PATRES

Public Administration Training and Coaching on Renewable Energy Systems

Disclaimer
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TRAINING COURSE PROGRAMME

Overview

Addressed to:

Technical officers, administrative officers, heads of offices and managers from municipalities and local authorities in general, social housing bodies and public utilities managing any energy-related service.

The overall objective is providing participants with all the required knowledge and skills to develop proper regulations, policies and planning, aimed at the introduction of RE systems in buildings and urban facilities.

Therefore, this multidisciplinary course programme is devoted to understanding:

- Technical aspects and market features of the main RE technologies;
- Policy and regulation framework, mechanisms and support schemes, devoted to promotion and spreading of RES utilization;
- Techniques for drafting effective regulations, setting up procedures and planning e.g. regarding architectural or urban integration.
- Methods for the governance process.
- Best practices and case studies from all over Europe

Training objectives:

Knowledge	Skills	Attitudes
• Principles of sustainable urban planning • Knowledge of the most common RE systems technologies, of their advantages and of their drawbacks • Principles of effective regulation • Participatory processes • Knowledge of social communication and consensus building • Principles of negotiation	• Choosing the most appropriate RE system technologies for the local context • Feasibility assessment of RES in buildings • Defining appropriate technical standards in regulations • Drafting effective regulations • Defining the most appropriate and effective mix of regulations and	• Favourable but critical attitude towards RE • Long term perspective • Attention to the stakeholders benefit in drafting regulation • Willingness to negotiate and involve stakeholders • Willingness to innovate and learn form others

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• Knowledge of the most appropriate mix of measure and regulation to spread the introduction of RE systems in buildings • Knowledge of funding opportunities for financing RE technologies • Knowledge of useful sources for getting and updating information	supporting actions • Creating bipartisan consensus on RE technologies • Winning the support of the stakeholders •	

Detailed Training Programme

Module 1 **RE Technologies - building and districts integration –**	**Recommended Length : 3–4 days**

Objectives:
Module 1 is designed to provide a general introduction to clean and renewable energy sources and technologies meant to be integrated in households, public facilities, buildings in general and districts.

For each RE technology the main content objectives are:
- To review the basic functioning of the conversion from natural resource into final energy;
- To describe the existing types of RE systems, their main characteristics and technology components;
- To update on the latest market and technology developments.

Skills:
Since the course is addressed to people with previous, even if basic, knowledge in RES, course participants are expected:

- To acquire operational knowledge on specific technologies;
- To be able to choose the most appropriate RE system technologies for the local context
- To realize a simplified feasibility assessment of RES in buildings
- To define appropriate technical standards for the application in regulations and policies.

Methodology:
The teaching methodology is based on in-class learning.
Module length suggested is 30 to 40 hours divided into 5 lessons. However, the duration of each lesson is flexible, according to local contexts and trainees' qualifications.
The lessons may be integrated by lecture hours and practical work, role playing exercises, seminars and self-study hours.
At the beginning of each lesson a brief self-evaluation (tests) on the concepts previously learned will be done.
Best Practices and case studies will be included in each lesson.

	Lesson 1 **Fundamentals of Solar energy**	**Contents:** – Introduction to solar technology and its links/response with/to energy consumption in buildings (i.e. electric energy, domestic hot water, space heating - national and European data)

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	(8-10 hours)	– The solar resource (solar incident radiations, climate data, solar map, inclination and shading influence). <u>Photovoltaic.</u> – Photo-electricity conversion – Types and Components of PV system – Basics of functioning and installation – Method for calculation of system energy requirements and Dimensioning <u>Solar-thermal conversion</u> – Types and Components of solar-thermal collectors – Differences between domestic hot water and plants for space heating. – Basics of functioning and installation – Method for calculation of system energy requirements and Dimensioning <u>Additional:</u> – Technical and economic assessment – Integration in buildings and districts application – Local/Territorial optimal applications. – The Market context: products, manufacturers, prices.
		Links, bibliography and sources: Resinbuil (IEE project) http://openpdf.com/ebook/resinbuil-pdf.html Best Result (IEE project) http://www.bestresult-iee.com/public_deliverables.aspx (training materials)
	Lesson 2 **Fundamentals of Biomass energy** **(4-6 hours)**	**Contents:** – Biomass Resources (types, availability and utilization) – Conversion technologies – Types and components of heating systems – Basics of functioning and installation – Integration in buildings and districts – Local/Territorial Applications – The Market context: products, manufacturers, prices.
		Links, bibliography and sources: Resinbuil (IEE project) http://openpdf.com/ebook/resinbuil-pdf.html Best Result (IEE project)

