

Synthesis of the project's policy outcomes

D4.1



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Abbreviations

Abbreviation	Description
BEI	Baseline Emissions Inventory
CBA	Cost-Benefit Analysis
CoM	Covenant of Mayors
DG	Director General
EE1st	Energy Efficiency First
EEAP	Energy Efficiency Action Plan
EED	Energy Efficiency Directive
EPBD	Energy Performance of Buildings Directive
EU	European Union
KPIs	Key Performance Indicators
LEC	Local Energy Concept
MCDA	Multi-Criteria Decision Analysis
NECP	National Energy and Climate Plan
PEAR	Regional Energy and Environmental Plan
RED	Renewable Energy Directive
RSES	Regional Spatial and Economic Strategy
SCBA	Social Cost-Benefit Analysis
SEAI	Sustainable Energy Authority of Ireland
SECAP	Sustainable Energy and Climate Action Plan
SUMP	Sustainable Urban Mobility Plan

Executive Summary

This report, developed under the EU-funded LIFE Regio1st project, provides a synthesis of policy outcomes and a set of recommendations to support the integration of the Energy Efficiency First (EE1st) principle in regional energy planning across the European Union. The analysis is based on practical evidence collected through a series of co-creative workshops and in-depth assessments conducted in six partner regions: Asturias (Spain), Liguria (Italy), Međimurje County (Croatia), Spodnje Podravje (Slovenia), Western Macedonia (Greece), and Southeast Ireland.

The findings indicate that while the EE1st principle is firmly established in EU legislation, its practical application at regional and local levels remains inconsistent and encounters significant challenges. Key barriers identified across the regions include:

- **Limited technical capacity and awareness** among staff to apply the principle and use advanced decision-support tools.
- **Siloed governance** hindering coordination between key sectors like energy, transport, and spatial planning.
- **A shortage of regional data and tailored tools** for robust cost-benefit analysis and investment prioritisation.

The Regio1st project demonstrated the practical value of dedicated decision-support tools, such as Social Cost-Benefit Analysis (SCBA) and Multi-Criteria Decision Analysis (MCDA), combined with capacity-building.

This report puts forward nine cross-cutting policy recommendations, designed to be adaptable to diverse regional contexts. These recommendations focus on:

- **Strengthening governance** through inter-departmental task forces.
- **Embedding EE1st** in legislation, funding programmes, and public procurement.
- **Developing monitoring systems** with clear indicators.
- **Providing technical and financial support** to overcome capacity gaps.

Additionally, the report proposes ten concrete actions for the Covenant of Mayors (CoM) to help mainstream the EE1st principle at the local level. These actions are geared towards integrating EE1st into the Sustainable Energy and Climate Action Plan (SECAP) development and implementation cycle, and towards improving guidance and training.

In conclusion, the effective implementation of the EE1st principle requires a coordinated, multi-level governance approach. The recommendations presented in this report aim to bridge the gap between EU policy ambitions and practical implementation on the ground, thereby equipping regional and local authorities with the tools, and support needed to treat energy efficiency as a fundamental resource in the energy transition.

1 Background and Scope

1.1 Regio1st in a nutshell

Regio1st, a project co-funded by the EU LIFE programme, aims to raise awareness about the Energy Efficiency First (EE1st) principle among regional authorities and their agencies, as well as support them to incorporate this in decisions related to energy planning.

Within the framework of this project, the following activities are being implemented: a) provision of appropriate support to regional authorities to embed the EE1st principle in their decisions and energy planning, b) establishment of a community of practice for EE1st, in cooperation with the Covenant of Mayors, c) facilitation of the introduction of the principle in national energy and climate plans (NECPs), and d) development of a customized co-creative tool for regions to assist their policy making process.

Regio1st focuses on six regions, i.e. Liguria in Italy, Ormoz and Slovenska Bistrica in Slovenia, Western Macedonia in Greece, Asturias in Spain, Medjmurje in Croatia and Carlow, Kilkenny, Wexford, Waterford in Ireland. These regions aim to implement and test the Regio1st framework and then showcase to other regions how they embedded the EE1st principle.

1.2 This report

The primary objective of this report is to develop comprehensive policy recommendations to support the implementation of the EE1st principle in the energy planning of EU regions. Data and information available from the project's regional activities were analysed to inform the recommendations. The recommendations were formulated ensuring that these are adaptable to diverse regional contexts.

The report was developed following four specific sub-objectives:

- **Analysis of relevant EU policy frameworks:** This included reviewing existing EU policies and mapping them against local, regional, and national frameworks. The analysis increased the understanding of the extent that EU-level policies are aligned with national and sub-national structures, as well as the constraints and requirements these impose on regional energy planning. This in turn informed the policy recommendations so that these are coherent across all levels of governance.

- **Analysis of regional activities:** An analysis of the outcomes of the workshops conducted in the 6 partner regions was undertaken. This included studying the discussions that took place during these regional workshops to effectively capture the range of challenges identified in the implementation of the EE1st principle, as well as the conditions or processes that were found to have a positive impact. The analysis covered critical aspects relevant to the application of the principle, including financing, governance structures, and planning procedures.
- **Formulation of policy recommendations:** The key take-aways and conclusions derived from Regio1st's regional activities were reviewed in order to identify those that are relevant across all EU regions. This helped formulate recommendations that are relevant and applicable in regions with different economic conditions, governance models, and energy planning priorities. Thus, the recommendations developed apply to diverse regional contexts within the EU.
- **Support other Region1st activities:** The findings, outcomes and recommendations outlined in this report aim to support the effective implementation of other Regio1st activities and support the replication and exploitation of the project's outcomes.

1.3 Methodology

The methodology employed ensured a structured, collaborative and fact-based approach. It enabled multiple levels of analysis, from policy review to data gathering, and co-creation with different partner organisations. The active contribution of partners helped ensure the validity and practical applicability of the findings, outcomes and recommendations included in this report. Figure 1 illustrates the steps followed for formulating the Regio1st recommendations.



Figure 1. Methodology employed to formulate the policy outcomes

Policy context review

To ensure alignment with broader regulatory and strategic frameworks, a systematic approach was applied to identify and analyse relevant policies at EU, national, regional and local level. The process included literature research, stakeholder consultation and the use of a policy mapping tool that was distributed amongst regional partners to report on the latest policy updates. European Directives and strategies relevant to the EE1st principle were examined, and where possible challenges and gaps between the different levels of governance in implementing the principle were identified. The primary objective was to identify how the EE1st principle is embedded within EU legislation and strategic documents, and to understand the extent of its legal implementation across key policy areas. The findings of this review are the foundations of understanding the policy context and evaluating how the EE1st principle is expected to influence planning, investment, and regulatory decision-making across sectors.

Data collection

The data collection process covered both primary and secondary sources. Regional workshops' reports, technical minutes, and monitoring notes were used. Workshop reports were utilised to extract qualitative information, while monitoring files provided systematised data on activities. In addition, a structured tool for mapping policies and procedures was used to help assess the degree of integration of the principle at national and regional level, as well as to identify the challenges faced. The process was iterative, allowing the continuous integration of findings.

Material evaluation and analysis

The collected material was evaluated through qualitative content analysis and comparative analysis to explore insights and draw conclusions. The information was categorized and analysed thematically in order to identify challenges, good practices and areas for improvement.

Co-creation with partners

The involvement of Regio1st partners has been fundamental. A participatory approach was adopted to enhance cooperation, knowledge sharing and the provision of input and feedback. Meetings and the use of digital tools (as well as shared repositories) helped maintain a continuous bilateral consultation process. Partners were actively involved in the development and the validation of the findings, and the outcomes outlined in this report and supported the formulation of the recommendations.

2 European Policy Context

In this section the current European Union policy context relevant to the Energy Efficiency First principle is reviewed. The EE1st principle has been explicitly introduced in several key EU legislative and policy documents, including Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action, Commission Recommendation (EU) 2021/1749 on Energy Efficiency First: From Principles to Practice, Directive (EU) 2023/1791 on Energy Efficiency (EED recast), and Commission Recommendation (EU) 2024/2143 providing guidelines for interpreting Article 3 of the recast Directive (fig. 2). Additionally, broader strategic EU initiatives such as the European Green Deal and the Renovation Wave support the logic and implementation of the EE1st by promoting energy efficiency as a core element. However, while these initiatives reinforce the strategic role of energy efficiency, it is not a legal obligation.

