



MASTER TRAIN-THE-TRAINER WORKSHOP

Krakow- Poland

AGENDA

20-23/02/2017



Day 1 (Monday, 20.02.2017)

Duration: 09:00 - 17:00

Objective: Increasing PPs' knowledge, skills and training capacities regarding **technical aspects** related to EE in public buildings, with the specific focus on integration of different solutions, choosing most optimal scenarios, ensuring efficient monitoring and involving building users in the processes.

Trainers: Cvetko Fendre, Franc Rihl, Melita Boric

Structure:

- Introduction
- Theoretical part (presentation of possible technical EE measures & solutions)
- Practical part (discussion on practical aspects of technical interventions, e.g. their integration with other EE solutions, users involvement, overcoming most typical barriers at different stages of the process, etc.)
- Case studies
- Exercise / Group work
- Summary of the exercise and the day

Agenda:

09:00-09:15	Introduction to the TOGETHER Master Train-the-Trainer and the TOGETHER training path <ul style="list-style-type: none"> • Patrycja PŁONKA, Association of Municipalities Polish Network "Energie Cités"
09:15-09:45	Presentation of the draft technical material for local trainings <ul style="list-style-type: none"> • Franc RIHL, University of Maribor • Discussion with all participants
09:45-10:15	Catalogue of possible technical EE solutions that may be implemented in public buildings (thermal retrofitting, change of heating source, installation of RES, modernisation of internal installations, purchase of EE equipment...) <ul style="list-style-type: none"> • Cvetko FENDRE, Training Expert
10:15-11:00	1st STEP to EE improvement - energy audit <ul style="list-style-type: none"> • Cvetko FENDRE, Training Expert
11:00-11:30	Coffee break
11:30-12:15	2nd STEP to EE improvement - choosing optimal energy renovation scenario for a building



	<ul style="list-style-type: none"> • Cvetko FENDRE, Training Expert
12:15-13:00	<p>3rd STEP to EE improvement - monitoring & evaluation of the results of energy renovation in a building</p> <ul style="list-style-type: none"> • Cvetko FENDRE, Training Expert
13:00-14:00	Lunch break
14:00-14:45	<p>Case study of SC Velenje (energy audit, comprehensive energy refurbishment, energy monitoring system, energy management organization)</p> <ul style="list-style-type: none"> • Cvetko FENDRE, Training Expert
14:45-15:15	<p>Case study of the City of Zagreb: ZAGEE project - solutions used, results achieved and lessons learnt</p> <ul style="list-style-type: none"> • Melita BORIC, City of Zagreb
15:15-15:45	Coffee break
15:45-17:00	<p>Exercise based on the example of a specific building energy audit:</p> <ol style="list-style-type: none"> 1. Analysis and verification of the building's physical parameters 2. Determination of the building's energy parameters 3. Determination of the energy potential of RUE for the building 4. Making priority table of a comprehensive energy refurbishment as result of energy audit 5. Checking EE of specific building with a programming tool – on line 6. Checking living comfort in specific place - on line
17:00	End of the training day
19:30	<p>Dinner at "PADRE" restaurant; 11 Wiślna str. (corner of Wiślna and Olszewskiego str.)</p> <p>Dinner hosted by PNEC</p>



Day 2 (Tuesday, 21.02.2017)

Duration: 09:00 - 17:00

Objective: Increasing PPs' knowledge, skills and training capacities on **financing energy efficiency improvement of public buildings**. The particular focus of the training is on how to prioritize public buildings for thermal efficiency retrofits using economic and financial analysis as well as how to choose an appropriate business model and funding sources to implement these projects.