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		http://www.bestresult-iee.com/public_deliverables.aspx (training materials)
	Lesson 3 **Fundamentals of Geothermal energy** **(4-6 hours)**	**Contents:** – Resource – Heat exchangers – Basics of functioning and installation – Integration in buildings and districts – Local/Territorial Applications – The Market context: products, manufacturers, prices.
		Links, bibliography and sources: http://www.bestresult-iee.com/public_deliverables.aspx (training materials)
	Lesson 4 **Fundamentals of Wind energy** **(4-6 hours)**	**Contents:** – Resource (wind maps and main criteria for the assessment of potentiality) – Wind turbine aerodynamics and design – Integration in buildings and districts – Local/Territorial Applications
		Links, bibliography and sources: http://www.bestresult-iee.com/public_deliverables.aspx (training materials)
	Lesson 5 (Optional) **Introduction to bioclimatic and low energy buildings** **(2-4 hours)**	**Contents:** – Solar passive systems – Housing energy source, insulation, materials, – Heating/cooling systems – Measurement and monitoring
		Links, bibliography and sources: Pass net (IEE project) http://www.pass-net.net/training/index.htm (training materials)

Module 2. **Regulations and Policies for RES deployment**	**Recommended Length : 3–4 days**
Objectives: Module 2 is designed to provide, firstly, a comprehensive overview of energy-related regulations and	

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policies, at a European, national and local level, and then, a more in-depth focus on actual means for RE implementing in local contexts, such as regulations, green public procurement and sustainable energy action plans. Further objective is to get knowledge of the European key actors actively involved in these topics.

Skills:
Main skills participants are expected to acquire are:

- Defining the most appropriate and effective mix of regulations and supporting actions for promoting RE integration in buildings.
- Acquiring techniques for drafting effective regulations, setting up procedures and supporting mechanisms for RES in buildings;
- Acquiring techniques for drafting and/or implementing Green Public Procurement
- Being aware of fundamentals for drafting a SEAP

Methodology:
The teaching methodology is based on in-class learning.
Module length suggested is 30 to 40 hours divided into 5 lessons. Flexibility duration of each lesson is foreseen, according to local contexts and the qualifications of participants.
The lessons may be integrated by lecture hours and practical work (i.e. a workshop session in lesson 3), apart from role playing exercises, seminars and self-study.
At the beginning of each lesson a brief self-evaluation (tests) on the concepts previously learned will be done.
Best Practices and case studies will be included in each lesson.

	Lesson 1 **European regulation, directives and policies.** (6-8 hours)	**Contents:** Support schemes on Renewable Energy implementation (investment subsidies, feed-in tariffs, tax exemptions, CO2 taxes, soft loans and additional aside premium). EU Framework: – Directive 2009/28/EC (RES Directive) – EPBD - Energy Performance in Buildings Directive (under recast) – EU Energy and Climate Package – Strategic Energy Review 2009 – SET Plan (Strategic Energy Technology Plan) – Green paper "towards a secure, sustainable and competitive European energy network" (2008) – Green paper "A European Strategy for Sustainable, Competitive and Secure Energy" (2006)
		Links, bibliography and sources:
	Lesson 2 **National and Regional rules**	**Contents:** National and local Administrative procedures, regulations and codes for the promotion and/or obligations of RES utilization in buildings and urban systems.