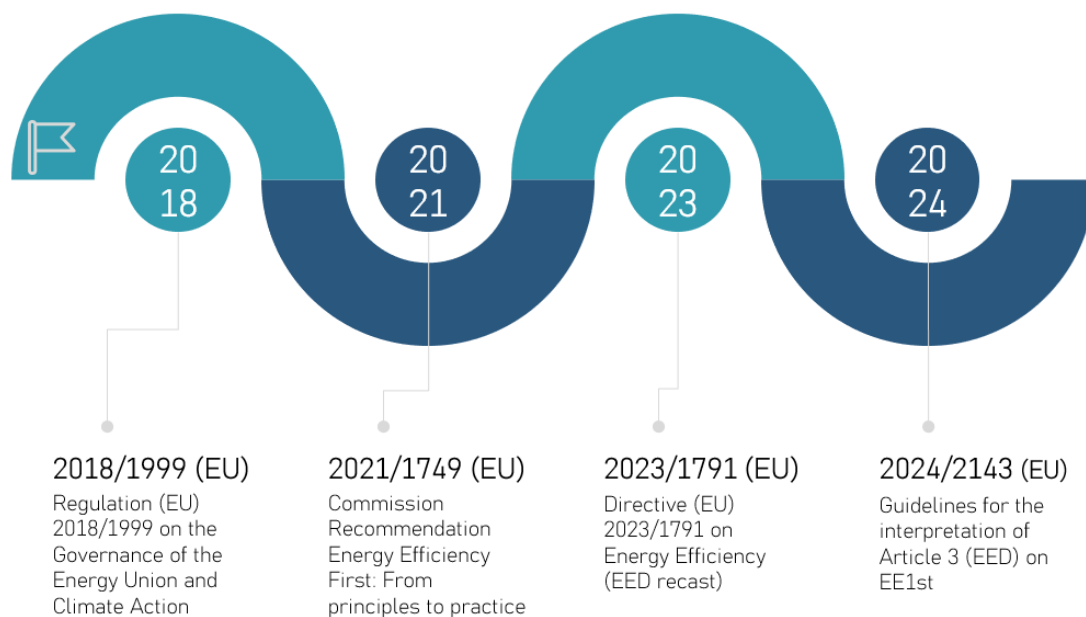


Figure 2. The EE1st journey in key EU legislative and policy documents

Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action

As outlined in Article 2, point (18), of Regulation (EU) 2018/1999¹, the EE1st principle has been established with a formal definition:

¹ Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No

“...‘energy efficiency first’ means taking utmost account in energy planning, and in policy and investment decisions, of alternative cost-efficient energy efficiency measures to make energy demand and energy supply more efficient, in particular by means of cost-effective end-use energy savings, demand response initiatives and more efficient conversion, transmission and distribution of energy, whilst still achieving the objectives of those decisions...”

It emphasizes that strategic investments in energy efficiency can cost-effectively reduce demand and, consequently, the need for additional energy production and infrastructure.

Regarding the integrated NECPs, Article 3 sets EE1st principle as an overarching principle, in particular that “... Member States shall... take into account the interlinkages between the five dimensions of the Energy Union, in particular the energy efficiency first principle”.

Moreover, recital (64) states that “ Member States should use the energy efficiency first principle, which means to consider, before taking energy planning, policy and investment decisions, whether cost-efficient, technically, economically and environmentally sound alternative energy efficiency measures could replace in whole or in part the envisaged planning, policy and investment measures, whilst still achieving the objectives of the respective decisions. This includes, in particular, the treatment of energy efficiency as a crucial element and a key consideration in future investment decisions on energy infrastructure in the Union. Such cost-efficient alternatives include measures to make energy demand and energy supply more efficient, in particular by means of cost-effective end-use energy savings, demand response initiatives and more efficient conversion, transmission and distribution of energy. Member States should also encourage the spread of that principle in regional and local government, as well as in the private sector.”

Commission Recommendation (EU) 2021/1749 on Energy Efficiency First: From principles to practice.

Commission Recommendation 2021/1749 (EU)² provides guidelines for applying the Energy Efficiency First principle across policies, planning, and investment decisions. The principle is recommended to be applied at all decision-making levels impacting energy supply or demand. Energy efficiency needs to be considered as an overarching guiding principle, aligning it with broader policy objectives. A comprehensive system

525/2013 of the European Parliament and of the Council (OJ L 328, 21.12.2018, p. 1, ELI: <http://data.europa.eu/eli/reg/2018/1999/oj>).

² Commission Recommendation (EU) 2021/1749 of 28 September 2021 on Energy Efficiency First: From principles to practice – Guidelines and examples for its implementation in decision-making in the energy sector and beyond (OJ L 350, 4.10.2021, p. 9, ELI: <http://data.europa.eu/eli/reco/2021/1749/oj>).

perspective that considers security of supply, climate neutrality, and cost-effectiveness as well as demand-side measures and flexibility should be integral parts of the solutions, contributing to cost-effective decarbonization paths.

Relevant entities should adhere to the principle, by defining responsibilities and establishing monitoring mechanisms, while removing barriers and providing incentives to enable its effective implementation, addressing societal and distributional impacts. Clear information and guidance, particularly at local levels are suggested to be provided and national regulatory authorities should establish methodologies to assess cost-benefit and energy-saving co-benefits, considering future climate impacts. Adequate resources for data collection, compilation of statistics and monitoring progress should be allocated as well. Finally, the document includes detailed guidelines in the annex to ensure consistent and effective implementation.

Directive (EU) 2023/1791 on Energy Efficiency (EED recast)

According to recital (15) of the preamble to Directive (EU) 2023/1791³, the EE1st principle should be considered across all sectors, being an 'overarching principle'. Energy efficiency solutions should be prioritised in policy, planning, and investment decisions, especially when setting new rules for the supply side and other policy areas.

This is further elaborated under Article 3, which sets it as a requirement that energy efficiency solutions are assessed above a threshold (major investment decisions of a value of more than EUR 100 000 000 each or EUR 175 000 000 for transport infrastructure projects). Member States obligations are further elaborated, both for applying the energy efficiency first principle and monitoring its implementation. Member States are also encouraged to take into account Commission Recommendation (EU) 2021/1749.

Article 3, in line with Article 7, states that Member States must ensure the application of the EE1st principle in public contracts and concessions with a value equal to or greater than the thresholds specified in Article 8 of Directive 2014/23/EU, Article 4 of Directive 2014/24/EU, and Article 15 of Directive 2014/25/EU. This requirement applies both to contracting authorities and contracting entities.

Additionally, Article 27 of Directive (EU) 2023/1791, requires Member States to ensure that gas and electricity transmission and distribution system operators apply the EE1st principle in their network planning, development, and investment decisions. National energy regulatory authorities must also apply the principle when carrying out their

³ Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (OJ L 231, 20.9.2023, p. 1, ELI: <http://data.europa.eu/eli/dir/2023/1791/oj>).

regulatory tasks regarding their decisions on the operation of the gas and electricity infrastructure, as outlined in Directives 2009/73/EC and (EU) 2019/944.

Commission Recommendation (EU) 2024/2143 Guidelines for the interpretation of Article 3 of Directive (EU) 2023/1791 as regards the EE1st

Commission Recommendation (EU) 2024/2143⁴, adopted on 29 July 2024 and published officially on 9 August 2024, provides non-binding interpretative guidelines to help Member States transpose and implement Article 3 of Directive (EU) 2023/1791, which establishes the Energy Efficiency First (EE1st) principle as a legal requirement. It notes that energy efficiency solutions should go beyond end-use energy savings, considering also demand-side resources (demand response, energy storage and smart technologies) and the efficient conversion, transport and distribution of energy.

The Annex sets the framework for the practical implementation of the EE1st, including what energy efficiency solutions to assess, how to assess these, how to handle major investment decisions above and below the thresholds set out in Article 3(1) of Directive (EU) 2023/1791, how to ensure proper assessment of wider benefits, how to apply the EE1st principle within and beyond the public sector and regulated sectors, how to address the impact on energy poverty, what institutions could act as monitoring entities and how to promote the application of cost-benefit methodologies.

In addition, the obligations under Article 3 are analysed, such as the sectors of energy consumption and the types of alternatives that must be considered for the proper implementation of the EE1st principle. It clarifies that energy efficiency solutions go beyond end-use savings/efficiency and include demand-side flexibility, storage and smart technologies, as well as more efficient conversion, transport and distribution of energy. An important part of the guidelines is the Recommendation for the use of cost-benefit analysis (CBA) methodologies that take into account the broader benefits of the examined alternatives in the environmental, economic, and societal sectors. Finally, it analyses how the principle is applied in the public and non-public sectors, with examples per policy area, ensuring the application of the principle to large investment decisions, and calls on Member States to ensure monitoring & reporting mechanisms, and oversight bodies to monitor compliance and progress via NECP reports.

