

## Evaluation of the energy efficiency in the building sector

2013-1-FR1-LEO05-48182

<http://www.adam-europe.eu/adam/project/view.htm?prj=10924>

## Projektinformation

Titel: Evaluation of the energy efficiency in the building sector

Projektnummer: 2013-1-FR1-LEO05-48182

Jahr: 2013

Projekttyp: Innovationstransfer

Status: bewilligt

Land: FR-Frankreich

Marketing Text: The EU Directive 2010/31/EU defines concrete goals for energy savings and energy efficient buildings. In France, the building sector employs around 450 000 persons, mostly in small companies. The new French building thermal regulation is completely new, but, unfortunately, it is not completely applicable if the professionals, who are in charge of the construction, are not ready to apply it.

Most of the construction processes which prevailed for the last three decades are not valid anymore, and the practice must really change. Many decisions are made by entrepreneurs in small or medium size companies. They need complete and up-to-date information concerning the best practices, but they don't necessarily have enough time to follow face-to-face training. The aim of the project is to improve the knowledge of entrepreneurs and managers in the field of the energy efficiency in the building sector through innovative e-learning courses for continuing education.

Zusammenfassung: The EvEnEf project supported the development of innovative and competitive professional approaches in the field of energy efficiency in the building sector. As most of actors in the realization of buildings are SMEs, the training of entrepreneurs and managers is a major issue to meet the target of the Energy Performance of Buildings European Directive. The different national building thermal regulations are more and more innovative and demanding, but the professionals who are in charge of the realization of buildings are not well informed or trained. Even if some of these professionals are aware of the challenge concerning the energy efficiency and can be considered as leaders in this sector, the training is not always a priority for the majority of them because of economical constraints. A significant effort remains to be done concerning the attractiveness and the accessibility of continuing training modules in the building sector. In this context this project adapted and integrated innovative training courses to improve energy efficiency in buildings alleviating the lack of knowledge of entrepreneurs and managers of the building industry. The project brought together VET providers, higher education institutions, SMEs, chamber of crafts in the sector to assess future skills needs and promote business input into course design and delivery, as stated in the "New Skills for New Jobs" initiative and to adapt/develop special modules in the energy efficiency of buildings and its evaluation for upgrading knowledge in the sectors of construction, energy supply and water supply. Through job analysis the necessary knowledge, skills and competences in thermal insulation and air-tightness, innovative and efficient systems for heating ventilation and cooling, thermal comfort, and the evaluation of the performance of all these technological solutions, were specified, developed and tested during this project. The transferred pedagogical content was adapted, upgraded and implemented on an e-learning platform. The project helped to improve the competitiveness of SMEs of the construction sector and to improve the employability of the professionals on a European scale. This objective has been met by helping professionals through vocational training to improve the quality of their work according to the new standards in the different European countries concerning the energy efficiency.

Beschreibung: This project is aimed at adapting and integrating an innovative training course and the results of a previous Leonardo da Vinci project into vocational education and training organisations and SMEs to improve energy efficiency in buildings alleviating the lack of knowledge of entrepreneurs and managers of the building industry. To this overall aim, the project will work toward achieving the following specific objectives:

- Identifying and analysing the needs of labour market, of entrepreneurs, managers,

## Projektinformation

engineers in the energy efficiency of buildings.

This objective addresses the priority of making VET more responsive to labour market needs.

- Selecting and analysing the e-learning innovative content to meet these needs and upgrade of the content with a course for evaluation of the energy efficiency.

This objective addresses the need of training new skills for the new "green jobs". The evaluation of the energy efficiency was not subject of the transferred project and this will be a new development in this project.

- Adapting, upgrading and implementing the EnEf e-learning materials to the legal framework, training system, language, and geography in France as well as to the needs of target groups in all partner countries.

Each country has its own construction types, constructions rules, habits, regulations, climate and this objective addresses the specific needs in the target country. At the same time, the European collaboration will help to share experiences and best practices in energy efficiency measures and can help the EU to harmonize the training of professionals and to progress towards some qualification standards.

- Transferring the training materials to France, and testing them and the new courses in evaluation of the energy efficiency of buildings in all partner countries.

This objective is linked to the operational objective of Leonardo da Vinci to facilitate the development of innovative practices in the field of vocational education and training, and their transfer, including from one participating country to others.

