

Urban Planners with Renewable Energy Skills – UP-RES

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Abstract

Missing link to energy and emissions

Traditionally, energy and emissions have not been integrated into the urban planning processes. Only in a very few planning schools in the world the spatial planners are educated with understanding on energy, and on renewable energy sources (RES) and energy efficiency (EE) in particular.

Relevance of the work to planning education

To fight Climate Change, however, such new understanding has become essential. The understanding may materialize in the following two ways:

- The energy experts and the urban planners shall start working together with all spatial development plans regardless existing or new building areas. In order to facilitate such co-working, training shall be provided to both types of professional to help them to understand each other.
- The training shall be extended to bachelor and master level education in parallel to the continued education of professionals.

UP-RES (Urban Planners with Renewable Energy Skills) Project as a part of the Intelligent Energy Europe framework programme provides pilot training to spatial and energy planners in five EU countries as well as material support to other universities to adopt such training into their curricula.

The training material designed to other planning schools in Europe will be made freely downloadable in 10 languages by mid July 2012 on the web page: <http://aalto2.aalto.fi/projects/up-res/materials.html>

Methodology

During 2012, the pilot training is carried out in five European countries, namely in Hungary, Spain, Germany, U.K. and in Finland, the latter being the country of the coordinator.

The project work started with the competence and training needs analysis. Based on the analysis, the training concept was designed specifically for each country. Practical examples and best practice cases of combined spatial and RES planning have been collected and used in the pilot training. Real cases have been identified in which win-win situations have been achieved when both the lifecycle costs and the

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Hungary:

- By Summer 2011, 3 short courses were implemented.
- The long course with as much as 60 ECTS credits was organized during Oct 2011-July 2012rs.

Germany: ...

- Six short courses of 2 days each were organized in Germany with 182 participants in Dresden, Frankfurt, Munich, Hamburg, Chemnitz and Berlin.
- The long course of 9 months was expected to start in June 2012.

Spain:

- Four information days were organised in the Chamber of Architect's regional headquarters in Girona, Tarragona and Barcelona
- The long course with 10 modules were implemented during Oct. 2011-June 2012. The long term course was structured in ten modules with an extension between 12 and 18 hours each.

United Kingdom:

- In total 5 short courses of 3 days each were implemented in UK by February 2012 but more expected later on.
- According to the project agreement, there will be no long courses in UK.

Structure of Training Material

The material at hand consists of the selected training materials of ten modules, for each of which a general description of the module objectives, approaches and the contents has been created. As annexes slides have been given to present some 3-5 key topics of the particular training module, some 300 slides altogether. Internet links have also been given for searching more information from the web in English language.

Methodologies of Training

In the pilot training several methodologies were applied, as follows:

- Sometimes a facilitator was chosen for each module to link the learned energy issues to urban planning
- Lectures were based on slides and discussions
- Excursions both locally and internationally were organized to best practice locations
- Exercises were carried out by the trainees in small groups and individually about issues combining RES and EE to spatial planning
- Distant learning was used to reduce the need of travelling and to save time
- Movies were shown to trainees such as, for instance, Inconvenient Truth, District Cooling,
- Expert panel, or expert clinic, advisory services were applied to support the trainees to carry out their exercises.

Example of Training Module

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emissions could be substantially reduced compared to the traditional way of spatial planning. The pilot training is underway during the period Oct. 2011 – June 2012.

Pilot Training Approach

The core of the training is the structure comprising ten modules. Each module typically comprises two days of training.

The module titles are as follows:

M1	SUSTAINABILITY CONCEPTS IN REGIONAL AND URBAN PLANNING: A HOLISTIC VISION
M2	ENERGY. FORMS - TRANSFORMATION - MARKET OUTLOOK
M3	ENERGY DEMAND REDUCTION STRATEGIES: POTENTIAL IN URBAN PLANNING
M4	ENERGY DEMAND REDUCTION STRATEGIES: POTENTIAL IN NEW BUILDINGS AND REFURBISHMENT
M5	ENERGY RESOURCES AND RENEWABLE ENERGY TECHNOLOGIES
M6	ENERGY DISTRIBUTION: DISTRICT HEATING AND COOLING
M7	THE RIGHT SCALE FOR EVERY ENERGY CONCEPT: HEAT AND COOL DENSITY (DEMAND SIDE), POTENTIAL ON SUPPLY SIDE
M8	NEW MANAGEMENT CONCEPTS IN THE ENERGY MARKET
M9	ENERGY PLANNING
M10	NEW TRANSPORT MODELS AND URBAN AND INTER-URBAN MOBILITY

The above listed Modules will be described in the attached documents, including the objective, the main contents and the information sources available to design local training of the particular module.

Country Specific Differences

Designing and implementing the training heavily depends on the local circumstances, and therefore, has to be adjusted to the local needs and conditions. Therefore, various approaches were chosen in the five countries to implement the pilot training, as follows:

Finland:

- In Spring 2011 already, 7 one-day courses were organized in the cities of Espoo, Kuopio, Oulu, Turku, Tampere, Seinäjoki and Jyväskylä to market the long pilot training course.
- During Fall 2011-Spring 2012, a 9 months lasting long course of 8 modules of two days each was organized for 26 urban and regional planners.
- Moreover, a voluntary excursion of three days to Germany was arranged.

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Here an example of the contents of a training module is presented. It has been a combination of team work, lecturers and an excursion, for example.

M5 ENERGY RESOURCES AND RENEWABLE ENERGY TECHNOLOGIES		13.-14.2.2012
Facilitator: N.N.		
Time	1st Day: Familiarization with RES	
9.00-9.15	Introduction to Module Topics	
9.15-10.30	Presentation of RES technologies and applications	
10.30-10.45	Break	
10.45-12.00	Based on the presentation, five groups of trainees search for information from Internet. One group specifically for solar electric, solar heat, wind, biomass and the fifth group for waste to energy.	
12.00-12.45	Break	
12.45-14.00	Five groups continue	
14.00-14.15	Break	
14.15-14.30	Presentation of the results of five group works	
15.30-16.00	Conclusion	
2nd Day: Rural Energy Supply		
9.00-10.30	Local economy: impacts of RES on rural economy and survival	
10.30-10.45	Break	
10.45-12.00	Off-grid village based on RES (Kempele, Finland)	
12.00-12.45	Break	
12.45-14.00	Agricultural waste to liquid fuel	
14.00-14.15	Break	
14.15-16.15	Excursion to a bio mass fuelled CHP plant	

Expected outcome

In summer 2012, the UP-RES project has provided support to extend similar training of urban planners with renewable energy and energy efficiency skills to other planning schools in Europe by means of publishing training materials. These downloadable materials comprise:

- The module structure of training;
- Introductory reading of the general approach and the content of each training module;
- Sources in literature and internet for more detailed information; and,
- Some 300 slides and supporting texts as well as shared experiences

The material is available in 10 European languages such as:

- English
- Finnish
- French
- German
- Hungarian
- Italian
- Polish
- Romanian
- Spanish
- Swedish

From fall 2012 on, the material is expected help extend such training to other European planning schools that consider integral spatial and RES planning as an important approach to fighting Climate Change.

The material above is freely downloadable. However, we would need to keep record on how, where and when such material has been applied in order to report on the use to the project sponsors, primarily the EU.

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