⁴ Commission Recommendation (EU) 2024/2143 of 29 July 2024 setting out guidelines for the interpretation of Article 3 of Directive (EU) 2023/1791 of the European Parliament and of the Council as regards the energy efficiency first principle (notified under document C(2024) 5284) C/2024/5284 OJ L, 2024/2143, 9.8.2024, ELI: <http://data.europa.eu/eli/reco/2024/2143/oj>

The Recommendation builds on the previous Commission Recommendation (EU) 2021/1749 of 2021, strengthening and making EE1st operational across all areas and levels of decision-making.

Other Directives and EU initiatives

Except for the above legislative and policy documents, the EU Directives on Electricity⁵, Renewable Energy (RED^{6 7}) and Energy Performance of Buildings (EPBD^{8 9}), although not explicitly referring to the EE1st principle, support it indirectly through objectives and actions. In particular, the Electricity Directive promotes demand flexibility measures and smart grids, the RE Directive promotes the integration of renewable sources while respecting the energy efficiency first principle, and the EPBD Directive promotes high energy efficiency technical standards and renovations.

Other strategic policy EU initiatives, such as the European Green Deal¹⁰ and the Renovation Wave¹¹, promote the logic and implementation of EE1st at the level of policy and strategic direction. The Green Deal makes energy efficiency a key pillar of the European strategy for climate neutrality by 2050, while the Renovation Wave focuses on improving the energy efficiency of buildings through extensive renovations.

⁵ Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast) (Text with EEA relevance.) PE/10/2019/REV/1 OJ L 158, 14.6.2019, pp. 125–199. Legal status of the document In force: This act has been changed. Current consolidated version: 16/07/2024 ELI: <http://data.europa.eu/eli/dir/2019/944/oj>

⁶ Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast) (Text with EEA relevance.) PE/48/2018/REV/10J L 328, 21.12.2018, pp. 82–209 ELI: <http://data.europa.eu/eli/dir/2018/2001/oj>

⁷ Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652 PE/36/2023/REV/2 OJ L, 2023/2413, 31.10.2023, ELI: <http://data.europa.eu/eli/dir/2023/2413/oj> ELI: <http://data.europa.eu/eli/dir/2023/2413/oj>

⁸ Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast) OJ L 153, 18.6.2010, pp. 13–3 ELI: <http://data.europa.eu/eli/dir/2010/31/oj>

⁹ Directive (EU) 2024/1275 of the European Parliament and of the Council of 24 April 2024 on the energy performance of buildings (recast) (Text with EEA relevance) PE/102/2023/REV/1 OJ L, 2024/1275, 8.5.2024, ELI: <http://data.europa.eu/eli/dir/2024/1275/oj> Legal status of the document In force ELI: <http://data.europa.eu/eli/dir/2024/1275/oj>

¹⁰ The European Green Deal-Striving to be the first climate-neutral continent https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

¹¹ Renovation Wave https://energy.ec.europa.eu/topics/energy-efficiency/energy-performance-buildings/renovation-wave_en

3 Outcomes on the Regio1st activities at regional level

This chapter presents the current state of play regarding the policy integration of the EE1st principle, in the six countries where the Regio1st regional partners are located, as well as the findings from the workshops carried out there. Specifically, for each region the policy screening sub section presents the level of adoption and integration of the principle at local, regional and national level. Subsequently, the main conclusions from the workshop activities are presented for each region, including the legal obligation to implement the EE1st, the awareness and familiarisation of local authorities, the available resources and know-how, the governance silos, the need for tools and training, the overlaps with existing local climate action plans, as well as other issues highlighted by local authorities. Finally, regional-specific recommendations on how to facilitate the principle's integration are proposed based on the analysis findings.

3.1 Asturias (Spain)

Local, regional, and national policies

At the **national level**, Spain has incorporated the EE1st principle into its Integrated National Energy and Climate Plan (*"As the European Commission points out, in order to achieve these objectives, priority must be given to energy efficiency, in line with the energy efficiency first principle... the application of the energy efficiency first principle, which serves as a compel to the measures of the entire NECP."*).

The plan mandates the systematic assessment of energy efficiency potential in energy planning, ensuring cost-effective and sustainable alternatives are considered. In sectors like buildings and transport, strategies focus first on reducing consumption through renovation, modal shift, and smart technologies (*"Newly built buildings must meet increasingly demanding energy efficiency standards... For its part, the reduction of emissions during the use phase in buildings already built is implemented in the measures of this Plan dedicated to improving energy efficiency in existing buildings, in application of the energy efficiency first principle."*). All major decisions, including the new supply infrastructure, must evaluate whether efficiency measures could achieve the same goals more effectively. However, there is a lack of detailed tools and guidelines for the practical implementation of the principle across all sectors.

At the **regional level**, the Asturias region has developed plans that indirectly incorporate the EE1st principle. The Energy Improvement Plan (Plan ASUME¹²) promotes energy efficiency in public infrastructure, transportation, and building rehabilitation. Although it is not explicitly mentioned in the strategic document, the entire Strategy is focused on promoting energy efficiency in the public sector as a key means to reduce dependence on external energy sources. The strategy includes public outreach campaigns, energy-saving criteria in public tenders, and acceleration of renewable adoption, but there are limited regional resources for widespread public sector upgrades and renewables.

Additionally, the Just Energy Transition Strategy¹³ focuses on energy efficiency to reduce dependence on coal by focusing on transforming the coal-dependent energy model, integrating energy efficiency in various sectors as well as renewables deployment, public outreach campaigns and establishment of energy-saving targets. EE1st will be considered in the next revision. However, the strategy's goal is not guaranteed to be achieved, as there are considerable economic dependencies on coal industries and funding limitations for renewable energy projects.

Finally, another strategy, the Energy Rehabilitation Strategy for Buildings Program "PREE 5000"¹⁴ provides grants for energy retrofit of buildings, aimed at reducing final energy consumption and carbon dioxide emissions, particularly in municipalities facing demographic challenges. However, the program faces challenges such as limited awareness and technical expertise among local authorities and building owners, high initial costs for rehabilitation actions despite the availability of grants, and difficulties in achieving widespread adoption of energy efficiency measures in rural or less populated regions due to logistical and economic constraints.

Findings and outcomes from Regio1st activities

Legal obligation to integrate the EE1st principle

- Although the EE1st principle is aligned with regional priorities, its implementation in Asturias is not embedded in regional legislation or regulatory processes.
- Participants recognised that, while tools like Social Cost-Benefit Analysis (SCBA) and Multi-Criteria Decision Analysis (MCDA) offer value, their integration

¹² PLAN ASTURIAS SUMA EN MEJORA ENERGÉTICA (Plan ASUME)

<https://www.asturias.es/documents/217090/1093036/20230120-Plan+-ASUME.PDF/367d83c5-1bd2-c944-c46d-2990d0d78993?t=1674216545914>

¹³ ESTRATEGIA DE TRANSICIÓN ENERGÉTICA JUSTA DE ASTURIAS https://www.otja.es/wp-content/uploads/2024/03/Estrategia_Transicion_Energetica-1.pdf

¹⁴ PREE 5000. Rehabilitación energética de edificios en municipios de reto demográfico

into formal decision-making requires institutional mandates and procedural incorporation.

Awareness and familiarity within local authorities

- Workshops revealed the need to increase awareness of the EE1st principle and its policy relevance at the regional level.
- The first in-depth technical session with regional departments revealed limited previous familiarity with the EE1st principle as a planning approach, despite the regions' openness to new approaches for sustainability.
- The hands-on demonstration of both tools with actual regional data, showing simulations and potential decision paths contributed to better understanding of its potential in transparent and evidence-based policymaking.

Resources and expertise

- Participants stated that they have limited prior experience in applying monitoring frameworks based on KPIs in regional energy planning.
- Several participants, including Director Generals (DGs) and technical staff, implied concerns about the challenges of introducing complex analytical tools (e.g., SCBA, MCDA) in settings with limited human and technical resources.
- Specific reference was made to the lack of accurate, up-to-date regional data and the difficulty of applying tools without external support.
- The need for external support, like training and capacity building, was consistently underlined, particularly to support the shift from traditional to data-driven planning processes.
- Participants highlighted the need for continued support from FAEN in adapting and applying the tools to regional contexts.

Governance silos

- Concerns were expressed regarding data consistency across departments, and the lack of harmonised baselines as a barrier for the valid use of SCBA and MCDA tools.
- Participants highlighted the difficulty of integrating new planning methodologies within established administrative structures and decision-making protocols.
- Effective deployment of EE1st tools will require improved coordination between energy, industry, planning, and finance departments, as well as data-sharing agreements.

