşılması durumunda, enerji etkin iyileştirme teknolojilerinin pratik yararlarına daha fazla önem verilmeli.	○	○	○	○

Diger (lütfen belirtiniz):

*D.1.4 Mali Gerekler

	Ilgili degil	fazla önemli değil	önemli	çok önemli
Iş çevrelerinin motivasyonunu sivil toplum Araştırma&Geliştirme girimşimleri ve fon kaynagı yaratmak aracılıgı ile arttırılmalı.				
Sanayi, bilimsel yeniliklerin sonuçlarını almak için maddi açıdan desteklenmelidir.				
Maliklere enerji etkin iyileştirme teknolojilerine yatırım yapmaları için maddi destek saglanmalı.				

Diger (lütfen belirtiniz):

*D.1.5 Kurumsal ve Idari Gerekler

	Ilgili degil	fazla önemli değil	önemli	çok önemli
Bilgi yaymak için araştırma enstitülerinden Avrupa Konseyi kılavuzları				
Son kullanıcıya uygulanabilirligi dikkate alınarak kamu destekli araştırma projelerinin degerlendirilmesi				

Diger (lütfen belirtiniz):

Bölüm E En Uygun Yöntemin Seçilmesi

En uygun yöntem kıyaslama yöntemi ile belirlenen ve diger sonuçlara gore düzenli olarak daha iyi sonuçlar veren yöntem olarak tanımlanır. Ek olarak, "en iyi" yöntemler gelişmeler keşfedildikçe daha iyi bir hale gelecektir.

Bu bölüm enerji etkin iyileştirme deger zincirinde bulunabilen ancak deger zinciri içerisinde etkili bilgi aktarımını destekleyecek bir örnegin yeteri kadar ön planda tutulmayan uygulama tekniklerini belirlemeyi amaçlamaktadır.

Lütfen enerji etkin iyileştirme teknolojileriyle ilgilendiginiz süreçte karşılaştıgınız bilgi aktarım yöntemi ve en iyi uygulama örnegi için fikrinizi paylaşınız. Bu en iyi uygulama senaryoları içerisinde bilgi saglayıcısı veya bilgi edinen olmanız mümkündür.

Bilgi transferi için en iyi senaryo ile ilgili bilgi sahibi degilim.

Evet katılım gösterdim/ en iyi senaryo hakkında bilgi sahibiyim

Cevabınız evet ise, detay veriniz:

Web Adresi (Mümkünse):

Dahil olan Kurum/Kuruluş türü:

Yorumlar:

Ankete Katılımınız için Teşekkür Ederiz

ee-Wise ailesi ankete zaman ayırdığınız teşekkür eder. ee-Wise projesiyle ilgili detaylı bilgi www.ee-wise.eu adresinden edinilebilir. Anketin uygulanma biçimiyle ilgili herhangi bir endişeniz veya sormak istediginiz husus varsa veya projeyle ilgili daha fazla bilgi edinmek istiyorsanuz lütfen bizimle iletişime geçiniz.

Teşekkürler

Tarih: 30 Nisan 2013

Bu anketin temasta olduğunuz birilerinin ilgisini çekeceğini düşünüyor musunuz? (Lütfen Evet veya Hayır olarak işaretleyiniz).

Evet

Hayir

Cevabınız evet ise lütfen ilgi duyacağını düşündüğünüz kişinin iletişim bilgilerini veriniz:

e-posta: