REGIO1ST

Implementing the Energy Efficiency First Principle in Regional Planning

POLICY BRIEF

October 2025

In a nutshell

Italian Regions play a key role in the energy transition. Legislation regarding energy is primarily their responsibility, although the fundamental principles are established by State Legislation. Regions are legally required to have Regional Energy and Environmental Plans (PEARs), multi-year strategic documents that are aligned with both national and EU energy frameworks.

The main reference at national level is the Integrated National Energy and Climate Plan (PNIEC in Italian, NECP in English), which details the Country's policies and measures to achieve its 2030 and 2050 energy and climate targets. Although the Energy Efficiency First (EE1st) principle was introduced in 2024 in the strategic part of the Plan, the mechanisms, methodologies and tools to ensure its practical implementation at the regional or project level have not yet been outlined. This lack of national guidance poses a challenge for the implementation of the principle at regional level.

Regional workshops organised in Liguria under the Regio1st project tried to fill this gap, introducing the principle and its practical application to the main stakeholders involved in the energy planning process at regional and local level, hence building their capacities on the topic. These stakeholders understood the value of integrating the principle in their planning and appreciated the step-by-step Planning Framework provided by Regio1st, in particular the Social Cost Benefit Analysis tool, with which they were not familiar.

This awareness-raising activity on the EE1st principle could be easily and effectively replicated in other Italian Regions willing to take the principle into account in their energy decision-making process.

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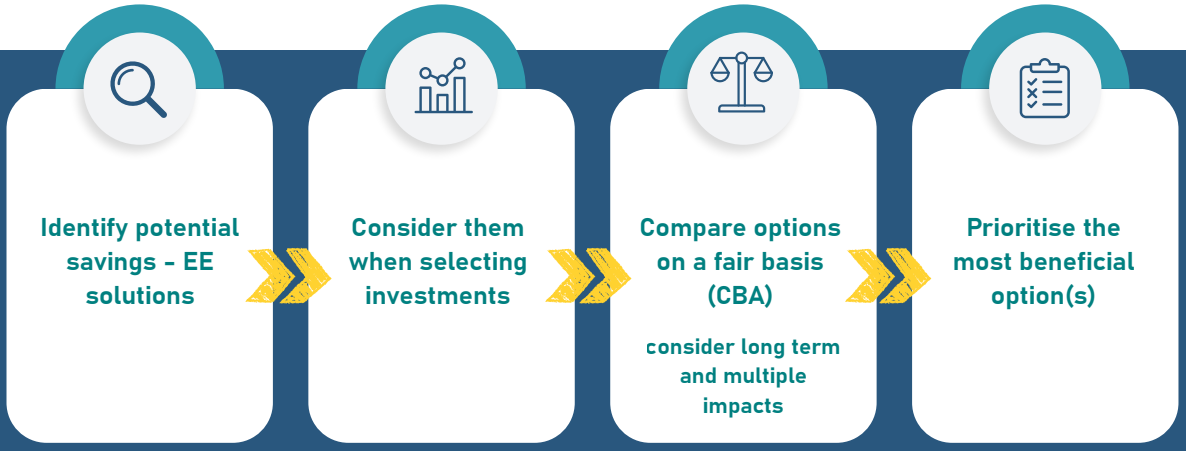
The basics

Energy Efficiency First Principle[1]: Prioritise energy demand reduction through cost-efficient energy efficiency measures in energy planning, policy and investment decisions. In practice, the EE1st principle balances demand and supply options to prioritise the most beneficial energy investments for the concerned community.

This is done by means of cost-effective end-use energy savings, demand response initiatives and more efficient energy supply.



The CBA does not make the decision, it helps in making it, depending on priorities.

EU context and policies

The European EE1st context and implementation is mainly set in the recast Energy Efficiency Directive[2], in particular:

- **Article 3 defines EE1st and sets the general frame** and highlights that the principle should be applied wherever it is relevant, including in regional plans;
- **Article 25 requires regional and local authorities to prepare local heating and cooling plans** in municipalities with 50 000+ inhabitants

In the perspective of EU-wide infrastructure development, TEN-E[3] also requires cost-benefit analysis to integrate EE1st principle in the planning of regional electricity, gas (incl. hydrogen) and district heating networks.

