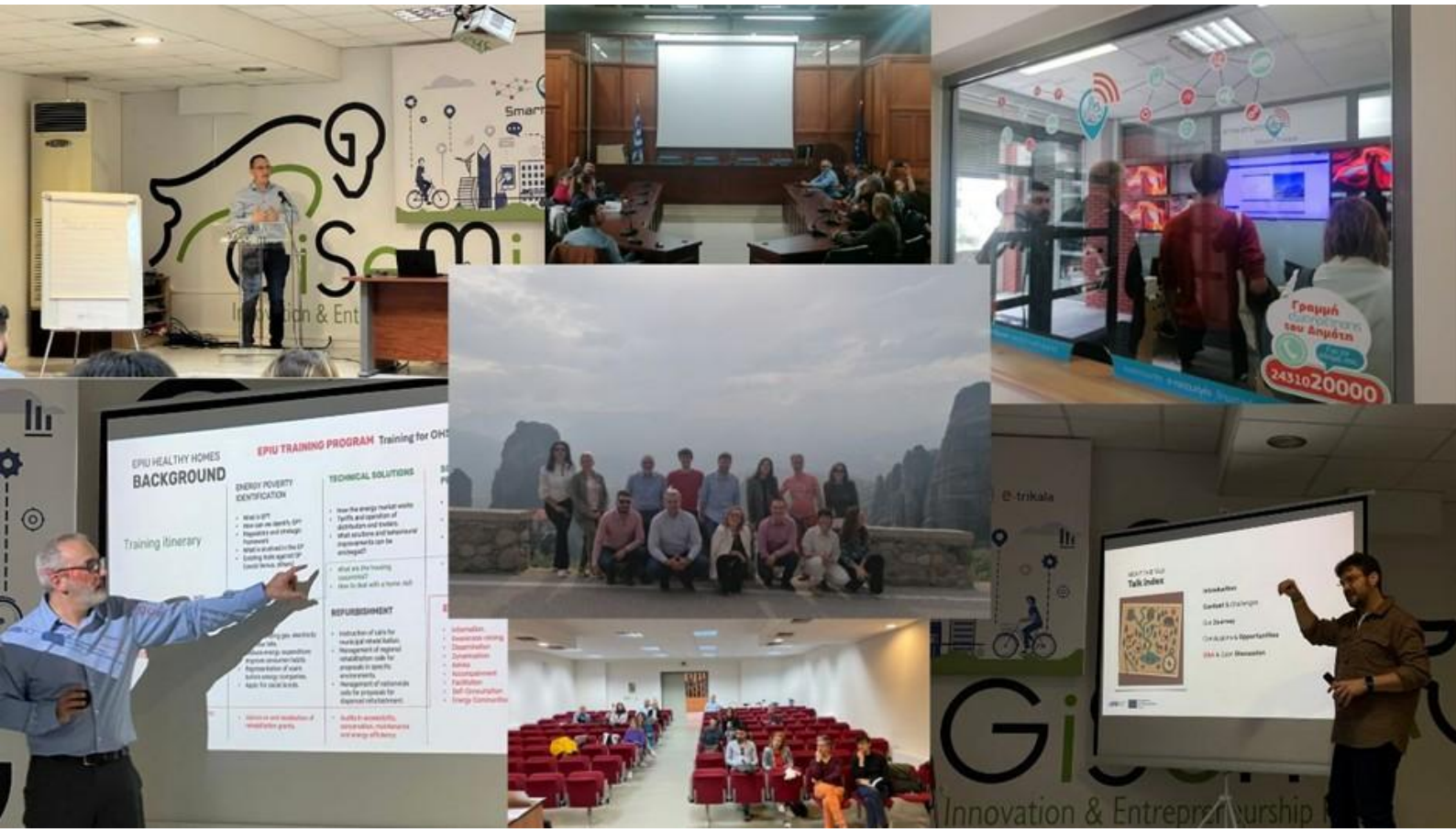
EmPowerIngUs

Innovative Transfer Network

Investment Plan for the City of Trikala



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Executive Summary

The Municipality of Trikala has established itself as a pioneer in digital governance, social innovation, and sustainable urban development. As one of Europe's 100 Climate-Neutral and Smart Cities, Trikala is advancing a fair and inclusive energy transition that places citizen well-being at its core. Within this strategic trajectory, the city is establishing a permanent Energy Office, supported through a coherent contribution of two initiatives. The EU-funded Energy4All project provided the initial foundation and supports its piloting phase, while the URBACT EmPowerIngUs network further strengths, operationalises, and ensures, through this Investment Plan, the long-term sustainability of the Energy Office.

Energy poverty remains a significant societal challenge in Greece, affecting thousands of households through inadequate heating, inefficient buildings, high energy expenditure, and social vulnerability. In Trikala, approximately 6,000 households are estimated to be exposed to some degree of energy vulnerability. This reality affects health, social inclusion, quality of life, and local economic resilience. At the same time, Trikala has committed, through its Energy Transition Strategy, Trikala 2030 Climate Action Plan, and Climate City Contract, to achieve deep reductions in energy poverty while accelerating progress toward climate neutrality.

The Energy Office of Trikala is the city's central operational instrument for achieving these objectives. It acts as a municipally anchored, citizen-centred service providing guidance on energy efficiency, household upgrades, financial support mechanisms, and behavioural change. It integrates social welfare, energy management, and digital innovation into a single governance structure, supported by Trikala's advanced smart-city infrastructure. Through the establishment of the Office, citizens will receive personalised assistance, from diagnosis of needs, to access to grants and financing, to monitoring outcomes over time.

This Investment Plan (IP) sets out a pathway to institutionalise and consolidate the Energy Office over the period 2026–2030. Developed within the URBACT EmPowerIngUs Innovation Transfer Network, the Plan adapts the Healthy Homes Office model from Getafe (Spain), while responding to Trikala's local context and administrative framework. The Office is structured around four mutually reinforcing Workstreams:

- institutionalisation and stakeholder governance;
- citizen empowerment and service delivery;
- market mobilisation and financing enablement; and
- data-driven transition intelligence through the Energy Transition Observatory.

