



Aalto University
School of Science
and Technology

UP-RES

Urban Planners with Renewable Energy Skills



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Challenges to urban planning

- Need to reduce heat consumption in buildings;
- Need to reduce fuel consumption in transportation;
- Need to reduce electricity consumption in lighting, cooling, heating;
- Need to turn from fossil to renewable energy;
- Need to reduce overall emissions to atmosphere; and,
- Need to circulate material flows of waste and energy supplies (use of ash, waste to energy,..).

Barriers to overcome

- At present, the urban areas tend to be scattered rather than centralized, which means higher energy consumption and emissions!
- Therefore:
 - Urban planners shall be educated to relations of spatial plans to energy and emissions;
 - Urban planners shall become aware of consequences of their spatial plans to energy and emissions;
 - Planning guidelines shall include energy as the major planning parameter;
 - Renewable energy requires a new way of thinking in urban and spatial planning that does not exist yet.

Why urban planning benefits from DHC and RES?

- The CHP (combined heat and power) is the most efficient way to use any renewable fuel to generate heat, power and cooling;
- Centralized heating and cooling load is vital to CHP and RES: there is no CHP without heat load;
- The heating and cooling load depends on urban structure: heat density and load level; and,
- DHC (district heating and cooling) enables a variety of different fuels and waste energies to be used for the urban energy supply in a sustainable way.