Need for tools and training

- The Regio1st tools were well received by regional authorities, particularly the SCBA and MCDA tools.
- The simplicity and practical application of the Regio1st framework were said to be the key strengths, and their relevance was validated through real cases' demonstrations using regional data.
- The DG staff expressed appreciation for the added value the tools could bring, especially in evaluating investment scenarios under constrained budgets, in case of further support and training is provided.
- Participants recommended including the tools in the impact assessment phase of future energy legislative processes.

Overlaps with existing local climate action plans

- No explicit overlaps were reported. However, the tools were seen as valuable assets to be used for the formulation of various strategies.
- Participants suggested to integrate the Regio1st tools into the Asturias' Regional Energy Strategy upcoming revision to provide a more solid evidence-based justification of the strategy.
- Interest was shown in the integration of Regio1st tools within the regional industrial decarbonization agenda.

Other points of consideration among local authorities

- Participants noted as practical barriers the unfamiliarity with cost-benefit and multi-criteria approaches, as well as the limited regional capacity to independently operate and maintain tools.
- Despite the challenges, participants consistently expressed willingness to adopt these methodologies, if technical assistance and political continuous support are provided.
- Additionally, the integration of diverse policy instruments under a single observatory structure sets challenges in terms of coordination and data harmonization but also interesting output and possibilities at the same time.

Regional recommendations

Awareness campaigns

Organise targeted events to raise awareness and improve understanding of the Energy Efficiency First (EE1st) principle at the regional level.

Regional Data alliance

Establish a partnership between agencies, municipalities, utilities and other relevant data holders for improved data sharing and monitoring.

Mainstreaming EE1st in strategy

Embed EE1st as a core principle in the upcoming revision of the Asturias Energy Strategy.

Capacity building

Develop a training programme for regional staff on data management, decision-support tools, and practical EE1st applications.

Cross-departmental Task Force

Create an EE1st Task Force with representatives from all relevant departments to avoid silos and ensure integrated planning.

Integration of EE1st tools

Incorporate methodologies and tools, such as cost-benefit and multi-criteria analysis into existing regional planning processes.

3.2 Liguria (Italy)

Local, regional, and national policies

At the **national level**, the 2024 revision of Italy's Integrated National Energy and Climate Plan acknowledges the Energy Efficiency First principle as a fundamental pillar (... "*Policies and measures reflect the first energy efficiency principle*") across its strategy, planning, and implementation, in alignment with EU Directive (EU) 2023/1791. It explicitly states that EE1st was considered in drafting the plan and will guide the implementation of measures, ensuring energy efficiency options are evaluated before supply-side interventions where more cost-effective. The plan explicitly references EE1st in strategic sections, particularly in relation to public procurement, building renovations, and investment planning, emphasizing that energy efficiency should be prioritized in all relevant decisions. While the document sets EE1st as a horizontal principle to be applied across sectors such as buildings, transport, and industry, it does not include defined mechanisms, methodologies, or enforcement tools to ensure its practical implementation at the regional or project level.

The revision of the NECP is expected to be completed 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.

At the **regional level**, Liguria Region is about to approve the Regional Energy and Environmental Plan (PEAR 2030¹⁵), which incorporates the EE1st principle as a key element of its energy framework. The EE1st principle is introduced as a focus point of the energy legislative framework of the Plan. Moreover, the principle is embedded in a specific way as the Plan's strategy and targets are built considering firstly 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.

Findings and outcomes from Regio1st activities

Legal obligation to integrate the EE1st principle

- At the time of the workshops, the EE1st principle had not been transposed into Italian national legislation. As such, regions and local authorities did not need to

¹⁵ Piano energetico regionale PEAR 2030 <https://www.regione.liguria.it/homepage-impresse/item/41006-Pear20230.html>

deal with it in their energy planning. The transposition of the recast Energy Efficiency Directive and the revision of the NECP is expected to be the first binding document to introduce the principle.

Awareness and familiarity within local authorities

- During the first meetings, the need for awareness-raising around the EE1st principle was raised, especially on how it is expected to be introduced at local and regional levels.
- While Liguria Region and the participating municipalities (Genova and Savona) had a good understanding of energy planning, they lacked familiarity with the EE1st principle and its strategic role within EU policy.
- Workshop presentations helped bridge this gap, contributing both to the understanding of the principle's concept and practical meaning.

Resources and expertise

- Absence of some officials in the workshops due to lack of available time, indicates that there is a shortage in personnel who can effectively respond in requirements beyond their planning duties.
- Municipalities expressed bold interest in applying CBA and Multi-Criteria Analysis tools but stated a lack of internal capacity and expertise to implement them without external support.
- The City of Savona, for instance, indicated that without external support, they would barely use these tools in their SECAP development process.
- The Region of Liguria also stated limited use of CBA methodologies but showed willingness to experiment with new tools with technical support.

Governance silos

- There is a distinct jurisdiction in energy planning between regional and municipal authorities. Municipalities (e.g. Savona) expressed interest in some of the planning stages but clarified that they are not responsible for regional energy strategies.
- The Liguria Region pointed out 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.

- Cooperation between the departments of energy planning and funding programmes is needed to make the EE1st operational.

Tools and training

- Both regional and municipal participants were interested in the Regio1st Planning Framework and developed tools (e.g. CBA, MCDA) as it meets their needs in advanced decision making.
- While many Regio1st Framework steps overlapped with existing planning practices (e.g. stakeholder engagement, baseline emissions inventories), participants identified added value in the Regio1st tools, particularly for stages that were previously overlooked (e.g. economic and feasibility assessment).
- Liguria Region expressed interest in using the CBA tool during the mid-term review of their Regional Energy Plan and the MCDA tool in selecting actions for the next energy plan cycle. These tools could be interesting also for the periodic monitoring of the regional Energy Plan's actions, which is required every two years after first approval.
- Officials showed interest in the MCDA tool for comparing alternatives considering aspects beyond economic viability. The tool is expected to be a valuable asset in the periodical update of their energy plans as well as the drafting of new ones.
- A need for training and technical support was expressed to ensure the effective implementation and integration of the tool.

Overlaps with existing local climate action plans

- Some of the Regio1st framework stages such as the stakeholder engagement, data collection to develop the baseline, etc. are less useful for the municipalities since they are somewhat included/covered by the Covenant of Mayors guidelines that they are already following.
- Genova has an existing SECAP (currently in the monitoring phase), and Savona is finalizing its new plan to be approved by the end of 2025, which is going to embed the EE1st principle in some of its energy efficiency mitigation actions.

Other points of consideration among local authorities

- Despite their openness to innovation, some hesitation was identified regarding the local authorities' capacity to use advanced tools (e.g. CBA, MCDA) without meaningful external support.

Regional recommendations

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.

3.3 Međimurje County (Croatia)

Local, regional, and national policies

At the **national level**, Croatia has integrated the EE1st principle into its NECP for the period 2021–2030. The principle is primarily addressed in relation to outreach and information campaigns on building decarbonization, rather than as a mainstreamed planning tool. The NECP was updated in 2023 and underwent public consultation in 2024, with the final version published in spring 2025.

Despite the detailed analysis of energy efficiency policies and measures and their contribution *towards Croatia's national contribution to the 2030 EU energy efficiency targets*, the plan does not take into account the increased ambition set by Directive (EU) 2023/1791 ("EED recast"). The policies and measures outlined in the NECP focus on energy efficiency across the entire energy system and economy. The largest impact in terms of delivering on the 2030 energy efficiency target is expected from the Croatian energy efficiency obligation schemes, followed by measures in buildings, and measures addressing public assets.

Croatia's NECP makes clear reference to the principle of "Energy Efficiency First (*"...increasing energy efficiency in all parts of the energy chain ... and applying the principle of Energy Efficiency First."*). In the building sector, it states that *"through co-financing programs for the energy renovation of buildings, the principle of 'energy efficiency first' has already been vigorously applied in Croatia."* The plan also states that new information measures will promote decarbonisation in buildings *"based primarily on the principle of 'energy efficiency first'."* It specifies that all renovation programmes are grounded in this principle, since *"the essential condition for obtaining grants ... is reducing the energy required for heating and cooling in buildings."*

Further, the NECP includes a dedicated measure, "ENU-2 Promoting the decarbonisation and application of the 'energy efficiency first' principle in buildings," which commits to expert networking and targeted *"Energy efficiency first information campaigns"* on renovation and decarbonisation. Finally, even in heating regulation (ES-9), the NECP underlines that the replacement of fossil-fuel systems must be done while *"respecting the principle of 'energy efficiency in the first place'."*

At the **regional level**, the Energy Efficiency Action Plan of Međimurje County (EEAP) for the period 2025–2027 incorporates the EE1st principle where applicable. The plan, proposed in September 2024 and adopted in December 2024, integrates the EE1st principle as a core element of regional planning, explicitly stating that energy efficiency measures must be prioritized over supply-side solutions whenever they are technically and economically justified. This principle is not only referenced in the strategic sections

of the plan but also operationalized through practical mechanisms, including cost-effectiveness analysis for project evaluation, prioritization of energy efficiency in investment planning, and its inclusion in public procurement procedures. The plan also mandates the use of energy audits, systematic energy management, and capacity-building for local authorities to ensure EE1st is applied consistently in daily decision-making.

