

**Interreg**

CENTRAL EUROPE



European Union  
European Regional  
Development Fund

**TOGETHER**

TAKING  
**COOPERATION**  
FORWARD



Untapped potential of energy efficiency in public buildings, Zagreb, 10.04.2019

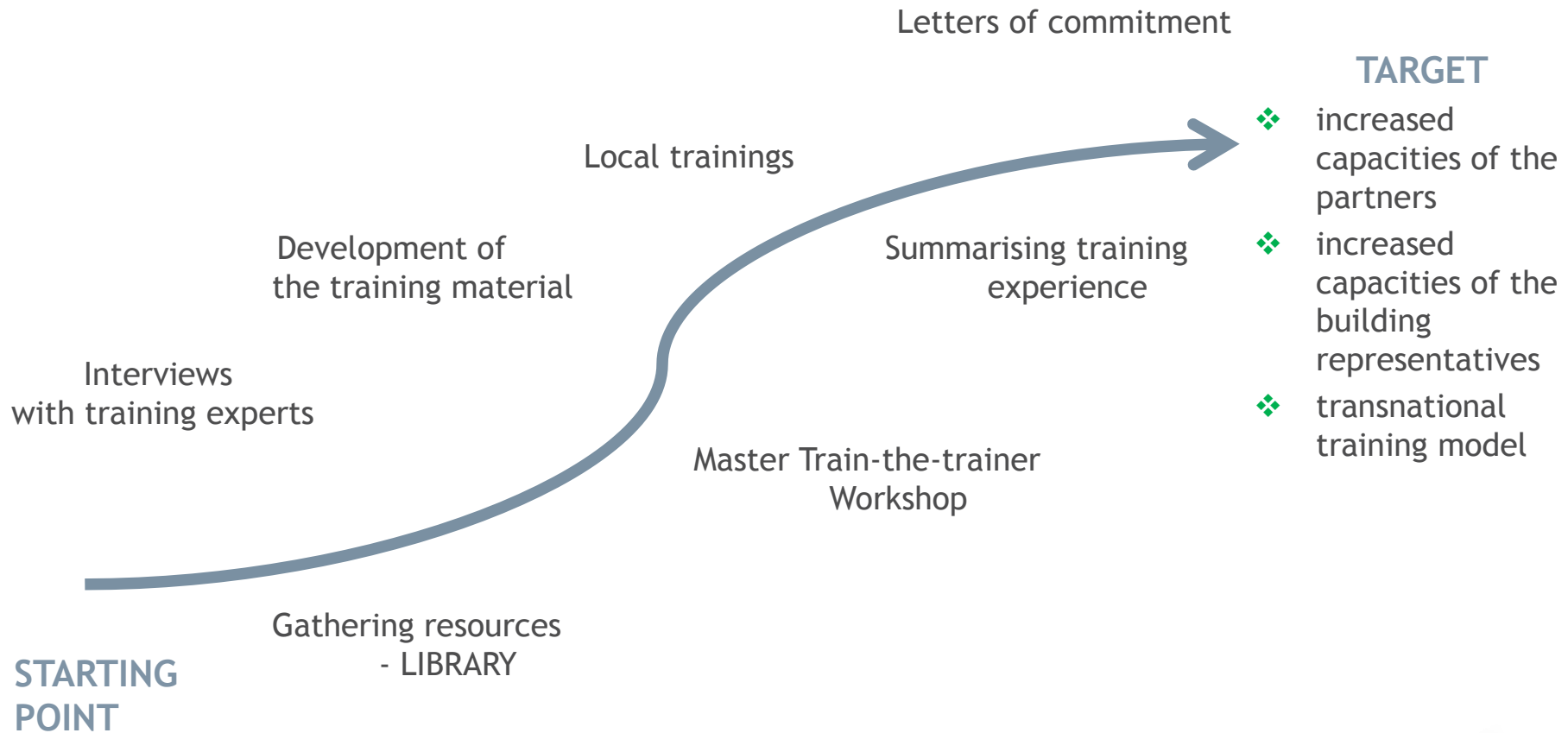


**Training relevant stakeholders - TOGETHER  
experience**





Patrycja Płonka, Association of Municipalities Polish Network „Energie Cités”

# TOGETHER TRAINING PATH



# STEP 0: IDENTIFICATION OF KEY TOPICS

What building owners and managers should know?