The IP presents a Full Institutionalisation Pathway scenario, where the Office operates with expanded staffing, proactive community outreach, strong digital integration, and regional transfer potential with an estimated investment of €2.1 million over five years.

The IP outlines an implementation roadmap, from institutional consolidation to full-scale expansion and eventual regional replication. It proposes a diversified financing strategy incorporating municipal budget contributions, the Regional Operational Programme of Thessaly, the National Climate Fund, and European innovation instruments. It also includes a Monitoring and Evaluation framework with the aim to address accountability, transparency, and continuous learning, while safeguarding citizen data and privacy.

The Energy Office represents institutional innovation in service of social justice. It enables Trikala to transform European and national policy commitments into daily, practical support for residents, reducing household vulnerability, strengthening resilience, stimulating investment in energy upgrades, and improving living conditions across the city. The Investment Plan therefore constitutes a financial strategy and a governance blueprint for embedding energy poverty mitigation as a permanent municipal responsibility and a defining pillar of Trikala's climate-neutral future.

Introduction

The city of Trikala has long been recognised as a national pioneer in digital transformation and civic innovation, and is among the EU Mission's 100 Climate-Neutral and Smart Cities. Building on this strong legacy, the municipality is further advancing its commitment to sustainability and social inclusion through an integrated approach to the energy transition. Central to this effort is the establishment of Trikala's Energy Office, developed under the EU-funded Energy4All project, as a stable, municipally anchored public service.

To reinforce this initiative, e-Trikala has identified the continuation and enhancement of the Energy Office as the primary objective of its IP. The completion and further development of the Energy Office represent a significant milestone in Trikala's trajectory, creating a permanent municipal mechanism to tackle and reduce energy poverty, improve energy efficiency, and empower citizens to actively participate in the city's transition toward a climate-neutral future.

This IP has been developed within the framework of the URBACT EmPowerIngUs network, which supports cities in transferring and adapting the innovative practice of the Energy Poverty Intelligence Unit (EPIU), originally implemented in Getafe, Spain. The EPIU model introduced a data-driven and citizen-centred approach to addressing hidden energy poverty, structured around three interlinked pillars: Understand, Support, and Act. After the establishment of the Energy Office, Trikala will adapt and localise Getafe's model, drawing on best practices and lessons learned throughout the project. This process will strengthen the city's capacity to identify, prevent, and address energy poverty in a systematic and sustainable manner.

The Plan outlines the pathway to transform the Energy Office from a time-limited project deliverable into a permanent public service embedded within the municipality's organisational and financial structure. It articulates a realistic and coherent set of actions covering the period 2026–2030, supporting the Office's creation and institutional consolidation, the expansion of its services, and the development of long-term mechanisms for financial sustainability and replication.

In alignment with the principles of the European Green Deal, the EU Cohesion Policy Objectives, the National Energy and Climate Plan of Greece, and Trikala's commitment to become a Climate-Neutral and Smart City, the Energy Office acts as the city's operational instrument for promoting energy efficiency, reducing greenhouse-gas emissions, and addressing social vulnerability linked to energy costs. Its mission is to ensure that the benefits of the energy transition reach all citizens, particularly those most affected by rising energy prices and poor housing conditions, while reinforcing Trikala's broader ambition, as mentioned above, notably to become a climate-neutral, inclusive, and digitally intelligent city.

The Plan follows the structure and methodological guidance provided by URBACT for the preparation of Local Investment Plans. It begins with an overview of the policy context and the rationale for intervention, proceeds to describe the investment proposal and its adaptation of the EPIU good practice, and then sets out the detailed workplan, budget, and financing strategy. The document concludes with a monitoring and evaluation framework that substantiates its transparency, accountability, and continuous learning throughout implementation.

Ultimately, this Investment Plan represents strategic roadmap for institutional innovation. By linking digital governance, social policy, and sustainable energy management, Trikala is creating a replicable model of how medium-sized cities can operationalise the European commitment to a just and inclusive energy transition.

1. THE POLICY CONTEXT

1.1 Needs analysis in the territorial context

The Municipality of Trikala, situated in the Region of Thessaly, occupies a pioneering position among Greek medium-sized cities in tackling the interlinked challenges of energy poverty, social vulnerability, and climate transition. Energy poverty, defined as the inability of a household to access adequate heating, cooling, lighting, and power at a reasonable cost, has emerged as a pressing socio-economic and environmental concern in Greece over the past decade. The issue is particularly acute in regions such as Thessaly, where an ageing building stock, volatile energy prices, and relatively low disposable incomes converge to create deep disparities in household living conditions.

National surveys show that 17.1 % of Greek households were unable to heat their homes adequately in 2020, while 28.2 % faced overdue payments on utility bills[1]. In Trikala, the problem is further aggravated by climatic variability and recent extreme events, including floods that damaged residential infrastructure and intensified energy needs. Local assessments conducted by the municipality identify low-income families, elderly residents, single-parent households, unemployed citizens, and flood-affected populations as those most at risk of energy poverty. The city's 76.000 residents occupy around 30.000 dwellings; many built before modern energy-efficiency standards were introduced[2]. Average after-tax income is approximately €900 per month, leaving limited capacity for self-financed renovation or renewable-energy investment.

Based on the national energy poverty prevalence mentioned above, and applying a conservative policy-aligned estimation to Trikala's approximately 30,000 households, it is estimated that around 6,000 households are exposed to some form of energy vulnerability. This estimation is generated by scaling national prevalence to the local population, adjusted downwards to reflect Trikala's comparative digital capacity and municipal support ecosystem. The estimated socio-economic cost of energy poverty in Trikala is also significant. Assuming a conservative average excess energy expenditure of €450 per affected household per year, the resulting aggregate economic burden for the estimated 6,000 vulnerable households is approximately €2.7 million annually, highlighting the significant avoidable costs associated with energy poverty. This quantification demonstrates that addressing energy poverty is both a climate and social priority, and also an economically rational investment as reducing vulnerability produces recurrent avoided costs for households, social services, and the municipal budget.