Themen: \* Nachhaltigkeit  
 \* Lebenslanges Lernen  
 \* Fernlehre  
 \* Unternehmen, KMU  
 \* Weiterbildung

Sektoren: \* Baugewerbe/Bau  
 \* Erbringung von Freiberuflichen, Wissenschaftlichen und Technischen Dienstleistungen

Produkt Typen: Homepage  
 Module  
 Fernlehre  
 CD-ROM

Produktinformation: • Project reports  
 • Need analysis report  
 • Syllabi of adapted and updated courses on:  
 - Global energy challenge  
 - Contribution of the building sector on energy issues  
 - EU legal framework concerning the Energy Performance of buildings  
 - Basic principles to understand how the energy is consumed in a building  
 - Thermal insulation and examples of good practices  
 - Flat roof insulation  
 - Glazings (principles and technological description)  
 - Systems (Heating, Cooling, Ventilation, Lighting)  
 - 3D interactive graphical tool  
 - Evaluation tests  
 • Adapted e-learning courses  
 • Training modules on evaluation of energy efficiency of buildings  
 • Evaluation and pilot test reports  
 • Dissemination plan  
 • Valorisation materials: project Web site, publications, demo DVD, leaflets

Projektwebseite: <http://www.evenef.eu>

## Vertragnehmer

Name: INES Plateforme Formation et Evaluation  
Stadt: Le Bourget du Lac  
Land/Region: Rhône-Alpes  
Land: FR-Frankreich  
Organisationstyp: Weiterbildungseinrichtung  
Homepage: <http://www.ines-solaire.org/>

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## Koordinator

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## Partner

### Partner 1

Name: Eurocrea Merchant Srl  
Stadt: Milano  
Land/Region: Lombardia  
Land: IT-Italien  
Organisationstyp: andere  
Homepage: <http://www.eurocreamerchant.it>

### Partner 2

Name: CHAMOIS CONSTRUCTEURS  
Stadt: La Balme de Sillingy  
Land/Region: Rhône-Alpes  
Land: FR-Frankreich  
Organisationstyp: andere  
Homepage: <http://www.chamoisconstructeurs.com>

### Partner 3

Name: Technical University of Sofia  
Stadt: Sofia  
Land/Region: Severozapaden  
Land: BG-Bulgarien  
Organisationstyp: andere  
Homepage: <http://tu-sofia.bg>

### Partner 4

Name: MASHO EOOD  
Stadt: Sofia  
Land/Region: Severozapaden  
Land: BG-Bulgarien  
Organisationstyp: andere  
Homepage: <http://www.mashoeood.com/>

## Partner

### Partner 5

Name: Chambre des Métiers et de l'Artisanat de Savoie

Stadt: CHAMBERY

Land/Region: Rhône-Alpes

Land: FR-Frankreich

Organisationstyp: andere

Homepage: <http://www.cma-savoie.fr>

## Produkte

- 1 Training needs of professionals in building energy efficiency
- 2 Syllabi of adapted and new courses
- 3 Adapted e-learning courses
- 4 Training modules on the evaluation of energy efficiency of buildings
- 5 Evaluation and pilot tests reports
- 6 Valorisation material

## Produkt 'Training needs of professionals in building energy efficiency'

Titel: Training needs of professionals in building energy efficiency

Produkttyp: andere

Marketing Text: Building energy efficiency is a demanding business sector. Professionals need to master new technologies, and it requires updating theoretical and practical knowledge and skills. The EVENEF project has developed training material responding the real needs of professionals as SMEs managers or craftsmen.

Beschreibung: The EVENEF project is a transfer of innovation project using results produced by the project called ENEF, of which one of the outcomes was the needs analysis of SMEs in the building energy efficiency sector.

This analysis was completed by a survey done by on the project's partner, the Chambre des Métiers et de l'Artisanat de Savoie (CMA73), which is a local Chamber of crafts. This survey helped to analyse the training needs of craftsmen in the building energy efficiency sector. This work is an outcome of the work package 2 "Need Analysis".

Zielgruppe: Entrepreneurs and managers of small and medium-size companies, engineers in the building construction sector and air conditioning supply, craftsmen.

Resultat: The needs analysis result of the ENEF project is available on the ADAM web site, project ENEF, file "Report of analysis of results".

The survey done by the CMA73 is available in the Files parts, both in French and English.

Anwendungsbereich: Needs analysis for the training of professionals ; Development of pedagogical material

Homepage:

Produktsprachen: Französisch  
Englisch

### product files

ENSummaryOfEcoConstructionInSavoie.pdf

<http://www.adam-europe.eu/prj/10924/prd/1/1/ENSummaryOfEcoConstructionInSavoie.pdf>

FREnqueteEcoConstructionEnSavoie.pdf

<http://www.adam-europe.eu/prj/10924/prd/1/1/FREnqueteEcoConstructionEnSavoie.pdf>

## Produkt 'Syllabi of adapted and new courses'

Titel: Syllabi of adapted and new courses

Produkttyp: Programme/Curricula

Marketing Text: All the pedagogical material produced in the EVENEF project has been created according a specific methodology dedicated to the development of training material. The syllabi of the different training modules is intended to meet the real needs of professionals, and is a critical step for a successful development of pedagogical materials.

