



# Module Training Document (Stage 7)

T.3.3 Training activities for endorsing  
the EE1st principle in the regional  
decision support



|                     |                                                                                                                                         |
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## PREFACE

Training activities for endorsing the EE1st principle in the regional decision support are based on the materials set out in T2.4. T2.4 provides the framework for REGIO1ST in 8 stages, from Stage 1: Preparation through to Stage 8: Implementation, Monitoring and Review. T3.3 will provide a coherent training and guidance package for assisting the six Regio1st regional authorities (and beyond during the exploitation activities in WP6 for 100 regions) in undertaking the steps of T3.2. More specifically, it will provide ad-hoc and upon demand trainings to familiarize the users with the functionalities, components and methodology, to explain and provide information and examples of all the main features of the decision support process, to train the users on how to use the framework and the respective tools.

| Module                                                                      | Partner Responsible         |
|-----------------------------------------------------------------------------|-----------------------------|
| Stage 1. Preparation                                                        | SEEA                        |
| Stage 2. Engaging Stakeholders & building partnerships                      | LEASP/ Menea / Faen         |
| Stage 3: Reviewing energy objectives and targets                            | Clube / Faen                |
| Stage 4. Exploring the current regional energy system                       | ICCS/LEASP/ Menea / Faen    |
| Stage 5: Cost benefit analysis                                              | Fraunhofer / IEECP          |
| Stage 6: Assessing the practical feasibility of least cost energy solutions | Fraunhofer / IEECP / ICCS   |
| Stage 7: Defining actions and developing the regional energy plan           | IEECP / ICCS                |
| Stage 8: Implementation, monitoring and review                              | IEECP (Lead) / Clube / SEEA |

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# 1 Introduction

This training seminar is designed to assist regional authorities in creating sustainable energy strategies aligned with the Energy Efficiency First (EE1st) principle. More specifically, this training stage guides regional and local authorities in selecting actions and developing a comprehensive regional energy plan. This plan will also take into consideration the potential impact, cost-effectiveness, net benefits, distributional impacts, and alignment with stakeholder priorities of optimal energy solutions. Additionally, the training includes examples of demonstration projects and identifying financial resources. Finally, it covers monitoring and evaluation systems to track the implementation progress of the regional energy plan while assessing its performance against specific objectives and targets.

## 2 Regio1st Framework outline

The Regio1st Planning Framework aims to provide a structured approach to regional energy planning, focusing on defining actions and developing robust energy plans. Stage 7 “Defining actions and developing the regional energy plan” of the Regio1st Planning Framework focuses on selecting specific actions and formulating a comprehensive regional energy plan. The objective is to base this plan on potential impact, cost-effectiveness, net benefits, distributional impacts, and alignment with stakeholder priorities. This ensures that the energy solutions are not only efficient but also equitable and supported by the community.

### Step 7.1: Prioritize Energy Interventions and Develop the Regional Plan

The first step involves using the Multi-Criteria Decision Analysis (MCDA) Tool to prioritize and select energy interventions. This process should align with the energy efficiency first principle. Planners need to consider the potential impact, cost-effectiveness, and stakeholder priorities when selecting energy solutions.

To prioritize and select the energy solutions/interventions, the following steps are suggested:

1. **Define Alternatives:** Begin by identifying potential actions while adhering to the EE1st principle and taking into account any initially planned actions.

2. **Calculate Impacts:** Utilize analytical tools such as s-CBA analysis, McaTool, COMBI tool, and conduct technical studies to assess the impacts of each alternative thoroughly.
3. **Compare Options:** Employ Multi-Criteria Decision Analysis methods, such as the Regio MCDA tool, to compare the impacts and benefits of each alternative against predefined criteria.
4. **Final Selection:** Choose the optimal alternative based on a comprehensive evaluation of both immediate gains and broader impacts. Ensure the selected option aligns with strategic objectives and maximizes positive outcomes.

Subsequently, a detailed action plan should be developed. This plan must outline the scope, responsibilities, timelines, estimated costs, expected impacts, and likely funding sources for each intervention.

Additionally, identifying demonstration projects is crucial. These projects address specific regional challenges or opportunities, showcase the feasibility and benefits of innovative energy technologies, and provide valuable learning experiences to the local community. Such projects help build public support, attract investments, and stimulate local markets for new energy solutions.

## Step 7.2: Establish a Monitoring and Evaluation System

The second step involves establishing a robust monitoring and evaluation system to track progress and assess the performance of the regional energy plan. This system should include regular data collection, analysis, and reporting on key performance indicators. It is essential to conduct periodic reviews and assessments of specific projects and actions to identify challenges, successes, and lessons learned. A Monitoring Template can be used to facilitate this process, ensuring that all aspects of the plan are systematically evaluated and adjusted as necessary.