Trainers: Aleksandra Novikova, Stefano Pagani (tbc), Antonio Zonta

Structure:

- Introduction
- Theoretical part (approaches to economic and financial analysis of energy efficiency projects, alternative business models to realize them, and potential funding sources)
- Practical part (the discussion of case studies, practical barriers and opportunities, e.g.)
- Developing new skills: solving a set of exercises based on the real data
- Knowledge transfer: the exchange with experience among the training participants in group work and presentations
- Resources for self-learning: available guides and tools
- Summary of the exercise and the day

Agenda:

09:00-09:30	Presentation of the draft financial material for local trainings <ul style="list-style-type: none"> • Stefano PAGANI, APE • Discussion with all participants
09:30-10:30	Economic and financial analysis of energy efficiency projects <ul style="list-style-type: none"> - Cost- and- benefit analysis, - The discussion of selected barriers to project design and implementation, - The theory - practice gap and the reasons for it, - Discussion of selected case studies - Reference sources and documents <ul style="list-style-type: none"> • Aleksandra NOVIKOVA, training expert
10:30-10:45	Coffee break
10:45-11:45	Financing models for energy efficiency in public buildings: self-financing, dept-financing, financing by a private contractor, financing by a private contractor through energy savings, project finance <ul style="list-style-type: none"> - The model overview, - Analysis of pros and contras, - Discussion of selected case studies



	<ul style="list-style-type: none"> - References courses and documents <ul style="list-style-type: none"> • Aleksandra NOVIKOVA, training expert
11:45-13:00	<p>Work in group:</p> <p>Exercise 1: Calculating and comparing the economic and financial performance of exemplary projects on retrofitting public buildings using CBA method</p> <p>Exercise 2: Identifying alternative business models for exemplary projects on retrofitting public buildings</p> <p>Output: Presentation of group results</p> <ul style="list-style-type: none"> • Aleksandra NOVIKOVA, training expert
13:00-14:00	Lunch break
14:00-15:00	<p>Funding sources for energy efficiency in public buildings (EU funds, financing institution instruments, technical assistance in project development, national public funding sources, financial intermediaries, institutional investors, crowd financing, private contractors):</p> <ul style="list-style-type: none"> - Overview, - Funding instruments, - Activities covered, - How to apply, - Reference courses and documents <ul style="list-style-type: none"> • Aleksandra NOVIKOVA, training expert
15:00-15:30	<p>Case study of the Province of Treviso: Participation of energy users in EPC</p> <ul style="list-style-type: none"> • Antonio ZONTA, Province of Treviso
15:30-15:45	Coffee break
15:45-16:30	<p>Work in group:</p> <p>Exercise 3: Identifying alternative sources for financing exemplary projects on retrofitting public buildings</p> <p>Output: Presentation of group results</p> <ul style="list-style-type: none"> • Aleksandra NOVIKOVA, training expert
16:30-17:00	Wrap up, Q&A
17:00	End of the training day
19:30	<p>Dinner at "Sławkowska 1" restaurant; 1 Sławkowska str.</p> <p>Dinner self-paid</p>



Day 3 (Wednesday, 22.02.2017)

Duration: 09:00 - 17:00

Objective: Increasing PPs' knowledge, skills and training capacities regarding **behavioural aspects** related to EE in public buildings, with the specific focus on understanding rationale behind people's behaviours and consumption patterns and then - on the basis of this understanding - finding most effective ways to approach building users and motivate them to change their behaviours and engage in energy-related initiatives.

Trainers: Manuel Nina, Antonio Zonta, Melita Boric, Francesco Molinari, Patrycja Płonka

Structure:

- Introduction
- Theoretical part (psychology behind building users' behaviours, consumption patterns, etc.)
- Practical part (methods and tools for changing building users behaviours and engaging them in energy saving activities, main barriers and drivers, etc.)
- Case studies
- Exercise / Group work
- Summary of the exercise and the day

Agenda:

09:00-09:15	Introduction to the DSM concept and the TOGETHER integrated approach <ul style="list-style-type: none"> • Antonio ZONTA, Province of Treviso
09:15-09:45	Presentation of the draft material on behavioural EE aspects developed for local trainings <ul style="list-style-type: none"> • Melita BORIC, City of Zagreb • Discussion with all participants
09:45-10:15	Psychology/sociology behind building users' behaviours, habits and consumption patterns (factors shaping people's energy behaviours and decisions, KAP gap, rebound effect, NIMBY approach, etc.) <ul style="list-style-type: none"> • Manuel NINA, training expert
10:15-11:00	Efficient communication and sharing information with building users (methods, tools, things to remember and to avoid, key ingredients of successful educational/information campaigns, etc.) <ul style="list-style-type: none"> • Manuel NINA, training expert
11:00-11:30	Coffee break