  <p>TAKING COOPERATION FORWARD</p>			
<p>TOGETHER</p> <p>LIST OF TOPICS TO BE COVERED IN THE "TOGETHER" TRAINING MATERIAL AND TRAINING PATH</p>			
Energy efficiency in public buildings			
Technical energy efficiency measures / aspects	Financial energy efficiency measures / aspects	DSM energy efficiency measures/aspects	Other energy efficiency measures/aspects
<ul style="list-style-type: none"> <li>• Energy audit</li> <li>• Energy performance certificates</li> <li>• Energy monitoring</li> <li>• Thermal retrofitting of the envelope</li> <li>• Change of the heating source</li> <li>• Installation of RES</li> <li>• Modernisation of internal installations for heat and electricity distribution, including:                             <ul style="list-style-type: none"> <li>✓ installation of TRV on radiators or IRC</li> </ul> </li> <li>• Modernisation of internal installations for hot water preparation &amp; distribution</li> <li>• Modernisation of internal lighting</li> <li>• Modernisation of HVAC systems, including:                             <ul style="list-style-type: none"> <li>✓ installation of VSD to standard motors in FCUs and AHUs of</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• EU and national financing programmes/schemes</li> <li>• ESCO scheme (EPC)</li> <li>• PICO scheme</li> <li>• Revolving funds</li> <li>• Other innovative/alternative financing schemes (e.g. on-bill financing, green bonds)</li> <li>• Economic assessment of the investment/action</li> <li>• Financial assessment of the investment/action</li> <li>• Economic/financial performance indicators (for monitoring economic/financial impact of the investment/action)</li> <li>• Development of business plan and budget of the investment/action</li> <li>• Ensuring bankability of investment/action</li> <li>• Tendering procedures</li> <li>• Green Public Procurement</li> <li>• Purchasing groups</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Behavioural DSM</u></li> <li>• Behavioural science/psychology related to the consumers habits/practices</li> <li>• Consumption patterns</li> <li>• Rebound effect (Jevons paradox)</li> <li>• "Knowledge-attitude-practice" (KAP) gap</li> <li>• Communication with building users' (methods, tools, tips, communication campaigns)</li> <li>• Changing behaviour of building users (methods, tools, tips, incentive schemes)</li> <li>• Living Lab approach and user driven approach</li> <li>• Split incentive approach</li> <li>• Systemic approach</li> <li>• Communication &amp; networking platforms (e.g.</li> </ul>	<ul style="list-style-type: none"> <li>• EU and national legal frameworks, including legal requirements concerning new and renovated buildings</li> <li>• Building standards (passive buildings, zero-emission buildings, etc.)</li> <li>• EE in public buildings as a part of wider municipal energy planning strategies</li> </ul>

# STEP 1: INTERVIEWS WITH TRAINING EXPERTS



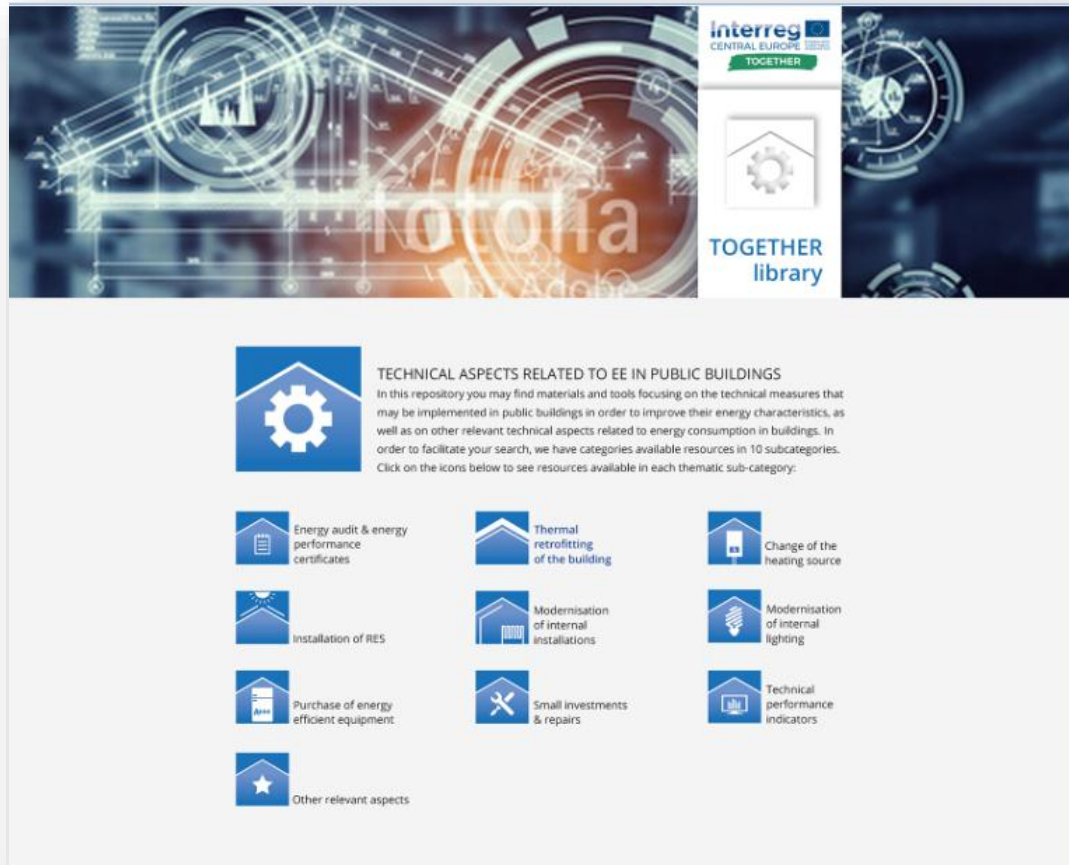
Report with many useful considerations and tips on:

- ❖ development of good quality training material
- ❖ organisation of efficient and interactive trainings
- ❖ getting useful feedback from the trainees and assessment of their new knowledge and skills
- ❖ keeping the trainees interested and focused over longer period of time

**A „MUST-READ” DOCUMENT  
FOR ALL THE TRAINERS AND  
ASPIRING TRAINERS!**



# STEP 2: TOGETHER LIBRARY



Repository of over 100  
resources on the topic of  
energy efficiency of  
buildings

Easy to navigate!

Living tool!

<http://www.interreg-central.eu/Content.Node/TOGETHER.html>



# STEP 3: TOGETHER TRAINING MATERIAL

## Technical training material



## Learn and teach about:

- ❖ technical interventions that may be implemented in a building to improve its energy efficiency
- ❖ integrating technical measures with each other and with other types of energy-saving solutions (analytical and behavioural ones)
- ❖ developing energy optimisation scenario for a specific buildings
- ❖ involving building users in technical interventions



What energy efficiency measures I could implement in my building?



# STEP 3: TOGETHER TRAINING MATERIAL

## Financial training material



FINANCIAL TRAINING MATERIAL			
Module 1: EU, national & regional financing schemes	Module 2: Alternative financing methods	Module 3: Economic & financial assessment of the investment	Module 4: Development of the financial documentation of the project
Module 5: Ensuring project bankability, viability and profitability	Module 6: Attracting & cooperation with potential investors	Module 7: Choosing optimal funding for EE projects	Module 8: Tendering procedures and green public procurement

## Learn and teach about:

- ❖ available funding opportunities
- ❖ economic and financial assessment of planned investments
- ❖ development of investment documentation
- ❖ development of tender documentation
- ❖ correct financial management of the project that is already running



How can I finance planned EE measures and ensure that they bring both energy & cost reduction?