## Step 7.3: Pursue Public Acceptance and Finalize the Regional Energy Plan

The final step focuses on pursuing public acceptance and finalizing the regional energy plan. This involves engaging in public consultation to gather feedback and embedding this feedback into the final plan. The goal is to ensure that the plan reflects the community's needs and priorities, thereby enhancing its chances of successful

implementation. Once the consultation process is complete and feedback has been incorporated, the plan should be finalized and published.

## 3 Using Multi-Criteria Decision Analysis in energy planning

### 3.1 Introduction to MCDA

Multi-Criteria Decision Analysis (MCDA) has its roots in the 1960s and 1970s, evolving from decision theory and operations research. Initially applied in military and economic planning, MCDA was developed to address complex decision-making scenarios involving multiple, often conflicting criteria. By the 1980s, its application had expanded into environmental management and energy planning, providing a structured framework to handle the increasing complexity of decisions in these fields.

#### Why

MCDA is employed to support decision-makers in evaluating and prioritizing multiple competing criteria. In strategic energy planning, this involves balancing economic, environmental, social, and technical factors to formulate sustainable and effective energy policies. The purpose of MCDA is to provide a comprehensive, transparent, and systematic approach to decision-making, ensuring that all relevant factors are considered and trade-offs are explicitly analyzed.

#### How and who

Conducting a Multi-Criteria Decision Analysis (MCDA) involves several structured steps to ensure a thorough and transparent evaluation process: i) First, clearly define the decision problem and identify the objectives that need to be achieved; ii) Next, establish the criteria for evaluating the alternatives, ensuring that these criteria are comprehensive and relevant to the decision context; iii) Assign weights to each criterion to reflect their relative importance, typically through stakeholder consultations or expert judgment; iv) Gather data on the performance of each alternative against the criteria; v) Apply an appropriate MCDA method, such as the Analytic Hierarchy Process (AHP), Weighted Sum Model (WSM), or Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS), to evaluate and rank the alternatives; vi) Analyze the results to identify the best-performing alternatives and conduct sensitivity analysis to test the robustness of the findings; vii) And finally, present the results to stakeholders in a clear and transparent manner, facilitating informed decision-making and ensuring that all

perspectives are considered. This structured approach helps in making balanced and well-justified decisions in complex scenarios.

### Pros

The benefits of MCDA in strategic energy planning are manifold. MCDA allows for a comprehensive evaluation by including diverse criteria, providing a holistic view of the options available. It enhances transparency and accountability by thoroughly documenting the decision-making process, thus helping to justify the decisions made. Additionally, MCDA aids in conflict resolution by identifying and reconciling conflicts among different stakeholders' objectives. It facilitates enhanced communication among stakeholders by clearly presenting the trade-offs and the rationale behind decisions. Finally, by systematically comparing alternatives, MCDA improves the quality of decisions, helping to select the most balanced and beneficial options.

### Cons

Despite its advantages, MCDA faces challenges such as the subjective nature of assigning weights and the complexity of accurately modelling stakeholder preferences. Additionally, the quality of the outcome heavily depends on the quality of input data and the rigor of the process.

## 3.2 Using the Regio1st MCDA tool

To consider all the 4 different dimensions in the analysis, the Regio1st MCDA tool has been released [<Download>](#). This tool serves as a valuable aid for energy planners by facilitating the prioritization of various energy options and ultimately supporting the decision-making process. The tool enables planners and stakeholders to derive aggregated scores and rankings, thus identifying the most feasible energy options for the region.

The purpose of this tool is to enhance the decision-making process of regional and local energy and climate planning, by bringing together diverse perspectives and ensuring that decisions are based on a broad set of criteria/indicators, on the economic, the environmental, the societal and the practical feasibility dimensions. Given that involving all relevant parties, including public authorities, planners, stakeholders, and society, is vital for creating a meaningful plan, this tool incorporates features that facilitate collaborative decision-making.

This tool (Multi-Criteria Decision Analysis Tool) is a structured tool that incorporates features that considers the results of the collaborative decision-making regarding regional priorities (The PPR tool). In particular, it allows the selection of criteria and the

assignment of weights to these criteria, encompassing dimensions such as environmental, social and economic sustainability, as well as practical feasibility evaluation. Stakeholders and/or planners can then assign evaluation scores to the selected criteria for each solution, whilst the tool also assists decision-makers in quantifying qualitative impacts when evaluating solutions. Subsequently, it calculates scores to provide a quantitative assessment of impacts, enabling more informed decision-making.