Recognising that energy poverty lies at the intersection of welfare, health, and environmental policy, the municipality has embedded its mitigation into the wider framework of urban resilience and climate neutrality. Quantified local objectives have been set: to lift approximately 500 households out of energy poverty each year and to achieve a 50 % reduction by 2025 and 75 % by 2030 relative to the 2016 baseline. These targets translate national ambitions into local practice and demonstrate political will at municipal level.

The city therefore treats the Energy Office as a dual mandate mechanism: improving household well-being and accelerating decarbonisation by reducing wasted energy demand at building level.

It is this context that encouraged Trikala to establish an Energy Office, a permanent municipal service responsible for coordinating interventions on energy poverty, household retrofitting, citizen engagement, and data management. The Office is being created under the EU-funded Energy4All project with the aim of becoming an enduring local institution embedded in municipal operations and capable of leveraging regional, national, and European resources.

Through participation in the EmPowerIngUs Innovation Transfer Network, Trikala is transferring and adapting the Healthy Homes Office model developed in Getafe (Spain) within the EPIU project. The adaptation draws

[1] Eurostat data show that the EU average for utility bill arrears is much lower (for example, around 6–7 % of the EU population had bill arrears in related EU data before/around 2020). References: https://link.springer.com/article/10.1007/s12053-023-10137-1 and https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733583/EPRS_BRI%282022%29733583_EN.pdf

[2] In the EU as a whole, about two-thirds of residential buildings were built before 1980, indicating that older housing stock is a widespread challenge across Europe, not unique to Greece. References: https://www.construction21.org/articles/h/improving-energy-and-resource-efficiency-in-the-european-construction-sector.html

on Trikala's digital infrastructure, notably the Smart Trikala system, aiming that citizen support and policy planning are informed by real-time data.

1.2 The policy response

Trikala's approach to energy poverty is framed within a coherent hierarchy of European, national, regional, and local strategies that converge toward a just and climate-neutral energy transition.

At national level, Greece's National Energy and Climate Plan (NECP) and the National Action Plan to Combat Energy Poverty (2021) provide the overarching legislative and policy context. Both documents set the same quantitative reduction targets as Trikala's local objectives, 50% by 2025 and 75% by 2030, and promote integrated solutions combining efficiency improvements, renewable energy, and consumer protection. They also encourage municipalities to develop dedicated local mechanisms that translate national commitments into direct household support.

At the regional level, the Operational Programme of Thessaly 2021-2027 identifies energy efficiency, social inclusion, and digital transition as key priorities for investment. This framework opens significant opportunities for funding municipal projects that address energy poverty through building retrofits, digital monitoring tools, and social innovation.

At local level, Trikala has enshrined its energy-poverty objectives in two cornerstone strategies: the Energy Transition Strategy and the Trikala 2030 Climate Action Plan. These strategies integrate social vulnerability, climate mitigation, and technological innovation into a single policy narrative that underpins the city's participation in the EU Mission for 100 Climate-Neutral and Smart Cities. Under its Climate City Contract, Trikala commits to eliminating structural energy poverty as a prerequisite for achieving climate neutrality.

To operationalise these commitments, the municipality is establishing the Energy Office, a municipal structure designed to coordinate all activities related to energy poverty, energy efficiency, and citizen engagement. Initially financed through the EU-funded Energy4All project, the Office represents a strategic shift from fragmented, project-based interventions toward an integrated and enduring municipal service. By leveraging Trikala's advanced digital infrastructure, particularly the Smart Trikala data platform, the city aims to develop a data-driven, citizen-centred one-stop service capable of identifying vulnerable households, providing tailored assistance, and generating evidence for local and regional policymaking.

Alignment of policy levels with funding instruments and Energy Office functions:

Policy level	Key policy Instrument / Programme	Type of contribution to Energy Office
EU Level	EU Mission Cities, LIFE, Horizon Europe, UIA legacy knowledge	Innovation pilots, digital tools testing, advanced methodologies, transnational learning
National Level (Greece)	National Energy and Climate Plan (NECP), National Action Plan against Energy Poverty, National Climate Fund	Regulatory alignment, core operational co-funding, national coherence for long-term sustainability
Regional Level (Thessaly ROP 2021–2027)	ESIF / Cohesion Policy funding (PO2, PO4, PO5)	Co-financing of staffing, digital systems integration, citizen outreach + social innovation
Local Level (Municipality of Trikala)	Municipal annual budget & Smart Trikala digital infrastructure	Permanent baseline financing, institutional anchoring, operational capacity

The present Investment Plan is therefore positioned at the intersection of these multi-level frameworks. Its purpose is to secure the continuation, institutionalisation, and progressive expansion of the Energy Office so that Trikala can deliver sustained, measurable reductions in energy poverty while advancing its broader climate-neutrality and social-inclusion objectives.

2. THE INVESTMENT PROPOSAL

2.1 Background to the proposal

The creation of Trikala's Energy Office arises from the city's growing recognition that fragmented or short-term interventions are insufficient to address the complex and structural nature of energy poverty. For more than a decade, the municipality has participated in European programmes promoting smart-city innovation, environmental management, and social cohesion, developing advanced digital infrastructures and data-driven governance capacities.

This experience proved particularly relevant through Trikala's engagement with EPIU model developed in Getafe, which demonstrated how integrated data collection and analysis can enable the systematic identification and targeting of hidden energy poverty.

Energy4All pilot action confirmed that a centralised, multidisciplinary service can generate significant value for residents and for municipal policy alike. Through Energy4All, Trikala is establishing an operational structure, recruiting and training staff, developing service protocols, and beginning integrating digital tools for citizen interaction and case management. However, regardless of the project's ambition to tackle the community's energy poverty, it also revealed an urgent need for long-term institutionalisation: without stable funding and an embedded governance model, the benefits risked being temporary. This highlighted the structural gap between short-term project innovation and the long-term public service capacity required to deliver measurable, scalable, and durable reductions in energy poverty.

In this context, Trikala recognises that the investment case must be structured in a bold and robust manner, ensuring the uninterrupted continuity of the Energy Office. Accordingly, the Investment Plan introduces a "Full Institutionalisation Pathway" scenario, characterised by significant investment ambition, strong scaling capacity, and substantial potential for regional replication and transfer.

