nZEB training in the Southern EU countries
Maintaining building traditions

SouthZEB
WP5 – Deliverable 5.2 Report on the pilot training sessions in the target Countries

February 2017

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Executive Summary

The objective of this document is to present the organization and execution of the “Pilot training sessions” in the four target countries; Cyprus, Greece, Italy and Portugal. Through the “Pilot training sessions”,1.556 (83 Gold level, 150 Silver level and 1323 Bronze level) SouthZEB professionals have been trained and certified through written examination.

The present document is an output of WP5, Task 2 (D5.2).

Project Data

Project Acronym:	SouthZEB
Full title:	nZEB training in the Southern EU countries Maintaining building traditions
Objective:	Support the building sector intermediate and senior professionals (engineers, architects, municipality employees and decision makers) in the Southern European countries (Greece, Cyprus, Italy and Portugal) to keep up to date with the market progression, notably supporting those professionals in their continuous development, particularly in designing and renovating nearly zero-energy buildings (nZEB). This will be achieved through the design and development of training and assessment programmes for the abovementioned professionals, focusing especially on the transfer of successful practices and knowledge from the front runners to the Southern EU countries.
Contract number:	IEE/13/393
Financing:	Intelligent Energy Europe
Budget:	
Duration:	5th January 2016– 5th February 2017
Project website:	www.southzeb.eu
Coordinator:	Iakovos Kalaitzoglou University of Patras, Patras University Campus, Greece
Participants:	University of Patras (UPatras), Greece Building Research Establishment Ltd (BRE), United Kingdom University of Minho (UMinho), Portugal Cyprus University of Technology (CUT), Cyprus BEST Institut für berufsbezogene Weiterbildung und Personaltraining GmbH (BEST), Austria Instituto Superior Técnico, Technical University of Lisbon (IST), Portugal Vocational Education Training Center EUROtraining (KEK Eurotraining) (KEK), Greece Distretto Technologico Trentino S.c.a.r.l. (DTTN), Italy GARnet Energy Saving Ltd (GARNET), Cyprus

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1 Introduction

The trained and certified SouthZEB trainers delivered the pilot training seminars for the target professionals. The seminars were disseminated appropriately, in order to ensure significant participation from outside the consortium as well. The target was to train at least 1500 professionals in all partner countries. Following the reception of applications from interested professional, a screening had to take place in order for the selected applicants to fulfil certain criteria defined by the consortium.

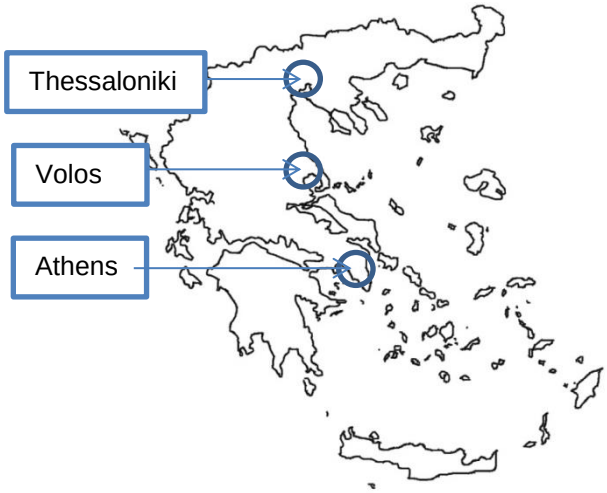
After the completion of the training seminars, participants had to take a written exam. All successful participants were awarded with nZEB designer certificate.

The outcome of the seminars was 1.556 trained and certified professionals (mainly engineers and architects) in total to the four target countries.

2 Organizing and running the Pilot training seminars

2.1 Greece

Subtask leader in Greece has been Eurotraining.



Overview

The trainers trained in the previous task 5.1 have used the material produced in WP3 and the portal developed in WP4 to train the target professionals. The workshop realization was also disseminated appropriately so as to achieve the maximum participation of professionals. In total 262 professionals (engineers, architects) and decision makers were trained. Associated partners encouraged the participation of their members in the seminars. All ten training modules were offered to the participants. All trained professionals participated in the SouthZEB assessment exams, in order to get the corresponding certification. The exams were organised at the end of each training class

2.1.1 Selected venue

The selected venue for the organization of the seminars was the facilities of Eurotraining.

EUROTraining has permanent scientific staff with expertise in the field of vocational training and also holds three training structures in three cities of Greece: Thessaloniki, Athens, and Volos.

All builidings are certified educational structures by the National Organization for Certification of Skills and Quidance and by the Ministry of Education.

In total, EUROTraining holds: 13 teaching classrooms, specialized training equipment for disabled people, easy access to the premises of VET for the disabled, typescript observation and evaluation system of training, 7 Informatics Laboratories, libraries with access to Internet and child care facilities and services

The seminars were held in the centre of Athens: Veranzerou Street. All three structures were available as examination centres, but only two (Athens and Thessaloniki) were selected by the trainees.

EUROTraining has great previous experience in training engineers as energy inspectors during the past 6 years.

2.1.2 Date Scheduling

The seminars in Greece took place between February of 2016 and February of 2015. The exact dates can be seen in Table G1 below.

2.1.3 Promoting the Pilot training seminars

In order to promote the both workshops and seminars, meetings with stakeholders in Greece were held, advertisements in social media were placed, newsletters were sent and finally publications in selected media were placed.

KEK's dissemination activities supported the training progress. Specifically, the following activities were implemented for the advertisement of the pilot training seminars:

- Organisation of meetings with stakeholders in the construction fields;
- Creation of lists for e-mail notifications and newsletters for national use to 610 email addresses;
- Publications in popular Greek printed and electronic media (B2Green, skywalker, studentenergy, xe);
- Extensive use of social networking tools (fb, twitter, LinkedIn);
- Creation of a dedicated You Tube channel;

The detailed description of these activities is presented in the dissemination report D7.3

2.1.4 Methodology

In Greece, seminars were held in the certified educational structures of KEK EUROTRAINING in Athens and assessment exams took place in the fully equipped certifications centres of KEK EUROTRAINING in both Athens and Thessaloniki.

All ten training modules were available to the interested professionals. KEK trainers, trained in the previous task transferred their knowledge to the professionals.

These training sections were offered free of charge for the participants, since they are considered a pilot training.

Additionally, the educational material of all implemented modules is available in digital format videotaped for all the absentees and also for the trainees who don't live close to the capital (Athens) and participate to the seminars via the SouthZEB e-learning platform.

2.1.5 Applications and selection of participants

Following the promotion of the seminars, around 305 applications were received. Through CV analysis 264 applicants were selected to enrol to the pilot training seminars. All selected applications meet the program requirements.

2.1.6 Selection of teachers/trainers

In order to ensure a high-quality delivery of the training material, the **certified nZEB trainers** of the previous task 5.1 “train the trainer workshops” were selected for the delivery of the pilot training seminars. Additionally, the following were considered regarding the selection of trainers:

- Relative experience (engineering field) to the material of each module.
- Related teaching experience.
- Relative academic qualifications and degrees.

The selected trainers for each module can be seen in Table G1.

2.1.7 Running of the pilot training seminars

The training seminars run smoothly based on the above presented schedule.

The duration of each module was considered sufficient. Each trainee selected the modules he or she wanted to participate (Module 1 and Module 2 were compulsory and they had to choose at least 2 more modules out of the 8)

Most of the participants attending the workshops were really keen in the material but did point out a few things which could be improved on their opinion. These included the following:

- Some topics are being repeated.
- Some topics are too generic and other are presented with too much detail.
- Some case studies and best practices examples to present the concepts are needed.
- Seminars need to be more focused on Greek national context and legislation.

Based on the feedback received form the participants the training material was revised and new material was developed.

2.1.7.1 Module 1: nZEB Basic module

During the delivery of this training module the South nZEB concept and the principles of a near zero energy construction (applied physics basics, thermal insulation, materials and construction) were presented.

Regarding the seminars in Greece, special emphasis was putted on the standards and roadmaps applied in the country. At present, there is no nZEB standard in Greece and therefore the participants were particularly interested on the methodology that should be followed in order to define the Greek roadmap for nZEBs. The latest Greek energy regulation exacts from the 2010/31 EPBD recast was presented.

In total 264 professionals attended this module: 142 in classroom and 122 using the e-learning platform of the SouthZEB project.

2.1.7.2 Module 2: nZEB Advance module

The advanced module elaborated further on various arguments of nZEB design and building, including technical physics with respect to humidity, building materials, construction techniques, installation and use of renewable energy sources. The module includes a practical workshop for the trainees.

Regarding the seminars in Greece trainees considered that this module is one of the most valuable. Greek professionals were very interested on practical issues and hands on experience transfer on the installation of renewable energy sources in the nZEB design and constution.

In total 264 professionals attended this module: 142 in classroom and 122 using the e-learning platform of the SouthZEB project.

2.1.7.3 Module 3: Thermal bridging

This module focused on the evaluation and calculation of thermal bridges, through practical exercises. It included sub-modules, thermal losses, isothermal curves, surface temperatures, humidity, active directives and regulations.

In Greece, thermal bridging is an important issue due to the recent update of the construction law (Regulation Energy Efficiency Buildings _ KENAK 2013 and New Building Regulation NOK 2012). Most of the existing buildings don't follow these regulations and trainees were interested on how to apply in practice the new regulations in building renovation and energy upgrade of the "old" building stock.

In total 158 professionals attended this module: 42 in classroom and 116 using the e-learning platform of the SouthZEB project.

2.1.7.4 Module 4: Thermal comfort

This module focused on the thermal environment of buildings. During the delivery of this training thermal comfort was defined and the methodology to model thermal comfort was presented. The factors and values that form the perception of thermal comfort were explored.

During the seminars in Greece, trainees discussed the differences between various Greek cities, villages, islands and inland areas Specifically, the local climatological parameters and the restrictions applied by the local architectural regulations were investigated.

In total 150 professionals attended this module: 42 in classroom and 108 using the e-learning platform of the SouthZEB project

2.1.7.5 Module 5: SZEB framework module and local architectural regulations

This module aimed at presenting the SouthZEB approach for the verification and certification of nZEB in the target countries.

Trainees in Greece showed little interest for the national legislation applied in Italy, Cyprus and Portugal. They were very interested to be trained on the new Greek legislation applied in the construction sector. Therefore, this module focused on the **Greece's New Building Regulations**, which into effect in 2012 with **law 4067/12 (Official Journal-FEK 79A/12) and the New Hellenic Regulation on the Energy Performance of Buildings (KENAK) and the respective Technical Guideline**.

Trainees agreed that it is important to continually update their knowledge concerning the legislation framework on building construction.

In total 127 professionals attended this module: 40 in classroom and 87 using the e-learning platform of the SouthZEB project

2.1.7.6 Module 6: nZEB simulation and design softwares

This module presented to the participants a simulation tool for the design of nZEB and energy efficient buildings.

Regarding the seminars in Greece there was a lot of interest on how to use this tool , estimate the energy efficiency of a building and present to the clients different design options.

In total 113 professionals attended this module: 40 in classroom and 73 using the e-learning platform of the SouthZEB project.

2.1.7.7 Module 7: Low carbon technology and automation for nZEB

This module trained professionals in learning the technologies of the various sub-systems and installations as well as their cost and effectiveness.

During the seminars in Greece there was an interesting discussion about installation, maintenance and operating cost in Greece and finally its amortisation.

In total 147 professionals attended this module: 20 in classroom and 127 using the e-learning platform of the SouthZEB project

2.1.7.8 Module 8: Retrofitting towards nZEB

The aim of this training module was to educate all interested parties in the way to address the existing building stock and its possibilities for transformation into nZEB.

During the seminars in Greece, this aspect and especially the cost optimality of nZEB retrofit technical solutions has a number of promoters in the country due to the financial crisis.

In total 133 professionals attended this module: 40 in classroom and 93 using the e-learning platform of the SouthZEB project

2.1.7.9 Module 9: Construction management and field supervision of nZEB

This module trained the participants in construction management and field supervision according to the latest construction standards for nZEB

This module in Greece, was particularly interesting for professionals directly involved with in the construction sector.

In total 119 professionals attended this module: 40 in classroom and 79 using the e-learning platform of the SouthZEB project

2.1.7.10 Module 10: Preparation of funding schemes and other incentives for nZEB

This module aimed at local and national authorities' representatives that participated in the corresponding sessions to be able to design new funding/promotion schemes for nZEB.

During the seminars in Greece, various ideas and proposal for funding schemes were discussed. Participants mainly referred on the successful implementation of the funding program **"Energy Efficiency at Household Buildings"** which provided incentives for people to improve the energy efficiency of their home, saving money and energy and increasing its value.

In total 150 professionals attended this module: 20 in classroom and 130 using the e-learning platform of the SouthZEB project

2.1.8 Table G1

The following table presents the schedule of the training in Greece.

The dates of the classes, the trainers and the number of the participants for each module.

	class Starding Date	class Closing Date	Name of Trainer	Preparation hours	Classroom hours and E-learning hours	Study hours	Location	Number of classroom participants	Number of e-learning participants
1st class									
Module 1: nZEB Basic module	22/2/2016	4/3/2016	TROGADIS VASILEIOS	4	12	4	Veranzerou 1, Athens	20	
Module 2: nZEB Advanced module	22/2/2016	4/3/2016	TROGADIS VASILEIOS	3	31	4	Veranzerou 1, Athens	20	
Module 7: Low carbon technology and automation for nZEB	22/2/2016	4/3/2016	EYAGGELOS PANOU	3	12	6.5	Veranzerou 1, Athens	20	
Module 10: Preparation of funding schemes and other incentives for nZEB	22/2/2016	4/3/2016	TROGADIS VASILEIOS	4	8	5	Veranzerou 1, Athens	20	
2nd class									
Module 1: nZEB Basic module	22/2/2016	4/3/2016	TROGADIS VASILEIOS	4	12	4	e-learning platform		20
Module 2: nZEB Advanced module	22/2/2016	4/3/2016	TROGADIS VASILEIOS	3	31	4	e-learning platform		20
Module 7: Low carbon technology and automation for nZEB	22/2/2016	4/3/2016	EYAGGELOS PANOU	3	12	6.5	e-learning platform		20
Module 10: Preparation of funding schemes and other incentives for nZEB	22/2/2016	4/3/2016	TROGADIS VASILEIOS	4	8	5	e-learning platform		20
3rd class									
Module 1: nZEB Basic module	22/2/2016	4/3/2016	TROGADIS VASILEIOS	4	12	4	e-learning platform		20
Module 2: nZEB Advanced module	22/2/2016	4/3/2016	TROGADIS VASILEIOS	3	31	4	e-learning platform		20
Module 7: Low carbon technology and automation for nZEB	22/2/2016	4/3/2016	EYAGGELOS PANOU	3	12	6.5	e-learning platform		20

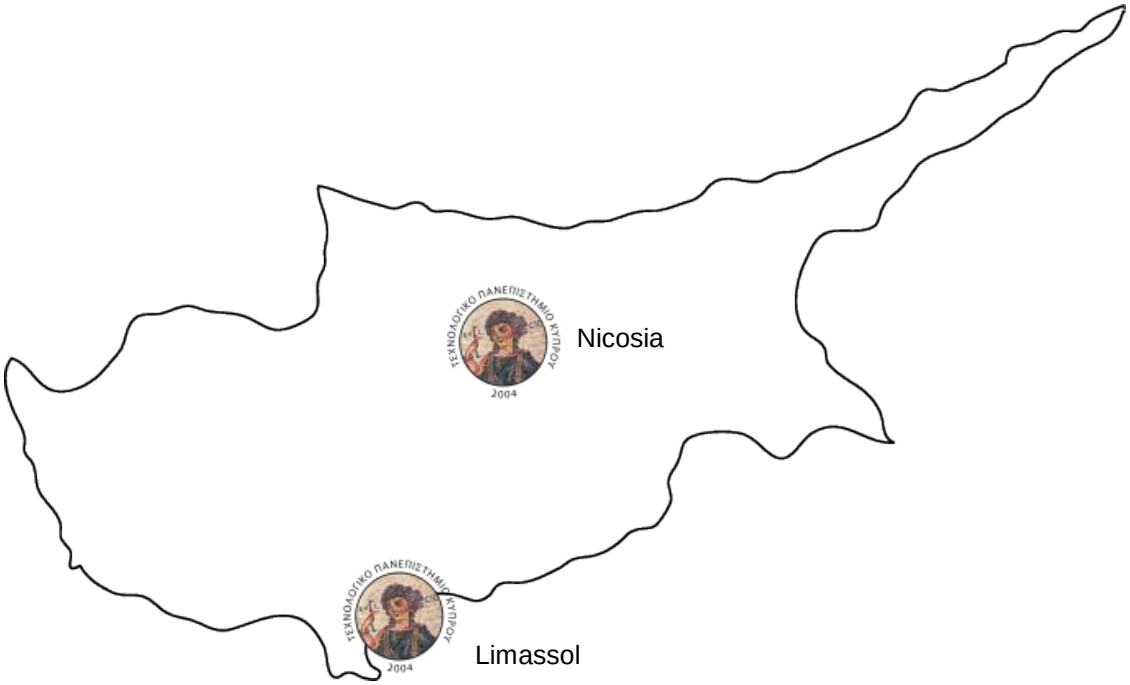
Module 10: Preparation of funding schemes and other incentives for nZEB	22/2/2016	4/3/2016	TROGADIS VASILEIOS	4	8	5	e-learning platform		20
4th class									
Module 1: nZEB Basic module	29/3/2016	9/4/2016	EYAGGELOS PANOU	4	12	4	Veranzerou 1, Athens	21	
Module 2: nZEB Advanced module	29/3/2016	9/4/2016	CHRISTOS KONSTAS	3	31	4	Veranzerou 1, Athens	21	
Module 3: Thermal bridging	29/3/2016	9/4/2016	EYAGGELOS PANOU	4	8	7	Veranzerou 1, Athens	21	
Module 4: Thermal comfort	29/3/2016	9/4/2016	EYAGGELOS PANOU	3	10	6	Veranzerou 1, Athens	21	
5th class									
Module 1: nZEB Basic module	29/3/2016	9/4/2016	MARINA ZOTAKI	4	12	4	Veranzerou 1, Athens	21	
Module 2: nZEB Advanced module	29/3/2016	9/4/2016	STEFANOS VAGENAS	3	31	4	Veranzerou 1, Athens	21	
Module 3: Thermal bridging	29/3/2016	9/4/2016	MARINA ZOTAKI	4	8	7	Veranzerou 1, Athens	21	
Module 4: Thermal comfort	29/3/2016	9/4/2016	MARINA ZOTAKI	3	10	6	Veranzerou 1, Athens	21	
6th class									
Module 1: nZEB Basic module	29/3/2016	9/4/2016	EYAGGELOS PANOU	4	12	4	e-learning platform		19
Module 2: nZEB Advanced module	29/3/2016	9/4/2016	CHRISTOS KONSTAS	3	31	4	e-learning platform		19
Module 3: Thermal bridging	29/3/2016	9/4/2016	EYAGGELOS PANOU	4	8	7	e-learning platform		19
Module 4: Thermal comfort	29/3/2016	9/4/2016	EYAGGELOS PANOU	3	10	6	e-learning platform		19
7th class									
Module 1: nZEB Basic module	4/5/2016	21/5/2016	EYAGGELOS PANOU	4	12	4	Veranzerou 1, Athens	20	
Module 2: nZEB Advanced module	4/5/2016	21/5/2016	CHRISTOS KONSTAS	3	31	4	Veranzerou 1, Athens	20	
Module 5: SouthZEB framework module and local architectural regulations	4/5/2016	21/5/2016	EYAGGELOS PANOU	5	16	8	Veranzerou 1, Athens	20	
Module 8: Retrofitting towards nZEB	4/5/2016	21/5/2016	CHRISTOS KONSTAS	6	20	13	Veranzerou 1, Athens	20	
8th class									
Module 1: nZEB Basic module	4/5/2016	21/5/2016	MARINA ZOTAKI	4	12	4	Veranzerou 1, Athens	20	
Module 2: nZEB Advanced module	4/5/2016	21/5/2016	MARINA ZOTAKI	3	31	4	Veranzerou 1, Athens	20	

Module 5: SouthZEB framework module and local architectural regulations	4/5/2016	21/5/2016	STEFANOS VAGENAS	5	16	8	Veranzerou 1, Athens	20	
Module 8: Retrofitting towards nZEB	4/5/2016	21/5/2016	STEFANOS VAGENAS	6	20	13	Veranzerou 1, Athens	20	
9th class									
Module 1: nZEB Basic module	4/5/2016	21/5/2016	EYAGGELOS PANOU	4	12	4	e-learning platform		20
Module 2: nZEB Advanced module	4/5/2016	21/5/2016	CHRISTOS KONSTAS	3	31	4	e-learning platform		20
Module 5: SouthZEB framework module and local architectural regulations	4/5/2016	21/5/2016	EYAGGELOS PANOU	5	16	8	e-learning platform		20
Module 8: Retrofitting towards nZEB	4/5/2016	21/5/2016	CHRISTOS KONSTAS	6	20	13	e-learning platform		20
10th class									
Module 1: nZEB Basic module	24/6/2106	16/7/2016	EYAGGELOS PANOU	4	12	4	Veranzerou 1, Athens	20	
Module 2: nZEB Advanced module	24/6/2106	16/7/2016	VASILEIOS ZOTAKIS	3	31	4	Veranzerou 1, Athens	20	
Module 6: nZEB simulation and design softwares	24/6/2106	16/7/2016	VASILEIOS ZOTAKIS	3	16	10	Veranzerou 1, Athens	20	
Module 9: Construction management and field supervision of nZEB	24/6/2106	16/7/2016	EYAGGELOS PANOU	5	30	4	Veranzerou 1, Athens	20	
11th class									
Module 1: nZEB Basic module	24/6/2106	16/7/2016	STEFANOS VAGENAS	4	12	4	Veranzerou 1, Athens	20	
Module 2: nZEB Advanced module	24/6/2106	16/7/2016	MARINA ZOTAKI	3	31	4	Veranzerou 1, Athens	20	
Module 6: nZEB simulation and design softwares	24/6/2106	16/7/2016	MARINA ZOTAKI	3	16	10	Veranzerou 1, Athens	20	
Module 9: Construction management and field supervision of nZEB	24/6/2106	16/7/2016	STEFANOS VAGENAS	5	30	4	Veranzerou 1, Athens	20	
12th class									
Module 1: nZEB Basic module	24/6/2106	16/7/2016	EYAGGELOS PANOU	4	12	4	e-learning platform		20
Module 2: nZEB Advanced module	24/6/2106	16/7/2016	VASILEIOS ZOTAKIS	3	31	4	e-learning platform		20
Module 6: nZEB simulation and design softwares	24/6/2106	16/7/2016	VASILEIOS ZOTAKIS	3	16	10	e-learning platform		20
Module 9: Construction management and field supervision of nZEB	24/6/2106	16/7/2016	EYAGGELOS PANOU	5	30	4	e-learning platform		20

13th class (extra e-learning class)									
Modules 1,2,3,4,5,6,7,8,9,10 were presented through e-learning platform and videos of previous classes. Trainers are responsible for observation, monitoring and guiding this class.	9/1/2017	23/1/2017	MARINA ZOTAKI & VASILEIOS ZOTAKIS & STEFANOS VAGENAS	depends on the module	depends on the module	depends on the module	e-learning platform		23
Below are trainees who already participated in one of the classes and continue their training through e-learning platform. These trainees should not be summed again in total number of participants of the 13 implemented classes. They should be summed only in subtotal number of each module participants.									
Module 3: Thermal bridging	22/2/2016	23/1/2017	MARINA ZOTAKI	4	8	7	e-learning platform		74
Module 4: Thermal comfort	22/2/2016	23/1/2017	MARINA ZOTAKI	3	10	6	e-learning platform		66
Module 5: SouthZEB framework module and local architectural regulations	22/2/2016	23/1/2017	STEFANOS VAGENAS	5	16	8	e-learning platform		44
Module 6: nZEB simulation and design softwares	22/2/2016	23/1/2017	VASILEIOS ZOTAKIS	3	16	10	e-learning platform		30
Module 7: Low carbon technology and automation for nZEB	22/2/2016	23/1/2017	EYAGGELOS PANOU	3	12	6.5	e-learning platform		64
Module 8: Retrofitting towards nZEB	22/2/2016	23/1/2017	STEFANOS VAGENAS	6	20	13	e-learning platform		50
Module 9: Construction management and field supervision of nZEB	22/2/2016	23/1/2017	STEFANOS VAGENAS	5	30	4	e-learning platform		36
Module 10: Preparation of funding schemes and other incentives for nZEB	22/2/2016	23/1/2017	TROGADIS VASILEIOS	4	8	5	e-learning platform		67

2.2 Cyprus

The responsible partner in carrying out the pilot seminars in Cyprus was CUT. GARnet, the other partner from Cyprus, also attended the training seminars but more on a supportive and observatory role.