Findings and outcomes from Regio1st activities

Legal obligation to integrate the EE1st principle

- The EE1st principle is mentioned in Croatian legislation within the 2021 amendments of the Energy Efficiency Act (Official Gazette nr. 127/14, 116/18, 25/20, 32/21, 41/21, 40/25), related to the EED transposition. The Act directly requires and regulates regional energy planning, but it does not elaborate on how to apply the EE1st principle. Nevertheless, the essence of EE1st is implemented through EU directives, national strategies and sector-specific rules. The application of the “Do No Significant Harm” principle particularly in projects funded under the Croatian Recovery and Resilience Plan (2021–2026), helps indirectly to set the foundations for the introduction and acceptance of the EE1st principle.

Awareness and familiarity within local authorities

- Workshop participants had limited awareness of the EE1st principle. While some parts of the principle were recognised, the concept of the principle as defined in EU policy was not widely known.
- Practical applications of the principle during the workshops (e.g., cost-benefit cases) and guidance materials helped improve comprehension.

Resources and expertise

- Some tools such as the Energy Inventory Data Collection Template were seen as too complex to be used internally by local authorities' technical staff. Participants indicated that such tasks are more appropriate for specialised energy agencies.
- The Social Cost-Benefit Analysis (SCBA) tool was also described as complex, requiring substantial input data and deeper technical understanding. Participants expressed the need for external support to interpret the outputs and incorporate them into planning.
- Time constraints were also mentioned as a barrier, particularly for tools like the Multi-Criteria Decision Analysis (MCDA).

Governance silos

- Awareness of regional strategies that may include energy efficiency exists, but tends to be siloed, and mostly recognizable by those planners/ stakeholders that have some kind of interest or responsibility on a specific area. This limits horizontal understanding and aligns implementation of the principle across sectors such as urban planning, environment, economy, and infrastructure.

Tools and training

- Although the tools were generally well received, there were concerns regarding the complexity, usability, and ongoing maintenance of some tools (Data inventory). Training and capacity-building support were proposed to facilitate the effective use of the tools.
- The Multi-Criteria Decision Analysis tool seems very useful and easy to use (especially given that the planning framework guidelines are available on the Regio1st planning framework website), but it may be time consuming to properly use it in the planning process.
- Simplification of some tools was suggested to improve usefulness for local authority users.
- Participants noted that having access to examples and guidance was crucial for understanding the tools. Practical application, as demonstrated in the monitoring template session, improved their capacity for possible future use.

Overlaps with existing local climate action plans

- Several regional strategies are already in place in Medjmurje County, including the Development Plan (to 2027) and the Environmental Protection Programme (2022–2025). While these strategies address related objectives, they do not explicitly reference the EE1st principle. As a result, alignment with EU energy efficiency priorities is not clear.
- Existing plans often focus on specific planning areas but lack defined implementation approaches to consider energy efficiency systematically.
- The Energy and Climate Action Plan developed under another EU-funded initiative, was discussed during the 5th workshop. Synergies between planning instruments like this Plan and the Regio1st planning framework were identified as important to align energy planning. Such potential alignment represents a great opportunity to embed EE1st into current planning processes.

Other points of consideration among local authorities

- Several participants stated their concerns about the feasibility of applying the EE1st principle without legal obligations or financial incentives.
- Political will was highlighted as a critical factor, with energy efficiency not consistently prioritised in decision-making processes unless supported by external funding mechanisms.

Regional recommendations

EE1st training pack

Publish an “EE1st introductory pack” with simplified tools and guides to support local authorities. Provide regular training for municipal staff on using EE1st tools and methods, tailored to different levels of expertise.

Panel for strategic planning

Create a panel for exchanging information between different strategies required (urban planning, environment, economy, infrastructure) to ensure coordination.

Synergies with other planning instruments

Strengthen links between EE1st and other planning instruments such as Energy and Climate Plans to maximise alignment and efficiency.

Working group on legal & financial needs

Establish a group to assess legal obligations or financial incentives to enable wider EE1st application.

Technical support

Request the Ministry to establish a helpdesk or support office to provide technical assistance for applying EE1st.

Awareness campaigns

Organise campaigns to improve local understanding of EE1st and its role in regional planning decisions.

3.4 Spodnje Podravje (Slovenia)

Local, regional, and national policies

At the **national level**, Slovenia has integrated the EE1st principle into its National Energy and Climate Plan (NECP), which aligns with the EU Energy Efficiency Directive (EED). Slovenia's NECP explicitly incorporates the Energy Efficiency First (EE1st) principle as a key objective in the Energy Efficiency sector (*"accelerating energy efficiency and material efficiency improvements in all sectors ... based on the energy efficiency first principle is a prerequisite for a successful and competitive transition to a climate-neutral society."*). This is presented as cross-sectoral that requires coordination between ministries and integration into sectoral strategies. The plan also emphasizes that energy efficiency must be considered as a priority in policy making and investment decision-making, particularly where cost-benefit analysis shows energy efficiency as the optimal solution, in sectors such as buildings, energy supply, and public infrastructure. Practical references to EE1st include its application in cost-benefit evaluations and prioritization of demand-side measures, specifically through measure M36.7-Preparing the ground for implementation for *"preparation of bases (methodologies, evaluation and decision-making processes, data support, implementation plans, etc.) to support the implementation of the energy efficiency first principle in the use and supply of energy at all levels of project decision-making, procurement and programming, investment and support schemes"*.

Additionally, the plan promotes the use of EE1st in public procurement and spatial planning by equipping authorities with training and regulatory support to prioritize energy efficiency, through the measure M11.1-Financing model for climate neutrality. In this, the NECP sets out a financing system aligned with *"implementing the energy efficiency first principle, guiding all actors, investors, the financial sector, providers and others in the post-2027 period in public investment and private investment."* However, while the document recognises the strategic role of EE1st, it does not provide detailed mechanisms or monitoring tools to ensure systematic implementation across all governance levels.

Additionally, the Energy Efficiency Act, which is currently in public consultation, explicitly incorporates the EE1st principle. The EE1st principle emphasizes prioritizing energy efficiency in all planning, policy-making, and major investment decisions, particularly for investments exceeding €100 million or €175 million for transport infrastructure projects. It mandates that sectors such as buildings, transport, water, ICT, agriculture, and finance consider energy efficiency measures and prepare studies to assess their costs and benefits from a long-term perspective, the security of supply and the quantification from a social, health and economic perspective. This also requires

taking into account the interconnections of sectors and cross-sectoral effects where decisions on policy, planning and investments require approvals and monitoring. Entities must report their compliance with the EE1st principle to the Ministry of Energy within six months.

The ministry will specify the methodology to be used for applying the principle. This methodology shall take into account the impact on energy poverty, identify the entities responsible for monitoring the application of the energy efficiency first principle, and determine the impact of regulatory frameworks and financial arrangements, as well as decisions on planning, policies and major investments on energy consumption, energy efficiency and energy systems. It shall also list measures taken to remove unnecessary regulatory or non-regulatory barriers to the implementation of the energy efficiency first principle and demand-side solutions, including by identifying national legislation and measures that are contrary to that principle.

Finally, the transmission and distribution system operators for gas and electricity shall apply the EE1st principle in their decisions on network planning and development and investments. The Agency shall supervise that transmission system operators and distribution system operators, using the methodology they use, also assess alternative options in the cost-benefit analysis, that they take into account the wider benefits of energy efficiency solutions, demand-side flexibility and asset investments, and that operators implement the EE1st principle.

Findings and outcomes from Regio1st activities

Legal obligation to integrate the EE1st principle

- At the time the first workshops took place, the Energy Efficiency First (EE1st) principle was not yet mandatory under Slovenian national law; national transposition was pending. As a result, participants had expressed their concerns that this regulatory gap limits the formal integration of EE1st into local and regional decision-making processes.
- LEASP, as the developer of Local Energy Concepts (LECs) for municipalities, began incorporating the EE1st principle into these documents starting with the LEC of the Municipality of Makole in January 2025. Since then, the EE1st principle has also been included in the LEC of the Municipality of Žetale. Going forward, this principle will be systematically integrated into all future LECs. LEASP is also actively promoting this approach among other local energy agencies in Slovenia through meetings of the Consortium of Local Energy Agencies of Slovenia.