Beschreibung: Learning outcomes were defined for all adapted and new modules that are being developed as part of WP4(Material adaptation) and WP5 (Course on evaluation of energy efficiency). For each module, knowledge, competences and skills are described that a trainee should be able to display after the completion of the course. These terms are based on the European Qualifications Framework, and the level that was being aimed at is "6". Based on these learning outcomes, syllabi were described for all the new and adapted modules. As part of the syllabus description, some sources were given that could be useful to potential trainees, and any pre-requisites are mentioned. The teaching and assessment methods are also briefly outlined.

Zielgruppe: Entrepreneurs and managers of small and medium-size companies, engineers in the building construction sector and in air conditioning supply, craftsmen.

Resultat: The learning outcomes and the syllabi of each training module (Work Package 3) where developed and evaluated by peer review and especially some project's partners (Chamois Constructeur and CMA73).

Anwendungsbereich: Creation of pedagogical material, Syllabi and Curricula.

Homepage:

Produktsprachen: Französisch  
Englisch

### product files

ENEvEnEfLearningOutcomes.doc

<http://www.adam-europe.eu/prj/10924/prd/2/1/ENEvEnEfLearningOutcomes.doc>

ENSyllabusWP4EvEnEf.doc

<http://www.adam-europe.eu/prj/10924/prd/2/1/ENSyllabusWP4EvEnEf.doc>

ENSyllabusWP5EvEnEf.doc

<http://www.adam-europe.eu/prj/10924/prd/2/1/ENSyllabusWP5EvEnEf.doc>

FREvEnEfLearningOutcomes.doc

<http://www.adam-europe.eu/prj/10924/prd/2/1/FREvEnEfLearningOutcomes.doc>

FRSyllabusWP4ENEvEnEf.doc

<http://www.adam-europe.eu/prj/10924/prd/2/1/FRSyllabusWP4ENEvEnEf.doc>

FRSyllabusWP5ENEvEnEf.doc

<http://www.adam-europe.eu/prj/10924/prd/2/1/FRSyllabusWP5ENEvEnEf.doc>

**product files**

## Produkt 'Adapted e-learning courses'

Titel: Adapted e-learning courses

Produkttyp: Lehrmaterial

Marketing Text: The EVENEF project is transferring results from the project ENEF, in which several training modules were developed about the energy efficiency in the building sector. These modules were especially intended for the training of entrepreneurs and managers of SMEs.

Beschreibung: Several training modules in the field of the energy efficiency in the building sector have been adapted from the previous Leonardo project ENEF to the French context (WP4). These have been upgraded taking into consideration the last technological developments and the new french thermal regulation.

To date, all of the seven modules from project EnEf have been translated in Bulgarian and French, adapted, upgraded, developed as PowerPoint presentationans and uploaded in a Moodle platform.

Zielgruppe: Entrepreneurs and managers of small and medium-size companies, engineers and craftsmen in the building construction sector and in air conditioning supply.

Resultat: The titles of the modules are: "General concepts of energy efficiency", "EU legal framework on energy efficiency of buildings", "Marketing and offering", "Heat insulation of external walls of buildings", "Glazing in buildings from an energy efficiency viewpoint", "Installations in buildings from an energy efficiency point of view", "Improving of energy efficiency of flat roofs". The tests for evaluating the trainees are being translated into Bulgarian and French.

Anwendungsbereich: E-learning material for Moodle Platform.