Overview

The trainers trained in the previous task 5.1 have used the material produced in WP3 and the portal developed in WP4 to train the target professionals. The workshop realization was also disseminated appropriately so as to achieve the maximum participation of professionals. In total, 174 engineers filed an application, expressing their interest in participating in the SouthZEB training seminars in Cyprus. All applicants were accepted to participate in the seminars, since all met the necessary requirements (having an engineering degree and be registered in ETEK). Out of these, 137 attended the delivery of at least on module. 111 participants have attended at least one exam and 95 achieved a passing grade in at least one module. Finally, 85 professionals (engineers, architects) and decision makers were certified, achieving a passing grade in the compulsory modules 01 & 02 and in at least another two modules. All ten training modules were offered to the participants. The exams were organised at the end of each training class. Dedicated exam days were also organized both in Limassol and Nicosia, where participants failed a specific module or more could repeat the exam for all the modules of their choice.

2.2.1 Selected venue

Cyprus University of Technology (CUT) is one of the three state universities of Cyprus and is based in Limassol. Therefore, the obvious venue selection was the university's premises in Limassol where suitable infrastructure is available for teaching activities, since auditoriums are available equipped with PCs, projector, blackboards, etc.

However, due to increased participation interest from engineers based in the capital of Cyprus, Nicosia, an effort was made to satisfy this need, even though this meant spending additional CUT resources. In collaboration with ETEK, their training premises in Nicosia were used in order to deliver training in Nicosia on specific modules. A questionnaire was sent to the applicants that declared their interest to participate in the SouthZEB training seminars whether they had a preference in attending the seminars in Nicosia or Limassol. Based on the collected information, training seminars were organized in Nicosia for modules 01 (Basic Module) and 06 (Building Energy Simulation). The training seminars for the rest of the modules were organized only in Limassol since the expressed interest for attending seminars for these modules in Nicosia was very little (below 5%).

2.2.2 Date Scheduling

The seminars in Cyprus took place between April 2016 and July 2016. The exact dates can be seen in Table C1 below.

2.2.3 Promoting the Pilot training seminars

From the beginning of the project many dissemination actions have been carried out in order to let people know about the project progress and the training sessions. A number of meetings took place between CUT and the administration of Cyprus Energy Service (CES), which is the responsible authority for the implementation of EPBD in Cyprus, informing them about the SouthZEB project, presenting the developed material and requesting their comments and suggestions in order to better adapt the developed material to Cyprus reality.

CES provided feedback on the developed material for the different modules and gave suggestions and requests specifying additions and alterations in the contents of each module. Furthermore, CES placed the SouthZEB seminar series under the auspices of the corresponding ministry, the Ministry of Energy, Commerce, Industry and Tourism, which was a major boost to the seminars' publicity. CES actions resulted in modifications to the modules contents for better addressing local issues, as well, as increased seminar participation.

Moreover, CUT developed a close collaboration with the Scientific and Technical Chamber of Cyprus (ETEK), the professional engineering body in Cyprus. All SouthZEB project details and updates where circulated among the Cyprus engineering community through ETEK's website and newsletter, which accounts more than eight thousand members. Experience shows that advertising seminars through ETEK maximizes participation, so it was decided that special emphasis would be given towards that channel of communication, which was one of the reasons for the successful completion of the SouthZEB training seminars in Cyprus.

Despite the near certain success guaranteed by the promotion of the project through ETEK, CUT proceeded with further advertisement and communication of the seminars. All the associations of professional engineers were contacted and requested to promote the training seminars amongst their members. In specific, the following engineering associations circulated material for the SouthZEB project and training seminars within their members:

- Cyprus Association of Architect Engineers
- Cyprus Association of Civil Engineers
- Cyprus Association of Architects and Civil Engineers
- Cyprus Association of Mechanical Engineers
- Cyprus Association of Electrical Engineers
- Cyprus Energy Agency

As a result of all the above the W.P.5.2 (pilot training seminars) is being held in Cyprus without any difficulty or obstacle.

2.2.4 Methodology

In Cyprus, seminars were held in the certified educational premises of CUT in Limassol, as well, as the certified training facilities of ETEK's training centre for engineers in Nicosia. All ten training modules were available to the interested professionals. SouthZEB trainers, trained in the previous task transferred their knowledge to the professionals. These training sections were offered free of charge for the participants, since they are considered a pilot training. Additionally, the educational material of all implemented modules was made available in digital form to all the participants of each module.

2.2.5 Applications and selection of participants

Following the promotion of the seminars, 174 applications along with their CVs were received from applicants of various engineering backgrounds (mainly architects, civil engineers, mechanical engineers and electrical engineers). The requirements for the participation in the training seminars were for any interested participant to be a graduate engineer and be registered in the official records of the Chamber of Engineers (ETEK). All applicants met the requirements set by the consortium, since the training seminars were mainly advertised amongst the engineering community.

2.2.6 Selection of teachers/trainers

In order to ensure a high-quality delivery of the training material, the **certified nZEB trainers** of the previous task 5.1 "train the trainer workshops" were selected for the delivery of the pilot training seminars. Additionally, the following were considered regarding the selection of trainers:

- Relative experience (engineering field) to the material of each module.
- Related teaching experience.
- Relative academic qualifications and degrees.

- Expressed interest in the delivery of specific module on behalf of the trainer

Hence, the allocation of trainers for each module can be seen in Table C1.

2.2.7 Running of the pilot training seminars

The training seminars run smoothly based on the schedule shown in Table G1. The duration of each module was considered sufficient. Each trainee selected the modules he/ she wanted to participate (Module 1 and Module 2 were compulsory and they had to choose at least 2 more modules out of the 8). Most of the participants in Cyprus declared that they intended to attend to all the modules, regardless if they have finally made it or not.

Most of the participants attending the workshops were really keen in the material but did point out a few things which could be improved on their opinion. These included the following:

- Some topics are being repeated in more than one module.
- Some topics are too generic and other are presented with too much detail.
- Some of the contents of modules 03-10 could be reallocated to module 01. Thus, two major modules (that are also compulsory) of 40 hours each would exist and the rest of the modules could be smaller and more focused on specialised aspects.
- Some case studies and best practices examples to present the concepts are needed.
- Seminars need to be more focused onCypriot context and legislation.
- Field work and a site visit could be a really valuable experience, especially in modules 08 and 09.

2.2.7.1 Module 1: nZEB Basic module

During the delivery of this training module the South nZEB concept and the principles of a near zero energy construction (applied physics basics, thermal insulation, materials and construction) were presented.

Regarding the seminars in Cyprus, special emphasis was made on the standards and roadmaps applied at international and national level. The requirements of an nZEB building have been fully defined in Cyprus, both for buildings used for residential purposes, as well, as for non-residential ones. The participants were particularly interested in the methodology that should be followed in order to optimize the design of an nZEB in Cyprus. Additionally, the participants intended to know what materials and technologies were more suitable to reach nZEB levels in Cyprus.

Furthermore, some of participants referred that the module is too orientated towards mechanical engineering and HVAC systems. Nevertheless, they did acknowledge that energy consumed for

cooling dominates energy consumption in buildings in southern climates, thus realizing the importance of HVAC systems. Moreover, the participants referred that it would be interesting to introduce concepts and examples of nZEB projects.

In total 130 professionals physically attended the seminars of this module.

2.2.7.2 Module 2: nZEB Advance module

The advanced module elaborated further the nZEB design and building, including technical physics with respect to humidity, building materials, construction techniques, installation and use of renewable energy sources. The module includes a practical workshop for the trainees.

Regarding the seminars in Cyprus, participants commented that they found the RES section particularly interesting and would like to have more practical examples on RES installation on buildings, especially in cases where RES are fully integrated in the building envelope.

In total 87 professionals physically attended the seminars of this module.

2.2.7.3 Module 3: Thermal bridging

Module 3 focusses on the energy performance of the building envelope. It presents the drivers for, and benefit of, improving the energy efficiency of the building envelope, as well as highlighting the risks that poor building envelope design and/or construction can present. It also addresses how building envelope performance can be assessed including information on the evaluation and calculation of U-values and thermal bridging in various constructions (walls, floors, roofs, etc.). It has a number of practical exercises to ensure attendees have a fundamental understanding of the theory comprising key building performance issues.

Regarding the seminars in Cyprus, this has been a topic of knew knowledge for the participants and it has been one of the subjects pointed out by the Cyprus Energy Service as of great importance, since, usually, no serious calculations regarding thermal bridging are performed in building energy performance studies. The trainees recognized the importance of dealing with thermal bridges, especially during retrofit works, since the majority of the Cyprus building stock has been built prior any legislation or regulations for the energy performance of buildings existed.

In total 67 professionals physically attended this module.

2.2.7.4 Module 4: Thermal comfort

This module is focused on the thermal environment of buildings. It defines thermal comfort for a human body and how it may be modelled. It introduces the basic physics, explains factors and values

that form the perception of thermal comfort, its assessment methods, adaptive models and the way thermal comfort is related and can be achieved in energy efficient buildings and especially in nZEB.

Regarding the seminars in Cyprus trainers and trainees discussed the impact of achieving thermal comfort conditions in the energy performance of buildings, even though it has been mentioned that little care is taken during the building design phase to optimize thermal comfort conditions with respect to energy consumption. The presentation of various examples of good practices and presentation of thermal comfort simulation tools was valued by the participants, since this has been a relatively new are for the majority of them. However, some complained that this module contained a lot of material addressing mechanical engineers, which also posed difficulties for them during the exam.

In total 58 professionals physically attended this module.

2.2.7.5 Module 5: SZEB framework module and local architectural regulations

This module aimed at presenting the SouthZEB approach for the verification and certification of nZEB in the target countries.

Regarding the seminars in Cyprus, trainees focused mainly in local legislation and regulations and considered the material for the rest of the target countries as practically irrelevant. Furthermore, special interest has been exhibited in legislation regarding RES integration in listed buildings, especially by architects. Moreover, emphasis was given in legislation and regulations providing incentives on behalf of the urban planning authority for the design and construction of nZEB buildings prior 2020.

In total 59 professionals physically attended this module.

2.2.7.6 Module 6: nZEB simulation and design software

This module presented to the participants a very popular energy simulation software, Energy Plus, that can be used for the design and the assessment of the energy efficiency of nZEB buildings.

Regarding the seminars in Cyprus the practical component of this module was highlighted. The use of energy simulation tools to estimate the energy efficiency of a building, to analyse energy efficiency measures, to compare different design options (use of envelope insulation, advanced glazing, natural ventilation, passive solutions, and high performance HVAC systems among many others) was valued as it allows engineers to present to the clients' different design options.

In total 72 professionals physically attended this module.

2.2.7.7 Module 7: Low carbon technology and automation for nZEB

This module trained professionals in low carbon technologies, a crucial topic to achieve nZEB performence, in learning the technologies of the various sub-systems and installations, their cost and effectiveness, as well as introducing how to assess the financial performance and cost effectiveness of the different systems.

Regarding the seminars in Cyprus the aspects more relevant were PV systems, storage systems and hybrid systems, as well as automation systems that are very important too. The discussion occurred also related to the various low carbon systems suited to Cyprus and the key design, installation, operation and maintenance issues. Furthermore, a lot of questions and subsequent discussion were raised regarding solar thermal systems and their utilization in spring and autumn, where for the case of Cyprus neither heating nor cooling is really necessary.

In total 63 professionals physically attended this module.

2.2.7.8 Module 8: Retrofitting towards nZEB

The aim of this training module was to educate all interested parties in the way to address the existing building stock and the way to retrofit the existing building stock towards nZEB considering both energy efficiency and indoor environmental quality. Assessment and energy audit techniques in existing buildings and the cost optimality of nZEB renovation technical solutions are also part of the training.

Regarding the seminars in Cyprus, particular interest was expressed by the participants in regards to the “Cost Optimal Solutions” applied for retrofitting towards nZEB buildings, as well as the accompanying financial calculations.

In total 73 professionals physically attended this module.

2.2.7.9 Module 9: Construction management and field supervision of nZEB

This module trained the participants in construction management and field supervision according to the latest construction standards for nZEB.

Regarding the seminars in Cyprus, Building Information Modelling (BIM) dominated the interest of the participants, since it was something completely new for the majority of them.

In total 50 professionals physically attended this module.

2.2.7.10 Module 10: Preparation of funding schemes and other incentives for nZEB

This module aimed at local and national authorities' representatives that participated in the sessions to be able to design new funding/promotion schemes for nZEB. The mechanisms and incentive schemes designed to facilitate the increased uptake of energy efficiency and low carbon technologies and/or green improvement plans for buildings were also presented. Nevertheless, a lot of professionals from the private sector attended the seminar as well.

In the seminars the discussion was focused mainly on the requirements and problems encountered related to an on-going funding scheme for retrofitting existing buildings (residential and non-residential) towards either an energy class category "B" or towards nZEB levels. In addition, the need of a new funding scheme to be implemented by the state was emphasized, since the budget of the on-going funding scheme at the time was soon to be depleted.

In total 41 professionals physically attended this module.

2.2.8 Table C1

	class Starding Date	class Closing Date	Name of Trainer	Preparation hours	Classroom hours and E-learning hours	Study hours	Location	Number of classroom participants
1st class								
Module 1: nZEB Basic module	09/04/2016	16/04/2016	K. Panagi	4	12	4	Limassol	108
Module 1: nZEB Basic module	14/04/2016	15/04/2016	K. Panagi	4	12	4	Nicosia	22
Module 2: nZEB Advanced module	18/04/2016	21/04/2016	N. Nikolaides and P. Kakonitis	3	31	4	Limassol	87
Module 3: Thermal Bridging	23/04/2016	23/04/2016	D. Nikolaidou	4	8	5	Limassol	67
Module 4: Thermal Comfort	04/05/2016	05/04/2016	G. Kourris	3	10	3	Limassol	58
Module 7: Low Carbon Tech	06/05/2016	07/05/2016	M. Evangelides	3	12	5	Limassol	63
Module 6: nZeb Simulation Software	24/05/2016	25/05/2016	D. Nikolaidou and F. Xeni	4	16	10	Limassol	64
Module 6: Nzeb Simulation Software	07/06/2016	08/06/2016	D. Nikolaidou and F. Xeni	4	16	10	Nicosia	8
Module 5: Local Arch Regulations	26/05/2016	27/05/2016	A. Galazi & P. Hadjipavlis	5	16	2	Limassol	59
Module 8: Retrofiting towards nZeb	01/06/2016	03/06/2016	K. Mavrikios & X. Hadjirakleous	6	20	13	Limassol	73
Module 9: Construction Mang	15/06/2016	18/06/2016	G. Demetriou & Ilic	4	30	5	Limassol	50
Module 10: Funding Schemes for nZEB	11/06/2016	11/06/2016	A. Galazi & P. Hadjipavlis	4	8	7	Limassol	41

2.3 Italy

Subtask leader in Italy was DTTN.

Overview

The trainers trained in the previous task 5.1 have used the material produced in WP3 and the portal developed in WP4 to train the target professionals. The workshop realization was also disseminated appropriately so as to achieve the maximum participation of professionals. In total in Italy 932 professionals (engineers, architects, surveyors) and decision makers have been successfully trained and certified. All ten training modules were offered to the participants and the modules requested from the professionals by receiving appropriate requests have been performed. All trained professionals participated in the SouthZEB assessment exams, in order to get the corresponding certification. The exams were organised at the end of each training class.

2.3.1 Selected venue

The selected venues for the organization of the seminars have been several and are displayed in Table It1. A detailed description may be found below.

DTTN has found the appropriate location which was suitable each time to perform the trainings in the most adequate way. Each training room was equipped with pc connections, microphones, audio equipment, projector and everything which was needed to perform the trainings.

- In Vibo Valentia the selected venue has been the “Sala Congressi A. Mummura” at the Camera di Commercio of Vibo Valentia at Piazza San Leoluca, Complesso Valentianam.
- In Naples the venue has been the Basilica di San Giovanni Maggiore at Rampe S. Giovanni Maggiore due to the high capacity and the relevance in the city. This location has been suggested from the Associations of the Engineers of Naples due to the importance of the SouthZEB trainings.
- In Rimini the venue has been the Conference room of the Association of the Engineers of Rimini, Corso d’Augusto, 213.
- In Milan the location has been the Classroom of the University of Milan located at the Dipartimento di Energia del Politecnico di Milano, Via Lambruschini, 4/A.
- In Siracusa the location has been the Auditorium CPT Siracusa - viale Ermocrate, 6.
- In Ragusa the location chosen has been Sala Conferenze C.N.A. – via Psaumida, 38.
- In Catanzaro both trainings have been located at the Conference Room at the Hotel Perla del Porto – Catanzaro.

2.3.2 Date Scheduling

The seminars in Italy took place between June and December 2016. The exact dates can be found in Table It1.

2.3.3 Promoting the Pilot training seminars

DTTN has promoted the seminars through its institutional and commercial contacts and through its close relationship with the different Associations of Engineers and Architects in Italy. Several organization meetings were held and chaired by DTTN. Additionally the seminars were also presented in some events were DTTN participated, such as Klimahouse fair in Bolzano in January 2016 and the Energy Med event in Napoli in March 2016.

2.3.4 Methodology

Several locations in Central and Southern Italy have been selected. Each venue hosted both the training sessions and the exams. The training sessions included 10 different modules, two of which were mandatory (Module 1 and 2) while the other eight were optional and could be selected by each participant. The actual number of attendees for each module can be found in Table It1.

The trainings have been offered free of charge, DTTN has supported costs for renting the locations and for trainers’ fees.

In order to ensure the largest possible participation to the courses, DTTN has been able to receive the endorsement of the Associations of Engineers and Architects. These Associations have a very strong

position in Italy among professionals, both engineers and architects. Thanks to this endorsement, DTTN has been able to involve more than 1.000 professionals to the courses.

Another positive effect of this endorsement is that besides the certificate “SouthZEB designer” the professionals have received credits that are part of the mandatory procedure of CPD (Continuing Professional Development).

The endorsement by the Associations has been obtained by DTTN at no cost for the project, because it also represents a positive value for them.

2.3.5 Applications and selection of participants

Following the promotion of the seminars, more than 1.000 applications were received from applicants of various backgrounds: architects, civil/environment/mechanical engineers and surveyors; also professionals from the Public Administration have participated.

The selection of the trainees has been made in accordance to the background of each professional, asking each one the reason for attending and the strong will to update their knowledge and experience.

2.3.6 Selection of teachers/trainers

In order to ensure the highest quality delivery of the trainings, the certified SouthZEB trainers for Italy were selected from the list of people who had successfully completed the “Train the trainer workshops” in Italy. Additionally, DTTN asked them to be available to provide training all around Italy.

Based on the previous considerations, and given the fact that a SouthZEB trainer is representing also DTTN and the project itself, several requests had to be satisfied by the trainers:

- To demonstrate to have the experience in managing and understanding the material and the topics of the modules,
- To be able to answer properly to technical and specific questions,
- To have previous granted experience in teaching.

The selected trainers who trained the trainees for SouthZEB project can be seen in Table It1.

2.3.7 Running of the pilot training seminars

The training seminars run smoothly based on the above presented schedule.

The duration of each module, in accordance with trainers and trainees, was considered sufficient and exhaustive. Each trainee has selected the modules that he/she wanted to participate and DTTN had activated in order to be able to organize training session properly. Module 1 and 2 were mandatory and trainees had to choose at least 2 other modules out of the other 8.

2.3.7.1 Module 1: nZEB Basic module

During the delivery of this training module the South nZEB concept and the principles of a nearly zero energy construction (applied physics basics, thermal insulation, materials and construction) were presented.

2.3.7.2 Module 2: nZEB Advance module

The advanced module elaborated further on various arguments of nZEB design and building, including technical physics with respect to humidity, building materials, construction techniques, installation and use of renewable energy sources.

2.3.7.3 Module 3: Thermal bridging

This module has not been delivered due to the fact that no one from the professionals have asked to attend and there has been no interest.

2.3.7.4 Module 4: Thermal comfort

This module is focused on the thermal environment of buildings. It defines thermal comfort for a human body and how to model it. It explains factors and values that form the perception of thermal comfort.

2.3.7.5 Module 5: SZEB framework module and local architectural regulations

This module has not been delivered due to the fact that no trainers have passed the exam during “Train the Trainer Workshops” in 2015. No one from the trainees have asked to attend this specific module.

2.3.7.6 Module 6: nZEB simulation and design softwares

This module presented to the participants a simulation tool for the design of nZEB and energy efficient buildings.

2.3.7.7 Module 7: Low carbon technology and automation for nZEB

This module trained professionals in learning the technologies of the various sub-systems and installations as well as their cost and effectiveness.

2.3.7.8 Module 8: Retrofitting towards nZEB

The aim of this training module was to educate all interested parties in the way to address the existing building stock and its possibilities for transformation into nZEB.

2.3.7.9 Module 9: Construction management and field supervision of nZEB

This module trained the participants in construction management and field supervision according to the latest construction standards for nZEB

2.3.7.10 Module 10: Preparation of funding schemes and other incentives for nZEB

This module has not been delivered due to the fact that no one from the professionals have asked to attend and there has been no interest.