Awareness and familiarity within local authorities

- Local municipalities, such as Ormož and Slovenska Bistrica, were not familiar with the EE1st principle prior to Regio1st workshop.
- Several participants found that the concept was new to their planning approach, and that workshops contributed significantly to raising their understanding of its implications and benefits.
- Municipalities were interested in the practical use of the CBA tool. Bilateral meetings were offered to focus more in depth on the use of the tool.

Resources and expertise

- Municipalities expressed concerns about their limited ability to have an impactful contribution into emissions of sectors outside their jurisdiction (e.g., transport, industry).
- One emerged challenge in small municipalities was the lack of municipal staff with the appropriate background to be able to gain detailed knowledge and insight into the tools presented. LEASP as their energy manager usually fills the knowledge and capacity gap.

Governance silos

- Municipalities like Slovenska Bistrica pointed out that while they are developing SECAPs and LECs, their authority is limited to the public sector.
- Even though their outreach is limited to the public sector, municipalities welcome the support from national government and other national organisations who are supporting investments across all sectors.
- The coordination gap is supported by local energy agencies, which serve as a vital link between different sectors and governance levels, including the local and national levels.

Tools and training

- Strong interest was shown for the Cost-Benefit Analysis (CBA) and Multi-Criteria Decision Analysis (MCDA) tools presented during Regio1st workshops.
- Participants appreciated the practical demonstrations of the tools and got offered bilateral meetings to build capacity and apply the tools in their local contexts.
- The Monitoring Template was also received well, to track implementation progress.

Overlaps with existing local climate action plans

- The local energy plans (SECAP, LEC) documents are valid until 2030 (SECAP) and for a period of 10 years (LEC), but it is possible to update the action plan earlier and this could be the right time to include the EE1st principle.
- Some municipalities were preparing their action plans (SECAP and LEC) at the time of the workshops, stating that they could incorporate the EE1st principle and the Regio1st planning framework and tools in the development of their plans, as well as the decision making of the respective actions. As described before, LEASP is already incorporating the EE1st principle into all new developed LECs.

Regional recommendations

Knowledge exchange

Facilitate regular exchange between energy agencies (The Consortium of Local Energy Agencies of Slovenia could be used) in Slovenia on integrating EE1st into local energy planning, sharing methods, tools, and good practices.

Nationwide replication of enhanced LECs

Promote the successful incorporation of EE1st in Local Energy Concepts (LECs) by LEASP as a model, and expand this approach nationwide

Vertical coordination protocol for investments

Define clear coordination mechanisms with national programmes to ensure EE1st is applied in investment prioritisation across governance levels.

Technical support by local Energy Agencies

Strengthen cooperation with local energy agencies to provide technical support and address staff shortages in smaller municipalities.

Awareness Campaigns

Organise targeted campaigns to raise awareness of the EE1st principle and its benefits for municipalities and stakeholders.

Integration of decision-making tools into SECAPs and LECs

Systematically update SECAPs and LECs by embedding the EE1st principle and applying CBA and MCDA tools in decision-making.

3.5 Western Macedonia (Greece)

Local, regional, and national policies

At the national level, Greece encourages the application of the EE1st principle through its National Energy and Climate Plan (NECP), in sectors where energy efficiency interventions are expected through the strategic priority “FP4.8: Seamless implementation of the ‘Energy Efficiency First’ principle”. More specifically, in the NECP published on December 2024 *“It is noted that the achievement of the above objectives is ensured by applying the Energy Efficiency First principle, prioritizing the selection of the most efficient policy measures while implementing cost-benefit analyses throughout the life cycle of the measure as well as the long-term perspective, system efficiency and cost, thus achieving, in accordance with the requirements of Regulation (EU) 1999/2018 (Article 18), multiple benefits across all end-consumption sectors, such as reducing energy costs, improving comfort conditions in buildings, increasing worker productivity, increasing domestic value added and employment and improving business competitiveness”*.

The NECP also specifies how this will be operationalised: *“To this end, the framework for the application of this principle will be developed in accordance with the provisions of Article 3 of Directive (EU) 2023/1791, including the designation of the body responsible for monitoring implementation, the development of guidelines and tools, the provision of technical support, etc.”*.

Findings and outcomes from Regio1st activities

Legal obligation to integrate the EE1st principle

- The EE1st principle has been embedded in Greek national legislation only as a declaration. Therefore, its practical integration into regional and local planning is not clearly established and remains voluntary.
- Participants underlined the need for advanced efforts to transpose the updated Energy Efficiency Directive (EU 2023/1791) into national law and be operationalised at regional and municipal levels.

Awareness and familiarity within local authorities

- Assessments through the interactive tool utilised in initial regional workshops revealed a significant knowledge gap among participants regarding the EE1st principle and its relevance to climate neutrality and planning activities.

- Insufficient time and capacity within local authorities' departments are major barriers for successfully applying the principle or for exploring its practical implementation.
- Engagement with EU-level speakers helped clarify the principle's strategic importance.
- The municipality and the technical services were not aware of the forthcoming changes regarding climate neutrality
- There is little knowledge of the forthcoming changes that will occur due to the implementation of EE1st in Greece and the new NECP.

Resources and expertise

- A shortage of staff, especially technical personnel in the Region of Western Macedonia and the Municipality of Kozani, was identified as a major constraint for integrating the EE1st into energy planning processes.
- Limited availability of energy-related data, mainly for the public and social housing sectors, hinders the application of cost-benefit methodologies.
- Participants emphasized the need for external support mechanisms, such as tools and capacity-building workshops, to overcome the existing resource limitations.

Governance silos

- There were indications of governance and policy alignment challenges regarding the integration of EE1st into existing infrastructure investments and regional development programs.
- The complexity of managing the district heating transition (due to the decommissioning of lignite-based plants) revealed poor coordination between different governance levels, as well as across different departments within local authorities.

Tools and training

- Several tools from the Regio1st digital toolbox (e.g. Cost-Benefit Analysis Tool, Energy Inventory Data Collection Template) were introduced and received positive comments by participants.
- Participants stressed the necessity of utilising cost-benefit analysis methodologies to assess and prioritise energy efficient measures

- Participants expressed strong interest in further developing their capacity to use these tools effectively and called for additional training sessions and workshops.

Overlaps with existing local climate action plans

- The importance of aligning new EE1st-based strategies with other existing frameworks, such as the Regional Development Programme and the upcoming local heating and cooling plans, was emphasized throughout the discussions.

Other points of consideration among local authorities

- Participants expressed concerns regarding the feasibility of implementing EE1st under current budget constraints and in the absence of a strong binding legal mandate.
- The future of district heating systems in Western Macedonia is considered an uncertainty, with participants calling for policy support to facilitate a sustainable and socially just energy transition.
- The lack of easily accessible and reliable data was stated as a barrier to informed investment planning, despite the agreement on the importance of the cost-benefit approaches.
- Participants demonstrated their will to collaborate and contribute to the implementation of the EE1st principle, through structured engagement, networking opportunities, and strategic planning support to advance energy-efficient projects and strategies.
- Participants unanimously agreed on their preference for a multidimensional approach for making decisions during strategic planning, prioritising regional development based on sustainability, environmental protection, and inclusive growth.

Regional recommendations

Just-Transition EE1st program board

Establish a dedicated board to oversee the heating transition, ensuring EE1st is systematically applied in planning and investments.

Capacity building

Deliver training programmes for regional and municipal staff to build expertise in applying EE1st tools and methods.

Data repository

Create a central registry and audit system for buildings and infrastructure to provide the data needed for EE1st-based analysis.

Strategic alignment through Memoranda of Understanding

Sign Memoranda of Understanding between governance levels to align strategic planning and investment decisions, with the EE1st principle.

Integration in climate strategies

Ensure the EE1st principle is fully incorporated when revising regional and local energy and climate strategies.

Multi-stakeholder Forums

Organise regular meetings with various stakeholders on energy efficiency, fostering cooperation and identifying new opportunities.

Funding conditionality

Link access to regional funding to the use of EE1st-compliant analysis in project proposals.