Recognizing the need for financial flexibility, in the appendix a second scenario, the "Lean Institutional Pathway", is presented. It proposes a lower-capital-intensity model combined with a streamlined recurrent cost structure.

Both scenarios maintain the core mission, governance, and methodological pillars of the Energy Office, while differing in scope, scale, and acceleration capacity. The "Full Institutionalisation Pathway" scenario represents the municipality's preferred pathway under favourable funding conditions, enabling full service expansion and regional replication.

In parallel, Trikala joined the EmPowerIngUs Innovation Transfer Network, which brought together cities seeking to transfer the good practice developed in Getafe, Spain, under the EPIU project, such as the Healthy Homes Office model. This good practice demonstrated that personalised, data-driven household support, when linked to health and social policies, can substantially reduce energy poverty. Trikala identified this as a perfect complement to its Energy4All experience. By combining the Spanish model's integrated approach with the city's own smart-city infrastructure, Trikala designed a new, permanent structure, the Energy Office, that merges social welfare, energy management, and digital innovation.

The present Investment Plan therefore represents the natural continuation of these initiatives. Its purpose is to secure the resources and partnerships necessary to transform a successful Energy Office into a long-term, institutionalised service capable of sustaining and expanding its activities well beyond the lifespan of the originating EU projects.

2.2 Our starting point

At the outset of this Investment Plan, Trikala possesses a strong foundation from which to scale up. The Energy Office is operational and adequately staffed, functioning as a one-stop service that offers citizens practical advice on energy use, technical guidance for improving efficiency, and mediation for access to financial assistance. The office's activities will be supported by a digital ecosystem, which enables secure data collection, case tracking, and analytical reporting.

The municipality's partnerships are equally robust. e-Trikala S.A. provides technological integration and data-management expertise; the Cooperative Bank of Thessaly facilitates access to financial instruments for building retrofits; Syneirmos NGO and other civil-society organisations ensure social outreach, while the local Energy Community of Thessaly connects vulnerable households to renewable-energy initiatives. Political commitment is also unequivocal: energy-poverty reduction is a stated priority in the Climate City Contract signed under the EU Mission for Climate-Neutral and Smart Cities.

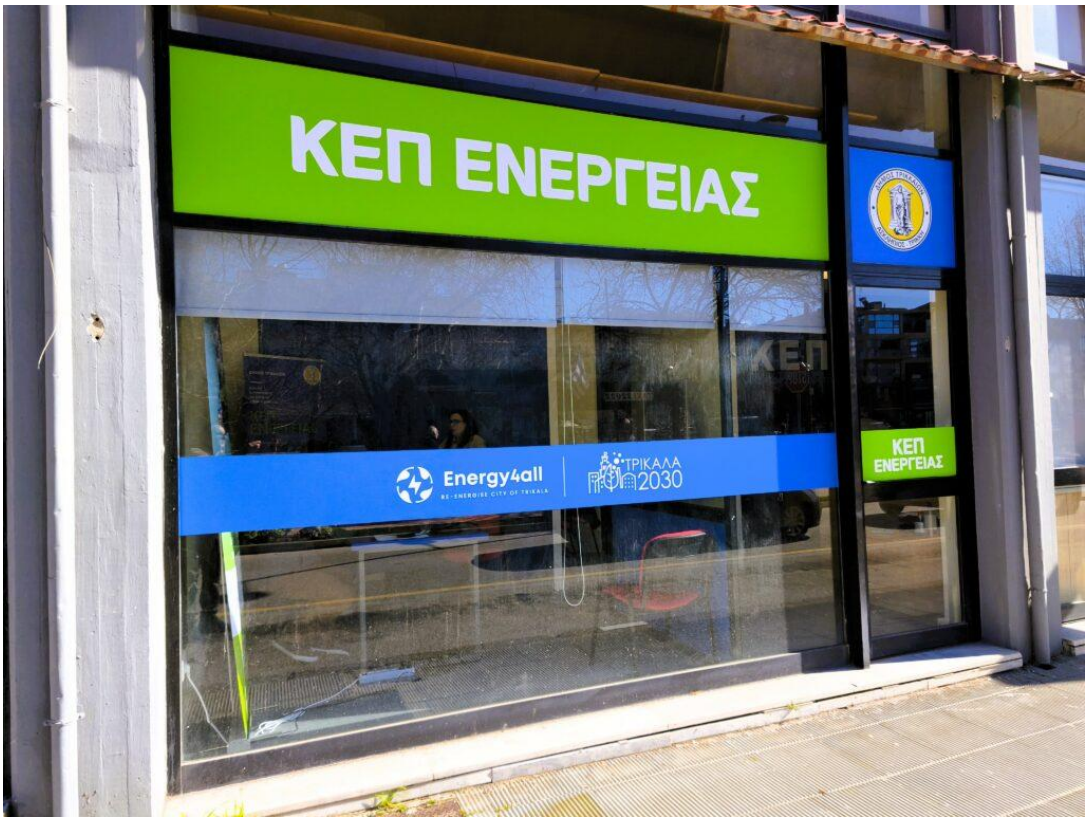
Despite this solid foundation, the municipality recognises three interlinked gaps that threaten long-term sustainability. The *first* is financial: current resources are derived almost entirely from time-limited EU projects, with no permanent budget line within the municipal accounts. The *second* is organisational: although the office functions effectively, it remains administratively attached to project structures rather than embedded in the city's permanent hierarchy. The *third* is systemic: integration among energy, housing, and social-welfare data platforms is partial, limiting the municipality's capacity for detailed targeting and impact evaluation.

These systemic gaps justify the need for an integrated investment. In Trikala's "Full Institutionalisation Pathway", the Energy Office progressively scales into a regional reference model, with enhanced staffing, more extensive audit deployment and advanced digital integration.

With regards to Trikala's participation in the EmPowerIngUs Innovation Transfer Network, the city aims to design and implement a comprehensive sustainability framework encompassing diversified funding, institutional consolidation, and enhanced inter-departmental coordination, so that the EPIU methodology transferred from Getafe can be fully embedded within permanent municipal structures. Through this framework, Trikala seeks to transform the Energy Office from a promising project outcome into an enduring municipal institution capable of sustaining, adapting, and scaling the transferred practice over time.