[1] Defined in 2018's Governance Regulation, reinforced in 2023's recast
[2] Directive (EU) 2023/1791 on Energy Efficiency
[3] Directive 2022/869 on guidelines for trans-European energy infrastructure (TEN-E)

Italian context

Regulatory framework

The Italian Constitution defines energy legislation as "concurrent," meaning it is shared between the National Government and the Regions. Legislative powers regarding energy are primarily vested in the Regions, but fundamental principles are established by State legislation.

At the national level, the most relevant regulation is the Integrated National Energy and Climate Plan (PNIEC in Italian, NECP in English). Italy's PNIEC details the Country's policies and measures to achieve its 2030 and 2050 energy and climate targets; it outlines strategies for decarbonization, energy efficiency, renewable energy development, energy security, and internal energy market integration, and is regularly updated to keep up with the changes in EU legislation. The last revision was published in July 2024 and first introduced the EE1st principle as a fundamental pillar across its strategy, planning, and implementation, in alignment with EU Directive (EU) 2023/1791. However, it does not yet include defined mechanisms, methodologies, or enforcement tools to ensure its practical implementation at the regional or project level. These aspects should be included in the new revision of the Italian NECP, which is expected by October 2025. The Ministry of Environment and Energy Security (MASE) and the National Agency for New Technologies, Energy, and Sustainable Development (ENEA) are responsible for updating the NECP, while regional governments do not have any influence in the formulation of the NECP.

Various other national strategies and plans are also relevant, such as the National Adaptation Plan (PNACC), the National Strategy for the Energy Renovation of Italy's building stock (STREPIN), and the National Strategy for Sustainable Development (NSDS).

At regional level, all Regions must have a Regional Energy and Environmental Plan (PEAR). PEARs are not required to be approved by the National Government, but in the scoping phase (VAS –Strategic Environmental Assessment) they are evaluated by relevant national stakeholders such as Ministries and the Superintendence for Cultural Heritage and Architecture. PEARs outline the energy policy strategy at regional level in compliance with the national legislation and have a multi-year duration.

Liguria Region has a new PEAR about to be approved with 2030 objectives, introducing the EE1st principle as a key element of its energy legislative framework. Moreover, the principle is somewhat already taken into consideration in the Plan's strategy and targets, since these are built considering first energy efficiency interventions and then the potential of renewable energy sources. The plan is expected to be approved by the regional Board by the end of 2025.

With regards to Strategies and Plans, Liguria also has a Regional Adaptation Strategy (SRACC) and a Regional Strategy for Sustainable Development (SRSvS); whereas the main piece of energy legislation is Regional Law no. 22/2007 "Norms on Energy matters" (as modified by RL no. 32/2016) with its subsequent Regulations, deliberating on matters such as the energy performance and energy certification of buildings as well as minimum requirements.

At local level, Italian Municipalities have no obligation to energy planning. However, they can choose to join the CoM initiative and develop a Sustainable Energy and Climate Action Plan (SECAP), a practice that is relatively popular in the Country. In the case of Liguria Region, the largest Municipalities do indeed have SECAPs.

Regional energy planning process

For the development of the Regional Energy and Environment Plan - PEAR, the planning process includes several subsequent stages and steps that are very similar if not the same for all Regions. In Liguria, the implemented process leading to the Plan was the following:

1. Context analysis (legislative, territorial, socio-economic);
2. Analysis of the current situation in terms of energy production and consumption, and development of the baseline;
3. Development of the Strategic Vision;
4. Development of different Energy Efficiency scenarios and selection of the most appropriate scenario;
5. Based on the selected energy efficiency scenario, renewable energy needs are then calculated;
6. For each technological option, potential actions to be implemented/promoted are identified (and their feasibility is assessed), in alignment with ERDF funds at regional level;
7. The environmental impacts of the proposed actions and of the various technological options are assessed; this is called “Scoping Phase” and means that the document is examined internally by all the relevant departments of the Region and by other stakeholders with a responsibility on environmental matters (such as Ministries).
8. After the Scoping Phase, a draft version of the regional Energy and Environment Plan is finalised, to be submitted to the preliminary approval of the regional Council of Ministers (in Italy Giunta Regionale).
9. After the first political approval, the draft Plan is shared for public consultation to collect feedback and views from all relevant stakeholders, associations and citizens; this is called Public Consultation phase.
10. Once the Public Consultation is over and feedback is collected and considered, the Plan is modified accordingly; the updated final version of the Plan then undergoes its final round of political approvals, to be given by both the Council of Ministers (as in the draft version) and the Regional Assembly (in Italy Consiglio Regionale).