2.3.8 Table It1

	class Starding Date	class Closing Date	Name of Trainer	Preparation hours	Classroom hours and E-learning hours	Exams hour	Location	Number of classroom participants	Number of e-learning participants
1st training course									
Module 1: nZEB Basic module	03/06/2016	03/06/2016	ANTONIO PROVENZANO	2	2	1	Vibo Valentia	204	0
Module 2: nZEB Advanced module	03/06/2016	03/06/2016	ANTONIO PROVENZANO	2	2	1	Vibo Valentia	204	0
Module 6:	03/06/2016	03/06/2016	SERAFINO MARCHESE	2	2	1	Vibo Valentia	204	0
Module 8:	03/06/2016	03/06/2016	SERAFINO MARCHESE	2	2	1	Vibo Valentia	204	0
2nd training course									
Module 1: nZEB Basic module	06/06/2016	06/06/2016	CARLO ROSSINI	2	3	1	Naples	102	0
Module 2: nZEB Advanced module	06/06/2016	06/06/2016	CARLO ROSSINI	2	3	1	Naples	115	0
Module 4:	20/06/2016	20/06/2016	CARLO ROSSINI	2	3	1	Naples	102	0
Module 6:	20/06/2016	20/06/2016	CARLO ROSSINI	2	3	1	Naples	119	0
Module 7:	11/07/2016	11/07/2016	CARLO ROSSINI	2	3	1	Naples	97	0
Module 8:	11/07/2016	11/07/2016	CARLO ROSSINI	2	3	1	Naples	96	0
3rd training course									
Module 1: nZEB Basic module	16/06/2016	16/06/2016	CARLO ROSSINI	2	4	1	Rimini	40	0
Module 2: nZEB Advanced module	16/06/2016	16/06/2016	CARLO ROSSINI	2	4	1	Rimini	40	0
Module 6:	17/06/2016	17/06/2016	CARLO ROSSINI	2	4	1	Rimini	40	0
Module 7:	17/06/2016	17/06/2016	CARLO ROSSINI	2	4	1	Rimini	40	0
4th training course									
Module 1: nZEB Basic module	01/07/2016	01/07/2016	CARLO ROSSINI	2	4	1	Milano	34	0
Module 2: nZEB Advanced module	01/07/2016	01/07/2016	CARLO ROSSINI	2	4	1	Milano	34	0
Module 4:	08/07/2016	08/07/2016	CARLO ROSSINI	2	4	1	Milano	34	0
Module 9:	08/07/2016	08/07/2016	CARLO ROSSINI	2	4	1	Milano	34	0
5th training course									
Module 1: nZEB Basic module	11/07/2016	11/07/2016	SUSANNA SERAFINI	2	4	1	Siracusa	70	0
Module 2: nZEB Advanced module	11/07/2016	11/07/2016	SUSANNA SERAFINI	2	4	1	Siracusa	70	0
Module 6:	12/07/2016	12/07/2016	SUSANNA SERAFINI	2	4	1	Siracusa	70	0
Module 8:	12/07/2016	12/07/2016	SUSANNA SERAFINI	2	4	1	Siracusa	70	0
6th training course									
Module 1: nZEB Basic module	26/10/2016	26/10/2016	SERAFINO MARCHESE	2	4	1	Catanzaro	279	0
Module 2: nZEB Advanced module	26/10/2016	26/10/2016	SERAFINO MARCHESE	2	4	1	Catanzaro	279	0
Module 4:	27/10/2016	27/10/2016	SERAFINO MARCHESE	2	4	1	Catanzaro	279	0
Module 6:	27/10/2016	27/10/2016	SERAFINO MARCHESE	2	4	1	Catanzaro	279	0
7th training course									
Module 1: nZEB Basic module	21/11/2016	21/11/2016	SUSANNA SERAFINI	2	2	1	Ragusa	62	0
Module 2: nZEB Advanced module	21/11/2016	21/11/2016	SUSANNA SERAFINI	2	2	1	Ragusa	62	0
Module 6:	21/11/2016	21/11/2016	SUSANNA SERAFINI	2	2	1	Ragusa	62	0
Module 8: Retrofitting towards nZEB	21/11/2016	21/11/2016	SUSANNA SERAFINI	2	2	1	Ragusa	62	0

8th training course									
Module 1: nZEB Basic module	13/12/2016	13/12/2016	SERAFINO MARCHESE	2	4	1	Catanzaro	206	0
Module 2: nZEB Advanced module	13/12/2016	13/12/2016	SERAFINO MARCHESE	2	4	1	Catanzaro	206	0
Module 4:	14/12/2016	14/12/2016	SERAFINO MARCHESE	2	4	1	Catanzaro	206	0
Module 6:	14/12/2016	14/12/2016	SERAFINO MARCHESE	2	4	1	Catanzaro	206	0

2.4 Portugal

In Portugal the Subtask leader of Task 5.2 was UMinho. UMinho and IST-ID were responsible for the organization of the Pilot Training Seminars at national level. In Portugal, nine Editions were planned, three in Oeiras (in the metropolitan area of Lisbon), one in Vila Nova de Gaia (in the metropolitan area of Porto), two in Guimarães, one in Covilhã, one in Faro and one in Ponta Delgada (Azores Archipelago). Figure P1 shows the locals were the seminars took place.

Figure P1 – Location of the Seminars in Portugal

2.4.1 Overview

The trainers trained in the previous task, Task 5.1, have used the material produced in WP3 and the portal developed in WP4 to train the target professionals. The seminars realization was disseminated appropriately, with the cooperation of the National Support Group and the dissemination performed, so as to achieve the maximum participation of professionals.

From the 681 persons that showed interest in the training through the submission of the application trough the SouthZEB website, 303 were allocated to a Seminar. In total 277 professionals (architects, engineers, municipality workers) were trained and certified. All ten training modules were offered to the participants. All trained professionals participated in the SouthZEB assessment exams, in order to get the corresponding certification. In general, the exams were organised one week after the training class.

2.4.2 Selected venue

The selected venues for the Pilot Training Seminars were the Instituto Superior Técnico (IST) in Taguspark campus in Oeiras, Gaiurb - Urbanismo e Habitação, EM (Gaiurb) facilities in Vila Nova de Gaia, University of Minho (UMinho) facilities in Campus de Azurém in Guimarães, Universidade da Beira Interior (UBI) facilities in Covilhã, University of Algarve (UAlg) facilities in Faro and the Laboratório Regional de Engenharia Civil (LREC) facilities in Ponta Delgada (Azores Archipelago) (Figure P1). These locations cover almost all the country (only Madeira Archipelago was not covered). The exams took place in the same venues.

All the locations had the proper structures to support the seminars (classrooms and support systems and installations, Internet access etc.).

2.4.3 Date Scheduling

The seminars in Portugal took place between 25th of January 2016 and 25th of May 2016, the exams took place between February and June. The exact dates of the seminars and exams can be seen in Figures P2 to P6 that show the schedule of the different editions of the Seminars.

The Seminars run from Monday to Friday (9 am to 6 pm) in Lisbon, Vila Nova de Gaia and Guimarães, on Wednesdays and Thursdays (7:00 pm to 11:30 pm) in Faro, from Wednesday to Thursday (7 pm to 11 pm) Friday (from 2 pm to 11 pm) and Saturday (9 am to 6 pm) in Covilhã, and on Wednesdays and Fridays (9 am to 6 pm) in Ponta Delgada. In general, the exams took place one week after the modules seminars.

1ª Edição SouthZEB - IST, Oeiras

9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h
25/Jan, Segunda-feira		26/Jan, Terça-feira		27/Jan, Quarta-feira		28/Jan, Quinta-feira	
M1	M1	M1		M2	M2	M2	M2
1/Fev, Segunda-feira		2/Fev, Terça-feira		3/Fev, Quarta-feira		4/Fev, Quinta-feira	
M4	M4	M5	M5	M8	M8	M8	M8
25/Fev, Quinta-feira		26/Fev, Sexta-feira					
16h - Exame M1		15h - Exame M4					
17h - Exame M2		16h - Exame M5					
		17h - Exame M8					

3ª Edição SouthZEB - IST, Oeiras

9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h
						11/Fev, Quinta-feira		12/Fev, Sexta-feira	
						M1	M1	M1	
15/Fev, Segunda-feira		16/Fev, Terça-feira		17/Fev, Quarta-feira		18/Fev, Quinta-feira		19/Fev, Sexta-feira	
M2	M2	M2	M2			M7	M7	M7	
22/Fev, Segunda-feira		23/Fev, Terça-feira		24/Fev, Quarta-feira		25/Fev, Quinta-feira		26/Fev, Sexta-feira	
M8	M8	M8	M8	M10	M10		16h - Exame M1		15h - Exame M7
							17h - Exame M2		16h - Exame M10
									17h - Exame M8

7ª Edição SouthZEB - IST, Oeiras

9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h
						10/Mar, Quinta-feira		11/Mar, Sexta-feira	
						M1	M1	M1	
14/Mar, Segunda-feira		15/Mar, Terça-feira		16/Mar, Quarta-feira		17/Mar, Quinta-feira		18/Mar, Sexta-feira	
M2	M2	M2	M2	M3	M3	M6	M6	M6	M6
21/Mar, Segunda-feira		22/Mar, Terça-feira							
M9	M9	M9	M9						
				6/Abr, Quarta-feira		7/Abr, Quinta-feira		8/Abr, Sexta-feira	
					16h - Exame M1		16h - Exame M3		17h - Exame M9
					17h - Exame M2		17h - Exame M6		

Figure P2 – Calendar of the Seminars that took place in Lisbon

Calendarização 2ª Edição SouthZEB - Gaiurb, Vila Nova de Gaia

9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h
1/Fev, Segunda-feira		2/Fev, Terça-feira		3/Fev, Quarta-feira		4/Fev, Quinta-feira		5/Fev, Sexta-feira	
M1	**M1**	**M1**		**M2**	**M2**	**M2**	**M2**	**M3**	**M3**
8/Fev, Segunda-feira		9/Fev, Terça-feira		10/Fev, Quarta-feira		11/Fev, Quinta-feira		12/Fev, Sexta-feira	
		Carnaval		**M4**	**M4**	**M5**	**M5**	**M10**	**M10**
15/Fev, Segunda-feira		16/Fev, Terça-feira		17/Fev, Quarta-feira		18/Fev, Quinta-feira		19/Fev, Sexta-feira	
M8	**M8**	**M8**	**M8**	**M6**	**M6**	**M6**	**M6**	**Exame M1/M2/M3**	
22/Fev, Segunda-feira		23/Fev, Terça-feira		24/Fev, Quarta-feira		25/Fev, Quinta-feira		26/Fev, Sexta-feira	
M9	**M9**	**M9**	**M9**	**M7**	**M7**	**M7**	**Exame M4/M5**	**Exame M10/M8**	
29/Fev, Segunda-feira		1/Mar, Terça-feira		2/Mar, Quarta-feira		3/Mar, Quinta-feira		4/Mar, Sexta-feira	
								Exame M6/M7/M9	

Calendarização 4ª Edição SouthZEB - Universidade do Minho, Guimarães

9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h
29/Fev, Segunda-feira		1/Mar, Terça-feira		2/Mar, Quarta-feira		3/Mar, Quinta-feira		4/Mar, Sexta-feira	
M1	**M1**	**M1**		**M2**	**M2**	**M2**	**M2**	**M3**	**M3**
7/Mar, Segunda-feira		8/Mar, Terça-feira		9/Mar, Quarta-feira		10/Mar, Quinta-feira		11/Mar, Sexta-feira	
M4	**M4**	**M5**	**M5**	**M6**	**M6**	**M6**	**M6**	**M10**	**M10**
14/Mar, Segunda-feira		15/Mar, Terça-feira		16/Mar, Quarta-feira		17/Mar, Quinta-feira		18/Mar, Sexta-feira	
M7	**M7**	**M7**		**M8**	**M8**	**M8**	**M8**		**Exame M1/M2/M3**
21/Mar, Segunda-feira		22/Mar, Terça-feira		23/Mar, Quarta-feira		24/Mar, Quinta-feira		25/Mar, Sexta-feira	
Exame M4/M5/M6		**Exame M7/M8/M10**						**Páscoa**	
04/Abr, Segunda-feira		05/Abr, Terça-feira		06/Abr, Quarta-feira		07/Abr, Quinta-feira		08/Abr, Sexta-feira	
M9	**M9**	**M9**	**M9**						
11/Abr, Segunda-feira		12/Abr, Terça-feira		13/Abr, Quarta-feira		14/Abr, Quinta-feira		15/Abr, Sexta-feira	
							Exame M9		

Calendarização 6ª Edição SouthZEB - Universidade do Minho, Guimarães

9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h	9h-13h	14h-18h
04/Abr, Segunda-feira		05/Abr, Terça-feira		06/Abr, Quarta-feira		07/Abr, Quinta-feira		08/Abr, Sexta-feira	
				M1	**M1**	**M1**		**M5**	**M5**
11/Abr, Segunda-feira		12/Abr, Terça-feira		13/Abr, Quarta-feira		14/Abr, Quinta-feira		15/Abr, Sexta-feira	
M2	**M2**	**M2**	**M2**	**M6**	**M6**	**M6**	**M6**	**M3**	**M3**
18/Abr, Segunda-feira		19/Abr, Terça-feira		20/Abr, Quarta-feira		21/Abr, Quinta-feira		22/Abr, Sexta-feira	
M8	**M8**	**M8**	**M8**	**M10**	**M10**	**M7**	**M7**	**M7**	**Exame M1/M2/M5**
25/Abr, Segunda-feira		26/Abr, Terça-feira		27/Abr, Quarta-feira		28/Abr, Quinta-feira		29/Abr, Sexta-feira	
Feriado		**M9**	**M9**	**M9**	**M9**	**M4**	**M4**		**Exame M6/M3/M7**
2/Maio, Segunda-feira		3/Maio, Terça-feira		4/Maio, Quarta-feira		5/Maio, Quinta-feira		6/Maio, Sexta-feira	
								Exame M8/M10	**Exame M9/M4**

Figure P3 – Calendar of the Seminars that took place in Vila Nova de Gaia and Guimarães

Calendarização 5ª Edição SouthZEB- UALg, Faro

Fevereiro 2016

Domingo	Segunda-feira	Terça-feira	Quarta-feira	Quinta-feira	Sexta-feira	Sábado
			19h-23h30	19h-23h30	19h-23h30	
	1	2	3	4	5	6
7	8	9	10	11	12	13
		Carnaval				
14	15	16	17	18	19	20
			M1	**M1**		
21	22	23	24	25	26	27
			M1			
28	29					

Março 2016

Domingo	Segunda-feira	Terça-feira	Quarta-feira	Quinta-feira	Sexta-feira	Sábado
			19h-23h30	19h-23h30	19h-23h30	
		1	2	3	4	5
6	7	8	9	10	11	12
			M2	**M2**		
13	14	15	16	17	18	19
			M2	**M2**		
20	21	22	23	24	25	26
					Páscoa	
27	28	29	30	31		

Abril 2016

Domingo	Segunda-feira	Terça-feira	Quarta-feira	Quinta-feira	Sexta-feira	Sábado
			19h-23h30	19h-23h30	19h-23h30	
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
			M5	**M5**		
17	18	19	20	21	22	23
24	25	26	27	28	29	30
	25 de Abril					

Maio 2016

Domingo	Segunda-feira	Terça-feira	Quarta-feira	Quinta-feira	Sexta-feira	Sábado
			19h-23h30	19h-23h30	19h-23h30	
1	2	3	4	5	6	7
8	9	10	11	12	13	14
			M8	**M8**		
15	16	17	18	19	20	21
			M8	**M8**		
22	23	24	25	26	27	28
29	30	31				

Junho 2016

Domingo	Segunda-feira	Terça-feira	Quarta-feira	Quinta-feira	Sexta-feira	Sábado
			19h-21h00	19h-21h00		
			1	2	3	4
			Exame M1/M2	**Exame M5/M8**		

Figure P4 – Calendar of the Seminars in Faro

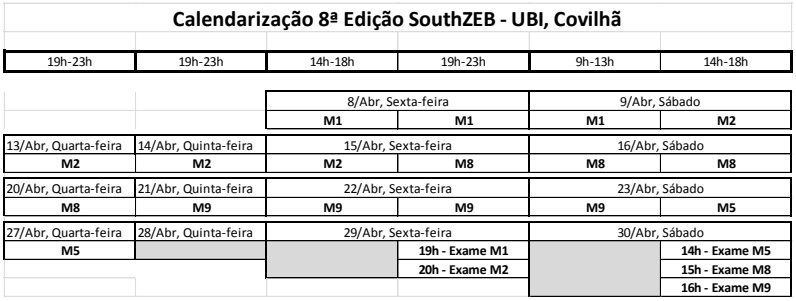


Figure P5 – Calendar of the Seminars that took place in Covilhã

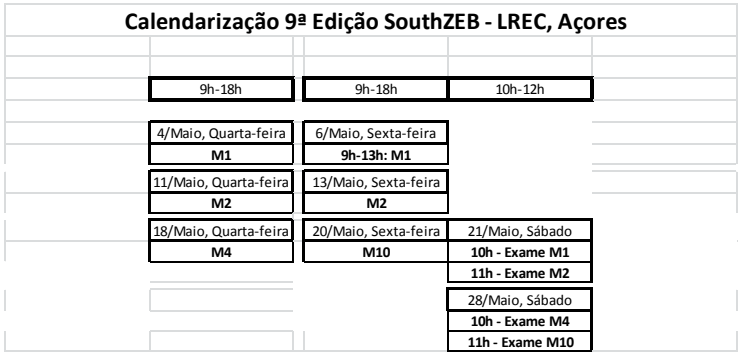


Figure P6 – Calendar of the Seminars in Ponta Delgada, Azores

Table P1 lists the number of certified trainees per module and per course edition.

Table P1 – Number of certified trainees per module

Edition	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	Total
Module 1: nZEB Basic module	35	49	32	30	20	38	28	40	5	277
Module 2: nZEB Advanced module	35	49	32	30	20	38	28	40	5	277
Module 3: Thermal bridging		20		19		18	25			82
Module 4: Thermal comfort	33	29		19		18			5	104
Module 5: SouthZEB framework module and local architectural regulations	33	17		20	20	21		40		151
Module 6: nZEB simulation and design software		20		24		20	25			89
Module 7: Low carbon technology and automation for nZEB		18	28	19		13				78
Module 8: Retrofitting towards nZEB	35	33	32	25	20	23		40		208
Module 9: Construction management and field supervision of nZEB		19		11		14	24	38		106
Module 10: Preparation of funding schemes and other incentives for nZEB		22	29	17		19			5	92

2.4.4 Promoting the Pilot training seminars

In order to advertise the Pilot Training Seminars, it was sent an email to all the institutions from the National Support Group asking them to disseminate the seminars between their members. The Project and the Seminars were also disseminated in the Portuguese municipalities, regional development agencies and municipal and regional energy agencies.

Additionally the seminars were also presented in several events where UMinho and IST participated, as for example the V Environment and Energy Fair of Ponte de Lima, the UMinho School of

Engineering Day and advertised in magazines and web sites (see, for example, the article in Edifícios e Energia magazine: http://edificioseenergia.pt/pt/noticia/southzeb-oferece-formacao-sobre-nzeb767).

2.4.5 Methodology

In Portugal, seminars were held in Instituto Superior Técnico in Taguspark campus in Oeiras, Gaiurb facilities in Vila Nova de Gaia, University of Minho facilities in Campus de Azurém in Guimarães, Universidade da Beira Interior facilities in Covilhã, University of Algarve facilities in Faro and the Laboratório Regional de Engenharia Civil facilities in Ponta Delgada (Azores Archipelago). The exams took place in the same venues.

All ten training modules were available to the interested professionals. Trainers, trained in the previous task (Task 5.1) transferred their knowledge to the professionals. These training sections were offered free of charge for the participants, since they are considered a pilot training.

All the educational material of all modules is available in the SouthZEB e-learning platform.

2.4.6 Applications and selection of participants

Following the promotion of the seminars, around 681 persons showed interest in the training. Through CV analysis, 303 applicants were allocated to a Seminar edition. All selected applications meet the program requirements.

Each trainee selected, in the submission form available in the project web site (Figure P7), the modules he or she wanted to participate (Module 1 and Module 2 were compulsory and they had to choose at least 2 more modules out of the 8).

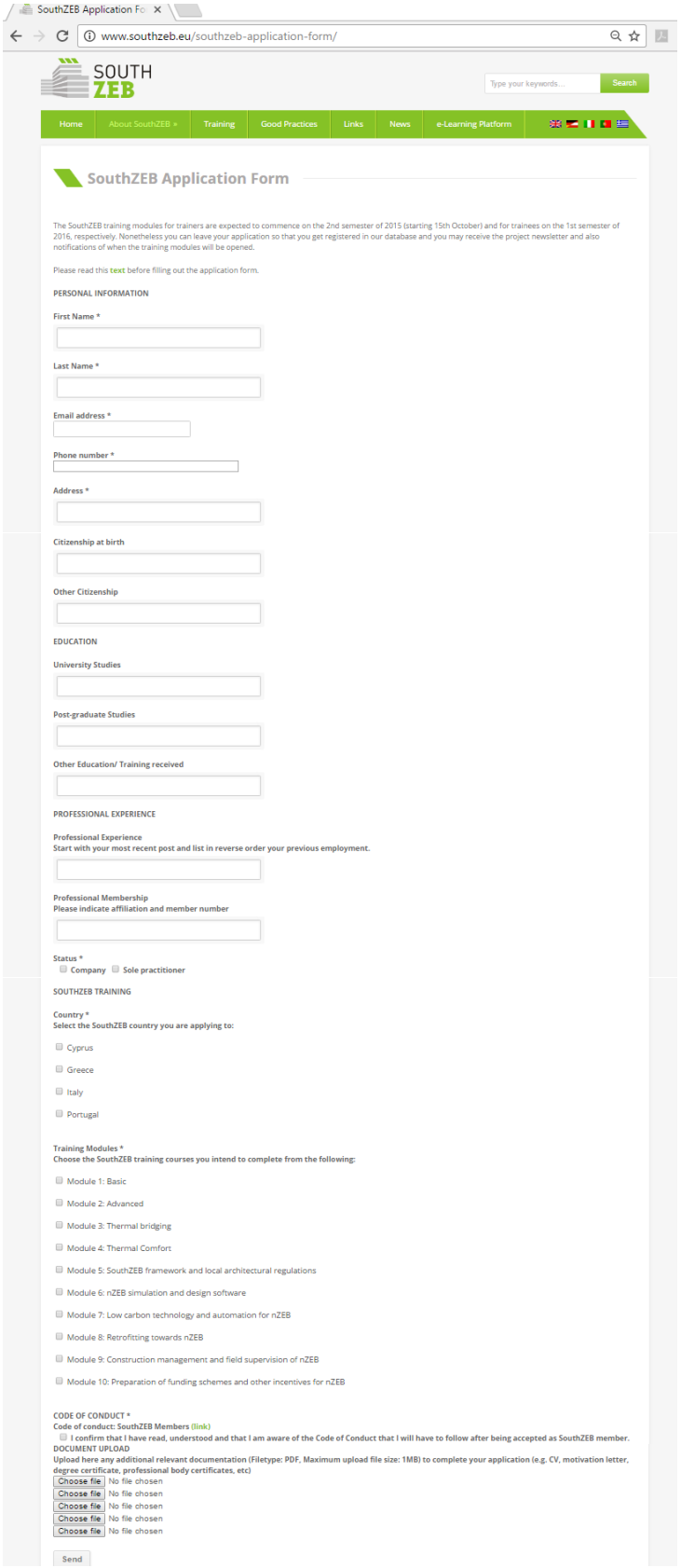

SouthZEB Application Fo
www.southzeb.eu/southzeb-application-form/
SOUTH ZEB
Type your keywords...
Search
Home
About SouthZEB »
Training
Good Practices
Links
News
e-Learning Platform
SouthZEB Application Form
The SouthZEB training modules for trainers are expected to commence on the 2nd semester of 2015 (starting 15th October) and for trainees on the 1st semester of 2016, respectively. Nonetheless you can leave your application so that you get registered in our database and you may receive the project newsletter and also notifications of when the training modules will be opened.
Please read this text before filling out the application form.
PERSONAL INFORMATION
First Name *
Last Name *
Email address *
Phone number *
Address *
Citizenship at birth
Other Citizenship
EDUCATION
University Studies
Post-graduate Studies
Other Education/ Training received
PROFESSIONAL EXPERIENCE
Professional Experience
Start with your most recent post and list in reverse order your previous employment.
Professional Membership
Please indicate affiliation and member number
Status *
Company
Sole practitioner
SOUTHZEB TRAINING
Country *
Select the SouthZEB country you are applying to:
Cyprus
Greece
Italy
Portugal
Training Modules *
Choose the SouthZEB training courses you intend to complete from the following:
Module 1: Basic
Module 2: Advanced
Module 3: Thermal bridging
Module 4: Thermal Comfort
Module 5: SouthZEB framework and local architectural regulations
Module 6: nZEB simulation and design software
Module 7: Low carbon technology and automation for nZEB
Module 8: Retrofitting towards nZEB
Module 9: Construction management and field supervision of nZEB
Module 10: Preparation of funding schemes and other incentives for nZEB
CODE OF CONDUCT *
Code of conduct: SouthZEB Members (link)
I confirm that I have read, understood and that I am aware of the Code of Conduct that I will have to follow after being accepted as SouthZEB member.
DOCUMENT UPLOAD
Upload here any additional relevant documentation (Filetype: PDF, Maximum upload file size: 1MB) to complete your application (e.g. CV, motivation letter, degree certificate, professional body certificates, etc)
Choose file No file chosen
Choose file No file chosen
Choose file No file chosen
Choose file No file chosen
Choose file No file chosen
Send

Figure P7 – Application form of the SouthZEB Pilot Training Seminars

2.4.7 Selection of teachers/trainers

In order to ensure a high-quality delivery of the training material, the certified nZEB trainers, qualified in the “train the trainer workshops” of Task 5.1 were selected for the delivery of the pilot training seminars. The selected trainers for each module can be seen in Tables P2 to P10, for each of the Pilot Training Seminars.