11:30-12:15	<p>Incentive schemes and tools for changing building users' behaviours (methods, tools, Living Lab approach, gamification/serious games methodologies, user driven approach, split incentive approach, systemic approach, etc.)</p> <ul style="list-style-type: none"> • Manuel NINA, training expert
12:15-13:00	<p>Living lab methodology in practice</p> <ul style="list-style-type: none"> • Francesco MOLINARI, Communication Expert
13:00-14:00	Lunch break
14:00-14:45	<p>Case study proposed by Manuel Nina: Energy Efficiency in a University Campus (SMART CAMPUS project case study)</p> <ul style="list-style-type: none"> • Manuel NINA, Training Expert
14:45-15:15	<p>Case study of PNEC: Implementation of the 50/50 energy-saving methodology in Polish schools</p> <ul style="list-style-type: none"> • Patrycja PŁONKA, PNEC
15:15-15:45	Coffee break
15:45-17:00	<p>Exercise / Group work: Implementing a behavior change program in a public building</p> <ul style="list-style-type: none"> • Exercise/group work engaging all participants
17:00	End of the training day
19:30	<p>Dinner at "La Campana" restaurant; 7 Kanonicza str.</p> <p>Dinner self paid</p>



Day 4 (Thursday, 23.02.2017)

Duration: 09:00 - 17:00

Objective: Increasing PPs' knowledge, skills and training capacities regarding **analytical aspects** related to EE in public buildings, with the specific focus on most efficient methods and tools for monitoring energy consumption, standard and smart energy management systems, as well as ICT technologies that may be implemented in buildings to optimise energy use.

Trainers: Miguel Carvalho, Melita Boric, Marcin Łojek

Structure:

- Introduction
- Theoretical & practical part (data analysis & verification, standard and smart energy management systems, ICT technologies for improving EE in public buildings, educating & activating building users using energy monitoring data)
- Case studies
- Exercise / Group work
- Summary of the exercise and the day

Agenda:

09:00-09:30	Presentation of the draft material on the analytical EE aspects developed for local trainings <ul style="list-style-type: none"> • Melita BORIC, City of Zagreb • Discussion with all participants
09:30-10:30	Energy consumption in buildings trends and the importance of Data Analytics for Energy Efficiency <ul style="list-style-type: none"> • Miguel Carvalho, training expert
10:30-11:00	Standard energy management systems - ISO 50001, EEA (experience of the 50000&1 SEAPs project) <ul style="list-style-type: none"> • Marcin ŁOJEK, Association of Municipalities Polish Network "Energie Cités"
11:00-11:30	Coffee break
11:30-13:00	Building Energy Management Systems & ICT technologies to improve EE in public buildings (requirements, scope, available solutions and technologies, data analytics for DSM and integration with other information sources); Exercise / Group work (30m) <ul style="list-style-type: none"> • Miguel Carvalho, training expert



13:00-14:00	Lunch break
14:00-15:15	Data Analytics methods for handling energy consumption data (data gaps & outliers) & self-learning methods to facilitate an intelligent building-user iteration for energy efficiency Case study proposed by Miguel Carvalho: IST/Taguspark (University) <ul style="list-style-type: none"> • Miguel Carvalho, training expert
15:15-15:45	Coffee break
15:45-17:00	Exercise / Group work: Identifying Energy Efficiency measures in a services building in downtown Lisbon <ul style="list-style-type: none"> • Exercise/group work engaging all participants
17:00	End of the training day
19:30	Dinner at "Marmolada" restaurant; 5 Grodzka str. Dinner self paid