3.6 Southeast Ireland

Local, regional, and national policies

At the **national level**, Ireland has integrated the EE1st principle into its Climate Action Plan 2024 (NECP) under the commitment *"In line with the requirements of Article 3 of the Recast EED, Ireland is committed to implementing the Energy Efficiency First Principle (EEFP), as defined in the Governance Regulation of the Energy Union."*, which aligns with the EU Energy Efficiency Directive (EED). The energy efficiency first principle is referenced as a guiding framework across multiple sectors and policy measures (*"Under Article 3 of the Recast EED, Ireland must implement the Energy Efficiency First Principle across planning, policy, and major investment decision processes, as required. We are currently considering how to most effectively achieve this, in the context of specific governance and legal structures."*). It is explicitly considered in the design of the Energy Efficiency Obligation Scheme (EEOS) while other efficiency policy instruments for businesses, such as audits and grants, are aligned with this principle. In the buildings sector, the principle is central to the National Retrofit Plan, prioritising energy demand reduction through deep retrofits (*"Consideration of whether any*

elements of the Energy Efficiency First Principle need to be reflected in Ireland's planning or building control processes, at the appropriate level.").

In the energy sector, the principle informs network development by promoting demand-side solutions that can reduce or defer infrastructure expansion (*"NIFTI objectives are aligned, in general means, to energy efficiency first principles. The framework encourages the use of active travel and public transport ahead of solutions reliant on private transport and seeks to ensure that the maintenance and optimisation of existing assets ... is also preferred to extensive enhancements or outright new infrastructure"*). However, implementation gaps exist due to fragmented coordination across sectors. The latest recast of the EED has not yet been adapted in Ireland, which slows down the implementation of requirements such as cost-benefit analysis (CBA).

At the **regional level**, the Sustainable Energy Authority of Ireland (SEAI)'s programs reflect EE1st principles indirectly by encouraging energy audits and retrofitting as priority actions. The Regional Spatial and Economic Strategy (RSES 2020-2032) does not explicitly reference the EE1st principle but incorporates its principles through the promotion of compact growth and energy-efficient transport systems. Examples of the EE1st principle in action in RSES include prioritizing energy efficiency in retrofitting public buildings and regional collaboration with the SEAI to promote energy-efficient practices across local authorities. The Southern Regional Assembly is also developing a regional decarbonization plan, set to be adopted within 2025, with SEAI ensuring the integration of the EE1ST principle.

Findings and outcomes from Regio1st activities

Legal obligation to integrate the EE1st principle

- The EE1st principle is currently not a legal obligation in Ireland, as the EED recast has not yet been transposed into national law. This results in a lack of visibility for the principle in planning and decision-making processes, which is a concern for local authorities.
- There is also no national-level formal guidance yet on how to apply the EE1st principle. In this context, Regio1st activities help fill an important gap by supporting local authorities in anticipation of the upcoming legal framework.

Awareness and familiarity within local authorities

- Regional and local level decision-makers are still not enough familiar with the EE1st principle. A recurring issue stated by most of the workshops' participants was the low level of awareness within local authorities regarding energy efficiency prioritisation, particularly outside of Climate Action units (e.g., within planning or housing departments).

Resources and expertise

- Local authorities need external technical support (e.g., from energy consultants/agencies like SEEA) as they lack in-house energy expertise. The expert assistance needs to be ongoing as the development plan reviews are periodical, and measures (mitigation and adaptation) need to be reconsidered on a continuous basis.
- Authorities highlighted the importance of a flexible support mechanism rather than a one-off learning workshop. Despite the recognition of the value of Regio1st tools, bilateral engagement for practical application is required.
- There are difficulties in finding the necessary staff and time to implement EE1st.
- Staff shortages (e.g., lack of an Energy Manager, as stated in Carlow) are slowing down project implementation.

Governance silos

- There is a lack of awareness across broader internal teams and need to identify who is responsible for planning and implementing energy efficiency actions.
- There is a need for greater engagement from municipal departments like planning. For instance, there is a lack of communication with departments that develop the decarbonization zones.
- Measures implemented should be aligned with the local planning processes to ensure integration into existing workflows.

Tools and training

- Local authorities face barriers related to cost and the lack of tools or expertise to conduct cost-benefit analyses (CBA). Regio1st tools are seen by the participants as useful and an opportunity for local authorities to prepare for future policy changes.
- Participants requested more tailored training sessions and tailored follow-ups, including workshops focused on planning aspects.

Overlaps with existing local climate action plans

- Many local authorities (e.g., Carlow, Kilkenny, Waterford, Wexford) have already developed Climate Action Plans, covering parts of the Regio1st scope, especially in preparatory phases. This has led to concerns about aligning planning and timelines, as many local authorities are currently focused on implementing their own plans.

- The project is a great opportunity to develop the Energy Efficiency Regional Policy Objectives of the assembly.
- The new Regional Decarbonization Plan is currently being drafted. Decarbonisation zones were seen as a promising area for piloting Regio1st methodologies.

Other points of consideration among local authorities

- Some local authority representatives showed scepticism about the added value of planning using the EE1st principle, particularly where overlaps with existing actions were identified.
- Local authorities are only responsible and accountable for 0.2-0.4% of emissions. Only through strategic planning can they influence and impact the wider community.
- The uncertainty regarding how EE1st will be applied in practice is a concern for many local authorities. However, local authorities are interested in exploring the potential benefits of implementing the principle.
- In some cases, CBAs indicated that more environmentally sustainable options (e.g., heat pumps) were more expensive than less sustainable alternatives, raising concerns over stakeholder buy-in.
- Volatility in electricity costs, compared to gas, significantly impacts CBA results, thus introducing significant uncertainties on decision making.

Regional recommendations

Support mechanism

Establish a structured support mechanism between the SEAI and local authorities to provide them with technical assistance and funding tools for projects aligned with the EE1st principle.

Tutoring facility

Set up a dedicated facility to provide municipalities with EE1st tutoring sessions on applying the principle in local planning.

Clear workflows and accountability

Define workflows, decision-making procedures and accountability roles within municipalities so that each department understands its role in energy planning.

Pilot Projects in Decarbonisation Zones

Pilot EE1st in designated decarbonisation zones and publish results to demonstrate impact and build confidence on the principle's potential.

Horizontal Working Groups

Create cross-departmental groups within municipalities to align strategies, share data, and integrate EE1st across planning areas.

Integration into energy plans

Introduce EE1st systematically in the preparation and revision of energy plans, such as the Regional Decarbonisation Plan.

Bilateral engagements

Hold targeted meetings with high-impact actors on CO₂ emissions to secure meaningful results.

Exchange days

Organise exchange sessions between local authority representatives and technical staff to share considerations on EE1st and co-design feasible actions with social impact.

4 Policy recommendations

The analysis of the findings of the regional workshops conducted by the Regio1st regional partners in 6 countries (Spain, Italy, Croatia, Slovenia, Greece, and Ireland), revealed significant challenges and notable differences in how the EE1st principle is implemented at regional and local levels. Based on the findings collected, the following cross cutting policy recommendations are proposed to support the more effective and meaningful application of the EE1st principle across the EU regions.

4.1 Policy recommendations

<p><i>Cross-sectoral coordination</i></p>	<p><i>Governance level:</i> Regional / Local</p>
<p>Policy Recommendation: Establish regional inter-departmental working groups (Energy Efficiency Task Forces) involving departments of urban planning, transport, buildings, energy, and finance, to achieve integrated planning.</p>	
<p>Siloed governance within regions often hampers the effective implementation of EE1st. Closer collaboration across departments and governance levels is crucial for aligning needs with objectives and actions.</p>	
<p><i>Technical support</i></p>	<p><i>Governance level:</i> National / Regional</p>
<p>Policy Recommendation: Provision of a technical support mechanism, including a dedicated helpdesk, for regional and local authorities.</p>	
<p>The application of the principle at regional level has encountered several practical obstacles due to the unfamiliarity of the authorities' staff with the EE1st principle. The establishment of a mechanism for the ongoing technical support of employees and decision-makers to overcome practical obstacles and challenges can be pivotal for applying the principle seamlessly and effectively.</p>	

Institutional establishment

Governance level:

National

Policy Recommendation: Ensure that the EE1st principle is embedded in energy and climate plans, regional development programmes, public tenders, and funding instruments.

The absence of a legal obligation emerged as a key barrier across nearly all regions analysed. To ensure consistent and meaningful application of the EE1st principle, it must be clearly embedded in national legislation. This includes the introduction of binding provisions that require energy efficiency measures to be systematically considered at every stage of investment planning and decision-making, in line with EU legislation.

Decision-support tools

Governance level:

EU / National

Policy Recommendation: Promote the use of tools, such as social Cost-Benefit Analysis (sCBA) and Multi-Criteria Decision Analysis (MCDA), into official impact assessment guidelines and decision-making procedures for investments and strategic energy planning.

Standardised analytical tools, such as social Cost-Benefit Analysis (SCBA) and Multi-Criteria Decision Analysis (MCDA), are useful for assessing alternatives on a fair basis and for ensuring transparency in decision-making. Their structured use can help effectively integrate EE1st approach into planning processes.