Additionally, the following was considered regarding the selection of trainers:

- Experience and deep knowledge in the topic of each module;
- Teaching experience and capacity;
- Academic qualifications and degrees;

There were 32 trainers enrolled in the pilot training seminars, 17 in Lisbon, three of them also in Covilhã, 12 in Vila Nova the Gaia and Guimarães, 2 in Faro and 1 in Ponta Delgada.

2.4.8 Running of the pilot training seminars

The training seminars run efficiently in accordance with schedules presented in Figures P2 to P6. The duration of each module was considered sufficient.

Most of the participants attending the workshops were really keen on the material but did point out a few things which could be improved in their opinion. The main comments on the training modules contents were similar in all Seminars Editions. Both trainers and trainees refer:

- Some topics are repeated in more than one Module and even in the same module;

  This should not occur in the same module. The topics covered in Module 1 and 2, that are mandatory, should not be repeated in the other modules.
- Module 1 does not emphasise the nZEB concept and some concepts could be explained in more detail.
- Module 1 is too directed to energy assessment technicians.
- Some topics that are in Module 2 and 5 related to the nZEB concept, should be at the beginning of Module 1;
- Some topics are too generic and others are presented with too much detail (mainly HVAC related topics);
- Some of the solutions presented are more specific for center and north of Europe than to the target south countries;
- More solutions targeted to nZEB in southern countries, and specifically to Portugal, should be presented;
- Some Modules need a practical application of the concepts presented;
- In some modules, standards and legislation are too detailed;

  For example, for Module 4 it was referred that calculation models were too detailed. Module 6 should be applied in the nZEB context.
- In some modules, case studies and best practices examples are needed;
- Some seminars need to be more focused on Portuguese national context and legislation.

- Some trainees referred that the class should be more cohesive as the interest of architects and especially mechanical engineers are very different;
- Some slides are not well organized. Too much information not relevant to nZEB is included in some presentations;
- Some information, especially in Modules 1 and 2 are not clear;
- In Module 6 the practical component of the module was highlighted.

Some measures taken to improve the modules content are:

- Modules content should be revised and the topics that are duplicated in the same presentation and in Modules 1 and 2 and in the other modules should be presented only once.
- Module 1 should have a larger emphasis in the nZEB concept.
- More focus on the nZEB and the relation of the topics of the modules with the nZEB concept should be presented.
- The national context and legislation should have more prominence.
- More examples of nZEB should be included, especially in south European countries;
- Inclusion of example of solutions (technologies, materials and solutions, both to envelope and systems) to reach nZEB should be included in the Modules.

2.4.8.1 Module 1: nZEB Basic module

During the delivery of this training module the South nZEB concept and the principles of a near zero energy construction (applied physics basics, thermal insulation, materials and construction) were presented.

Regarding the seminars in Portugal, special emphasis was made on the standards and roadmaps applied at international and national level. The participants were particularly interested on the methodology that should be followed in order to define nZEB levels in Portugal. Additionally, the participants intended to know what materials and technologies were more suitable to reach nZEB levels in Portugal. The participants referred that the module is too directed to energy assessment technicians and that it is given too much importance to the HVAC systems and very less attention to passive measures to improve building performance. Moreover, the participants referred that it would be interesting to introduce concepts and examples of NZEB projects and that M1 need to be more focused on the national context.

In total 277 professionals attended the seminars of this module.

2.4.8.2 Module 2: nZEB Advance module

The advanced module explained further the nZEB design and building, including technical physics with respect to humidity, building materials, construction techniques, installation and use of renewable energy sources. The module includes a practical workshop for the trainees.

Regarding the seminars in Portugal this module was considered to be very focused on HVAC systems and that the contents should be more adapted to southern Europe and national context. Additionally, it was referred that the connection between Life Cycle Assessment and nZEB was not presented. The most valued aspects were related to the passive solar technologies and renewable technologies and the natural lightning.

In total 277 professionals attended this module.

2.4.8.3 Module 3: Thermal bridging

Module 3 focusses on the building fabric performance. It presents the drivers for, and benefit of, improving building fabric performance, as well as highlighting the risks that poor building fabric design and/or construction can present. It also addresses how building fabric performance can be assessed including information on the evaluation and calculation of thermal performance. It has a number of practical exercises to ensure attendees have a fundamental understanding of the theory comprising key building performance issues.

Regarding the seminars in Portugal the trainees recognized the importance of the thermal bridges treatment especially during retrofit works as a significant amount of the Portuguese building stock was built without thermal behaviour concerns. They referred the relevance of detailing the different types of thermal bridges, with a computational analysis.

In total 82 professionals attended this module.

2.4.8.4 Module 4: Thermal comfort

This module is focused on the thermal environment of buildings. It defines thermal comfort for a human body and how to model it. It explains factors and values that form the perception of thermal comfort, its assessment methods, adaptive models and the way thermal comfort is related and can be achieved in energy efficient buildings and especially in nZEB.

Regarding the seminars in Portugal trainers and trainees discussed the impact of achieving thermal comfort conditions in the energy performance of buildings, the presentation of various examples of good practices and presentation of thermal comfort simulation tools was valued by the participants.

In total 104 professionals attended this module.

2.4.8.5 Module 5: SZEB framework module and local architectural regulations

This module aimed at presenting the SouthZEB approach for the verification and certification of nZEB in the target countries.

Regarding the seminars of Module 5 in Portugal trainees intended a higher focus on the local architecture and more case studies and exercises. Trainees wanted more details specifically related to the nZEB requirements (local production, maximum needs, etc.).

In total 151 professionals attended this module.

2.4.8.6 Module 6: nZEB simulation and design softwares

This module presented to the participants a simulation tool for the design of nZEB and energy efficient buildings.

Regarding the seminars in Portugal the practical component of this module was highlighted. The use of energy simulation tools to estimate the energy efficiency of a building, to analyse energy efficiency measures, to compare different design options (use of envelope insulation, advanced glazing, natural ventilation, passive solutions, and high performance HVAC systems among many others) was valued as it allows the technicians to present to the clients' different design options.

The duration of this module was 30 hours. In total 89 professionals attended this module.

2.4.8.7 Module 7: Low carbon technology and automation for nZEB

This module trained professionals in low carbon technologies crucial to helping achieve ZEBs, in learning the technologies of the various sub-systems and installations, their cost and effectiveness, as well as introducing how to assess the financial performance and cost effectiveness of the different systems.

Regarding the seminars in Portugal the aspects more relevant were the storage systems (batteries and their application, vehicles and PV systems), as well as automation systems that are very important too. The discussion occurred also related to the various low carbon systems suited to Portugal and the key design, installation, operation and maintenance issues.

In total 78 professionals attended this module.

2.4.8.8 Module 8: Retrofitting towards nZEB

The aim of this training module was to educate all interested parties in the way to address the existing building stock and the way to retrofit the existing building stock towards nZEB considering both energy efficiency and indoor environmental quality. Assessment and energy audit techniques in existing buildings and the cost optimality of nZEB renovation technical solutions are also part of the training.

Regarding the seminars in Portugal the “Optimal Cost Solutions Criteria”, the practical session on this subject, addressing financial interest assessment tools of energy rehabilitation measures, and the difference of these solutions regarding the nZEB solutions were the most discussed aspects. The trainees understood the importance of integrating all the fields of knowledge to achieve the nZEB. The options presented and available to perform rehabilitations to improve performance and indoor thermal comfort without disregarding aspects such as indoor air quality and lighting were also addressed. Practical part of the module was considered very useful.

In total 208 professionals attended this module.

2.4.8.9 Module 9: Construction management and field supervision of nZEB

This module trained the participants in construction management and field supervision according to the latest construction standards for nZEB.

Regarding the seminars in Portugal Building Information Modelling (BIM) was the topic that generated most interest to the participants.

In total 106 professionals attended this module.

2.4.8.10 Module 10: Preparation of funding schemes and other incentives for nZEB

This module aimed at local and national authorities’ representatives that participated in the sessions to be able to design new funding/promotion schemes for nZEB. The mechanisms and incentive schemes designed to facilitate the increased uptake of energy efficiency and low carbon technologies and/or green improvement plans for buildings were also presented.

In the seminars in Portugal the discussion was related to the incentives applied to Portugal and the need of introducing more examples of incentives applied in southern Europe countries, with detail at the level of operation, as well as evaluation of the measures with higher impact.

In total 92 professionals attended this module.

2.4.9 Pilot Training Seminars General Data

Tables P2 to P10 list the trainers, dates, and the number of enrolled trainees of each one of the Seminars. In Portugal only classroom training took place.

Table P2 – Data related to the Seminars – 1st Edition, IST - Oeiras

	Class Starting Date	Class Closing Date	Name of Trainer	Preparation hours	Classroom hours	Study hours	Number of participants
Module 1: nZEB Basic module	25/1/2016	4/2/2016	Patrícia Botelho; Alda Serradeiro	4	8	8	39
Module 2: nZEB Advanced module	25/1/2016	4/2/2016	Ana Bastos; Alda Serradeiro; Patrícia Botelho; Hugo Cortes	4	16	20	38
Module 4: Thermal comfort	25/1/2016	4/2/2016	João Costa; Ana Bastos	4	8	8	38
Module 5: SouthZEB framework module and local architectural regulations	25/1/2016	4/2/2016	Paula Neves; Patrícia Botelho	4	8	18	37
Module 8: Retrofitting towards nZEB	25/1/2016	4/2/2016	Paula Neves; Patrícia Botelho; Paulo Lobo; Pedro Flores	4	16	20	38

Table P3 – Data related to the Seminars – 2nd Edition, Gaiurb, Vila Nova de Gaia

	Class Starting Date	Class Closing Date	Name of Trainer	Preparation hours	Classroom hours	Study hours	Number of participants
Module 1: nZEB Basic module	1/2/2016	25/2/2016	Alexandre Reis, Vitor Gil	4	12	4	49
Module 2: nZEB Advanced module	1/2/2016	25/2/2016	Alexandre Reis, Carla Pires	4	16	20	49
Module 3: Thermal bridging	1/2/2016	25/2/2016	José Nunes	4	8	8	25
Module 4: Thermal comfort	1/2/2016	25/2/2016	Lurdes Duarte	4	8	8	36
Module 5: SouthZEB framework module and local architectural regulations	1/2/2016	25/2/2016	Marco Ferreira, Carla Pires	4	8	18	23
Module 6: nZEB simulation and design software	1/2/2016	25/2/2016	Romeu Vicente, Ricardo Almeida, Fernando Moura	4	16	10	21
Module 7: Low carbon technology and automation for nZEB	1/2/2016	25/2/2016	João Carlos Bezerra, Lurdes Duarte	4	12	4	20
Module 8: Retrofitting towards nZEB	1/2/2016	25/2/2016	Alexandre Reis, Marco Ferreira	4	16	20	36

Module 9: Construction management and field supervision of nZEB	1/2/2016	25/2/2016	João C. Bezerra, Fernando Moura	4	16	20	21
Module 10: Preparation of funding schemes and other incentives for nZEB	1/2/2016	25/2/2016	João C. Bezerra, Fernando Moura	4	8	8	31

Table P4 – Data related to the Seminars – 3rd Edition, IST - Oeiras

	Class Starting Date	Class Closing Date	Name of Trainer	Preparation hours	Classroom hours	Study hours	Number of participants
Module 1: nZEB Basic module	11/2/2016	24/2/2016	João Costa; Hugo Cortes	4	12	4	33
Module 2: nZEB Advanced module	11/2/2016	24/2/2016	Agostinho Gonçalves; Manuel Carvalhosa; Alda Serradeiro	4	16	20	33
Module 7: Low carbon technology and automation for nZEB	11/2/2016	24/2/2016	Pedro Flores; Paula Neves	4	12	4	29
Module 8: Retrofitting towards nZEB	11/2/2016	24/2/2016	João Costa; Agostinho Gonçalves; Alda Serradeiro	4	16	20	31
Module 10: Preparation of funding schemes and other incentives for nZEB	11/2/2016	24/2/2016	Ana Bastos	4	8	8	29

Table P5 – Data related to the Seminars – 4th Edition, UMinho, Guimarães

	Class Starting Date	Class Closing Date	Name of Trainer	Preparation hours	Classroom hours	Study hours	Number of participants
Module 1: nZEB Basic module	29/2/2016	5/4/2016	Vitor Gil, Tiago Fonseca	4	12	4	37
Module 2: nZEB Advanced module	29/2/2016	5/4/2016	Carla Pires, Filipe Cunha, Tiago Fonseca	4	16	20	36
Module 3: Thermal bridging	29/2/2016	5/4/2016	José Nunes	4	8	8	17
Module 4: Thermal comfort	29/2/2016	5/4/2016	Filipe Cunha, Tiago Fonseca	4	8	8	19
Module 5: SouthZEB framework module and local architectural regulations	29/2/2016	5/4/2016	Marco Ferreira, Carla Pires	4	8	18	17
Module 6: nZEB simulation and design software	29/2/2016	5/4/2016	Romeu Vicente, Ricardo Almeida	4	16	10	24
Module 7: Low carbon technology and automation for nZEB	29/2/2016	5/4/2016	João Carlos Bezerra, Lurdes Duarte	4	12	4	19
Module 8: Retrofitting towards nZEB	29/2/2016	5/4/2016	Filipe Cunha, Marco Ferreira, Tiago Fonseca	4	16	20	25
Module 9: Construction management and field supervision of nZEB	29/2/2016	5/4/2016	João Carlos Bezerra, Fernando Moura	4	16	20	14

Module 10: Preparation of funding schemes and other incentives for nZEB	29/2/2016	5/4/2016	João Carlos Bezerra, Fernando Moura	4	8	8	14

Table P6 – Data related to the Seminars – 5th Edition, UAlg, Faro

	Class Starting Date	Class Closing Date	Name of Trainer	Preparation hours	Classroom hours	Study hours	Number of participants
Module 1: nZEB Basic module	17/2/2016	26/5/2016	Maria Farinha; Elson Almeida	4	12	4	32
Module 2: nZEB Advanced module	17/2/2016	26/5/2016	Maria Farinha; Elson Almeida	4	16	20	30
Module 5: SouthZEB framework module and local architectural regulations	17/2/2016	26/5/2016	Maria Farinha; Elson Almeida	4	8	18	24
Module 8: Retrofitting towards nZEB	17/2/2016	26/5/2016	Maria Farinha; Elson Almeida	4	16	20	24

Table P7 – Data related to the Seminars – 6th Edition, UMinho, Guimarães

	Class Starting Date	Class Closing Date	Name of Trainer	Preparation hours	Classroom hours	Study hours	Number of participants
Module 1: nZEB Basic module	6/4/2016	28/4/2016	Alexandre Reis, Tiago Fonseca	4	12	4	43
Module 2: nZEB Advanced module	6/4/2016	28/4/2016	Carla Pires, Filipe Cunha, Tiago Fonseca	4	16	20	42
Module 3: Thermal bridging	6/4/2016	28/4/2016	José Nunes	4	8	8	17
Module 4: Thermal comfort	6/4/2016	28/4/2016	Filipe Cunha, Tiago Fonseca	4	8	8	18
Module 5: SouthZEB framework module and local architectural regulations	6/4/2016	28/4/2016	Marco Ferreira, Lurdes Duarte	4	8	18	22
Module 6: nZEB simulation and design software	6/4/2016	28/4/2016	Romeu Vicente, Ricardo Almeida, Fernando Moura	4	16	10	23
Module 7: Low carbon technology and automation for nZEB	6/4/2016	28/4/2016	Alexandre Reis	4	12	4	10
Module 8: Retrofitting towards nZEB	6/4/2016	28/4/2016	Filipe Cunha, Marco Ferreira, Tiago Fonseca	4	16	20	23
Module 9: Construction management and field supervision of nZEB	6/4/2016	28/4/2016	João Carlos Bezerra, Fernando Moura	4	16	20	15
Module 10: Preparation of funding schemes and other incentives for nZEB	6/4/2016	28/4/2016	João Carlos Bezerra, Fernando Moura	4	8	8	18

Table P8 – Data related to the Seminars – 7th Edition, IST - Oeiras

	Class Starting Date	Class Closing Date	Name of Trainer	Preparation hours	Classroom hours	Study hours	Number of participants
Module 1: nZEB Basic module	10/3/2016	22/3/2016	Patrícia Botelho; Susana Lucas; Rodrigo Rodrigues	4	12	4	31
Module 2: nZEB Advanced module	10/3/2016	22/3/2016	Susana Lucas; Cristina Caixias; Virgínia Rebocho; Hugo Cortes	4	16	20	29
Module 3: Thermal bridging	10/3/2016	22/3/2016	Paula Neves	4	8	8	26
Module 6: nZEB simulation and design software	10/3/2016	22/3/2016	Hugo Cortes; Alda Serradeiro	4	16	10	24
Module 9: Construction management and field supervision of nZEB	10/3/2016	22/3/2016	Américo Nunes; Arménio Oliveira; Ricardo Leão	4	16	20	25

Table P9 – Data related to the Seminars – 8th Edition, UBI - Covilhã

	Class Starting Date	Class Closing Date	Name of Trainer	Preparation hours	Classroom hours	Study hours	Number of participants
Module 1: nZEB Basic module	8/4/2016	27/4/2016	Américo Nunes; Arménio Oliveira; Ricardo Leão	4	12	4	43
Module 2: nZEB Advanced module	8/4/2016	27/4/2016	Américo Nunes; Arménio Oliveira; Ricardo Leão	4	16	20	42
Module 5: SouthZEB framework module and local architectural regulations	8/4/2016	27/4/2016	Américo Nunes; Arménio Oliveira; Ricardo Leão	4	8	18	38
Module 8: Retrofitting towards nZEB	8/4/2016	27/4/2016	Américo Nunes; Arménio Oliveira; Ricardo Leão	4	16	20	41
Module 9: Construction management and field supervision of nZEB	8/4/2016	27/4/2016	Américo Nunes; Arménio Oliveira; Ricardo Leão	4	16	20	39

Table P10 – Data related to the Seminars – 9th Edition, LREC - Ponta Delgada, Azores

	Class Starting Date	Class Closing Date	Name of Trainer	Preparation hours	Classroom hours	Study hours	Number of participants
Module 1: nZEB Basic module	4/5/2016	20/5/2016	Rafael Raposo	4	12	4	7
Module 2: nZEB Advanced module	4/5/2016	20/5/2016	Rafael Raposo	4	16	20	7
Module 4: Thermal comfort	4/5/2016	20/5/2016	Rafael Raposo	4	8	8	5
Module 10: Preparation of funding schemes and other incentives for nZEB	4/5/2016	20/5/2016	Rafael Raposo	4	8	8	5

3 Exams and results of the pilot training seminars

The syllabus of the assessment exams was specified on previous work package (WP3.3)

The assessment was not available online, but only through actual exams, organized by each country. The exams were available as a set of questions (a pool of 100 questions), from which the responsible examination body had to select for the actual exam (30 questions).

The exams (both initial and repetitive) were undertaken on completion of the modules under exam conditions, as follows:

- Applicants provided proof of identity (passport, national ID card, photo driving license)
- No communication with any other candidates in any way during the assessment
- All assessment examinations were independent from the others
- All assessment examinations were within a set time period specified by the competent partner.

3.1 Greece

Subtask leader in Greece regarding assessment exams is Eurotraining. The experienced staff of KEK EUROtraining was responsible and all exams ran smoothly.

The exams and the repetitive exams took place in two Greek cities: Athens (1, Veranzerou str.) and Thessaloniki (7-9, Pipsou st.).

3.1.1 Exams and Repetitive exams

The exams were scheduled to take place one week after the the finish of each class.

Trainees who did not pass the had the opportunity to take again the exams. (maximum of three times)

In total 264 people attended the exams, out of which 262 were certified as SouthZEB Designers as shown below. All the exams in Greece took place between March of 2016 and February of 2017. The exact dates can be seen in Table G2 below.

3.1.2 Certified SouthZEB Designers

A “ZEB Designer” certificate was awarded to each trainee that participates in the training modules and that has successfully completed a set of 4 nZEB specific training modules (modules 1 and 2 are compulsory, plus at least two more modules that were selected based on training needs)**.** All ten modules could be completed by trainees, with recognition being given to such achievements in the certification.

The number of certified nZEB Designer per module is resented in table G3

3.1.3 Table G2

Exams in Greece

Exams	Number of days	Dates	Number of participants	Locations	Number of certified trainers
1st class	5	14/3/2016-18/3/2016	20	Veranzerou 1, Athens	20
2nd class	5	14/3/2016-18/3/2016	20	Veranzerou 1, Athens	20
3rd class	5	14/3/2016-18/3/2016	20	Veranzerou 1, Athens	20
4th class	5	18/4/2016-22/4/2016	21	Veranzerou 1, Athens	21
5th class	5	18/4/2016-22/4/2016	21	Veranzerou 1, Athens	21
6th class	5	18/4/2016-22/4/2016	19	Veranzerou 1, Athens	19
7th class	5	23/5/2016-27/5/2016	20	Veranzerou 1, Athens	20
8th class	5	23/5/2016-27/5/2017	20	Veranzerou 1, Athens	20
9th class	5	23/5/2016-27/5/2018	20	Veranzerou 1, Athens & Pipsou 9, Thessaloniki	20
10th class	9	19/7/2016-29/7/2016	20	Veranzerou 1, Athens	20
11th class	9	19/7/2016-29/7/2017	20	Veranzerou 1, Athens	20
12th class	9	19/7/2016-29/7/2018	20	Veranzerou 1, Athens	20
13th class	8	23/1/2017-27/1/2017 and 6/2/17-8/2/17	23	Veranzerou 1, Athens	21

3.1.4 Table G3

Certified Designers in Greece

RESULTS (Trainees-Pilot training sessions)	**Number of certified trainees**
	262
Number of certified trainees per module	
Module 1: nZEB Basic module	**262**
Module 2: nZEB Advanced module	**262**
Module 3: Thermal bridging	**158**
Module 4: Thermal comfort	**150**

Module 5: SouthZEB framework module and local architectural regulations	**127**
Module 6: nZEB simulation and design softwares	**113**
Module 7: Low carbon technology and automation for nZEB	**147**
Module 8: Retrofitting towards nZEB	**133**
Module 9: Construction management and field supervision of nZEB	**119**
Module 10: Preparation of funding schemes and other incentives for nZEB	**150**

Certification Level	**Number of Designers**
Bronze	137
Silver	92
Gold	33
Total	**262**

3.2 Cyprus

The consortium partner in charge of running the assessment exams and repetitive exams in Cyprus was CUT. Exams and repetitive exam days have been organized in both Limassol and Nicosia. The exams run smoothly, without any problems, in both cities.