How to embed EE1st in regional governance structure and decisions

In Liguria, the workshops aimed to introduce stakeholders to and raise awareness about the Energy Efficiency First principle, with which they were not familiar. Since our stakeholders were both regional and local, with different needs and planning procedures, we opted to organize bilateral meetings, to ensure that the discussions would be as tailored and effective as possible.

During those meetings, we moved from introducing the basic principles of EE1st to discussing their benefits in regional and local energy planning to testing its practical application on the Liguria real case scenario.

Feedback was generally positive throughout the process. Stakeholders appreciated the Regio1st Framework and its proposed tools, in particular the Social Cost-Benefit Analysis (SCBA) and the Multi-Criteria Decision Analysis (MCDA).

The meetings with the Region contributed to raise awareness and build their capacity on the EE1st principle and laid the foundations for its integration in the future steps of regional energy planning.

Liguria Region stressed the importance of cross-departmental coordination, especially between the Energy Office, the Environmental Department, and the Energy Efficiency office that applies for the ERDF funding programme and supports the drafting of Municipal building regulations, to effectively implement the EE1st tools.

With regards to Local Authorities, this engagement process led to Municipality of Savona including the EE1st principle in its upcoming SECAP action focusing on the Energy Efficiency of Public Buildings.

Thanks to the Regio1st project, the Liguria territory has built its capacities and experimented with the EE1st principle, anticipating the national legislation and requirements on the matter. This places our Region in an ideal position to fully implement the principle when the time will come, enabling it to be at the forefront of Italian regions with regards to energy planning and investments.

We believe that our approach could be easily and effectively replicated in other Italian Regions that are (or are not) in the process of updating their Regional Energy Plan.

Available support for regions – Policies, Funding and more

Italian regions have access to a variety of national policies, funding schemes, and support initiatives aimed at accelerating the energy transition, improving energy efficiency (EE), and mobilising investments in line with EU objectives.
The main source of funding used to finance the objectives, priorities and actions outlined by the Regional Energy Plans (PEARs) are Regional Operational Programmes (PR-FESR), which define the strategy and operations for the use of funds allocated by the European Regional Development Fund (ERDF). In these 7-years Programmes, Regions can set their own priorities and decide on the investments, which are allocated through calls for proposals. The topic of Energy Efficiency is always the subject of several of these calls, whether it's to finance the EE of public buildings owned by different kinds of Municipalities within the Region or to finance the EE of private SMEs.

Over the past few years, Recovery and Resilience Funds (PNRR in Italy) have also been used to significantly finance energy efficiency across the nation, with over 15.5 billion euro allocated to EE and building renovation as part of the "Green revolution and ecological transition" pillar. Additional 6.5 billion euro have been provided by the Italian State for the same aim to match the recovery funds. Implementations of PNRR measures should be completed by the end of 2026.

Further initiatives available at national level to finance the energy efficiency of public buildings are:

- **Conto Termico – Thermal Account:** financing up to 65% of expenditure for energy efficiency intervention in public buildings (up to 100% in the case of schools and health structures, with a maximum of 575 euro per sq2). Regional and local authorities are eligible.

- **PREPAC – Programme for the Energy Renovation of the central PA buildings**: providing 75 million euros per year from 2021 to 2030 to finance interventions for the energy renovation of public buildings owned by the Central-national PA (Regional and Local Authorities are not eligible, no small buildings).

As for privately owned buildings, the main fiscal deduction for energy efficiency is the **Ecobonus, which for 2025 offers a 50% deduction for primary residences and a 36% deduction for secondary homes and commercial properties.**

What does EE1st change in the process and discussions?

Thanks to the experience gained through the Regio1st project, the Liguria territory has built its capacities about and experimented with the EE1st principle, anticipating the national legislation and requirements on the matter. This places the Region in an ideal position to fully implement the principle when the time will come, enabling them to be at the forefront of Italian regions with regards to energy planning and investments.