Homepage: <http://telearn.tu-sofia.bg/evenef/>

Produktsprachen: Bulgarisch  
Französisch  
Englisch

### product files

#### BG

WP4BG.zip

<http://www.adam-europe.eu/prj/10924/prd/3/4/WP4BG.zip>

#### FR

WP4French.zip

<http://www.adam-europe.eu/prj/10924/prd/3/3/WP4French.zip>

#### IT

WP4Italian.zip

<http://www.adam-europe.eu/prj/10924/prd/3/5/WP4Italian.zip>

## **product files**

### **BG**

WP4BG.zip

<http://www.adam-europe.eu/prj/10924/prd/3/4/WP4BG.zip>

### **FR**

WP4French.zip

<http://www.adam-europe.eu/prj/10924/prd/3/3/WP4French.zip>

### **IT**

WP4Italian.zip

<http://www.adam-europe.eu/prj/10924/prd/3/5/WP4Italian.zip>

## Produkt 'Training modules on the evaluation of energy efficiency of buildings'

**Titel:** Training modules on the evaluation of energy efficiency of buildings

**Produkttyp:** Lehrmaterial

**Marketing Text:** The new French thermal regulation requires to evaluate the energy efficiency of the building and its system during the design process, and tends to promote the evaluation of the performance of the building after its construction. Achieving this goal is not possible without involving the practitioners in the whole "quality chain". Moreover, with upgrading their skills on the issue of the evaluation of the energy efficiency, SMEs increase the quality of their products, improve their competitiveness and the skills of its employees.

**Beschreibung:** New modules in the form of online presentations are being created on eight different topics (WP5). Their development has been based on the learning objectives and syllabi defined in WP3. These modules are being developed along with the relevant tests.

**Zielgruppe:** Entrepreneurs and managers of small and medium-size companies, engineers and craftsmen in the building construction sector and air conditioning supply.

**Resultat:** The course modules on 'Evaluation of the energy efficiency in buildings', which are being developed, include the following topics:

- Building regulation and national context, with a focus on the "Guarantee of performance" as stated by the French national regulation
- Insulation, and evaluation of the air-tightness
- Building design, thermal inertia and thermal comfort
- Ventilation
- Efficient systems for heating and cooling : generation, distribution, emission and regulation
- Renewable energies : photovoltaics, thermal solar, wood
- Tools for the evaluation of the building design (before construction)
- Methods and approaches for evaluating the building and systems energy efficiency after the construction

These modules will also include exercises and tests for self-evaluation.

**Anwendungsbereich:** E-learning material dedicated to SMEs managers and craftsmen.

**Homepage:** <http://telearn.tu-sofia.bg/evenef/>

**Produktsprachen:** Französisch  
Englisch

### product files

#### BG

WP5\_BG.zip

[http://www.adam-europe.eu/prj/10924/prd/4/4/WP5\\_BG.zip](http://www.adam-europe.eu/prj/10924/prd/4/4/WP5_BG.zip)

#### EN

WP5EN.zip

<http://www.adam-europe.eu/prj/10924/prd/4/2/WP5EN.zip>

## **product files**

### **FR**

WP5FR.zip

<http://www.adam-europe.eu/prj/10924/prd/4/3/WP5FR.zip>

### **IT**

WP5Italian.zip

<http://www.adam-europe.eu/prj/10924/prd/4/5/WP5Italian.zip>

## Produkt 'Evaluation and pilot tests reports'

Titel: Evaluation and pilot tests reports

Produkttyp: Evaluierungsmethoden

Marketing Text: The pedagogical material developed in the EVENEF project is evaluated by different means. The purpose of this project is to develop training modules responding the real needs of professionals. All the material is teste and evaluated by targeted professionals.

Beschreibung: Different evaluation procedures have been planned to analyse the quality of the training modules and to adjust these if necessary :

- design walkthrough and peer-review of the material by the project's partner and some external experts
- pilot tests with some targeted professionals
- fied trial with trainees

Trainees are also being involved in all stages. Questionnaires to gather data on user's attitudes and opinions are used.

Zielgruppe: Entrepreneurs and managers of small and medium-size companies, engineers and craftsmen in the building construction sector and in air conditioning supply.

Resultat: Reports have been created on the outcomes of three meetings with craftsman and managers from SME's in France. The first meeting was focused on confirming the needs of SME's and evaluated some preliminary work done in WP4 and WP5. The second meeting was a workshop, and was a more comprehensive analysis of the e-learning modules developed so far, and the platform that they are available on. The purpose of the third workshop was very similar to the second, but different trainee's were used. The two workshops are preliminary pilot tests (with a total number of active participants of 12).

Anwendungsbereich: Evaluation of e-learning training modules in the field of energy efficiency.