2.3 The Energy Office

The Energy Office is located in a central municipal building in the heart of Trikala, chosen for its accessibility to all citizens, including those with disabilities. Its central position, close to key services and public transport, ensures convenient access and communication. The office is designed to combine functionality, comfort, and inclusiveness, featuring a welcoming reception area with information materials and digital displays, as well as a fully equipped workspace for staff that complies with data protection standards. The entire space is accessible, with ramps, elevators, specially adapted restrooms, and facilities for visitors with visual or hearing impairments.

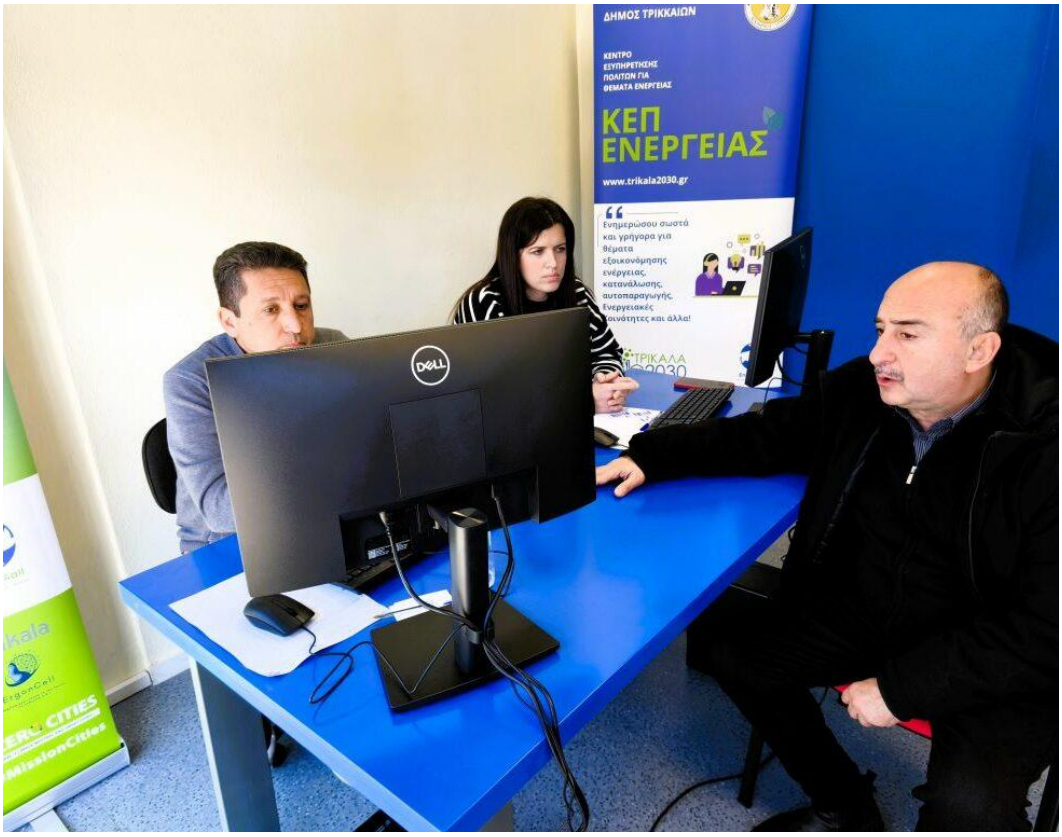


Picture. 1 Trikala's Energy Office

Equipped with modern technological infrastructure, it provides efficient and user-friendly services through an electronic request management system, digital kiosks for information and automated submissions, and free Wi-Fi for visitors. It operates Monday to Friday from 08:00 to 16:00, with extended hours once a week, such as on Wednesdays, until 20:00, to accommodate citizens who cannot visit during regular hours.

The Energy Office provides a wide range of services aimed at improving energy efficiency, promoting renewable energy sources, and supporting the city's transition toward climate neutrality. Acting as a central coordination hub, it assists citizens, businesses, and public institutions through accessible, transparent, and personalized support. Its core functions include citizen reception and service, both in person and online, ensuring that energy-related requests are handled efficiently. It also offers specialized guidance on national and European energy efficiency programs, organizes seminars and workshops to raise public awareness, and distributes educational materials that encourage sustainable energy practices.

In addition to its advisory role, the Energy Office supports private energy upgrade projects by helping applicants prepare documentation, access funding opportunities, and connect with relevant professionals. It employs modern digital tools, such as an online calculator for cost estimation and subsidy eligibility, as well as advanced monitoring systems like the Climate Neutrality Observatory and the Greenhouse Gas Measurement Platform, which track energy use and emissions. Through continuous training programs, interactive workshops, and online learning platforms, the Energy Office aspires to foster knowledge sharing, empowers citizens, and promote collective participation in achieving the city's sustainability and climate goals.



Picture. 2 Trikala's Energy Office

The office applies both quantitative and qualitative indicators to monitor the effectiveness of its services. Key performance indicators (KPIs) include the number of citizens served each month, the average response time to requests, the percentage of successfully completed cases, the number of energy upgrade projects supported, and the level of citizen satisfaction based on feedback surveys.

These metrics allow the office to evaluate its operational efficiency, identify areas for improvement, and ensure the continuous enhancement of service quality. By systematically tracking and analyzing performance data, the office strengthens transparency, accountability, and its overall contribution to promoting energy efficiency and citizen engagement.

Citizen participation in evaluating the office's operations strengthens accountability and helps identify areas for improvement. Feedback will be gathered through satisfaction surveys, complaint and suggestion forms, and direct communication channels such as phone and email.

Continuous improvement is driven by performance indicators, staff input, and citizen feedback, leading to corrective actions, enhanced training, digital upgrades, and innovative tools such as online appointment systems and chatbots.

The Energy Office operates in full compliance with national and EU legislation, including the GDPR, Greek Law 4624/2019, building energy performance regulations, and funding program requirements. Staff is responsible for being informed about legal updates and ensuring that all procedures follow current standards.

Moreover, data protection is a key priority, based on principles of data minimization, citizen consent, restricted access, and secure systems. Citizens may request correction or deletion of their data, and all processing is logged in accordance with GDPR. The office also upholds strict health and safety standards, conducting regular inspections, maintaining emergency and first-aid procedures, and ensuring full accessibility for people with disabilities.

