



Module Training Document

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 familiarise 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. For the data required per region to include in the decision support, the ENERGEEWATCH will be used as a benchmark through the data from the regional observatories.

Module	Partner Responsible
Stage 1. Preparation	SEEA
Stage 2. Engaging Stakeholders & building partnerships	LEASP/ Menea / Faen / CluBE
Stage 3: Reviewing energy objectives and targets	Clube / Faen
Stage 4. Exploring the current regional energy system	ICCS/ Faen / CluBE / SEEA / Menea
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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Stage 5. Cost–Benefit Analysis

This document serves as a synthetic note accompanying the training materials for Stage 5 of the Regio1st framework. It provides an extended overview of the key concepts, tools, and methodologies presented during the training session on Cost–Benefit Analysis (CBA) for regional energy planning. The purpose of this stage is to equip regional and local authorities with practical instruments to evaluate different energy planning options in a transparent, structured, and comparable manner. By applying CBA, regions can make evidence-based decisions that direct limited resources towards the measures with the greatest overall benefits : economic, environmental, and social.

Stage 5 is particularly important in the broader Regio1st framework: following the preparatory and analytical stages, it translates scenarios and technical assessments into clear decision-making criteria. It ensures the prioritization of actions according to the Energy Efficiency First (EE1st) principle and in line with European legislative requirements, such as the Energy Efficiency Directive (EED).

1 The Role of Cost-Benefit Analysis in Regional Energy Planning

CBA acts as the decision-making backbone of the Regio1st process. Earlier stages provide the data foundation, baseline inventories, scenarios, and risk analysis, while Stage 5 systematically assesses this information to determine which measures bring the greatest value. It does not focus only on financial flows but integrates broader dimensions, considering the economic, environmental, and social consequences of planning choices. This is where the EE1st principle comes fully into play, ensuring that efficiency measures are assessed and prioritized before supply-side options.

By combining financial appraisal with wider social and environmental impacts, CBA helps regional authorities make decisions that are not only economically sound but also politically credible and socially inclusive.

2 Core Methodological Principles

The training emphasized that a robust CBA requires careful definition of scope, identification of all relevant costs, and comprehensive assessment of benefits. Costs typically include investment, operation, maintenance, and financing, but should also consider avoided costs such as deferred infrastructure investment. Benefits extend well beyond energy savings to include reduced emissions, improved public health, and job creation.

Several financial methodologies were discussed: Net Present Value (NPV), which discounts future costs and benefits to their current value; Benefit-Cost Ratio (BCR), which expresses efficiency as the ratio of benefits to costs; and Internal Rate of Return (IRR), which highlights profitability thresholds. Sensitivity analysis plays a key role in testing results against uncertainty, for example fluctuating energy prices or discount rates. Since not all impacts can be monetized, multi-criteria analysis (MCA) was also presented as a complementary tool, allowing qualitative dimensions such as political feasibility or public acceptance to influence decision-making.

3 The Regio1st CBA Tool

A core element of the session was the presentation of the Regio1st CBA Tool, which has been developed to make these principles operational for regional and local authorities.

The tool builds on the outputs of earlier Regio1st stages and provides a transparent, user-friendly method for comparing alternatives. It is adaptable to different governance levels, whether regional administrations or municipalities, and is designed to integrate with existing planning processes.

The tool follows EU methodological guidance, ensuring credibility and comparability across regions. By embedding the EE1st principle, it makes energy efficiency the priority lens through which projects are evaluated. Participants were shown how to use the tool: from entering baseline data, to structuring scenarios, and finally interpreting the results in terms of NPV, BCR, and wider co-benefits.

4 The IEECP Simplified CBA (sCBA) Tool

Alongside the Regio1st tool, the training introduced the IEECP simplified CBA tool (sCBA). This instrument has been designed for authorities with limited resources or technical capacity, providing an entry point to CBA without requiring extensive datasets. It uses simplified inputs and default values, reducing the burden on municipalities that may lack detailed statistics. Beyond its practical outputs, the sCBA tool also serves an educational function, helping local teams to understand the logic of CBA and build capacity for more advanced analysis later.

While less detailed than the Regio1st tool, the sCBA tool is particularly useful for small municipalities. The two are complementary: one allows for deep regional planning, while the other ensures inclusiveness by enabling all authorities to begin applying CBA principles.

5 Practical Application and Challenges

The session explored how CBA can be applied across different sectors. In transport, for example, authorities can evaluate the costs of electrifying bus fleets against benefits such as reduced fuel imports and improved air quality. In buildings, CBA allows a comparison between deep renovation programmes and incremental efficiency measures, accounting for comfort and health gains. For renewable energy, costs of local generation can be weighed against the resilience and security it provides.

Participants also discussed the main challenges of CBA. These include the availability and quality of data, particularly for quantifying social and environmental co-benefits; the selection of discount rates, which strongly influence the results; and ensuring

comparability between projects in different sectors. The training underlined that transparency and stakeholder engagement are essential to overcome these challenges and build legitimacy around the results.

6 Added Value within the Regio1st Framework

Stage 5 consolidates the earlier steps of the Regio1st framework into a structured decision-making process. By providing tools and methodologies, it ensures that energy efficiency is not just considered but actively prioritized in planning. Aligning with EU legislation, particularly the revised EED, Stage 5 supports public authorities in demonstrating cost-effective leadership in energy planning. At the same time, it enables regional strategies to align with national and European objectives, which is key for accessing funding and external support.

The added value of Regio1st lies in transforming CBA from a technical burden into a practical, accessible, and strategic decision-support instrument. With its dual-tool approach, the comprehensive Regio1st CBA tool and the simplified IEECP version, it ensures that all authorities, regardless of size or capacity, can participate in evidence-based planning.

7 Conclusion

Cost-Benefit Analysis is the decisive stage that allows regional and local authorities to prioritise actions that deliver the greatest overall value for their communities. By embedding robust CBA into Stage 5, the Regio1st framework guarantees that regional energy plans are not only technically sound but also politically credible and socially responsible. The combined use of the Regio1st and IEECP tools provides flexibility, from detailed regional analysis to simplified entry-level assessments, ensuring that all levels of governance are empowered to engage in transparent, evidence-based decision-making. In doing so, Stage 5 strengthens the role of regional and local authorities in advancing Europe's transition toward climate neutrality.



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