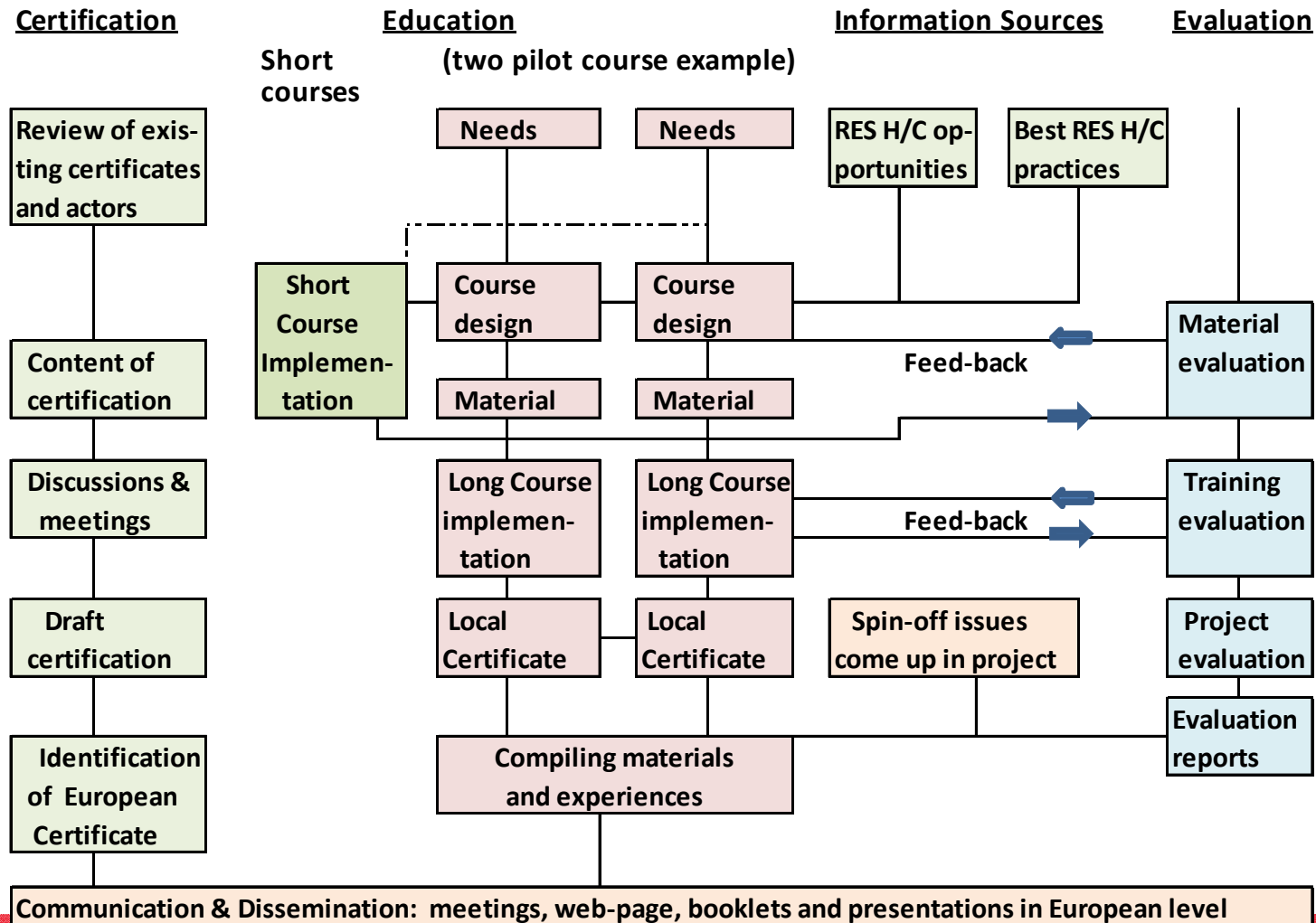
UP-RES focus

- Renewable Energy Directive: to promote RES in heating, cooling and powering of communities at high energy efficiency.
- EU coverage: Experience from 5 training pilots to be extended to European level through European level associations and meetings.

UP-RES content

- Review planning guidelines in a number of cities in EU;
- Review education programmes of urban planners in universities in EU;
- Record and present positive examples of urban planning as models of good approach;
- Design and implement pilot training courses of RES to urban planners in Germany, Finland, Hungary, Spain and UK;
- Draft recommendations for urban planning that take RES and its emission relations into account; and,
- Prepare a plan for EU-certification of energy skilled urban planners.

UP-RES flow chart



UP-RES outputs

- 5 countries in different parts of Europe with pilot training programmes and courses to urban and regional planners;
- 200 planning schools and institutes in EU as members of AESOP informed and activated;
- 1000 heating and cooling utilities in 32 countries will be informed and activated through Euroheat&Power and AGFW;
- 20 European research institutes and universities informed;
- 20 European associations of urban planners and architects informed;
- 400 regional and urban planning organizations in Europe informed; and,
- Training material summary issued in 10 EU languages.