To this end, the Regio1st Framework is a key tool, providing a step-by-step methodology to approach energy planning from the point of view of the Energy Efficiency First Principle. In the case of Liguria, the steps/tools that were considered of most interest were the Social Cost-Benefit Analysis (SCBA) and the Multi Criteria Decision Analysis (MCDA) tools, since they covered unfamiliar aspects for regional and local planners. Such tools enabled stakeholders to broaden their perspective and better understand the implications of the principle in regional and local energy planning.

The engagement and awareness raising of stakeholders was done via bilateral meetings and proved to be successful, despite the difficulties that were experienced at times finding slots in the technical offices' very busy agendas. To make the principle feel less abstract/distant to planners, we strived to adapt and tailor the discussion on EE1st around the individual stakeholders' realities, being as concrete as possible and framing it around their own plans and projects. Although it didn't happen immediately, after a while stakeholders began to see EE1st as something that could bring an added value to their own work, rather than an additional burden to their daily work.

With regards to promoting Multilevel Climate and Energy Dialogue, during the project we contributed by bringing different kinds of stakeholders together to discuss Energy Efficiency First. Among the various initiatives, we organized a **Country webinar in partnership with the national Energy Agency ENEA and the National Network of Energy Agencies RENAEL, which was participated by:**

7 Regional Governments	**2** Provinces	**7** energy agencies (both regional & local)

hence bringing together all levels of governance around the topic.

In this sense, our work did contribute to the spirit of Article 11 of the Governance Regulation, which calls for climate and energy dialogue across levels of government.

What can EE1st change in the analysis / assessment: example of social CBA

Two different types of CBA can be conducted, namely:

Original CBA:

A cost-benefit analysis (CBA) is conducted to measure the benefits of a decision or taking action minus the costs associated with taking that action. CBA includes measurable financial metrics such as revenue or costs due to the decision to pursue a project. In this research, the term economically feasible or not feasible are also used to explain the results of the CBA analysis. The economic impacts are identified, and the evaluation is performed taking into consideration the impacts on the national economy. The analysis is based on changes in the market prices.

Social CBA:

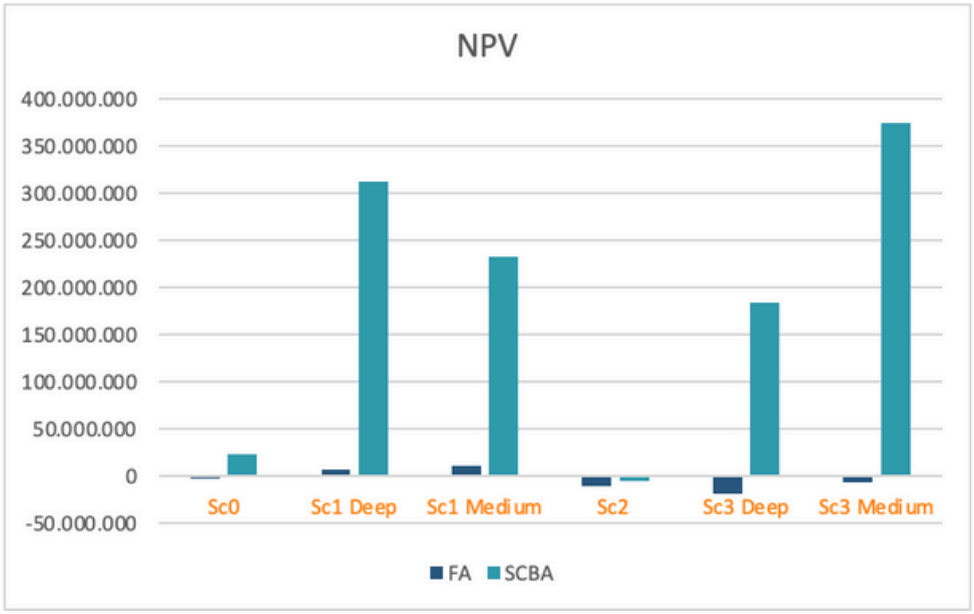
SCBA includes all the factors of CBA analysis. In addition to this, the environmental and social impacts are identified, and the evaluation is performed taking into consideration the impacts on the whole society. The analysis includes both the market prices and the external cost and benefits triggered by the examined investments.