Homepage:

Produktsprachen: Französisch

### product files

#### Certificates

CertificateEvEnEfEN.pptx

<http://www.adam-europe.eu/prj/10924/prd/5/2/CertificateEvEnEfEN.pptx>

CertificateEvEnEfFR.pptx

<http://www.adam-europe.eu/prj/10924/prd/5/2/CertificateEvEnEfFR.pptx>

CertificateEvEnEf\_IT.pptx

[http://www.adam-europe.eu/prj/10924/prd/5/2/CertificateEvEnEf\\_IT.pptx](http://www.adam-europe.eu/prj/10924/prd/5/2/CertificateEvEnEf_IT.pptx)

#### Workshops

WorkshopAttendanceCma18February2014.pdf

<http://www.adam-europe.eu/prj/10924/prd/5/3/WorkshopAttendanceCma18February2014.pdf>

## **product files**

WorkshopAttendanceCma26June2014.pdf

<http://www.adam-europe.eu/prj/10924/prd/5/3/WorkshopAttendanceCma26June2014.pdf>

WorkshopEvaluationChamCo20June2014.pdf

<http://www.adam-europe.eu/prj/10924/prd/5/3/WorkshopEvaluationChamCo20June2014.pdf>

WorkshopEvaluationCma26June2014.pdf

<http://www.adam-europe.eu/prj/10924/prd/5/3/WorkshopEvaluationCma26June2014.pdf>

WorkshopSummaryChamCoJune2014.pdf

<http://www.adam-europe.eu/prj/10924/prd/5/3/WorkshopSummaryChamCoJune2014.pdf>

WorkshopSummaryCMA18February2014.pdf

<http://www.adam-europe.eu/prj/10924/prd/5/3/WorkshopSummaryCMA18February2014.pdf>

WorkshopSummaryCma26June2014.pdf

<http://www.adam-europe.eu/prj/10924/prd/5/3/WorkshopSummaryCma26June2014.pdf>

## Produkt 'Valorisation material'

Titel: Valorisation material

Produkttyp: Homepage

Marketing Text: The aim of the EVENEf project is to provide training not only during the project, but to transform the accumulated experience, know how and lessons learned to make a lasting service to our stakeholders. The entire project was shaped according to the needs of our potential users: SMEs managers, entrepreneurs, craftsmen, but also training center and all interested individuals in the background.

Beschreibung: Concerning the exploitation of the results, the aim is to ensure that the user needs are met, and to ensure that the sustainability of the project results is achieved. Concerning the dissemination part, the aim is to produce information focusing on the project's activities to multiply the project results effect (Web site, Demo DVD, Leaflet, Publications, Dissemination workshops).

Zielgruppe: Entrepreneurs and managers of small and medium-size companies, engineers and craftsmen in the building construction sector and in electricity, gas, steam and air conditioning supply.

Resultat: The project website (WEB) has been set up in all the project languages (<http://www.evenef.eu>). The internet platform (using the company moodle) on which the modules can be accessed from has been developed. A newsletter has been published on the EvEnEf project's progress (BRC), and has been posted on the official project website. An EvEnEf logo has also been designed, and all materials being created as a result of the project will use it to promote the project and to give it an identity. The remaining dissemination activities will be done until the end of the project (CD, DVD, leaflet, Publications, Dissemination workshops)

Anwendungsbereich: Valorisation the EVENEf project

Homepage:

Produktsprachen: Bulgarisch  
Englisch  
Französisch

## product files

ENEvenefDisseminationPlanV2.docx

<http://www.adam-europe.eu/prj/10924/prd/6/1/ENEvenefDisseminationPlanV2.docx>

ENEvEnEfLeafletv2.pdf

<http://www.adam-europe.eu/prj/10924/prd/6/1/ENEvEnEfLeafletv2.pdf>

EnNewsletter1April2014.pdf

<http://www.adam-europe.eu/prj/10924/prd/6/1/EnNewsletter1April2014.pdf>

EnNewsletter2Jan2015.pdf

<http://www.adam-europe.eu/prj/10924/prd/6/1/EnNewsletter2Jan2015.pdf>

## Veranstaltungen

### Dissemination event: Foire de Savoie

Datum 14.09.2015

Beschreibung A large dissemination even will be held in Savoie. The EvEnEf modules will be displayed, and people will be encouraged to try the modules in their own time.

Zielgruppe Managers, SME's and engineers.

Öffentlich Öffentliche Veranstaltung

Kontaktinformation Alain Guiavarch: [alain.guiavarch@ines-solaire.org](mailto:alain.guiavarch@ines-solaire.org)

Zeitpunkt und Ort 9am-5pm, the 14-16th September 2015. Chambéry, France.

### Open public seminar

Datum 13.04.2015

Beschreibung During the salon Habitat et Jardin organized by CMA73 (11-14 april 2015), an open public seminar is organized to present the main results of the EVENEf project.  
<http://www.habitat-jardin.com/>

Zielgruppe SMEs managers, craftsmen, all public.

Öffentlich Öffentliche Veranstaltung

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Zeitpunkt und Ort From 13 april 2015, Chambéry