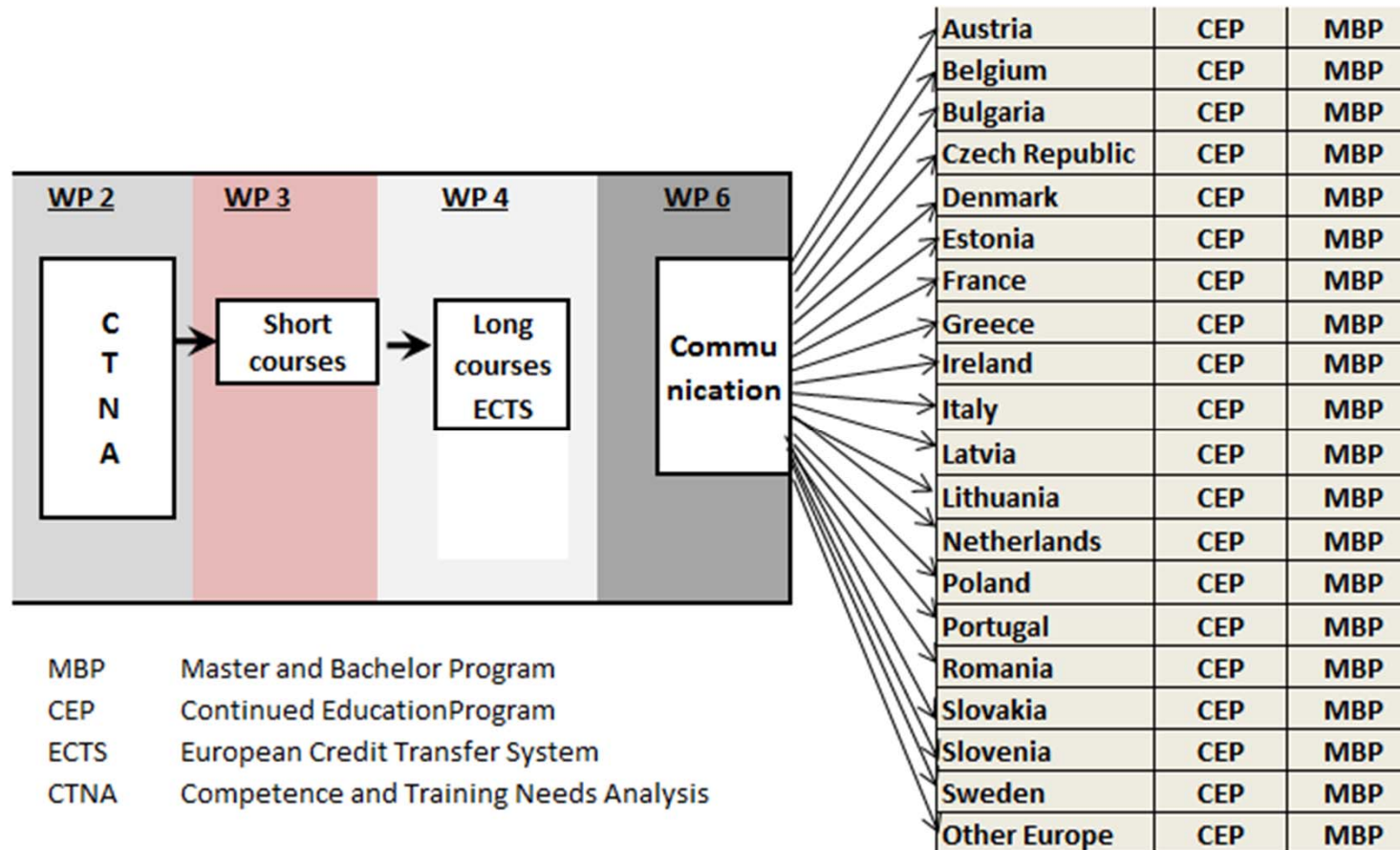
UP-RES co-operators

- Association of European Schools of Planners (AESOP)
- Euroheat & Power and DHC Research Platform
- Urban planner organisations
- NSG - National Steering Groups (co-financiers)
- NSG in Finland as an example:
 - Helsinki Energy,
 - SITRA – the Finnish Innovation Fund,
 - Uusimaa Regional Council (Helsinki capital area),
 - Finnish Energy Industries,
 - Association of Finnish Regional and Local Authorities (Kuntaliitto),
 - Motiva – Half governmental energy saving agency.

Role of planning schools

- Concerns planning schools that have indicated willingness to co-operate with UP-RES;
- Commenting the brief output of Competence and Training Needs Analysis, February 2011;
- Intention to start a similar training course in 2012 expressed in writing by March 15, 2011;
- Possibility to comment the prepared training material in Spring 2011;
- Possibility to experience the lessons learned from the implemented pilot training courses in Spring 2012; and,
- Adoption training modules to their own curricula in order to start a similar training program in their planning school in Fall 2012.

Dissemination on European level



Through Association of European Schools of Planners –AESOP - and Euroheat & Power