3.2.1 Exams and Repetitive exams

An one hour exam has been organized at the beginning of each following module (i.e. the exam for module 01 has been organized during the first hour of the first day of delivering the training for module 02). In addition, special examination days were organized, in both Limassol and Nicosia, where the professionals attending the seminars could take an exam on a module, or more, of their choice that they failed initially or could not attend the originally scheduled exam due to work-load related reasons.

Anyone following the seminars could sit the exam of each module at a maximum of three times. The exams in Cyprus took place between April and July 2016. The exact dates can be seen in table C2 below.

3.2.2 Certified SouthZEB Designers

A “SouthZEB Designer” certificate was awarded to each trainee that participated in the training modules and that has successfully completed a set of at least 4 nZEB specific training modules (modules 1 and 2 are compulsory, plus at least two more modules that were selected based on training needs)**.** All ten modules could be completed by trainees, with recognition being given to such achievements in the certification.

In total, 111 professionals attended the exam of at least one module. Out of these 111 professionals, 97 achieved a passing grade in at least one module, while 85 have been certified as “SouthZEB Designers”. More specifically, 11 participants failed to pass any module exam, 12 achieved a passing grade in the exam of 1 module, 2 achieved a passing grade in the exam of 2 modules, 1 achieved a passing grade in the exam of 3 modules, 6 achieved a passing grade in the exam of 4 modules, 5 achieved a passing grade in the exam of 5 modules, 5 achieved a passing grade in the exam of 6 modules, 15 achieved a passing grade in the exam of 7 modules, 13 achieved a passing grade in the exam of 8 modules, 9 achieved a passing grade in the exam of 9 modules and 32 achieved a passing grade in the exam of all 10 modules.

The number of certified nZEB Designers per module is presented in table C3, while the number of certified nZEB Designers per certification level is presented in table C4.

3.2.3 Table C2

Exams in Cyprus

Exams	Number of days	Dates	Number of participants	Location
Module 01 Exam	1	18/04/2016	97	Limassol
Module 02 Exam	1	23/04/2016	77	Limassol
Module 03 Exam	1	04/05/2016	72	Limassol
Module 04 Exam	1	06/05/2016	72	Limassol
Module 07 Exam	1	24/05/2016	66	Limassol
Module 06 Exam	1	26/05/2016	63	Limassol
Exam Repeat - free module selection between Modules 01, 02, 03, 04 and 07	1	28/05/2016	28	Limassol
Module 05 Exam	1	01/06/2016	69	Limassol
Module 07 Exam	1	07/06/2016	16	Nicosia
Module 08 Exam	1	11/06/2016	47	Limassol
Module 10 Exam	1	15/06/2016	72	Limassol
Repeat Exam - free module selection between Modules 01, 02, 03, 04, 05, 07, 08 and 10	1	19/06/2016	43	Limassol
Module 09 Exam	1	25/06/2016	56	Limassol
Repeat Exam - free module selection between Modules 01, 02, 03, 04, 05, 07, 08, 09 and 10	1	02/07/2016	26	Limassol and Nicosia
Repeat Exam - free module selection between Modules 01, 02, 03, 04, 05, 07, 08, 09 and 10	1	09/07/2016	32	Limassol and Nicosia
Repeat Exam - free module selection between Modules 01, 02, 03, 04, 05, 07, 08, 09 and 10 for selected participants (that had passed 3 modules and needed just 1 to be certified)	1	20/07/2016	5	Limassol

3.2.4 Table C3

Certified Designers per module in Cyprus

Number of certified trainees per module	
Module Name	**Number of certified trainees**
Module 1: nZEB Basic module	**85**
Module 2: nZEB Advanced module	**85**

Module 3: Thermal bridging	**77**
Module 4: Thermal comfort	**75**
Module 5: SouthZEB framework module and local architectural regulations	**76**
Module 6: nZEB simulation and design softwares	**53**
Module 7: Low carbon technology and automation for nZEB	**70**
Module 8: Retrofitting towards nZEB	**45**
Module 9: Construction management and field supervision of nZEB	**38**
Module 10: Preparation of funding schemes and other incentives for nZEB	**76**
Total	**85**

3.2.5 Table C4

Certified Designers per certification level in Cyprus

Certification Level	Number of Designers
Bronze	16
Silver	37
Gold	32
Total	85

3.3 Italy

Subtask leader in Italy regarding assessment exams is DTTN. The exams' sessions ran smoothly and took place at the end of each training session.

3.3.1 Exams and Repetitive exams

The exams were scheduled to take place at the end of each training session seminar.

Trainees who did not pass the first time had the opportunity to try them again (maximum of three times).

In total 1.010 people attended the exams, out of which 932 were certified as "SouthZEB designer" as shown below. All the exams in Italy took place between June and December 2016. The exact dates can be seen in Table It2 below.

3.3.2 Certified SouthZEB Designers

The "SouthZEB Designer" certificate was awarded to each trainee who participated in the training modules and successfully completed a set of at least 4 nZEB specific training modules (modules 1 and 2 were mandatory, plus at least two more modules that were selected based on training needs).

The number of certified nZEB Designer per module is presented in table Tit3

3.3.3 Table It2

Exams	Number of days in total	Dates	Number of participants	Locations	Number of certified trainers
1st class	1	03/06/2016	204	Vibo Valentia	204
2nd class	3	06/06/2016 20/06/2016 11/07/2016	631	Napoli	192
3rd class	2	16-17/06/2016	40	Rimini	40
4th class	2	01-08/07/2016	34	Milano	34
5th class	2	11-12/07/2016	70	Siracusa	70
6th class	2	26-27/10/2016	279	Catanzaro	279
7th class	1	21/11/2016	62	Ragusa	62
8th class	1	13-14/12/2016	206	Catanzaro	206

3.3.4 Table It3

Certified Designers in Italy

RESULTS (Trainees training sessions)	Number of certified trainees
	932
Number of certified trainees per module	
Module 1: nZEB Basic module	**932**
Module 2: nZEB Advanced module	**932**
Module 3: Thermal bridging	**0**
Module 4: Thermal comfort	**552**
Module 5: SouthZEB framework module and local architectural regulations	**0**
Module 6: nZEB simulation and design softwares	**895**
Module 7: Low carbon technology and automation for nZEB	**65**
Module 8: Retrofitting towards nZEB	**362**
Module 9: Construction management and field supervision of nZEB	**34**
Module 10: Preparation of funding schemes and other incentives for nZEB	**0**

Certification Level	Number of Designers
Bronze	932
Silver	0
Gold	0
Total	932

3.4 Portugal

Subtask leader in Portugal was UMinho. The organization of the Pilot Training Seminars and exams took place in Portugal with the collaboration of UMinho and IST. In all seminars the exams took place without any problems.

The exams and the repetitive exams took place in six cities: Oeiras, Vila Nova de Gaia, Guimarães, Faro, Covilhã e Ponta Delgada.

3.4.1 Exams and Repetitive exams

The exams, in general, were scheduled to take place one week after the finish of each class. Trainees who did not pass had the opportunity to repeat again the exams a maximum of three times.

A total of 277 trainees were approved in the exams, some had to repeat the exam as they were not approved in the first opportunity. The exams took place between 25th of February and 2nd of June (Table P11), some repetition exams occurred later.

Table P11 –Data related to the Pilot Training Seminars exams in Portugal

Edition	Number of days	Dates	Number of participants	Locations	Number of certified trainees
1st	5	25/02/2016-26/02/2017; 6/04/2016-08/04/2016	39	IST - Oeiras	35
2nd	4	19/02/2016; 25/02/2016; 26/02/2016; 04/03/2016;	49	Gaiurb - Vila Nova de Gaia	49
3rd	5	25/02/2016-26/02/2017; 6/04/2016-08/04/2016	33	IST - Oeiras	32
4th	4	18/03/2016; 21/03/2016; 22/03/2016; 14/04/2016	34	UMinho - Guimarães	30
5th	2	01/06/2016; 02/06/2016	32	UAlg - Faro	20
6th	3	22/04/2016; 29/04/2016; 06/05/2016;	40	UMinho - Guimarães	38
7th	3	6/04/2016-08/04/2016	31	IST - Oeiras	28
8th	2	27/04/2016; 28/04/2016	43	UBI - Covilhã	40
9th	2	21/05/2016; 28/05/2016	7	LREC - Ponta Delgada, Azores	5

3.4.2 Certified SouthZEB Designers

A “nZEB Designer” certificate was awarded to each trainee that participates in the training modules and that has been successfully approved in at least 4 nZEB training modules (modules 1 and 2 are mandatory, plus at least two more modules that were selected based on training needs). The number of certified nZEB Designers per module is resented in Table P12.

Table P12 – Number of certified trainees per module in the Trainees-Pilot training sessions

Edition	**Total**
Module 1: nZEB Basic module	277
Module 2: nZEB Advanced module	277
Module 3: Thermal bridging	82
Module 4: Thermal comfort	104
Module 5: SouthZEB framework module and local architectural regulations	151
Module 6: nZEB simulation and design software	89
Module 7: Low carbon technology and automation for nZEB	78
Module 8: Retrofitting towards nZEB	208
Module 9: Construction management and field supervision of nZEB	106
Module 10: Preparation of funding schemes and other incentives for nZEB	92

Table 13 lists the number of approved trainees in respect of the SouthZEB designer status (“Bronze”, “Silver” and “Gold”).

Table P13 – Certification level status

Number of Modules Approved	Number of Trainees Approved		
4	85	238 (85.9%)	4 ≤ Bronze ≤ 6
5	136		
6	17		
7	11	21 (7.6%)	7 ≤ Silver ≤ 9
8	7		
9	3		
10	18	18 (6.5%)	Gold = 10
Total	277	277	

4 Funding Schemes in target countries

As per the recast Directive EPBD (2010/31/EU) all new buildings constructed within the EU after 2020 should reach nearly zero energy levels. However, there is a gap between theory and practice and SZEB project come to fill in this gap addressing the need of developing training professionals involved in the nZEB building process. An important objective of the program is to develop proposals regarding funding schemes for nZEB for each south European participating country.

4.1.1 Funding schemes in Greece

Based on the outputs of the training module 10 the following funding schemes were proposed by nZEB trainers and trainees, policy maker and KEK's team:

1. **Energy Efficiency at Household Buildings**

Government should restart programs as **"Energy Efficiency at Household Buildings"** which was very popular. It was co-funded program that provided incentives for people to improve the energy efficiency of their home, saving money and energy and increasing its value.

Provided the opportunity of obtaining a loan (with or without guarantor) and also the payment of suppliers / contractors through the bank without the involvement of citizen. After the inclusion in the program a deposit 40% of the budget could be requested.

Owner of buildings could upgrade the energy performance of the building with:

- 100% subsidy of the interest rate
- a grant for up to 70% of the total budget
- compensation of the cost of the energy inspections
- compensation of the project consultant's fee

An eligible residence was a detached house a block of flats (the part which concerns all building apartments), or an independent apartment, which meets the following criteria:

- was located in areas with a zone price lower than or equal to €2,100 per square meter, as set by 31/12/2009.
- Had a building permit. If there was not a building permit, a relevant legalization document must be provided, which verifies that the building is legal.
- Had been classified, according to the Energy Performance Certificate (EPC), as lower than or equal to class D.
- Has not been marked for demolition.

Within the context of the Program, eligible works are only those recommended by the Energy Inspector, which fall only within the following three categories of eligible interventions:

- Installation of heat insulation on a building shell including the terrace/roof and pilotis area

- Replacement of door /windows (frames/glazing) and installation of shading systems
- Upgrading of the heating and hot water supply systems.

The eligible budget of interventions, including VAT (which is an eligible expense for the "Energy Efficiency at Household Buildings" Program), may not exceed €15,000 per ownership.

The "Energy Efficiency at Household Buildings" Program includes three categories of incentives; recipients are included in the category that corresponds to their income.

The total expenditure incurred for the performance of the two energy inspections, both of which are compulsory, will be covered by 100% under the "Energy Efficiency at Household Buildings" Program, on condition that the application is approved by the Program and the energy aim set therein is met.

In addition, on the same condition, the project consultant's fee is also covered; the eligible cost is up to €250 for each application (not included VAT).

Necessary prerequisite for the payment of the aforementioned incentives is the achievement of the minimum energy aim of the Program: upgrade by at least one energy class or, alternatively, annual primary energy efficiency (conservation) higher than the 30% of the energy consumption of the reference building.

The **"Energy Efficiency at Household Buildings"** is a co-funded improvement program of energy efficiency of the residential buildings sector, which is directed to owners whose houses are low-energy class. The program provided incentives for beneficiaries to make the most important interventions to improve the energy efficiency of their home and at the same time contribute to achieving energy and environmental goals of the country. The proposal of the nZEB trainers and trainees, policy maker and KEK's team is to restart this program based on a new funding scheme which will be focused to nZEB.

2. "Net metering" and "PV rooftop systems" program

Greek authorities have introduced legislation to facilitate net-metering for solar PV arrays, allowing installations up to 500 kWp.

The Greek net-metering scheme is applicable to all solar PV systems that aim for self-consumption, thus expands to both rooftop and ground-mounted systems.
The upper limit for residential net-metering PV installations in Greece's mainland grid is set at 20 kWp. However, in commercial applications where the required load exceeds 20 kWp, the new scheme allows for net-metering for installations that exceed the 20 kWp limit and reach up to half the power consumption of the consumer. In this case, net-metering systems can reach up to 500 kWp.

Moreover, for either governmental or non-governmental not-for-profit organizations (e.g. universities and hospitals), the net-metering law allows for PV installations that cover an organization's electricity needs fully. In this case too, a net-metering PV installation cannot exceed 500 kWp of capacity.

Regarding Greece's autonomous electricity grids (e.g. islands that are not interconnected to Greece's mainland grid) the upper limit for net-metering installations is set at 20 kWp. An exemption to this rule is the island of Crete, where consumers can install systems up to 50 kWp. adjustment

Energy compensation for net-metering owners is taking place on an annual basis.

The country's new renewable energy law also approves virtual net metering for specific investors. Thus, city and regional councils, schools, universities, farmers and farming associations will be allowed to develop solar PV projects up to 500 kWp (and other renewable projects) a considerable distance away from the place of the actual power consumption.

Net metering in Greece is active but there is great need of dissemination and information in order to be widely applicable and effective.

Government should restart "Feed in tariff schemes", accord permissions and enter into contracts for actions in favor of nZEB and RES.

Greek authorities should also restart programs as "**PV rooftop systems**"

The program covered rooftop PV systems up to 10 KWp both for residential users and small businesses*, setting a new feed-in-tariff (FIT) for such systems. The one who is interested in the PV installation should own the place in order to join the program. Furthermore, it is essential a residence to cover part of its hot water needs by some other renewable source (e.g. solar thermal).

According to the Law, very small business are those who occupy less than 10 persons and have total revenues and Assets less than 2.000.000 ¤ annually
According to the Program, the PV System can be installed on roofs and flat-roofs, including terraces.

The only necessary permission was the small-scale work permit by the Urban Planning. The basic urban conditions were the following: a) The installation of PV System was not allowed above the termination of the staircase, of the lift and of any other structure, b) The installation order of the PV Modules must not create a space of main or secondary use or a semi-open space, c) In the case of installation of PV Modules on existing roofs, the Modules must be installed on the main volume of the roof, follow its angle and abstain half a meter from its outlines, d) If the Modules were installed on a flat roof there distance must be one meter inside from the outlines.

A large number of citizens showed interest in following this scheme and invested into that.

A program close to this mentality should start over.

3. "Tax benefits" and nZEB

Some proposals regarding funding schemes for nZEB combine tax reduction or exemption and actions by the citizens towards nZEB:

- Reduction of the flat tax real property (ENFIA) for high energy classification properties and grants tax relief to companies investing in nZEB.
- Tax exemption - fiscal incentives for individuals
- Tax exemption - fiscal incentives for companies/SMEs
- Programs sponsored by state agencies designed to promote energy efficiency and renewable energy and typically funded out of general tax revenues

4. Dissemination and implementation of others countries good practises

Some proposals comprise ideas based on examples given by other countries and the importance of presenting promoting and advertising all these ideas.

- Also, Create a "recycling fund" following UK method. It is a ring-fenced fund. The financial savings delivered by the projects are returned to the fund allowing for further spending on front line services, hence the term “Recycling Fund”. Even if it doesn’t work perfectly in Greek reality, it would be a great promotion of the nZEB design in general.
- Dissemination of “Green Deal” in other countries and its advantages
- Dissemination of “Energy Performance Contract (EnPC)” in other countries and its advantages
- Public purpose programs administered by utilities, state agencies, or other third parties and paid for by utility ratepayers, typically through a non-bypassable system benefits charge instituted as part of restructuring legislation or rules
- Utility programs administered by the local utility and paid for by utility ratepayers through their bundled rates
- Programs sponsored by state agencies designed to promote energy efficiency and renewable energy and typically funded out of general tax revenues
- Demand-response and load-management programs, which offer incentives to curtail demand during peak energy use periods in response to system reliability or market conditions.

4.1.2 Funding schemes in Cyprus

During the delivery of the training seminars in general, and in particular, the training seminar of Module 10, namely “Preparation of funding schemes and other incentives for nZEB”, there were two on-going funding schemes that had been launched by the government in 2015 and would soon be expiring due to insufficient balance of funds, so there was a fruitful discussion between CUT’s team and the participants, that consisted of privateers and policy makers, regarding the possibility of new funding schemes to take place and possible improvements of the new potential schemes.

1. Current Situation on funding schemes in Cyprus

In 2015, the government of Cyprus launched two funding schemes regarding the application of energy efficiency measures in households and companies, namely, “Energy retrofitting/saving in Households” and “Energy retrofitting/saving in Companies”, which targeted solely energy savings in current buildings occupied either for residential purposes or by companies and used for their main scope of work. The scheme would not fund any energy efficiency measures in factories, any other form of industry or the agriculture sector.

The first scheme targeting households, “Energy retrofitting/saving in Households”, required that a residential building applied energy efficiency measures in order to be upgraded to an energy category B, classified based on its EPC, or achieve energy savings of at least 40%, based on the national methodology for the energy assessment of buildings. Moreover, in addition to the above, for a household to be eligible for a subsidy, it had to apply at least two of the following three energy efficiency measures:

i. Thermal insulation of the building’s envelope vertical structural elements (brick walls, columns, beams) achieving a mean thermal transmittance coefficient (U-value) $Um_{vert} \leq 0.72$ W/m^{2}K.

ii. Thermal insulation of the building’s envelope horizontal structural elements (roofs, exposed floors, etc.) achieving a mean thermal transmittance coefficient (U-value) $Um_{horiz} \leq 0.63$ W/m^{2}K.

iii. Windows/doors replacement, achieving a mean thermal transmittance coefficient (U-value) $Um_{windows} \leq 3.23$ W/m^{2}K.

The funding scheme subsidized eligible costs by 50% with a maximum grant of €15000 per household. The eligible costs under the scheme were the following:

i. Issue of an EPC.

ii. Thermal insulation of building’s envelope vertical structural elements (walls, columns, beams).

iii. Thermal insulation of the building’s envelope horizontal structural elements (roofs, exposed floors, etc.).

iv. Windows/doors replacement.

v. Installation of a new, conventional fuel, boiler of nominal efficiency of at least 92%, used for heating or hot water generation.

vi. Installation of a new boiler, burning biomass, used for heating or hot water generation.

vii. Installation of a new air, water or geothermal heat pump, used for heating or hot water production, with minimum performance requirements COP≥4.0 and EER≥3.7.

viii. Installation of new solar thermal system for hot water generation.

ix. Installation of new solar thermal system for heating and/or cooling.

x. Lights replacement with more energy efficient ones.

xi. Installation of smart meters.

xii. Installation of external fixed position shading systems.

xiii. Installation of external moveable shading systems.

xiv. Replacement of existing AC split units with new ones with minimum performance requirements of SCOP≥4.0 and SEER≥6.1.

In case where the energy retrofit of the building would lead to a building meeting the nZEB criteria the funding percentage would raise to 75% of eligible costs and the maximum grant would increase to €25000.

The second scheme targeting commercial buildings, “Energy retrofitting/saving in Companies”, required that a commercial building applied energy efficiency measures in order to be upgraded to an energy category B, classified based on its EPC, or achieve energy savings of at least 40%, based on the national methodology for the energy assessment of buildings. Moreover, in addition to the above, for a household to be eligible for a subsidy, it had to apply at least two of the following three energy efficiency measures:

iv. Thermal insulation of the building’s envelope vertical structural elements (brick walls, columns, beams) achieving a mean thermal transmittance coefficient (U-value) $Um_{vert} \leq 0.72$ W/m^{2}K.

v. Thermal insulation of the building’s envelope horizontal structural elements (roofs, exposed floors, etc.) achieving a mean thermal transmittance coefficient (U-value) $Um_{horiz} \leq 0.63$ W/m^{2}K.

vi. Windows/doors replacement, achieving a mean thermal transmittance coefficient (U-value) $Um_{windows} \leq 3.23$ W/m^{2}K.

The funding scheme subsidized eligible costs by 50% with a maximum grant of €200000 per company. The eligible costs under the scheme were the following:

xv. Issue of an EPC.

xvi. Feasibility study.

xvii. Thermal insulation of building’s envelope vertical structural elements (walls, columns, beams).

xviii. Thermal insulation of the building’s envelope horizontal structural elements (roofs, exposed floors, etc.).

xix. Windows/doors replacement.

xx. Installation of a new, conventional fuel, boiler of nominal efficiency of at least 92%, used for heating or hot water generation.

xxi. Installation of a new boiler, burning biomass, used for heating or hot water generation.

xxii. Installation of a new air, water or geothermal heat pump, used for heating or hot water production, with minimum performance requirements COP≥4.0 and EER≥3.7.

xxiii. Installation of a CHP unit.

xxiv. Installation of new solar thermal system for hot water generation.

xxv. Installation of new solar thermal system for heating and/or cooling.

xxvi. Lights replacement with more energy efficient ones.

xxvii. Installation of smart meters.

xxviii. Installation of external fixed position shading systems.

xxix. Installation of external moveable shading systems.

xxx. Replacement of existing AC split units with new ones with minimum performance requirements of SCOP≥4.0 and SEER≥6.1.

In case where the energy retrofit of the building would lead to a building meeting the nZEB criteria the funding percentage would raise to 75% of eligible costs but the maximum grant would remain the same at €200000.

The available funds for the two above mentioned funding schemes were depleted in June 2016, so eventually the schemes ended prematurely. In addition to the above two funding schemes, the government had in place two more incentive schemes:

1. Installation of PVs with net metering for households with a maximum installed capacity of 5 kW, under the scheme “Solar Energy for everyone” (still active).
2. Installation of PVs with net metering for commercial buildings with a maximum installed capacity of 5 kW (still active).
3. 5% increase of building’s allowed area for new buildings of high energy efficiency.

2. Proposals on new funding schemes in Cyprus

The main problems encountered during the application of the above funding and incentive schemes are summarized below:

- Complex and not straight forward procedures. The department in charge required a number of times clarifications and other things not mentioned in the initial call of the schemes.
- Too much and unnecessary paperwork

- Limited access to funds (loans or other forms of funding) to cover for the investment. This posed the biggest problem of all since one (individual or company) had to prove that the funding of the investment was in place (either by own funds or through banks, investors, etc.) in order to be approved for funding.
- Big delays on behalf of the government in the whole process moving forward.