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	and policies for RES in buildings (6-8 hours)	
		Links, bibliography and sources: To be prepared in each country
	Lesson 3 **Drafting regulation (Workshop section)** (14-18 hours)	**Contents:** – Techniques and principles for drafting regulations; – Approved text components and legal approaches for drafting proper ordinances, regulations, policies; – Simplifying regulations and procedure. – Flanking measures for promotion of RE technologies: information campaign, training courses for installers, economic and fiscal incentives.
		Links, bibliography and sources: IEE project www.solarordinances.eu/
	Lesson 4 **Green Public Procurement /energy)** (4 hours)	**Contents:** – Green Public Procurement management and implementation – Focus on: RE market - How to buy Renewable electricity - How to choose proper contracts, suppliers, tariffs, etc.
		Links, bibliography and sources: http://ec.europa.eu/environment/gpp/toolkit_en.htm (GPP Training Tool Kit, 3 modules in all EU languages) http://www.procuraplus.org/index.php?id=4611 (Manual on GPP)
	Lesson 5 **How to develop a SEAP** (6 hours)	**Contents:** – The Covenant of Mayors agreement – SEAP guidelines
		Links, bibliography and sources: http://www.eumayors.eu/library/documents_en.htm (Guidelines –Templates and instructions in 22 languages)

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Module 3. **Management**	**Recommended Length : 2 - 3 days**

Objectives:
Module 3 is designed to provide mainly an overview of the management aspects for such local process of RE technology implementation. Therefore, the module deals with fund-raising and citizens involvement.

Skills:
Main skills participants are expected to improve are:

- Orientating and being able to apply for European, national and regional funding opportunities for RES implementation in buildings;
- Enhancing the involvement citizens and stakeholders in the decision-making process regarding RE rules and obligations;
- Being able to reach overall consensus on RE technologies and get support from key actors.

Methodology:
The teaching methodology is based on in-class learning.
Module length suggested is 20 to 30 hours divided in 2 lessons. Flexibility duration of each lesson is foreseen, according to local contexts and the qualifications of participants.
The lessons may be integrated by lecture hours and practical work (i.e. a workshop session in lesson 3), apart from role playing exercises, seminars and self-study.
The lessons may be integrated by lecture hours, role playing exercises (i.e. for multi-stakeholder meeting), and self-study.
Best Practices and case studies will be included in each lesson.
At the beginning of each lesson a brief self-evaluation (tests) on the concepts previously learned will be done.

	Lesson 1 **Project Financing Fund raising…** **(10-12 hours)**	**Contents:** Financing opportunities for RE cities: – Framework of EU mechanisms and opportunities (Elena, Concerto…) – National, regional and local support mechanisms (subsides, loan programmes…) – Private (Project-financing; Leasing; letting the roofs of public buildings to be used by third parties for RES installations)
		Links, bibliography and sources:
	Lesson 2 **Governance, Awareness raising, Participatory process (10-12 hours)**	**Contents:** How to involve stakeholders and citizens for a participated decision making process. – Methods of communication and marketing – Multi-stakeholder processes

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		Links, bibliography and sources: www.belief-europe.org/ (Guide: Involve stakeholders and citizens in your local energy policy) http://www.raise-plus.org/ Raising Citizens' Awareness of European Research for the sustainable City of Tomorrow (Guidelines)

Module 4 (optional) **Pilot Actions**	**Recommended Length : 0,5 - 1 day**

Objective:
This single day lesson aims to support the start up of pilot actions that course participants must perform/apply in their respective local context and/or institutions.
Therefore, the module will lead to:
Organize working group composed by 3, 4 or 5 people, from different institutions;
Set up the project frameworks and main contents;
Set up the work programmes (schedule plan).

	Lesson 1 **Start up of project works**	**Contents:** – Participants present their project works ideas – Planning/settlement of pilot actions: Themes, Staffs, Boundary…. – Start up of project works

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Further useful links and sources:

http://www.eumayors.eu/benchmarks_of_excellence/index_en.htm

http://www.managenergy.net/gp.html

http://www.managenergy.net/buildings.html

http://www.buildup.eu/

http://concertoplus.eu/

http://www.enthuse.info/

http://www.res-league.eu/

http://www.pvlegal.eu/

http://www.pass-net.net/

http://www.procuraplus.org/index.php?id=4611 (collection of good practices)

http://www.buildup.eu/cases (collection of good practices)

http://www.energy-cities.eu (Association of EU local Authorities promoting sustainable energy policies)

http://www.solarordinances.eu/

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