In Trikala, the adaptation of the EmPowerIngUs practice focuses on institutionalising a lean, digitally enabled, and municipally embedded interface that translates the EPIU methodology transferred from Getafe into a permanent local public service. Building on the city's existing digital capacity, the Energy Office is designed

as an integrated municipal function with standardised workflows, a unified case-management pipeline, structured referrals to the Energy Performance Certificate (EPC) and audit providers, and evidence-based prioritisation of vulnerable households. Through this institutional embedding, the Energy Office moves beyond a project-based pilot to become a genuine investable public service innovation: a small, stable, and scalable municipal mechanism capable of sustaining the transferred practice over time.

2.4 The adapted version of the innovative practice

Trikala's Energy Office represents a contextual adaptation of the *Healthy Homes Office* model developed in Getafe through the *EPIU – Energy Poverty Intelligence Unit* project. While Getafe's initiative addressed hidden energy poverty through a combination of data intelligence, cross-sector collaboration, and community outreach, Trikala translates these principles into a medium-sized Greek city context characterised by strong digital capacity and a dispersed urban population. In this adaptation, digital tools are used primarily to support targeting, coordination, and evidence generation, while direct, in-person and community-based support remains central to service delivery, ensuring that households with limited digital access or skills are not excluded.

The EPIU model revolved around three complementary pillars: *UNDERSTAND*, *SUPPORT/OUTREACH*, and *ACT*. It combined detailed socio-demographic analysis with targeted interventions and citizen participation to detect and alleviate energy poverty. Trikala retains this structure but adapts it to its administrative and territorial realities.

Through the *UNDERSTAND* pillar, Trikala integrates energy-poverty data within its existing *Smart Trikala* digital ecosystem, enabling automated identification of vulnerable households and mapping of priority areas. This approach replaces the field-intensive surveys used in Getafe with a scalable, data-driven diagnostic model tailored to local capacity.

The *SUPPORT/OUTREACH* component is embodied in the Energy Office itself, established under the Energy4All project as a visible, citywide service point. Citizens can access guidance on energy efficiency, financial schemes, and technical advice either physically or online. Awareness activities and partnerships with NGOs, schools, and local institutions ensure that engagement remains inclusive and participatory, echoing EPIU's social ethos.

In the *ACT* dimension, Trikala reinterprets EPIU's direct retrofit interventions as coordination and facilitation functions. The Office acts as an intermediary between households and available programmes such as *Exoikonomo* and the *Regional Recovery Fund* (*RRF)*, assisting residents throughout application and implementation processes. This model respects the limits of municipal competence in Greece while maintaining the integrated logic of the original practice.

Two distinctive innovations characterise Trikala's adaptation: a strong digital backbone, which transforms case data into analytical intelligence for local policymaking, and a clear institutional pathway for permanence. Initially financed by *Energy4All*, the Office will progressively secure diversified funding through municipal budgets, regional programmes, and European instruments like *ELECTRA*, ensuring continuity beyond the founding project.

2.5 The integrated approach and the participative process

The development of the Energy Office and this Investment Plan has been guided by an integrated and participatory methodology consistent with URBACT principles. From the earliest stages, the municipality adopted a whole-of-city perspective, recognising that a single department or actor cannot resolve energy poverty. Instead, it requires the coordination of technical, social, financial, and environmental policies within a unified governance framework.

The URBACT Local Group (ULG) has served as the principal vehicle for this integration. Comprising the Municipality of Trikala's Social Welfare and Technical Services Departments, e-Trikala S.A., the Municipal Water Company and the Chamber of Commerce, the group functions as a collaborative platform for co-

design and joint decision-making. The ULG's discussions have defined service priorities, refined operational procedures, and established mechanisms for monitoring performance.

The participatory architecture of Trikala's Investment Plan therefore remains central. The ULG and associated stakeholder network will be continuously mobilised not only for co-design, but as implementation partners e.g., banks for financing options, chambers for technical audits, university / research actors for data interpretation, and civil society groups for outreach and trust-building with vulnerable households. This ensures that participation is not a consultation ritual, but an operational delivery mechanism. This integrated approach is fully compatible with the investment proposal as the network grows in formalised co-delivery capacity.

This participatory process has fostered a sense of shared ownership that extends beyond the municipality itself. It has also strengthened relationships among local institutions, enabling synergies between social assistance, technical advice, and financial support. The cooperative spirit that characterises Trikala's governance has become one of its greatest assets in implementing innovative policy.

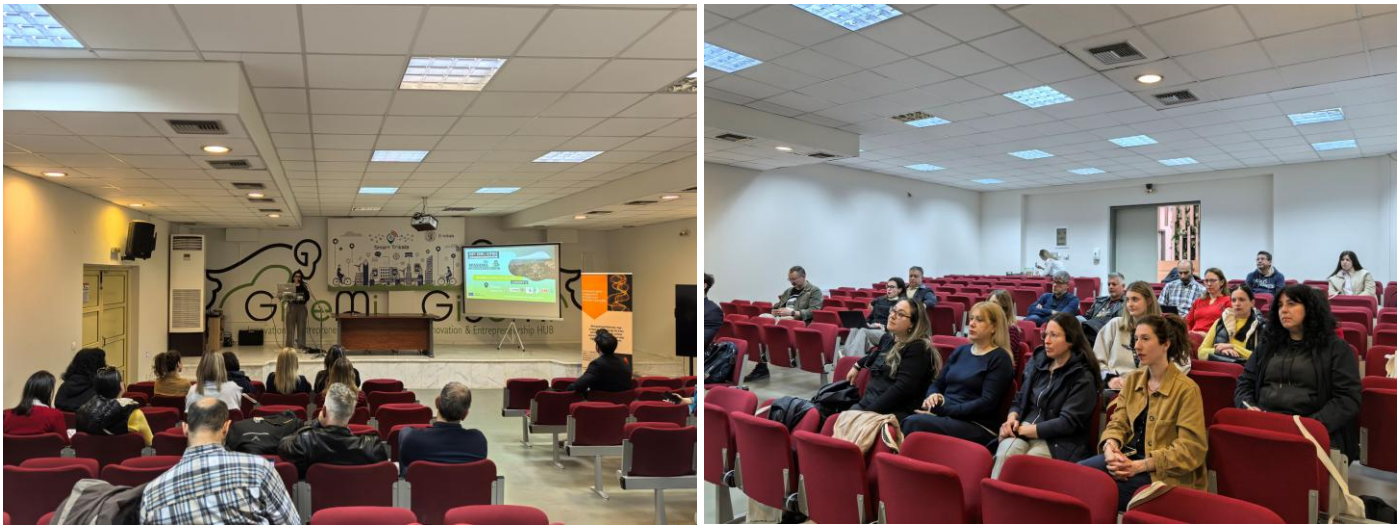
The integrated approach embodied in the Energy Office thus reflects both the city's governance philosophy and its strategic ambition. By aligning social policy, technological innovation, and climate objectives within a single institutional framework, Trikala is creating a model of municipal action capable of addressing complex sustainability challenges in a holistic way. The Investment Plan builds on this model to ensure that the office's integrated, participatory character is maintained and strengthened as it evolves into a permanent feature of the city's administrative and social landscape.