Bearing in mind the above problems, the following suggestions were put in place:

- Re-launching the two schemes with simpler, faster and more straightforward procedures.
- New financial instruments to be put in place in order for more privateers and institutions to gain access to funds:
    - Access to bank loans after interim approval for funding.
    - Subsidizing interest rate for loans.
- Funding of individual energy efficiency measures without having to upgrade to an energy class category of B or achieve 40% energy savings
- Increase the maximum grant for households by €5000 (i.e. to €20000 for retrofitting to an energy category “B” or €30000 for retrofitting towards nZEB).
- Increase the maximum allowed installed capacity of PVs under the net-metering scheme for companies.

4.1.3 Funding schemes in Italy

During seminars and courses several ideas have been proposed by the participants. However, the main discussions were focused on the real value and reliability that hypothetical funding schemes can have. A clarification has to be underlined: there are several regional, local and municipal funds that are ongoing in different ways in Italy. Regions have the opportunity to promote some initiatives to support the financing of activities towards nZEB buildings, always in accordance to national and European law and directives which are effective.

The agreed solution during the training was to examine and follow the new funding schemes which have been approved by the national Italian government and Ministry of Economic Development and that we are certain that it is working. DTTN has not directly contacts with the Ministry or with relevant persons to discuss on this specific topic, and many years are requested form experts to perform a new and efficient funding scheme.

"Conto Termico 2.0".

As incentive for nZEB initiatives the Italian government has launched in May 31st, 2016 the new "Conto Termico 2.0" which strengthens and simplifies the support mechanism already introduced by the Decree 28/12/2012, to encourage measures to increase energy efficiency and the production of thermal energy from renewable sources. The beneficiaries are public administrations, companies and individuals who will have access to funds for 900 million euro per year, of which 200 reserved for the PA.

The mechanism responsible in Italy for the management and disbursement of incentives is the "GSE – Gestore dei Servizi Energetici".

With the "Conto Termico 2.0" it is possible to rebuild the buildings to improve the energy performance, reducing costs of consumption and recovering quickly part of the expenditure incurred. In addition, it enables the PA to exercise their role expected by the directives on energy efficiency and helps to build a "more efficient country".

The "Conto Termico 2.0" provides higher incentives

- up to 65% of costs incurred for "nZEB buildings";
- up to 40% for the interventions for the insulation of walls and roofs, for the replacement of windowed closures, for the installation of solar shielding, indoor lighting, building automation technologies, condensing boilers;
- up to 50% for heat insulation measures in climate zones E / F and up to 55% in the case of thermal insulation and replacement of windowed closures, if combined with other system (condensing boilers, heat pumps, solar thermal, etc.);
- even up to 65% for heat pumps, biomass boilers and appliances, hybrid systems with heat pumps and solar heating systems;
- 100% of the costs for the Energy Audit and for the Energy Performance Certificate (A.P.E.) for the PA (and ESCOs operating on their behalf) and 50% of these costs for private entities, with the cooperatives of inhabitants and social cooperatives.

European Energy Efficiency Fund (http://www.eeef.eu/)

The European Energy Efficiency Fund (EEE-F) is an innovative public-private partnership dedicated to mitigating climate change through energy efficiency measures and the use of renewable energy in the member states of the European Union. It focuses on financing energy efficiency, small-scale renewable energy, and clean urban transport projects (at market rates) targeting municipal, local and regional authorities and public and private entities acting on behalf of those authorities.

On 1st July 2011, the European Commission, the European Investment Bank (EIB), the Cassa Depositi e Prestiti (CDP) and Deutsche Bank have announced the launch of the European Fund for Energy Efficiency (European Energy Efficiency Fund).The fund EEE-F will help EU Member States to achieve the goal that aims to reduce, by 2020, emissions of greenhouse gases and energy consumption by 20% and lead to 20% of the energy renewable. EEE-F is the central part of a new mechanism to promote sustainable energy for the European Parliament and the Council of Ministers. The new instrument takes the form of an investment fund with an initial budget amounting to 265 million euro thus constituted:

- 125 million euro from the European Commission ("Junior Tranche" the Fund);
- 75 million euro from the EIB (Senior and Mezzanine Tranche Shares);
- 60 million euro from the Cassa Depositi e Prestiti (Mezzanine and Senior Shares);
- 5 million euro from Deutsche Bank (Mezzanine Tranche).

Moreover, an additional 20 million euro will be made available in the form of grants for technical assistance support to the definition of investment projects of size even less than 50 million euro. The Fund aims to attract more private and public investors, in order to provide a wide range of financial products such as loans, guarantees and equity.

EEE-F finances and supports investment projects relating to the adoption of measures to:

- Energy efficiency (70% of resources);
- Renewable energy (20% of resources);
- Clean urban transport (10%).

Potential beneficiaries are local authorities or regional, public or private companies acting on behalf of public authorities, such as local energy utility, ESCo, or providers of district heating, cogeneration and public transport companies.

Fondo Italiano per l'Efficienza Energetica (http://www.fitef.com/)

Fondo Italiano per l'Efficienza Energetica (FIEE) is first Italian equity fund devoted entirely to investment projects in energy efficiency projects in partnership with ESCos. FIFE is aiming to setup a diversified portfolio of small-sized (€1–5 million) and medium-sized (€5–20 million) projects benefiting private and public Clients. The investment scopes of the projects are focused to:

a. revamping of street lighting and privately-held lighting infrastructure,
b. high-efficiency cogeneration and tri-generation power plants fuelled by gas, biogas, syngas, biomass,
c. high-efficiency district heating and cooling systems, including those fueled by renewable energy sources,

d. energy efficiency projects in manufacturing processes."

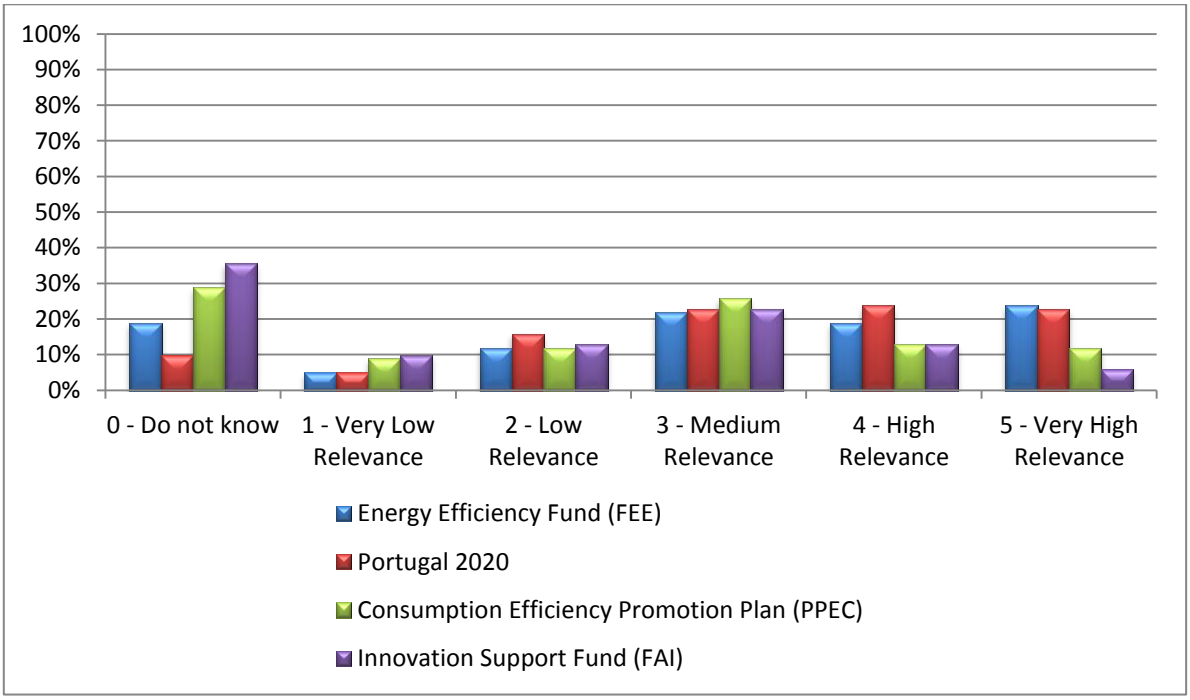
FIEE aims to raise €150 million to be invested in the domestic market, for which it has already collected the commitment of the European Investment Bank to invest 25 million euro. FIEE is aiming to projects with a target IRR of 10-12%, even with limited use of leverage and dividend yield to investors of 8-10%.

4.1.4 Funding schemes in Portugal

A link to an online questionnaire was sent through email to all nZEB trainers and trainees and to all members of the National Support Group, from which we have received 101 answers. It consists in two questions on which the participants had to rank the importance (from 1 – low to 5 – high) of funding schemes and incentives for energy efficiency in buildings to the promotion of nZEB buildings in Portugal.

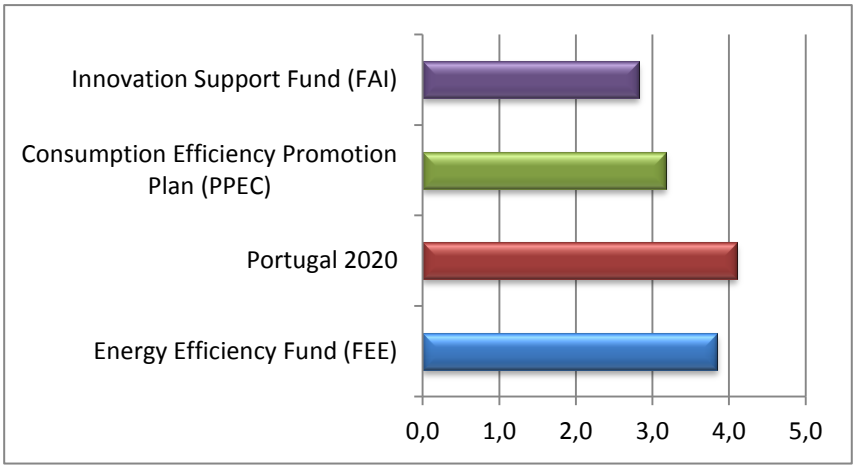
3. Funding schemes and incentives for energy efficiency in buildings implemented in Portugal

The first question of the questionnaire was related with the funding schemes and incentives for energy efficiency in buildings implemented in Portugal on which were asked, to participants, to rank their current relevance for the promotion of nZEB buildings.



Graph P1– Questionnaire results: relevance of the funding schemes and incentives for energy efficiency in buildings implemented in Portugal.

From the funding schemes and incentives implemented in Portugal, the Portugal 2020 and Energy Efficiency Fund (FEE) are the most known: 90% know Portugal 2020, 81% know FEE, the Consumption Efficiency Promotion Plan (PPEC) was known by 71% and the Innovation Support Fund (FAI) was only known by 64% of the participants on this survey.

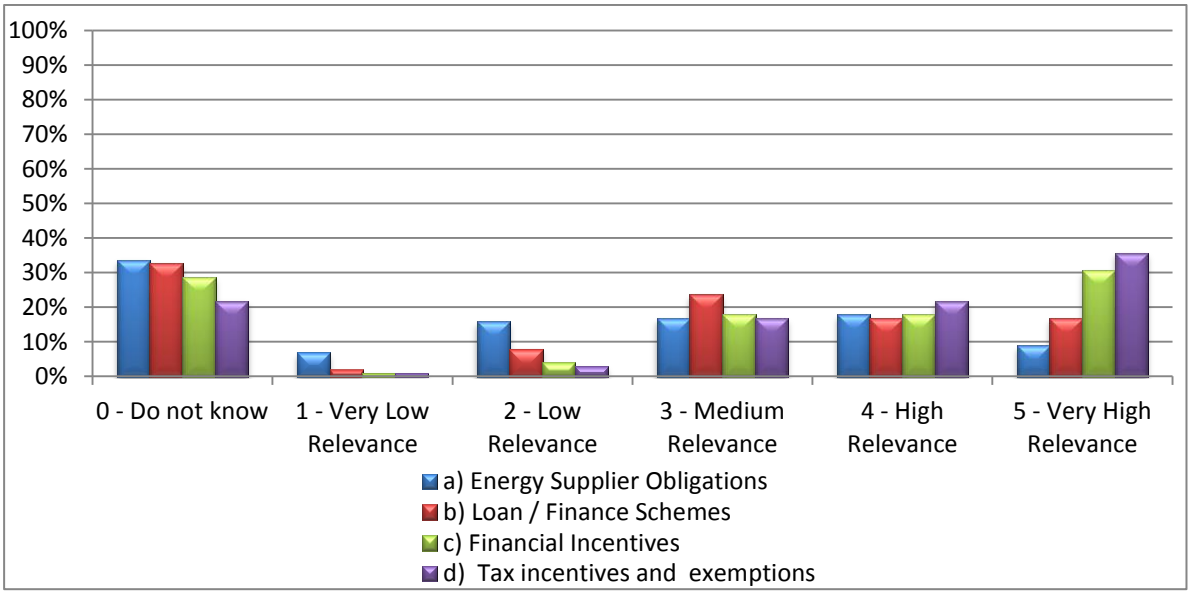


Graph P2– Questionnaire results: average relevance rank of the funding schemes and incentives for energy efficiency in buildings implemented in Portugal.

The same funding schemes that were most known were also ranked as the ones with the higher relevance. Portugal 2020 has an average relevance rank of 4.1 and FEE has 3.8, the remaining funding schemes PPEC and FAI has 3.2 and 2.8, respectively.

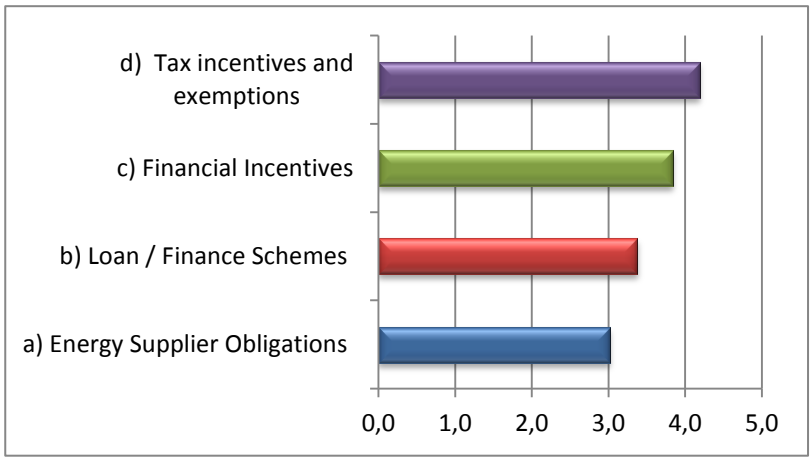
4. Typologies of funds and incentives applied in other European countries

The second question was related with the typologies of funds and incentives applied in other European countries on which were asked, to participants, to rank their current relevance for the promotion of nZEB buildings in Portugal.



Graph P3– Questionnaire results: relevance of the typologies of funds and incentives, for energy efficiency in buildings, applied in other European countries.

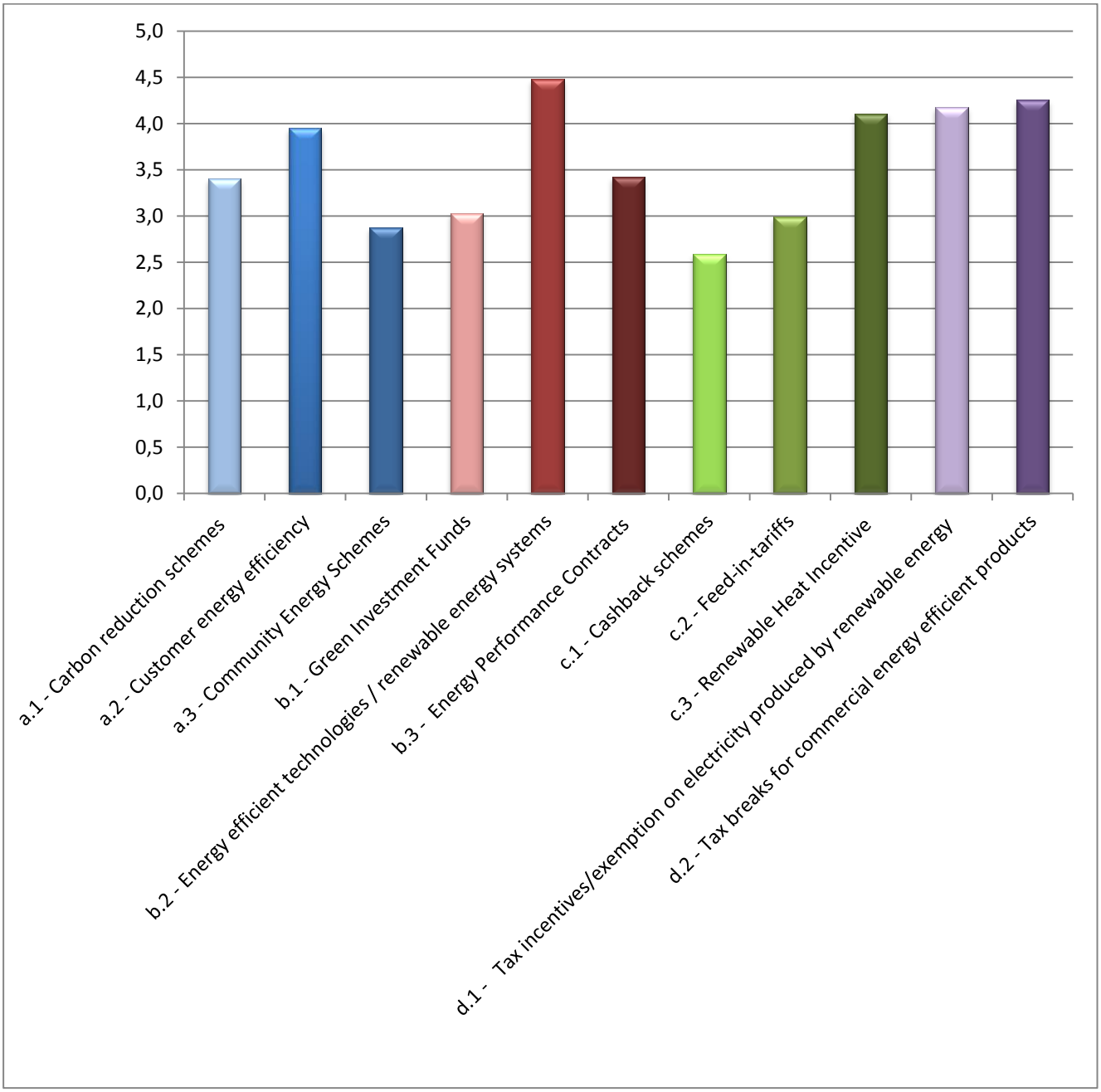
From the typologies of funds and incentives, the “Tax incentives and exemptions” are the most known by 79% of the participants, followed by “Financial Incentives”, “Loan / Finance Schemes” and “Energy Supplier Obligations” that were known by 72%, 68% and 67%, respectively.



Graph P4– Questionnaire results: average relevance rank of typologies of funds and incentives, for energy efficiency in buildings, applied in other European countries.

The same order is maintained, by the different typologies, in the average relevance rank: 4.2, 3.8, 3.4 and 3.0, respectively.

From each typology the participants were also asked to rank the relevance of specific schemes.



Graph P5– Questionnaire results: average relevance rank of the specific schemes of typologies of funds and incentives, for energy efficiency in buildings, applied in other European countries.

In what regards the “Energy Supplier Obligations”, the higher ranked scheme, in average, was the “Customer energy efficiency” (4.0). The typology “Loan / Finance Schemes” has the specific scheme with the highest rank, among all typologies, “Energy efficient technologies / renewable energy systems” (4.5). In the “Financial Incentives” typology the specific scheme most ranked, in average, was the “Renewable Heat Incentive” (4.1). In the “Tax incentives and exemptions” typology, both

specific schemes were very well ranked, in average: "Tax incentives/exemption on electricity produced by renewable energy" (4.2); "Tax breaks for commercial energy efficient products" (4.3)

5. Recommendations

Portugal 2020 and the FEE have been identified as the funding schemes with a higher relevance, what could be due to the wide range of operations typologies for a large scope of applicants that could be funded under these schemes. These two schemes are a good model for future funding schemes and incentives for the promotion of nZEB buildings in Portugal.

From the different typologies of funding schemes implemented in other countries, the most ranked were the "Tax incentives and exemptions" followed by the "Financial Incentives". However when analysing the specific schemes, the "Energy efficient technologies / renewable energy systems", from the "Loan / Finance Schemes" typology, registered the highest average rank when compared to all other typologies. Another relevant aspect is that every typology as at least one specific scheme with high relevance, which result as recommendation when designing new funding schemes all funding schemes typologies should be considered and if possible included in the funding programme.

These funding schemes should be accompanied by large information campaigns using all the media available, in order to reach all potential applicants.

5 Conclusions

The recast Directive on the energy performance of buildings (EPBD) stipulates that by 2020 all new buildings constructed within the EU after 2020 should reach nearly zero energy levels. This means that in a few years, all new buildings will demonstrate very high energy performance and their reduced or very low energy needs will be significantly covered by renewable energy sources. Apart from market barriers, barriers regarding the know-how of professionals also exist. Training programs plays a crucial role in order to overcome this barrier. SouthZEB project achieved to train a significant number of professionals involved in the nZEB building process (engineers, architects, municipality employees and decision makers) in south European countries. One of the main objectives of this project was to implement “Pilot training sessions” in the four target countries; Cyprus, Greece, Italy and Portugal. The trained and certified SouthZEB trainers delivered the pilot training seminars for the target professionals. The target was to train at least 1500 professionals in all partner countries. The target was achieved.

In Greece 264 trainees participated and 262 were certified. In Cyprus 111 trainees participated and 85 were certified. In Portugal 303 trainees participated and 277 were certified. In Italy 1010 trainees participated and 932 were certified. In total 1.556 trainees were certified as “n ZEB designers” by taking written exams.

More specific the trained and certified SouthZEB trainers during the first phase of the project training (train the trainer workshops) delivered the pilot seminars. All ten training modules were offered in all four target countries. After the completion of the training seminars, participants had to take written exams. All successful participants were awarded with nZEB designer certificate.

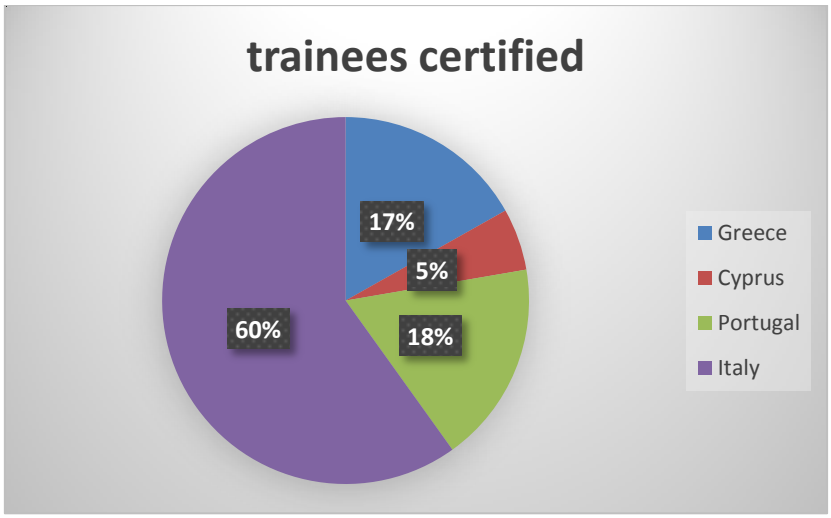
The seminars realization was disseminated appropriately. From the beginning of the project many dissemination actions have been carried out in order to let people know about the project progress and the training sessions.