Data, Monitoring and Reporting Mechanisms

Governance level:

National

Policy Recommendation: Establish a standardized framework for data acquisition, monitoring, and reporting to support the implementation of the Energy Efficiency First principle.

Regular data collection from relevant entities and definition of a core set of Key Performance Indicators (KPIs) to track progress should be mandated by the suggested framework. Establishing a centralized reporting platform and a formal obligation for authorities to report will ensure robust, comparable data is available. This is essential for accountability, informed policy adjustments, and continuous improvement in applying the EE1st principle.

Financial Preconditions

Governance level:

EU / National / Regional

Policy Recommendation: Integrate the EE1st principle in funding processes for European funds (such as Cohesion Funds, Just Transition Fund, LIFE and others) or national funding programmes and instruments and establish dedicated financing guidelines for EE1st-compliant projects.

Considering EE1st as an eligibility or evaluation criterion in funding programmes and instruments can become a strong incentive for regional authorities and encourage the development of more actions and projects that take the principle into account. Many regions and municipalities lack the financial resources to implement EE1st without external funding, thus such a requirement is expected to increase funds available for energy efficiency projects. To support this process, it is recommended that dedicated guidelines for developing EE1st-compliant projects are developed at a national or EU level.

Alignment with other strategies

Governance level:

National / Regional / Local

Policy Recommendation: Develop guidelines to align existing plans and strategies with the EE1st principle.

EE1st should be introduced into existing strategic plans such as Sustainable Energy and Climate Plans (SECAP), Sustainable Urban Mobility Plans (SUMP), energy efficiency plans, urban/regional/infrastructure development strategies. The provision of guidelines for effectively incorporating the EE1st principle in existing plans and strategies can enable these to become vehicles for the widespread implementation of the principle.

Capacity building

Governance level:

EU / National

Policy Recommendation: Establish a training mechanism.

The lack of technical expertise and trained staff to deal with the various aspects of integrating the EE1st principle at regional level was identified as a horizontal challenge. The provision of relevant training at an EU or national level will ensure sufficient expertise within regional and local authorities.

“Lighthouse” applications

Governance level:

EU / National

Policy Recommendation: Promote Lighthouse “EE1st Regions” to demonstrate best practices, effective tools, and the strategic application of the EE1st principle.

Hands-on application of EE1st in real planning contexts provides valuable lessons and can help other regions and municipalities embed the principle in their planning processes. Showcasing successful practical examples also accelerates learning across regions, especially through peer learning activities.

4.2 Suggested actions for the Covenant of Mayors

Recommendations for the Covenant of Mayors were developed, albeit beyond its original scope, to facilitate the integration of the Energy Efficiency First principle at a local level. The Covenant of Mayors, a flagship European Union initiative for energy and climate strategic planning, actively involves local authorities, ranging from small municipalities to massive metropolitan centres, in the energy transition, and engages energy agencies, governing bodies, and initiatives at both municipal and regional levels. Consequently, embedding the EE1st principle within the CoM was identified as a pivotal milestone for its widespread adoption and implementation by municipal and regional authorities, which is why the ensuing recommendations are specifically tailored to the Covenant of Mayors framework.

Integration in SECAP Development

When developing a Sustainable Energy and Climate Plan, the EE1st principle should be integrated into all stages of planning and implementation. In particular, the CoM could encourage Covenant Signatories, Supporters and Coordinators to consider the EE1st principle during the different planning stages described below.

Recommendation 1: Put more emphasis on EE1st when developing the Baseline Emissions Inventory (BEI)

During the preparation of the BEI, the EE1st principle should be considered to ensure that appropriate data are collected. Besides identifying available data and sources that will support the development of the BEI (e.g. heating oil, petrol and diesel sales), it is imperative to collect data that help understand the current situation in each sector and its' energy saving potential. For example, understanding the current state of the building stock (e.g. compliance with building standards, insulation levels, window glazing types, and heating systems installed) is key to establish buildings' potential for implementing energy efficiency interventions.

Recommendation 2: Consider EE1st when planning and implementing actions

During the design and implementation phase of actions, the EE1st principle should be considered. In particular, the wider impacts of actions should be evaluated when selecting actions (for example this could be done by considering externalities, using cost-benefit analysis tools and decision support tools) and the maximum possible uptake of energy efficiency measures should be considered during the decision-making

process, before other options are explored, especially on energy supply. This would help cities and regions avoid unnecessary investments in energy infrastructure.

Recommendation 3: Consider EE1st when reporting actions and submitting SECAPs

A monitoring/checking function could be set-up at the online CoM portal for filling in and submitting a SECAP that prompts the city to consider all energy efficiency options first. For instance, a prompt to consider the EE1st principle could be included when inputting renewable energy action(s).

Strategic and Institutional Enhancements

The EE1st principle should be promoted when municipalities adhere to the CoM and set up appropriate supporting administrative structures. In particular, the CoM could consider the recommendations outlined below.

Recommendation 4: Integrate the EE1st Principle in the Commitment Letter for CoM signatories

The EE1st principle could be included in the commitment letter for CoM signatories (e.g. at the end of the commitment to "ACT") or as an annex, for instance by integrating the following phrase *"Our plans will also carefully take into account the Energy Efficiency First principle."*

Recommendation 5: Promote the integration of the EE1st principle into Regional and Local Policies

The integration of the EE1st principle into relevant legislative frameworks that apply to local and regional energy and climate planning processes should be encouraged. For instance, the CoM Board could advocate for Covenant Signatories, Supporters and Coordinators to embed the principle into their regulatory and planning frameworks, as well as to clearly integrate this in their energy and climate plans.

Technical Support Mechanisms

Technical guidance and support are vital in applying successfully the EE1st principle at local and regional level. The CoM could consider launching the activities listed below.

Recommendation 6: Develop Training Programs on how to integrate EE1st in regional/local planning

The CoM could develop training sessions for municipal staff on how to best integrate the EE1st principle into their planning processes and organise regular workshops/webinars on the application of EE1st in local planning.

Recommendation 7: Provide Guidance and Support on how to integrate EE1st in regional/local planning

The CoM could encourage regional authorities and other CoM supporting structures to provide guidelines and support to integrate the EE1st principle into local and regional action plans through simplified technical documents and planning checklists.

Recommendation 8: Create an online Repository dedicated to EE1st

In order to support Signatories to successfully integrate the EE1st principle in energy planning, an online repository could be created at the CoM portal dedicated to the EE1st principle, similarly to existing CoM repositories for adaptation, energy communities, and energy poverty. The EE1st repository could feature:

- Definition and the policy context relevant to the EE1st principle
- Best practices in incorporating the EE1st principle in energy and climate planning, e.g. from Regio1st and other initiatives
- Planning tools and templates that facilitate the integration of EE1st into planning, such as the Regio1st Framework and its supporting tools that aim to guide local and regional energy planning and support the incorporation of the EE1st in planning.

Recommendation 9: Launch Awareness Raising Campaigns on EE1st

The CoM could launch educational campaigns to inform both the public and local authorities about the benefits of the EE1st principle.

Recommendation 10: Organise Cooperation and Experience Exchange activities relevant to EE1st

The CoM could organise workshops and webinars that promote cooperation between municipalities, regions and relevant organizations and facilitate the exchange of knowledge and best practices.

5 The Way Forward

The evidence gathered from the six Regio1st partner regions makes it clear that the path from policy to practice for the Energy Efficiency First principle requires a deliberate and coordinated strategy. The challenges of limited technical capacity, siloed governance, and a shortage of regional data must be addressed first to unlock the principle's full potential.

The region-specific recommendations, the nine cross-cutting policy recommendations and ten targeted actions for the Covenant of Mayors detailed in this report provide a clear and adaptable framework for action. To bridge the gap between EU ambition and local implementation, the following priorities are essential:

- **Accelerate governance and institutional alignment:** Prioritise the establishment of inter-departmental task forces and embed EE1st explicitly into legislation, public procurement, and funding programmes to create a cohesive and supportive environment.
- **Build capacity and use of tools:** Scale up training programmes and technical support to enable authorities to effectively use decision-support tools like Social Cost-Benefit Analysis (SCBA) and Multi-Criteria Decision Analysis (MCDA), turning the principle into a standard step in the planning process.
- **Establish robust monitoring and data systems:** Implement the standardized framework for data acquisition and reporting to ensure accountability, track progress through clear indicators, and enable evidence-based policy adjustments.

By acting on these priorities, European regions and municipalities can transform the EE1st principle from a guiding concept into a standard, daily practice. This will ensure that energy efficiency is consistently treated as a fundamental resource, securing a cost-effective, just, and resilient energy transition for the EU.



Website: <https://fedarene.org/project/regio1st/>

Social Media: #Regio1st



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