The tool empowers regions and their planners to make informed decisions by following a 5-step methodology. It provides a structured and efficient approach for regions and planners to extract, evaluate, and rank regional actions/investments, facilitating a data-driven, and impactful energy and climate planning process:

- Select up to 4 alternatives (investment options, scenarios of actions, stand-alone actions for energy and climate).
- Define the criteria to evaluate the selected alternatives, along with their respective importance and type of impact. There are four categories of criteria to consider: economic, environmental, societal and practical feasibility.
- Evaluate the practical feasibility of the alternative energy solutions.
- Assess the alternatives using the remaining criteria.
- Select the importance of each criteria category.

➡ **Final results:** The ranking is calculated by the MCDA algorithm and the results are presented.

The tool includes a guiding document showing how to use it.

## 4 Developing a regional Energy Plan (ICCS)

### 4.1 Considerations when designing actions and developing a plan

The first section of the relevant presentation provides three basic actions' categories based on who is going to implement them, what he is going to implement and how he is going to implement it. Each category plays a crucial role in achieving energy efficiency goals.

|      |                                                                                                                                                          |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Who  | <ul style="list-style-type: none"> <li>• Public sector</li> <li>• Private sector</li> </ul>                                                              |
| What | <ul style="list-style-type: none"> <li>• Interventions/Equipment</li> <li>• Behavioral changes</li> </ul>                                                |
| How  | <ul style="list-style-type: none"> <li>• Direct refurbishments</li> <li>• Raise awareness events</li> <li>• Collaboration with municipalities</li> </ul> |

Moreover, during the procedure of designing and selecting actions, the planner should take into consideration the following:

1. The current energy situation of the region;
2. The regional needs;
3. The actions' feasibility;
4. The alignment of actions with the existing policies;
5. The impact and the general benefits of the actions;
6. The cost-effectiveness of the actions;
7. The inclusion of both technical interventions and raise awareness actions;
8. The stakeholder/public engagement.

As soon as a list of eligible actions has been developed, the planner should also gather all the relevant information (energy savings, costs etc.) and decide along with the authority and/or the stakeholders what buildings/facilities/equipment will be included in the implementation plan. Subsequently, after calculating the total energy savings as well, the planner could determine if the proposed actions are adequate to reach the energy efficiency target. In case the target is not reached, the planner should redefine the actions and adjust the number of buildings/facilities/equipment to be refurbished.

The next step is to identify the responsible bodies for the implementation of each action and find the appropriate human and monetary resources. Furthermore, developing a detailed timetable and establishing interim targets are important in order to ensure that the implementation process stays on track.

## 4.2 How to best incorporate the EE1st principle

In each stage of planning, it's imperative for the planner to consistently integrate the EE1st principle, prioritizing energy efficiency as a fundamental guideline. The presentation provides the definition of EE1st principle as well as indicative ideas on

where and how to implement it. Giving top priority to alternative cost-efficient energy efficiency measures, in energy planning, policy, and investment decisions, aims to enhance both energy demand and supply efficiency. This includes:

- Cost-effective end-use energy savings
- Demand response initiatives
- More efficient energy conversion, transmission, and distribution

## 4.3 Designing the monitoring and evaluation of actions

Monitoring the implementation of actions and interventions in the regional energy plan allows planners to track progress and impact, and assess effectiveness. This ongoing evaluation facilitates necessary adjustments as well as the introduction of new actions, ensuring that goals are met, promoting adaptive energy planning.

The presentation provides some key points to be included in the monitoring plan followed by a demonstration of the Regio1st Monitoring Tool.

## 4.4 Putting all the stages together to develop a plan

The last section provides an overview of the Regio1st framework, detailing the stages to be included in a regional energy plan. It covers the entire process, from initial preparation to final implementation, ensuring a comprehensive approach to regional energy planning.