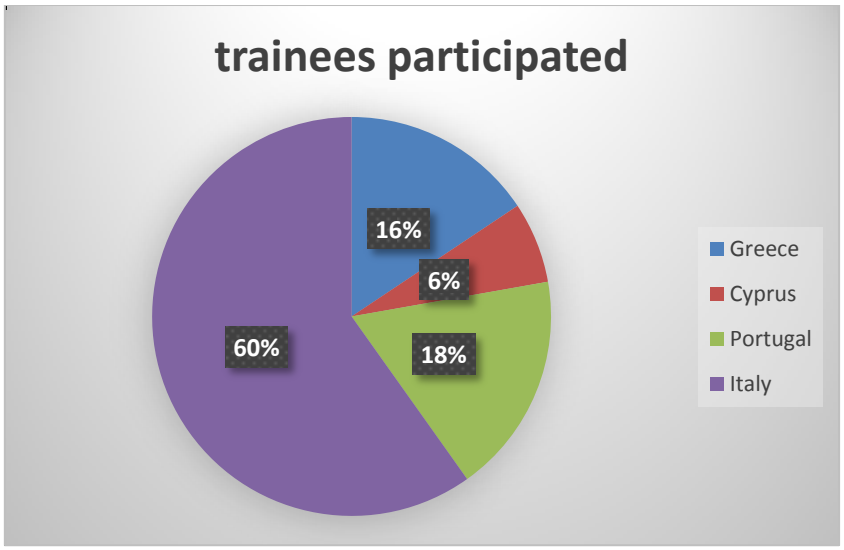
The training seminars run smoothly and they were evaluated by using toolkits developed by UPATRAS. Questionnaires, interviews and observations by trainers and trainees were collected and analysed in order to reach an objective conclusion. Evaluation and comments helped the targeted countries to improve the training modules, the assessment exams and the training procedure. All ten modules and 1000 examination questions were revised based on this feedback.

As it is mentioned above, southZEB project came to fill in the gap between theory and practice on reaching nearly zero energy levels in construction field. In order to enhance the applicability of the training in target countries, the project trainers, the trainees (especially decision makers that follow the seminars) and each partner’s team proposed new funding/promoting schemes for nZEB for each South European participating country (EL, CY, PT, IT)

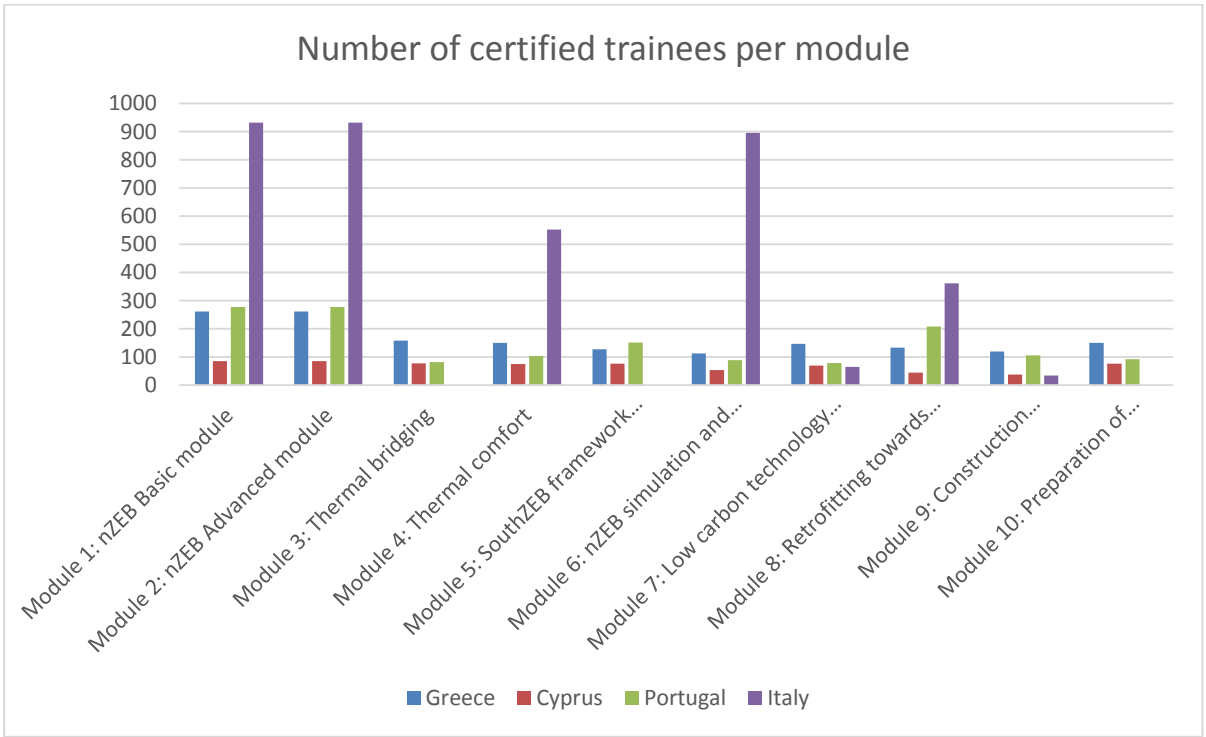
At the following diagrams the training results of WP5.2 are summarized:

Country	trainees participated	trainees certified
Greece	264	262
Cyprus	111	85
Portugal	303	277
Italy	1010	932
Total	1688	1556





Number of certified trainees per module					
Country	Greece	Cyprus	Portugal	Italy	**Total**
Module 1: nZEB Basic module	262	85	277	932	**1556**
Module 2: nZEB Advanced module	262	85	277	932	**1556**
Module 3: Thermal bridging	158	77	82	0	**317**
Module 4: Thermal comfort	150	75	104	552	**881**
Module 5: SouthZEB framework module and local architectural regulations	127	76	151	0	**354**
Module 6: nZEB simulation and design softwares	113	53	89	895	**1150**
Module 7: Low carbon technology and automation for nZEB	147	70	78	65	**360**
Module 8: Retrofitting towards nZEB	133	45	208	362	**748**
Module 9: Construction management and field supervision of nZEB	119	38	106	34	**297**
Module 10: Preparation of funding schemes and other incentives for nZEB	150	76	92	0	**318**



Annexes

All target countries provided documentation verifying the successfull completion of the seminars. Some indicatively pictures of the training, scanned copies of the signed attendance lists and agendas are presented below.

1. Greece

1.1 Pictures from Seminars

1st Class_ February 2016 _ Athens

4th Class _ April 2016 _ Athens

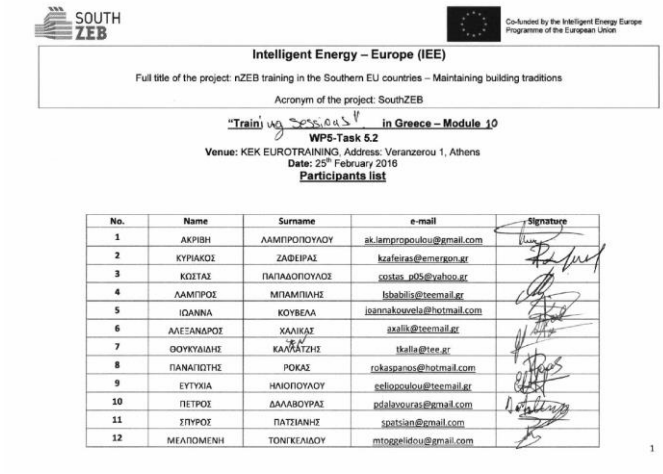
5th Class _ March 2016_ Athens

5th Class _ March 2016 _ Athens

7th Class _ May 2016 _ Athens

8th Class _ May 2016 _ Athens

1.2 Copies of singed Attendance lists



SOUTH ZEB

Co-funded by the Intelligent Energy Europe Programme of the European Union

Intelligent Energy – Europe (IEE)

Full title of the project: nZEB training in the Southern EU countries – Maintaining building traditions

Acronym of the project: SouthZEB

"Training Sessions" in Greece – Module 10

WP5-Task 5.2

Venue: KEK EUROTRAINING, Address: Veranzerou 1, Athens

Date: 25th February 2016

Participants list

No.	Name	Surname	e-mail	Signature
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12	ΜΕΛΠΟΜΕΝΗ	ΤΟΝΤΓΚΕΛΙΔΟΥ	mtoggelidou@gmail.com	

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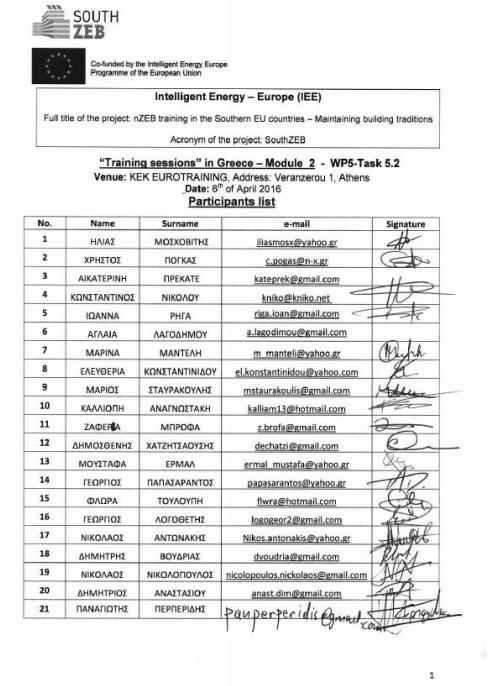
1st Class _ Module 10 (1st page of 2 pages)



SOUTH ZEB

Co-funded by the Intelligent Energy Europe Programme of the European Union

Intelligent Energy – Europe (IEE)

Full title of the project: nZEB training in the Southern EU countries – Maintaining building traditions

Acronym of the project: SouthZEB

"Training sessions" in Greece – Module 2 - WP5-Task 5.2

Venue: KEK EUROTRAINING, Address: Veranzerou 1, Athens

Date: 6th of April 2016

Participants list

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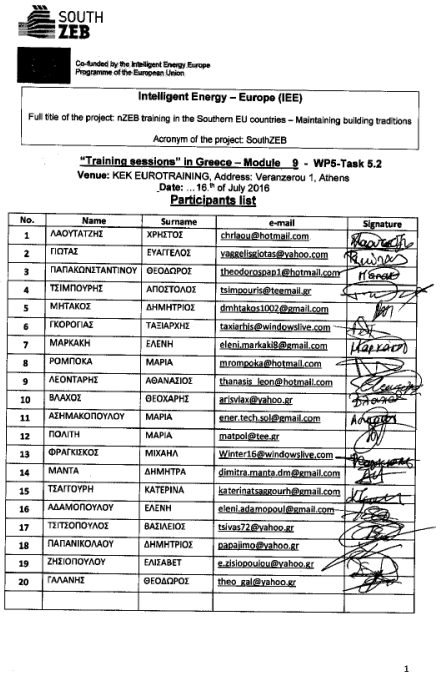
21	ΠΑΝΑΓΙΩΤΗΣ	ΠΕΡΠΕΡΙΔΗΣ	panperidis@gmail.com	

1

5th Class _ Module 2 (1st page of 2 pages)



SOUTH ZEB

Co-funded by the Intelligent Energy Europe Programme of the European Union

Intelligent Energy – Europe (IEE)

Full title of the project: nZEB training in the Southern EU countries – Maintaining building traditions

Acronym of the project: SouthZEB

"Training sessions" in Greece – Module 9 - WP5-Task 5.2

Venue: KEK EUROTRAINING, Address: Veranzerou 1, Athens

Date: ...16th of July 2016

Participants list

No.	Name	Surname	e-mail	Signature
1	ΛΑΟΥΤΑΤΖΗΣ	ΧΡΗΣΤΟΣ	chrlaou@hotmail.com	
2	ΓΙΩΤΑΣ	ΕΥΑΓΓΕΛΟΣ	vaggelisgiotas@yahoo.com	
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12	ΠΟΛΙΤΗ	ΜΑΡΙΑ	matpol@tee.gr	
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14	ΜΑΝΤΑ	ΔΗΜΗΤΡΑ	dimitra.manta.dm@gmail.com	
15	ΤΣΑΓΓΟΥΡΗ	ΚΑΤΕΡΙΝΑ	katerinatsaggourh@gmail.com	
16	ΑΔΑΜΟΠΟΥΛΟΥ	ΕΛΕΝΗ	eleni.adamopoul@gmail.com	
17	ΤΣΙΤΣΟΠΟΥΛΟΣ	ΒΑΣΙΛΕΙΟΣ	tsivas72@yahoo.gr	
18	ΠΑΠΑΝΙΚΟΛΑΟΥ	ΔΗΜΗΤΡΙΟΣ	papaiimo@yahoo.gr	
19	ΖΗΣΙΟΠΟΥΛΟΥ	ΕΛΙΣΑΒΕΤ	e.zisiopoulou@yahoo.gr	
20	ΓΑΛΑΝΗΣ	ΘΕΟΔΩΡΟΣ	theo_gal@yahoo.gr	

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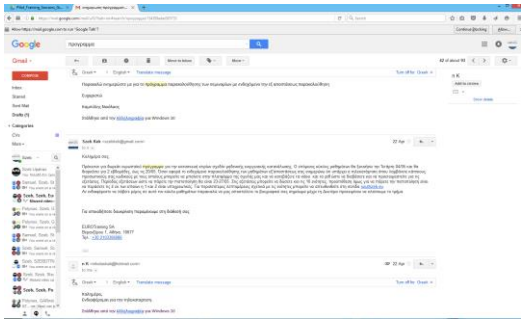
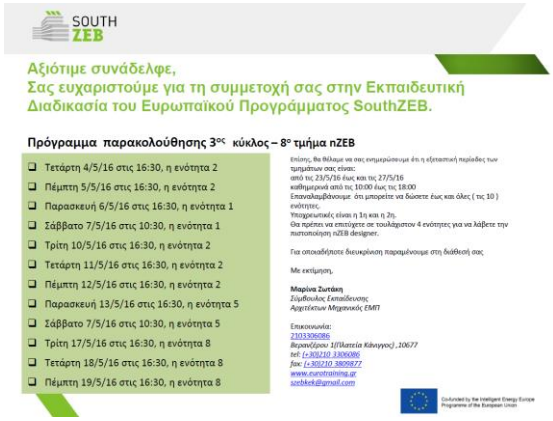
11th Class _ Module 9 (1st page of 2 pages)

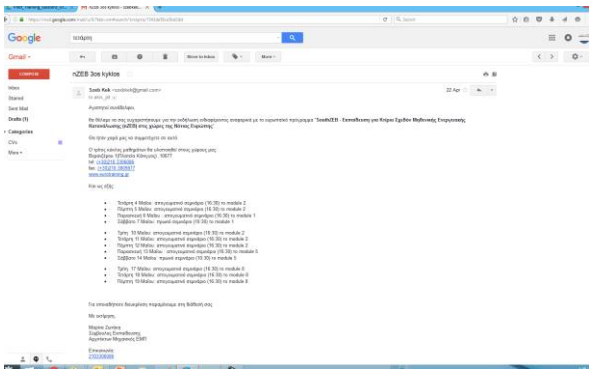
1.3 Agendas / Programme and exams information



E-mail to inform trainees (Agenda and invitation)



Attached file (Agenda : programme and exams)



Agenda of each Class sent to all corresponding trainees who participated

2. **Cyprus**

2.1 Pictures from Seminars

Cyprus_Module 1

Cyprus_Module 2

Cyprus_ Module 3

Cyprus _ Module 5

Cyprus _ Module 6

Cyprus _ Module 7

2.2 Copies of singed Attendance lists

Intelligent Energy Europe (IEE)
(nZEB training in the Southern EU Countries – Maintaining Building Traditions)
IEE/13/292/S12.675576

1ο Εκπαιδευτικό Σεμινάριο: «Βασικό Πρόγραμμα» - 2η Μέρα
Παρασκευή 15 Απριλίου 2016, 09:00-15:00
Αίθουσα Εκδηλώσεων ΕΤΕΚ, Λευκωσία

Α/Α	Επώνυμο	Όνομα	Ειδικότητα	Τηλέφωνο	e-mail	Υπογραφή
1	Αλουπού	Αναστασία	Αρχιτέκτονας Μηχανικός	99930812	anastasia.cy_90@hotmail.com	
2	Βασιλείου	Παναγιώτα	Μηχανολόγος Μηχανικός	99947355	penny.vasiliou@gmail.com	
3	Γαβριήλ	Γαβριήλ	Πολιτικός Μηχανικός	99981879	gavrielgavriel251991@gmail.com	
4	Γέρου	Ιωάννης	Ηλεκτρολόγος Μηχανικός	99537278	ioannis.yerou@gmail.com	
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6	Ζενιέρης	Ξένιος	Μηχανολόγος Μηχανικός	99889095	xenios.ze@gmail.com	
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9	Μακρομάλλης	Κυριάκος	Μηχανολόγος Μηχανικός	99516866	kmakromallis@hotmail.com	
10	Μαυροβάσιλου	Νάσια	Πολιτικός Μηχανικός	99852552	nasia-m@hotmail.com	
11	Νικολάου	Παναγιώτης	Μηχανολόγος Μηχανικός	9948677ι	pnikolaou@hotmail.com	
12	Παναγιώτου	Τερέζα	Ηλεκτρολόγος Μηχανικός	99179078	tereza4927@hotmail.com	
13	Παπαδόπουλος	Τίμος	Visiting Research Fellow	96688182	timospj@gmail.com / tp@isvr.soton.ac.uk	

Nicosia _ Module 1 (1st page of 2 pages)

Intelligent Energy Europe (IEE)
(nZEB training in the Southern EU Countries – Maintaining Building Traditions)
IEE/13/292/S12.675576

2ο Εκπαιδευτικό Σεμινάριο: «Προηγμένο Πρόγραμμα» - 4η Μέρα
Τετάρτη 20 Απριλίου 2016, 09:00-17:00
Κτήριο Τάσσος Παπαδόπουλος – Αμφιθέατρο 01, Λεμεσός

Α/Α	Επώνυμο	Όνομα	Ειδικότητα	Τηλέφωνο	e-mail	Υπογραφή
1	Khozeymeh	Iman	Μηχανολόγος Μηχανικός	99148099	iman@limcen.com	
2	Krstevska	Monika	Μηχανολόγος Μηχανικός	99805925	m_krstevska@hotmail.com	
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4	Αγαθοκλέους	Έλενα	Μηχανολόγος Μηχανικός	99831612	agat.elena@hotmail.com	
5	Αγαθοκλέους	Ραφαέλα	Μηχανολόγος Μηχανικός	99962603	rafaela.agathokleous@cut.ac.cy	
6	Αγαπίου	Ευάγγελος		99987787	evangelos_m@hotmail.com	
7	Αγρότης	Κώστας	Μηχανολόγος Μηχανικός	99636535	agrotis@cytanet.com.cy	
8	Αλεξάνδρου	Στέλιος		99458584	salexandrou@eac.com.cy	
9	Αλουπού	Αναστασία	Αρχιτέκτονας Μηχανικός	99930812	anastasia.cy_90@hotmail.com	
10	Αναστασίου	Ορέστης	Πολιτικός Μηχανικός	99541926	orestis.anastasiou@gmail.com	
11	Ανδρέου	Κυριάκος	Μηχανολόγος Μηχανικός	99630019	kyriacosandreou@gmail.com	
12	Αντρέου	Άντρια	Πολιτικός Μηχανικός	99110045	aandre23.aa@gmail.com	
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Limassol _ Module 2 (1st page of 10 pages)

Intelligent Energy Europe (IEE)
(nZEB training in the Southern EU Countries – Maintaining Building Traditions)
IEE/13/292/S12.675576

6ο Εκπαιδευτικό Σεμινάριο: «Ενεργειακή Προσομοίωση»
Τρίτη & Τετάρτη 07-08 Ιουνίου 2016, 09:00-17:00
Πολιτιστικό Κέντρο ΕΤΕΚ – 1ης Οροφος, Λευκωσία

Α/Α	Επώνυμο	Όνομα	Ειδικότητα	Τηλέφωνο	e-mail	Υπογραφή 1ης Μέρα	Υπογραφή 2η Μέρα
1	Αντρέου	Άντρια	Πολιτικός Μηχανικός	99110045	sandre23.aa@gmail.com		
2	Γαβριήλ	Γαβριήλ	Πολιτικός Μηχανικός	99981879	gavrielgavriel251991@gmail.com		
3	Κάουρος	Βάσος	Πολιτικός Μηχανικός	99608865	vkaouros@gmail.com		
4	Κωνσταντίνου	Ρένος	Πολιτικός Μηχανικός	99519227	constantinour@hotmail.com		
5	Μαυροβάσιλου	Νάσια	Πολιτικός Μηχανικός	99852552	nasia-m@hotmail.com		
6	Νικολάου	Παναγιώτης	Μηχανολόγος Μηχανικός	99486771	pnikolaou@hotmail.com		
7	Πάζουρου	Κούλλα	Μηχανικός Περιβάλλοντος	99959025	Πάζουρου		
8	Παπαδόπουλος	Τίμος	Visiting Research Fellow	96688182	timospi@gmail.com / tp@isvr.soton.ac.uk		
9	Παπαδοπούλου	Παναγιώτα	Μηχανολόγος	99051191	panagiota1010@hotmail.com		

Nicosia _ Module 6 (1st page of 2 pages)

2.3 Agendas / Trainers resume

ΣΕΙΡΑ ΕΚΠΑΙΔΕΥΤΙΚΩΝ ΣΕΜΙΝΑΡΙΩΝ ΣΤΑ ΠΛΑΙΣΙΑ ΤΟΥ ΕΡΩΠΑΪΚΟΥ ΠΡΟΓΡΑΜΜΑΤΟΣ "nZEB training in the Southern EU Countries – Maintaining building traditions" IEE/13/292/S12.675576

4ο Εκπαιδευτικό Σεμινάριο: «Θερμική Άνεση»

Φορέας Υλοποίησης: Τεχνολογικό Πανεπιστήμιο Κύπρου
Τετάρτη & Πέμπτη 4-5 Μαΐου 2016, Ώρα έναρξης: 09:00
Κτήριο Τάσσος Παπαδόπουλος - Αμφιθέατρο 01, ΤΕΠΑΚ Λεμεσός

Πρόγραμμα

Τετάρτη 04 Μαΐου 2016 – Κτήριο Τάσσος Παπαδόπουλος / Αμφιθέατρο 01	
08:50 – 09:00	**Προσέλευση**
09:00 – 10:00	**Εξέταση 3ου Σεμιναρίου («Θερμογέφυρες»)**
10:00 – 11:30	**1η Ενότητα**
	• *Κεφάλαιο 01 – Εισαγωγή (Γιώργος Κούρρης)*
	• *Κεφάλαιο 02 – Κτήρια & Θερμική Άνεση (Γιώργος Κούρρης)*
11:30 – 12:00	**Διάλειμμα**
12:00 – 14:30	**2η Ενότητα**
	• *Κεφάλαιο 03 – Κανονισμοί (Γιώργος Κούρρης)*
	• *Κεφάλαιο 04 – Έννοιες Θερμικής Άνεσης (Γιώργος Κούρρης)*
Πέμπτη 05 Μαΐου 2016 – Κτήριο Τάσσος Παπαδόπουλος / Αμφιθέατρο 01	
09:00 – 11:00	**3η Ενότητα**
	• *Κεφάλαιο 05 – Θερμική Άνεση (Γιώργος Κούρρης)*
	• *Κεφάλαιο 06 – Μοντέλα Θερμικής Άνεσης (Γιώργος Κούρρης)*
11:00 – 11:30	**Διάλειμμα**
11:30 – 13:00	**3η Ενότητα**
	• *Κεφάλαιο 07 – Αξιολόγηση Θερμικής Άνεσης (Γιώργος Κούρρης)*
13:00 – 14:00	**Διάλειμμα**
14:00 – 15:30	**4η Ενότητα**
	• *Κεφάλαιο 08 – Παραδείγματα (Γιώργος Κούρρης)*
	• *Σύνοψη σεμιναρίου – Συζήτηση*
15:30	**Λήξη 4ου Σεμιναρίου**

Το πρόγραμμα SouthZEB χρηματοδοτείται από το Intelligent Energy Europe. Η διεξαγωγή της σειράς σεμιναρίων που λαμβάνουν χώρα στα πλαίσια του προγράμματος πραγματοποιείται με την στήριξη και συνεργασία της Υπηρεσίας Ενέργειας Κύπρου, του Υπουργείου Ενέργειας Εμπορίου Βιομηχανίας & Τουρισμού.