# STEP 3: TOGETHER TRAINING MATERIAL

## DSM training material



## Learn and teach about:

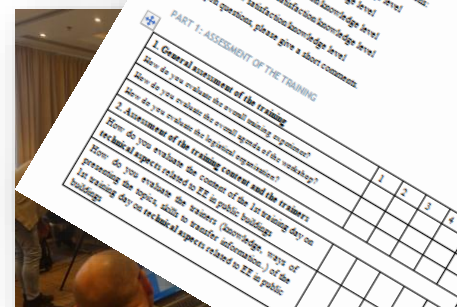
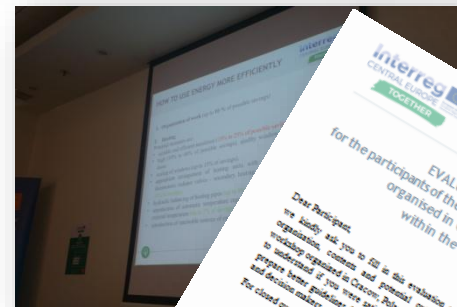
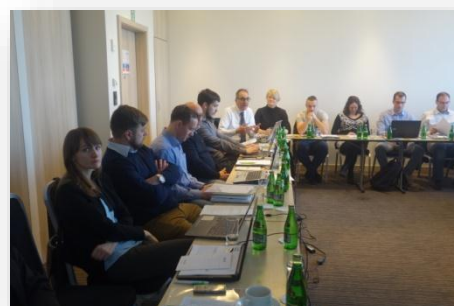
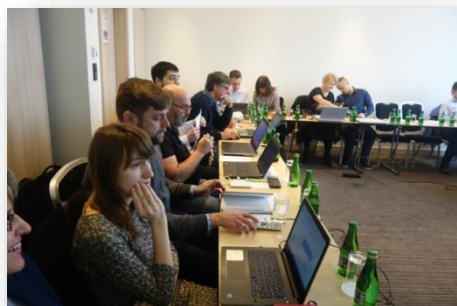
- ❖ different energy monitoring & management methods & tools
- ❖ using data analysis to find energy consumption optimisation measures
- ❖ using ICT to rationalise energy consumption
- ❖ factors influencing building users' consumption patterns
- ❖ methods and tools for educating building users
- ❖ incentive schemes encouraging building users to use energy more efficiently



What information I can get from the EMS? How can I use them to plan energy optimisation measures and motivate building users to save energy?



# MASTER TRAIN-THE-TRAINER WORKSHOP - INTENSIVE LIVING LAB



**Interreg CENTRAL EUROPE TOGETHER**

for the participants of the MASTER TRAIN-THE-TRAINER WORKSHOP organised in Cracow on 20-23.02.2017 within the TOGETHER project

Dear Participant,  
we kindly ask you to fill in this evaluation questionnaire, which will help us assess the organization, content and potential outcomes of the MASTER TRAIN-THE-TRAINER workshop organized in Cracow, Poland on 20-23.02.2017. Your feedback will help us not only to prepare better guidelines for a series of local trainings for public buildings owners, managers and decision makers.

For closed questions, please choose one of the options:  
 5 - very high satisfaction/knowledge level  
 4 - high satisfaction/knowledge level  
 3 - medium satisfaction/knowledge level  
 2 - low satisfaction/knowledge level  
 1 - low satisfaction/knowledge level

For open questions, please give a short comment.

**PART I: ASSESSMENT OF THE TRAINING**

1. General assessment of the training		1	2	3	4	5
How do you evaluate the overall quality of the workshop?						
How do you evaluate the overall speed of the workshop?						
2. Assessment of the training content and the trainers						
How do you evaluate the content of the 1st training day on technical aspects related to EE in public buildings?						
How do you evaluate the content of the 2nd training day on presenting the topics, skills to transfer information) of the 1st training day on technical aspects related to EE in public buildings?						

# MASTER TRAIN-THE-TRAINER WORKSHOP - INTENSIVE LIVING LAB

**Technical training:** *how to assess building's energy situation?*

**Financial training:** *how to choose optimal business model?*

**DSM training:** *how to use energy data to optimise energy consumption and activate building uses?*

Worth considering: separate training module on training techniques, methods and tools



# LOCAL TRAININGS - HUGE BUT REWARDING UNDERTAKING!

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**QUESTIONNAIRE**

**PART 1: BASIC INFORMATION**

Please fill in below your contact data, as well as basic information about your professional background, current position within the municipality and main activities and responsibilities (including the ones related to energy and environment).

First and last name	
Professional background	
Current position	
Organisation	
E-mail address	
Phone number	
Main activities responsibilities within the organisation	

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**Graph 1: Level of initial thematic knowledge of different target groups**

Target Group	Technical	Financial	Behavioural	Analytical
Municipal decision maker	2.5	2.8	2.5	2.5
Municipal employee	2.2	2.5	2.2	2.2
Building manager	2.5	2.5	2.5	2.5
Building maintenance manager	2.5	2.5	2.5	2.5
Other	2.5	2.5	2.5	2.5