The Energy Office of Trikala represents a major step in the city's long-term commitment to address energy poverty and accelerate the just energy transition. Conceived as both a social innovation and a governance reform, the Office translates national and European energy strategies into tangible local action. It offers an integrated response to a problem that is simultaneously technical, social, economic, and environmental. Through this Investment Plan, Trikala seeks to transform the pilot achievements of the Energy4All project into a stable, institutionalised mechanism capable of delivering consistent and measurable results over the period 2026–2030.

Beyond its direct impact on vulnerable citizens, the Energy Office embodies a cultural shift in how the municipality understands and manages energy poverty. It places the citizen at the centre of a collaborative ecosystem linking social services, technical expertise, financial institutions, and data-driven decision-making. In this way, it becomes both a service for residents and a policy instrument for the city, ensuring that each household supported contributes to the broader goals of social inclusion, economic resilience, and carbon neutrality.

2.6 Testing Activities

In April 2026, the Municipality of Trikala conducted an awareness-raising event as part of the EmPowerIngUs project to raise awareness on energy poverty among citizens, including its hidden forms, its causes, its social and economic impacts, as well as available mitigation measures. The event took place at the GiSeMi HUB and brought together local citizens, including vulnerable households, municipal staff, and key stakeholders involved in energy and sustainability policies.



Picture. 3 1st Testing Activity - Awareness Raising Event

During the two-hour session participants were introduced to the EmPowerIngUs project, focusing on its objectives, expected outcomes, and the adaptation of good practices to the needs of Trikala. This was complemented by presentations of other EU-funded initiatives, such as Energy4All and RestartmAIcity, as well as the municipality's broader strategy towards climate neutrality. These sessions aimed to highlight synergies between projects and to position energy poverty within a wider framework of sustainable urban development.

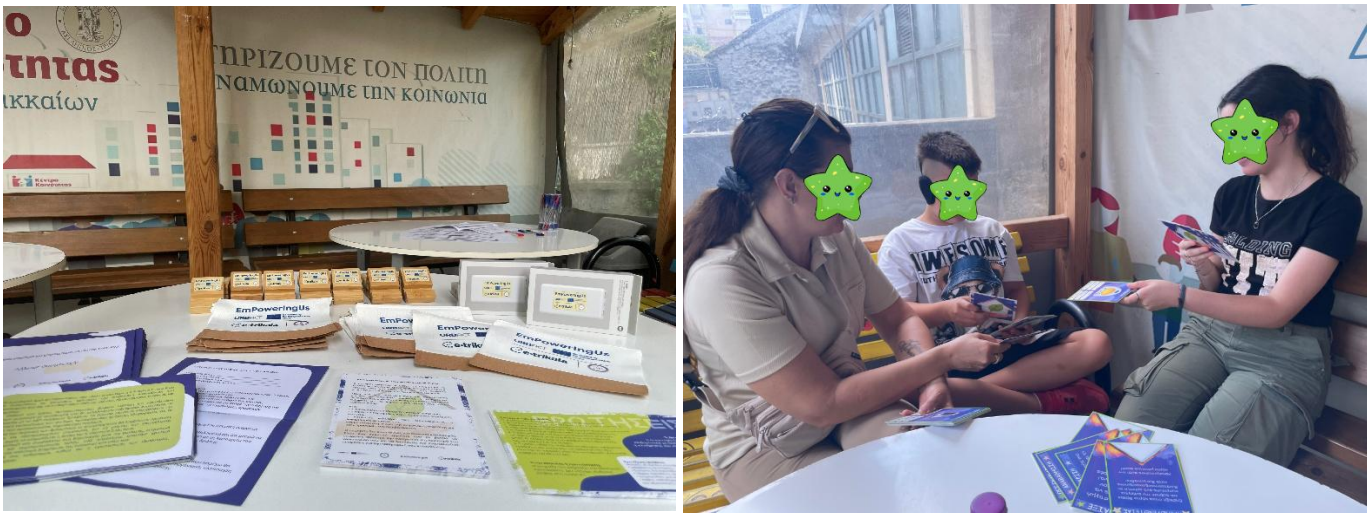
The "Myth or Reality?" interactive exercise that followed engaged participants in a two-part participatory activity to explore energy poverty. The first part collected data on participants' perceptions and baseline knowledge, while the second part asked them to classify statements about energy poverty as myths or realities. This approach encouraged discussion, allowed participants to share experiences, and helped challenge misconceptions and reduce stigma associated with energy poverty.

A key highlight of the event was the presentation and demonstration of the energy kit developed by the RestartmAIcity, which is planned to be distributed to vulnerable households.

The testing action proved highly effective. Participants gained a deeper awareness of energy poverty, including its hidden dimensions, while the interactive format fostered dialogue, trust, and engagement. The lessons learned confirmed that participatory approaches are essential for meaningful citizen engagement and that awareness-raising is a necessary precursor to behavior change.