Agenda _ Module 4

Γιώργος Κούρρης

(Σύντομο βιογραφικό σημείωμα)

Ο Γιώργος Κούρρης είναι κάτοχος πτυχίου B.Sc. in Energy Technology and Management από το University of Wales (University College of Swansea) και πτυχίου M.Sc in Building Services Engineering από το Heriot-Watt University στο Εδιμβούργο.

Εργάζεται εδώ και 27 χρόνια ως μελετητής μηχανολογικών εγκαταστάσεων σε κτίρια στην Κύπρο, Ελλάδα, Αγγλία και τον Αραβικό Κόλπο. Έχει ασχοληθεί εκτεταμένα κυρίως με μηχανολογικές μελέτες σε μεγάλα κτίρια. Είναι επίσης Ενεργειακός Ελεγκτής για κτιριακές και βιομηχανικές εγκαταστάσεις με εμπειρία εκτεταμένων ελέγχων σε μεγάλα κτίρια στην Κύπρο και Ειδικευμένος Εμπειρογνώμονας για κατοικίες.

Κατέχει τους τίτλους European Ingenieur και Chartered Engineer. Είναι μέλος του ΕΤΕΚ και μέλος των Βρετανικών Ινστιτούτων Energy Institute και Chartered Institute of Building Services Engineers (CIBSE). Είναι επίσης μέλος του American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) και του Association of Energy Engineers (AEE) των ΗΠΑ.

Trainers Resume attached to Agenda

ΣΕΙΡΑ ΕΚΠΑΙΔΕΥΤΙΚΩΝ ΣΕΜΙΝΑΡΙΩΝ ΣΤΑ ΠΛΑΙΣΙΑ ΤΟΥ ΕΡΩΠΑΪΚΟΥ ΠΡΟΓΡΑΜΜΑΤΟΣ "nZEB training in the Southern EU Countries – Maintaining building traditions" IEE/13/292/SI2.675576

1ο Εκπαιδευτικό Σεμινάριο: «Βασικό Πρόγραμμα»

Φορέας Υλοποίησης: Τεχνολογικό Πανεπιστήμιο Κύπρου
Σάββατο 09 & 16 Απριλίου 2016. Ώρα έναρξης: 09:00
Κτήριο Τάσσος Παπαδόπουλος - Αμφιθέατρο 01, ΤΕΠΑΚ Λεμεσός

Πρόγραμμα

Σάββατο 09 Απριλίου 2016	
08:30 – 08:50	**Προσέλευση - Εγγραφές**
08:50 – 09:00	**Καλωσόρισμα και Εισαγωγή στο Ερευνητικό από το Συντονιστή του Έργου**
	• *Παύλιος Ελευθερίου, Τεχνολογικό Πανεπιστήμιο Κύπρου*
09:00 – 11:30	**1η Ενότητα**
	• *Κύπρος Παναγή*
11:30 – 12:00	**Διάλειμμα**
12:00 – 14:30	**2η Ενότητα**
	• *Κύπρος Παναγή*
Σάββατο 16 Απριλίου 2016	
09:00 – 11:30	**3η Ενότητα**
	• *Κύπρος Παναγή*
11:30 – 12:00	**Διάλειμμα**
12:00 – 14:30	**4η Ενότητα**
	• *Κύπρος Παναγή*
14:30 – 15:00	**Σύνοψη σεμιναρίου - Συζήτηση**
15:00	**Λήξη 1ου Σεμιναρίου**

Agenda _ Module 1

3. **Italy**

3.1 Pictures from Seminars

Napoli_ June 2016

Rimini_June 2016

Vibo Valentia_ June 2016

Siracusa_ July 2016

Ragusa_ November 2016

Catanzaro_ December 2016

3.2 Copies of singed Attendance lists

habitech

Ordine Architetti Pianificatori Paesaggisti e Conservatori della Provincia di Siracusa

SOUTH ZEB

CORSO

"Soluzioni nZEB: edifici a energia quasi zero"

CFP N. 6

lunedì 11 e martedì 12 luglio 2016 alle ore 09.00 presso Auditorium CPT Siracusa in viale Ermocrate n. 6

N. Scheda	titolo	cognome	nome	ora	entrata
1	Architetto	ALBANESE	ANDREA	9:00	
2	Architetto	ALLEGRA	ROSARIA	9:00	
3	Architetto	ANDOLINA	GIOACCHINO	9:00	
4	Architetto	BATTIATO	MARCO	9:00	
5	Architetto	BORDONARO RUBINI	VINCENZO	9:00	
6	Architetto	BUONCONSIGLIO	MARCO	9:00	
7	Architetto	CACCAMO	VINCENZO CLAUDIO	9,00	
8	Architetto	CALVO	CORRADO	9:00	
9	Architetto	CAMPISI	PAOLO	9,00	
10	Architetto	CANIGIULA	UMBERTO	9:00	
11	Architetto	CARRUBBA	DAVIDE	9:00	
12	Architetto	CASTELLINO	MILENA	9,00	
13	Architetto	CICITTA	SAMUELE	9:00	
14	Architetto	COCCIMIGLIO	DANIELA	9:00	
15	Architetto	COSTA	CARLO	9:00	
16	Architetto	CRISCI	FABIO	9,00	
17	Architetto	CULTRERA	[redacted] ROBERTO	9,00	
18	Architetto	DI DIO	RAFFAELE	9,30	
19	Conservatore	DI GREGORIO	GIAN LUIGI	9:00	
20	Architetto	DI MAURO	DANIELE	9:00	
21	Architetto	FABIO	GIUSEPPE	9:00	
22	Architetto	FOTI	SONIA	9:00	

Siracusa _July 2016(1st page of 3 pages)

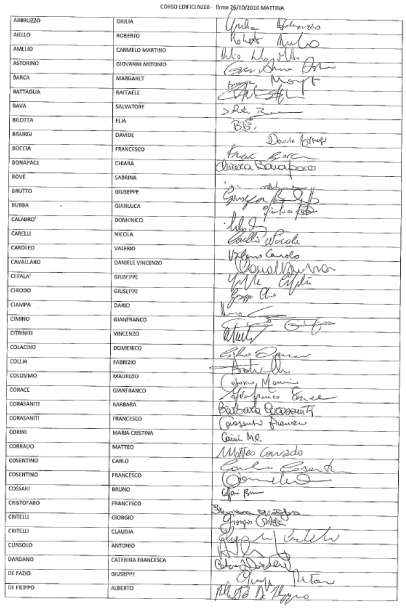
SOUTH ZEB — *Corso SouthZEB Modulo 1 e 2* — habitech

Venerdì 1 luglio 2016 -- 9.00 - 18.00 presso Politecnico di Milano

Registro presenze

	Cognome, Nome	Firma
1	Fiore Alessandro	
2	Beltroni Giampaolo	
3	PINATO PAOLO	
4	MILONI GIPAOLO	
5	MARCO [illegible]	
6	ANTONELLO MIRAGLIA	
7	PIETROBON MARCO	
8	SILVIO CAMALDO	
9	MICHELA PANCELLO	
10	DANIELE BONATO	
11	ANDREEA [illegible]	
12	Roberta Mastri	
13	FERRARI FULVIO	
14	[illegible] DENIS	
15	SARA MANGIALARDO	
16	[illegible]	
17	Gloria Galbiati	

Milano_ July 2016 (1st page of 2 pages)

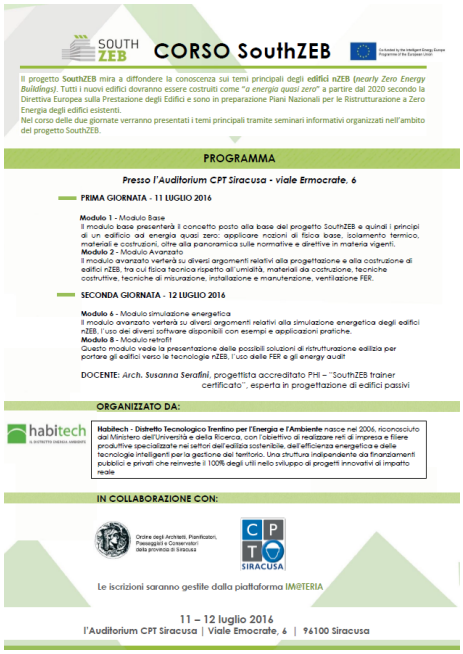


CORSO EDIFICI NZEB - firme 26/10/2016 MATTINA

ABRUZZO	GIULIA	
AIELLO	ROBERTO	
AMELIO	CARMELO MARTINO	
ASTORINO	GIOVANNI ANTONIO	
BARCA	MARGARET	
BATTAGLIA	RAFFAELE	
BAVA	SALVATORE	
BILOTTA	ELIA	
BISURGI	DAVIDE	
BOCCIA	FRANCESCO	
BONAPACE	CHIARA	
BOVE'	SABRINA	
BRUTTO	GIUSEPPE	
BUBBA	GIANLUCA	
CALABRO'	DOMENICO	
CARELLI	NICOLA	
CARDILEO	VALERIO	
CAVALLARO	DANIELE VINCENZO	
CEFALA'	GIUSEPPE	
CHIODO	GIUSEPPE	
CIAMPA	DARIO	
CIMINO	GIANFRANCO	
CITRINITI	VINCENZO	
COLACINO	DOMENICO	
COLLIA	FABRIZIO	
COLOSIMO	MAURIZIO	
CORACE	GIANFRANCO	
CORASANITI	BARBARA	
CORASANITI	FRANCESCO	
CORINI	MARIA CRISTINA	
CORRADO	MATTEO	
COSENTINO	CARLO	
COSENTINO	FRANCESCO	
COSSARI	BRUNO	
CRISTOFARO	FRANCESCO	
CRITELLI	GIORGIO	
CRITELLI	CLAUDIA	
CUNSOLO	ANTONIO	
DAIDANO	CATERINA FRANCESCA	
DE FAZIO	GIUSEPPY	
DE FILIPPO	ALBERTO	

Catanzaro_ October 2016 (1st page of 10 pages)

3.3 Agendas



SOUTH ZEB **CORSO SouthZEB**

Il progetto **SouthZEB** mira a diffondere la conoscenza sui temi principali degli **edifici nZEB** (*nearly Zero Energy Buildings*). Tutti i nuovi edifici dovranno essere costruiti come "*a energia quasi zero*" a partire dal 2020 secondo la Direttiva Europea sulla Prestazione degli Edifici e sono in preparazione Piani Nazionali per le Ristrutturazione a Zero Energia degli edifici esistenti.
Nel corso delle due giornate verranno presentati i temi principali tramite seminari informativi organizzati nell'ambito del progetto SouthZEB.

PROGRAMMA

Presso l'Auditorium CPT Siracusa - viale Ermocrate, 6

PRIMA GIORNATA - 11 LUGLIO 2016

Modulo 1 - Modulo Base
Il modulo base presenterà il concetto posto alla base del progetto SouthZEB e quindi i principi di un edificio ad energia quasi zero; applicare nozioni di fisica base, isolamento termico, materiali e costruzioni, oltre alla panoramica sulle normative e direttive in materia vigenti.
Modulo 2 - Modulo Avanzato
Il modulo avanzato verterà su diversi argomenti relativi alla progettazione e alla costruzione di edifici nZEB, tra cui fisica tecnica rispetto all'umidità, materiali da costruzione, tecniche costruttive, tecniche di misurazione, installazione e manutenzione, ventilazione FER.

SECONDA GIORNATA - 12 LUGLIO 2016

Modulo 6 - Modulo simulazione energetica
Il modulo avanzato verterà su diversi argomenti relativi alla simulazione energetica degli edifici nZEB, l'uso dei diversi software disponibili con esempi e applicazioni pratiche.
Modulo 8 - Modulo retrofit
Questo modulo vede la presentazione delle possibili soluzioni di ristrutturazione edilizia per portare gli edifici verso le tecnologie nZEB, l'uso delle FER e gli energy audit

DOCENTE: *Arch. Susanna Serafini*, progettista accreditato PHI – "SouthZEB trainer certificato", esperta in progettazione di edifici passivi

ORGANIZZATO DA:

habitech

Habitech - Distretto Tecnologico Trentino per l'Energia e l'Ambiente nasce nel 2006, riconosciuto dal Ministero dell'Università e della Ricerca, con l'obiettivo di realizzare reti di impresa e filiere produttive specializzate nei settori dell'edilizia sostenibile, dell'efficienza energetica e delle tecnologie intelligenti per la gestione del territorio. Una struttura indipendente dai finanziamenti pubblici e privati che reinveste il 100% degli utili nello sviluppo di progetti innovativi di impatto reale

IN COLLABORAZIONE CON:

Ordine degli Architetti, Pianificatori, Paesaggisti e Conservatori della provincia di Siracusa

CPT SIRACUSA

Le iscrizioni saranno gestite dalla piattaforma IM@TERIA

11 – 12 luglio 2016
l'Auditorium CPT Siracusa | Viale Ermocrate, 6 | 96100 Siracusa

Siracusa_ July 2016


Ciclo di seminari
"Progetto Europeo SouthZEB: edifici nZEB in clima Mediterraneo"

SEMINARIO

Edifici nZEB: principi fondamentali nZEB

06 GIUGNO 2016

BASILICA DI SAN GIOVANNI MAGGIORE | NAPOLI

Programma – Sessione Mattutina

8:30 - 8:45 Registrazione partecipanti

8:45 - 9:00 Saluti di benvenuto
LUIGI VINCI | Presidente dell'Ordine degli Ingegneri della Provincia di Napoli
FILIPPO DE ROSSI | Coordinatore Commissione Energia
STRESS - HABITECH

9:00 – 12:45 Modulo 1 – il progetto europeo SouthZEB ed i principi fondamentali degli edifici nZEB
CARLO ROSSINI | Habitech
Test

12:45 - 13:00 Approfondimento
Il progetto di ricerca Smart Case ed i suoi dimostratori
FRANCESCO DE FALCO | Stress S.c. a r. l.

Programma – Sessione Pomeridiana

13:30 - 14:00 Registrazione partecipanti

14:00 – 17:45 Modulo 2 – Concetti e tecnologie avanzate degli edifici nZEB
CARLO ROSSINI | Habitech
Test

17:45 - 18:00 Approfondimento
nZEB nei climi mediterranei: progettazione e ottimizzazione energetica di un edificio non residenziale situato a Napoli
ADOLFO PALOMBO | Stress S.c.a r.l. – Università degli Studi di Napoli Federico II

Per maggiori informazioni è possibile contattare Habitech:
dott.ssa Micol Mattedi – europe@dttn.it 0464-443455

Gli ingegneri partecipanti potranno iscriversi sul sito www.ordineingegnerinapoli.it
Agli ingegneri in regola con le firme di controllo saranno riconosciuti n. 4 CFP per ogni sessione

Napoli_ June 2016


In collaborazione con:

nell'ambito del progetto europeo

ORGANIZZANO IL CICLO DI SEMINARI TECNICI SU

Il progetto europeo SouthZEB: seminari di approfondimento sui temi degli edifici nZEB in clima mediterraneo

Martedì 13 e mercoledì 14 dicembre 2016 - Hotel Perla del Porto – Catanzaro

Docente: *ing. Serafino Marchese, "SouthZEB trainer" certificato*

PROGRAMMA:

PRIMA GIORNATA – 13 DICEMBRE 2016

- 8.30 Registrazione partecipanti
- 8.45 Saluti dei Presidenti Ordini e Collegi
- 9.00 – 13.00 Modulo 1 - Modulo Base (Strumenti per l'analisi energetica degli edifici nZEB)
  PAUSA PRANZO
- 14.00 – 18.00 Modulo 2 - Modulo Avanzato (La tecnologia a bassa emissione e l'automazione per gli edifici)

SECONDA GIORNATA – 14 DICEMBRE 2016

- 8.30 Registrazione partecipanti
- 9.00 – 13.00 Modulo 4 - Il comfort termico negli edifici nZEB
  PAUSA PRANZO
- 14.00 – 18.00 Modulo 6 - Management e supervisione degli edifici nZEB

ISCRIZIONE GRATUITA PREVIA REGISTRAZIONE.
LA PARTECIPAZIONE È RISERVATA AI PROFESSIONISTI CHE NON HANNO PRESO PARTE ALLA I EDIZIONE

Per info ed iscrizioni: Segreteria Organizzativa
Ai professionisti partecipanti verranno riconosciuti i CFP ai sensi del Regolamento per l'aggiornamento della competenza professionale.

Habitech - Distretto Tecnologico Trentino per l'Energia e l'Ambiente nasce nel 2006, riconosciuto dal Ministero dell'Università e della Ricerca, con l'obiettivo di realizzare reti di impresa e filiere produttive specializzate nei settori dell'edilizia sostenibile, dell'efficienza energetica e delle tecnologie intelligenti per la gestione del territorio.

Catanzaro_ December 2016

4. Portugal

4.1 Pictures from Seminars

3rd Edition_Lisbon_Module 1

4th Edition_Guimaraes_Module 6

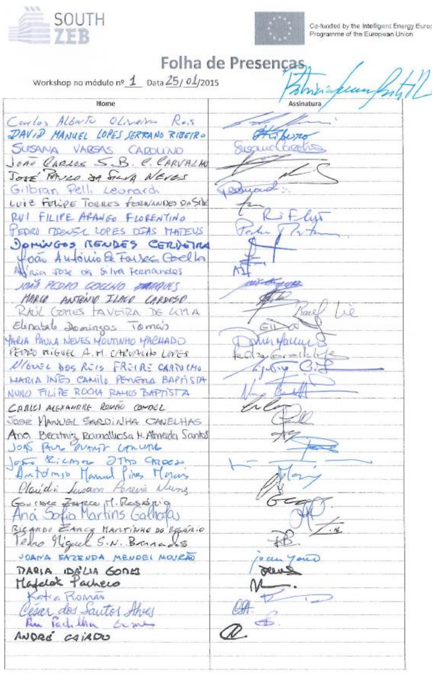
5th Edition_Faro_Module 1

8th Edition_Coviha

8th Edition_Coviha

9th Edition_Ponta Delgada Azores_Module 2

4.2 Copies of singed Attendance lists


SOUTH ZEB

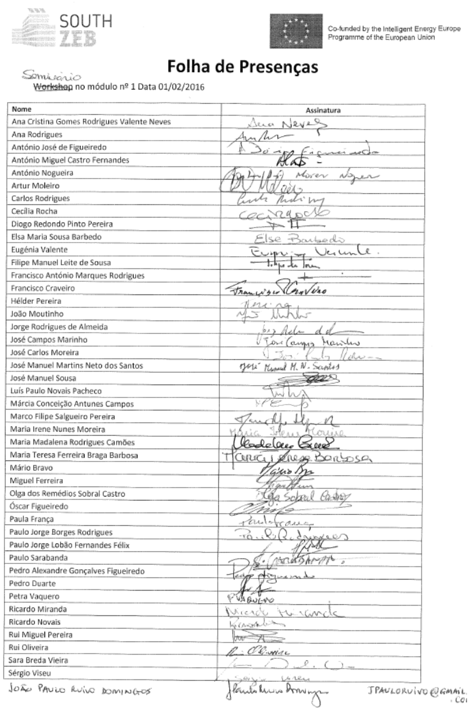
Co-funded by the Intelligent Energy Europe Programme of the European Union

Folha de Presenças

Workshop no módulo nº 1 Data 25/01/2015

Nome	Assinatura

1st Edition_Lisbon_Module 1


SOUTH ZEB

Co-funded by the Intelligent Energy Europe Programme of the European Union

Folha de Presenças

Seminário

~~Workshop~~ no módulo nº 1 Data 01/02/2016

Nome	Assinatura
Ana Cristina Gomes Rodrigues Valente Neves	
Ana Rodrigues	
António José de Figueiredo	
António Miguel Castro Fernandes	
António Nogueira	
Artur Moleiro	
Carlos Rodrigues	
Cecília Rocha	
Diogo Redondo Pinto Pereira	
Elsa Maria Sousa Barbedo	
Eugénia Valente	
Filipe Manuel Leite de Sousa	
Francisco António Marques Rodrigues	
Francisco Craveiro	
Hélder Pereira	
João Moutinho	
Jorge Rodrigues de Almeida	
José Campos Marinho	
José Carlos Moreira	
José Manuel Martins Neto dos Santos	
José Manuel Sousa	
Luís Paulo Novais Pacheco	
Márcia Conceição Antunes Campos	
Marco Filipe Salgueiro Pereira	
Maria Irene Nunes Moreira	
Maria Madalena Rodrigues Camões	
Maria Teresa Ferreira Braga Barbosa	
Mário Bravo	
Miguel Ferreira	
Olga dos Remédios Sobral Castro	
Óscar Figueiredo	
Paula França	
Paulo Jorge Borges Rodrigues	
Paulo Jorge Lobão Fernandes Félix	
Paulo Sarabanda	
Pedro Alexandre Gonçalves Figueiredo	
Pedro Duarte	
Petra Vaquero	
Ricardo Miranda	
Ricardo Novais	
Rui Miguel Pereira	
Rui Oliveira	
Sara Breda Vieira	
Sérgio Viseu	

2nd Edition_Vila Nova de Gaia_Module 1

SOUTH ZEB

Co-funded by the Intelligent Energy Europe Programme of the European Union

Folha de Presenças

Workshop no módulo nº 5 Data 13/04/2016

Nome		Assinatura
Agripina	Garcia López	
Álvaro	Carvalho	
Ana	Águas	
António	Mortal	
António Hugo Tavares da	Lamarão	
Armando	Costa Inverno	
Cândido	Sousa	
Carlos	Coelho	
Daniel	Paulino	
Daniel	Ferreira	
Elisabete	Figueiredo	
Filipe Joel	Rodrigues Sobral	
Hugo	Câmara	
Isabel	Viegas	
João	Lopes	
João	Raposo	
João Carlos Chaínho	Nunes	
João Pedro	Costa	
Jorge	Lima	
Jorge	Francisco	
José	Gonçalves	
José	Rosário	
José	Paulo	
Luis Carlos	Barradas Henriques Mateus	
Marco Antonio	Correia Bento	
Nelson	Galego	
Nelson	Martins	
Nuno	Ferreira	
Pedro Miguel	Medeiros Tavares Guerreiro	
Raul	Lana Miguel	
Tânia Ribeiro	Ribeiro	
Telma	Neto Viegas	
Tiago David	Pinto	
Verónica	Mendonça	

5th Edition_Faro_Module 5