The CBA aims to examine the social profitability of the examined energy efficiency projects, justifying the potential utilization of specific financial schemes (such as subsidies) in relation with the results of the financial analysis. The conduction of the financial analysis and the social CBA leads to the calculation of two different indicators, namely the financial Net Present Value (NPV) (or the financial Internal Rate of Return (IRR)) and the social NPV (or the social IRR respectively). Another considered metric is the Benefit-to-Cost Ratio (B/C Ratio).

Table 1: The results of financial and social NPVs and the decisions to move forward/to stop.

Potential result of calculations	Financial NPV	Social NPV	Conclusions	Next steps
1st	≥ 0	≥ 0	Economically and socially beneficial	Promoting these types of investments/ interventions
2nd	≤ 0	≥ 0	Economically not beneficial. However, socially important	Providing financial supports, e.g., subsidies, increasing municipality's equity share in the investment
3rd	≥ 0	≤ 0	Economically beneficial to invest on a project but not socially.	Penalty for the investors and imposing the incentives that distribute the economic benefits among different groups, such as taxes.
4th	≤ 0	≤ 0	Economically and socially not beneficial.	Stop the investments/interventions

Figure 1: Overview of B/C ratios per scenario in Liguria.



In Liguria, Scenario 3 with medium renovations, yielded the best results, meaning the highest social NPV:

- Scenario 3 considers the realisation of nearly-zero energy buildings (NZEBs), meaning refurbishing the building envelope, implementing heat pumps, and installing photovoltaics;
- Medium renovation means a renovation limited to window frames, doors and walls.

This shows that long-term policies involving higher costs provide more benefits in the long run, due to lower energy consumptions, higher utilisation of renewables, and decreased energy costs. Implementation of heat pumps alone (Scenario 2) is not beneficial due to the lower price of natural gas compared to electricity. Fossil fuel investments are similarly not beneficial, particularly in the case of Liguria where ⅓ of households utilising natural gas already possess gas boilers presenting the highest efficiency. The baseline scenario is an easy political move, being this the cheapest intervention and thus ensuring the highest reach to households. However, this is assuming that no subsidies are considered. Subsidies promoting EE and renewables can highly impact the costs of interventions, and thus the outreach.

What's next?

Implementing Energy Efficiency First is not a one-off exercise, but it's an iterative process that builds over time. Regio1st enabled Liguria to get familiar and start experimenting with the principle, but a lot more needs to be done for it to become fully embedded in the regional and local energy planning.

At regional level, now that the principle is well-known the Region could include it in the next planning cycle, e.g. integrating the SCBA in the decision-making process of the next Plan.

At local level, Municipalities of Liguria can include EE1st in their SECAPs, **following the example of Municipality of Savona that included it in its SECAP action on the EE of public buildings, thanks to the Regio1st activity.**

Moving forward, several actions can be implemented to strengthen the uptake of EE1st in Liguria, as well as in other Italian regions willing to start the process of integrating the principle in their planning:

Focus groups for EE1st integration in PEAR 2030: Set up a dedicated working group to embed EE1st in the Regional Energy and Environmental Plan (PEAR 2030) and its regular updates, making the use of MCDA, CBA, and regular monitoring.

Technical support mechanism: Request the establishment of a helpdesk or support office to provide ongoing technical assistance to regional and municipal authorities.

Regional–Municipal EE1st assembly: Establish a coordination assembly between the Region and municipalities to coordinate EE1st implementation and exchange experience.

Addressing overlooked areas: Revisit previously neglected aspects of energy planning to capture the added value that EE1st methodologies can bring.

Capacity building: Provide training and guidance to strengthen regions capacity for using advanced EE1st tools in planning and investment decisions.

Cross-Departmental coordination: Establish a working group to connect EE1st planning with regulations and funding mechanisms to ensure consistency across policies.

Awareness campaigns: Organise awareness-raising events to promote the role and benefits of the EE1st principle among stakeholders and decision-makers.

REGIO1ST

Regio1st raises awareness about the Energy Efficiency First principle (EE1st) among regional governments and their agencies and supports them to make related decisions in their planning.

Scan here to visit our Planning Framework:

www.fedarene.org/project/regio1st

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