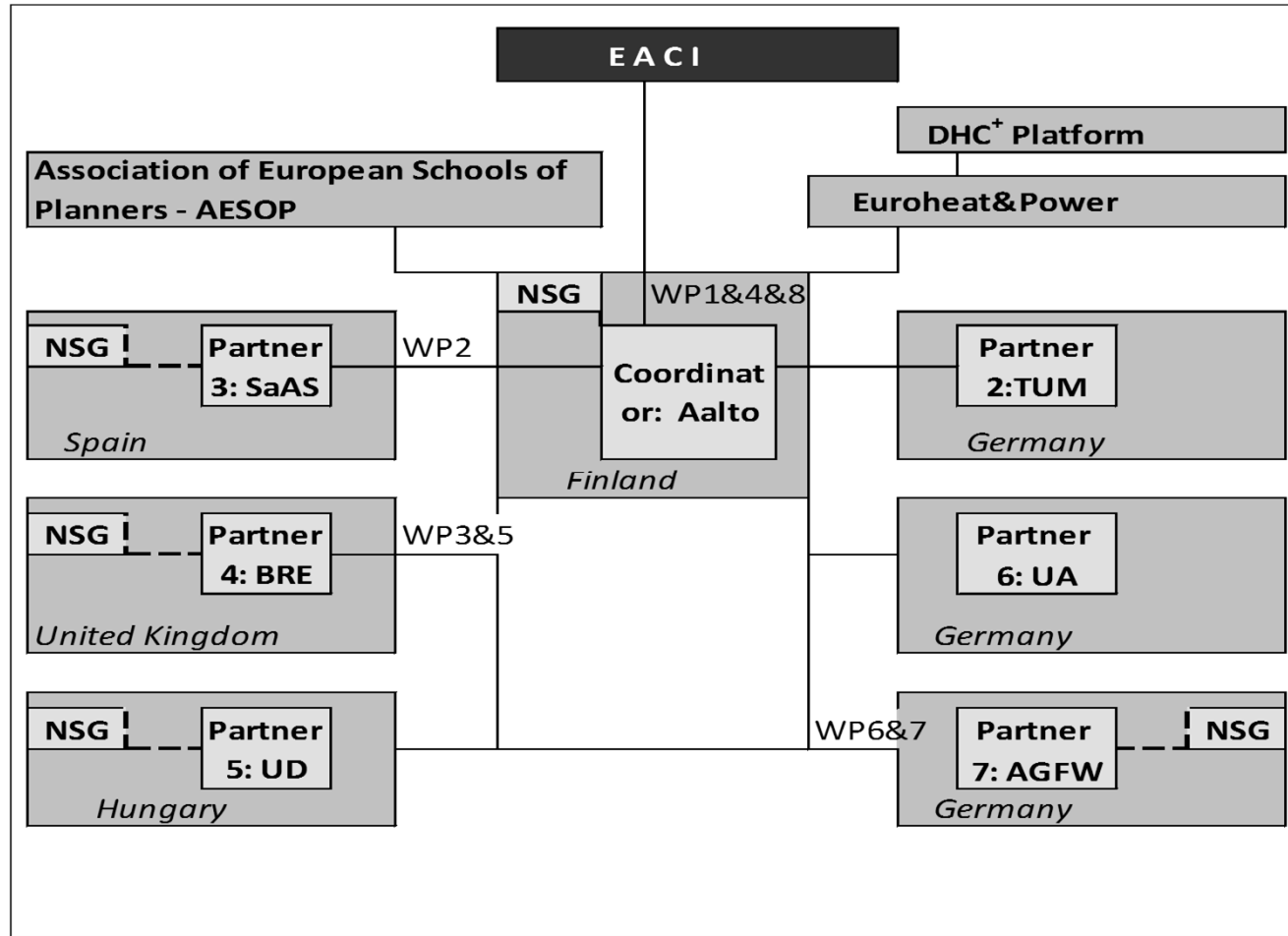
Seven partners in UP-RES

- Finland: (1) Aalto University with various departments and its DIPOLI Life-long Learning Institute (as leader)
- Germany: (2) District Heating Association - AGFW, Frankfurt, (3) University of Augsburg - UA and (4) Munich University of Technology, Munich –TUM
- UK: (5) Building Research Establishment Ltd. - BRE, Watford
- Spain: (6) Association of Architecture and Sustainability in Catalonia, Barcelona - SaAS
- Hungary: (7) University of Debrecen

UP-RES budget

Partner	City	Country	Budget K €
Aalto	Espoo	FI	338,7
TUM	Munich	DE	48,6
SaAS	Barcelona	ES	124,0
BRE	Watford	UK	232,5
UD	Debrecen	HU	76,4
UA	Augsburg	DE	42,6
AGFW	Frankfurt	DE	123
TOTAL			985,8

UP-RES organisation



UP-RES contract dates

- Project application submitted in June 2009
- Project in negotiations taken place during Jan.-July 2010
- Project approval obtained July 2010
- Kick-off meeting having taken place in Sep 15-16, 2010
- Implementation to last 30 months until Feb. 2013

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