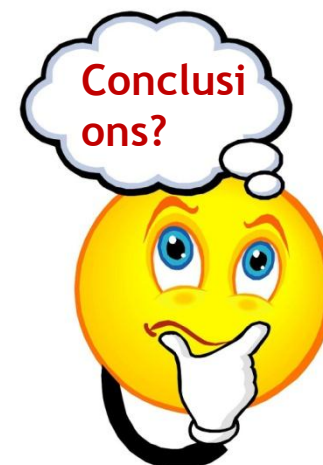
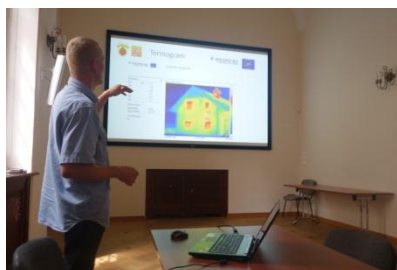
**Conclusions:**

As shown on the graph above, there are significant differences in the initial level of thematic knowledge of different target groups. E.g. municipal decision makers have the highest knowledge in financial issues, while their expertise in analytical issues is rather low. Building managers, on the other hand, have respective knowledge in technical and behavioural aspects but they need significant training in finances. Also worth mentioning is relatively low technical knowledge of the municipal employees responsible for supervising public buildings and their energy consumption. All this needs to be taken into consideration when planning the trainings.

**B.3. Average level of knowledge and expertise concerning specific topics within TECHNICAL ASPECTS category**

The graph below presents the average level of knowledge of the respondents regarding different technical topics specified in the questionnaire:

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**Training needs assessment  
& report**

**Series of trainings**

**Reader-friendly  
reports**



proving that the TOGETHER transnational & interdisciplinary training model really works and is flexible enough to be adapted to different local situations, target groups, etc.



Establishing contacts with experienced trainers that improved the TOGETHER training path.



Catching attention of the target groups and increasing both their overall energy awareness and concrete competences to manage energy better.



Establishing good basis for the pilot action and further energy-saving projects that could be implemented in pilot buildings and municipalities.




Establishing efficient exchange of experience and energy-saving ideas between the representatives of the target group.



# OBSTACLES ENCOUNTERED (AND OVERCAME!)

 Time!

 Multiplicity of obligations and tasks of the target group (hard to focus enough on the trainings)

 Diversity within the target group regarding professional background and experience

 Necessity to develop more general/framework training material with references to more detailed and comprehensive ones

 Diversity within the target group regarding training needs (not all the topics were interesting for everyone)

 Limited interest of some targets

 Scarcity of reference material for some of the topics, including the ones that we consider important (integration, optimisation, combining data analysis with users behaviour)



look at the main training topic in a **HOLISTIC** way

**get to KNOW your training group well**

**increase your own KNOWLEDGE & training CAPACITIES**

**consult the EXPERTS for getting different perspectives**

adopt **INTEGRATED** and **TARGETED** training approach

**combine traditional training tools with interactive ones**

**don't only lecture! Make the trainees find their own solutions**

**make trainings are PRACTICAL as possible**

use trainees as experts

**remember that a training is not a single action but part of long-term capacity building strategy - TOGETHER model**





- With diversified target group like in the case of TOGETHER it is better to organized several short trainings for different types of targets instead of large, unified trainings for all.
- In principle, short trainings with personalized messages are highly appreciated by the users, although such trainings require much more face-to-face interactions and direct communication.
- Lessons timetable should be as compatible with the working time of the trainees as possible.
- To catch attention of the trainees and keep them interested it is necessary to present technologies, solutions, examples, case studies and recommendations that are potentially applicable in their particular situation.
- It is worth to include on-site building visits of the training programme and show the saving opportunities where bad habits can be witnessed.
- It is important to give the trainees time to discuss and exchange experience, opinions on the information delivered, ideas for energy-saving measures, etc. (both during the training - networking sessions, and more informally, e.g. during common dinner at the end of the training day).
- When possible, embed the training programme into the regular training of staff.



- Training content and material should be carefully adapted not only to the country situation (legal, climate, economic, social...) but also to the specific needs of the trainees, their educational and professional background and practical possibilities of taking certain actions.
- Technical trainings should be organized only for technical staff and energy managers, financial trainings only for people who are responsible for financial issues, raising funds for energy-related projects, etc. For other target groups it is enough to pass only basic knowledge on the topics.
- The trainings should feature specific examples of easy-to-implement measures and ideas or examples of successful projects targeting this topic.
- It would be worth to implement some training sessions with the specific in-depth knowledge and exercises about laws and regulations, addressed to the local administrations' technicians.
- Remember to insert as many local, specific information into the material as possible.





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