# 5 The experience of the Liguria region in developing actions

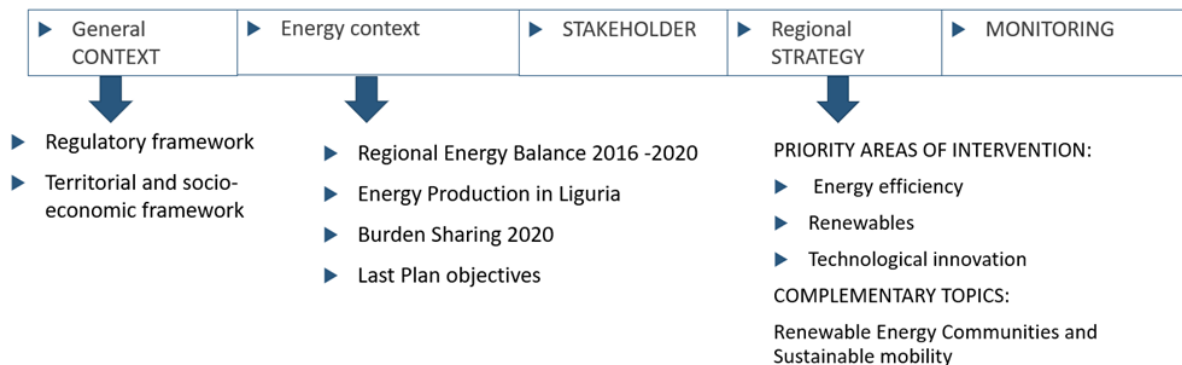
IRE is the technical agency for Infrastructures, urban Regeneration and Energy of Liguria Region, Italy. IRE's Energy Department aims to support Liguria Region, its Municipalities and other entities in the green transition, helping them in the development of energy and climate plans and in the implementation of climate initiatives, and promoting technological innovation in energy efficiency, renewable energy, alternative fuels and new energy vectors.

One of IRE's Energy Department main activities is **energy planning**: development and implementation of regional energy and environmental plans, SECAPs, energy and environmental plans for port authorities and energy data management.

The presentation aims to show IRE's experience in the definition of actions in the framework of the Regional Energy and Environmental Plan (PEAR) that is now being finalized by Liguria Region with the technical support of IRE. The adopted methodological approach is made of:

1. Analysis of regional positioning and meetings with stakeholders
2. Definition of the general strategy and priority areas of intervention
3. Analysis of the strengths, weaknesses, opportunities and challenges of technology options
4. Study of the regional potential of technological options and definition of the Plan objectives
5. Identification of regional actions to reach the objectives, in synergy with the ERDF programming for 2021-27
6. Preliminary definition of monitoring activities

The structure of the making of the Plan can also be outlined as follows:



A **collaborative approach** is set to define the regional stakeholder needs and make them merge with regional policies and demands:

#### Tools:

- **Regional Steering Committee on Energy Policies**

President- Regional Minister for Economic Development  
 Coordinator – General Director for Economic Development  
 Energy sector's technical offices  
 Director of IRE Liguria's Energy department

- **REGIONAL TECHNICAL WORKING GROUPS**

LNG

Hydrogen

Renewable Energy Communities and Port Energy Communities



#### Meetings

- ☐ LISTENING TO STAKEHOLDER NEEDS
- ☐ ACQUISITION OF KNOWLEDGE

The priority areas of intervention are set to be Energy efficiency (Civil sector+SMEs), Renewable Energy Sources (Focus on PV and RECs) and innovation technology (R&D on Hydrogen, Waves Energy and Nuclear), although at the moment there are no indications on specific areas/structures as the Regional Plan sets 2030 targets but no localization inputs are detected, since it has a routing and strategic nature.

The RES objectives are calculated on the basis of EU objectives and for each priority area, specific actions are defined through meetings among the Regional Steering Committee, technical working groups and stakeholders with a Bottom-up approach and also in strong synergy with ERDF FUNDS programming.

## 6 EUCF: Develop investment concepts to accelerate investments in sustainable energy

The EUCF (European City Facility) is a European initiative which supports local authorities across Europe, to develop investment concepts to accelerate investments in sustainable energy. Its aim is to reach the EU climate objectives (up to 2030). However, there are some obstacles such as the lack of national support, gap between strategies and implementation, difficulty to find the best financing opportunities and others that should be addressed. Therefore, EUCF tries to overcome this gap by becoming the missing piece between the energy and climate action plans, the financing and the implementation. This could be achieved by developing business plans for each project, in order to facilitate banks/financial institutions to understand their scope and worth.

EUCF supports cities financially (60k €) in the development of their Investment Concept (first year) and then provides a technical support with the aim to increase their ability

to attract public and private investments for their projects (next two years). The financial support includes inhouse work, consulting services and other needs.

The presentation showcases details regarding what an “Investment Concept” is, which essentially translates a project idea into financial language.

Moreover, a list of questions is provided, in order for an entity to check if it is eligible to submit an application so as to be supported from EUCEF, along with some basic considerations regarding the application and the evaluation criteria.

Finally, the 6 steps (below) of the process are presented with details and useful links:

- Pre-application
- Application
- Grant Agreement
- Investment Concept development
- Investment Concept implementation



Website:

<https://regio1st-planning-framework.eu.buildspaceproject.eu/>

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