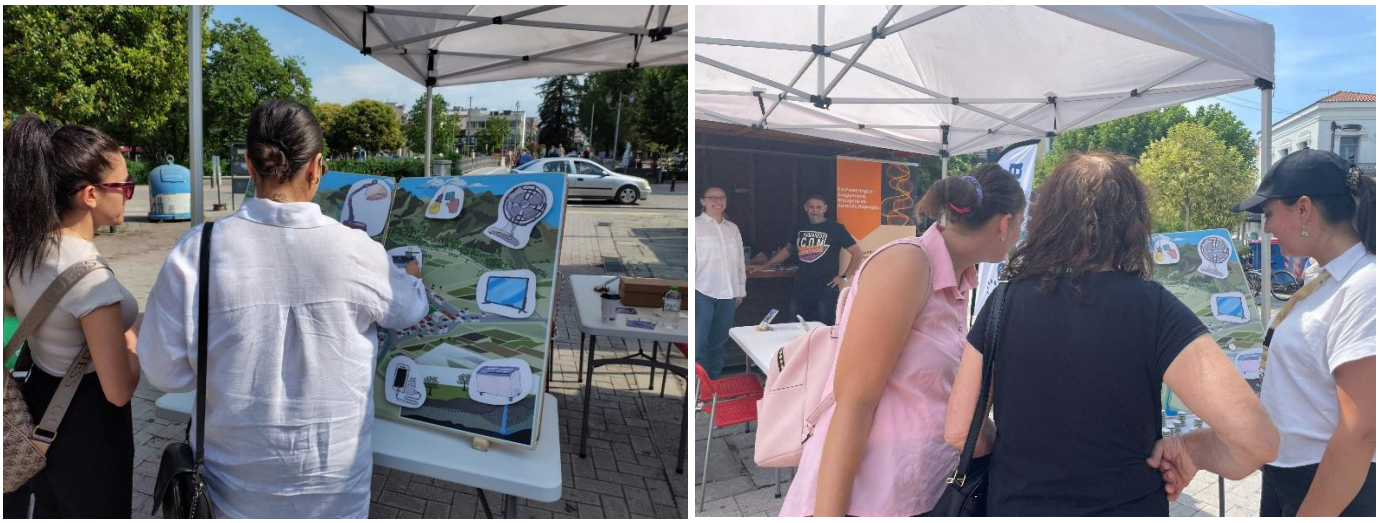
Building on the lessons learned from the initial awareness activity, Trikala implemented two additional testing actions during June 2026, focusing on strengthening citizen engagement, improving energy awareness, and collecting first-hand information on household energy conditions. These activities represented an important transition from general communication towards a more personalised, citizen-centred approach aligned with the principles of the Energy Office. The objective was not only to inform citizens about energy efficiency, but also to establish direct interaction channels, build trust, identify potential energy vulnerability, and test practical tools that can support future municipal interventions.

On June 23rd, 2026, an awareness intervention took place at the Community Center of Trikala. The location was selected as a strategic location due to its connection with citizens receiving social support services. The activity aimed to strengthen the role of the Community Center as a point not only for welfare assistance but also for prevention, information, and empowerment. Around 40 participants attended the session, where they received information about energy efficiency principles, the role of smart energy monitoring, and practical everyday measures that can reduce consumption without compromising comfort. The session encouraged open discussion, allowing citizens to share their experiences and concerns regarding energy costs, while also creating a direct pathway towards participation in the Energy Office services.



Picture. 4 2nd Testing Activity - Awareness Event

The second awareness intervention was implemented through a public campaign in the city centre of Trikala on June 25th, 2026, targeting a broader and more diverse audience. A temporary information point was established in a highly visible public area, enabling direct contact with citizens who would not necessarily engage through traditional municipal channels. The campaign introduced residents to the role and services of the Energy Office, including energy advice, consumption monitoring, and available support mechanisms. To make the topic more accessible, interactive and gamified tools were used, including an energy habits board, an energy card game presenting appliance consumption characteristic, and a “Find the Differences” activity highlighting energy efficiency practices in residential buildings. This approach successfully attracted approximately 100 citizens and supported intergenerational engagement, with younger participants often acting as a bridge for discussions with older family members. In addition, 23 citizens expressed interest in participating in the smart meter testing, while many more received information material for further awareness raising.

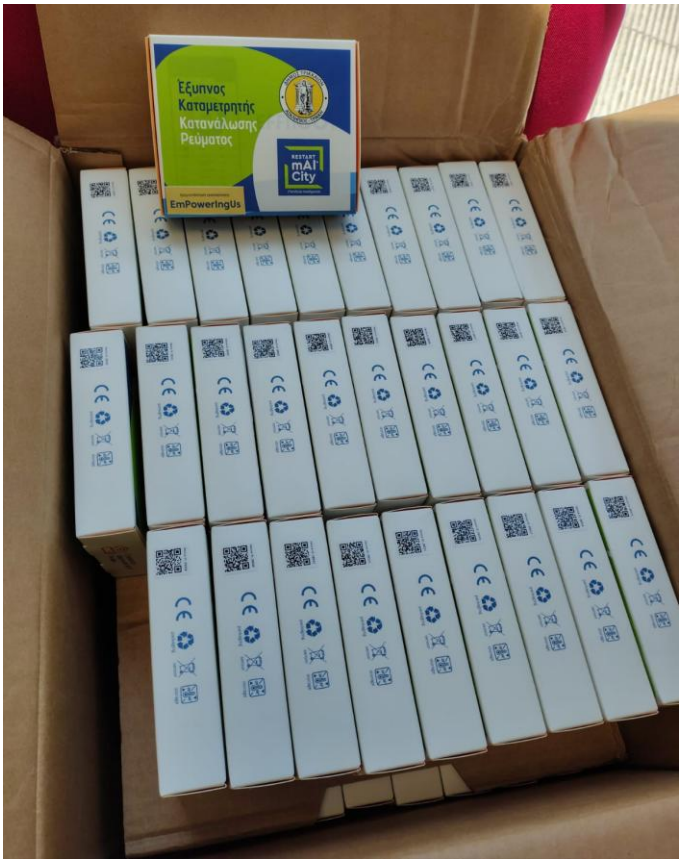


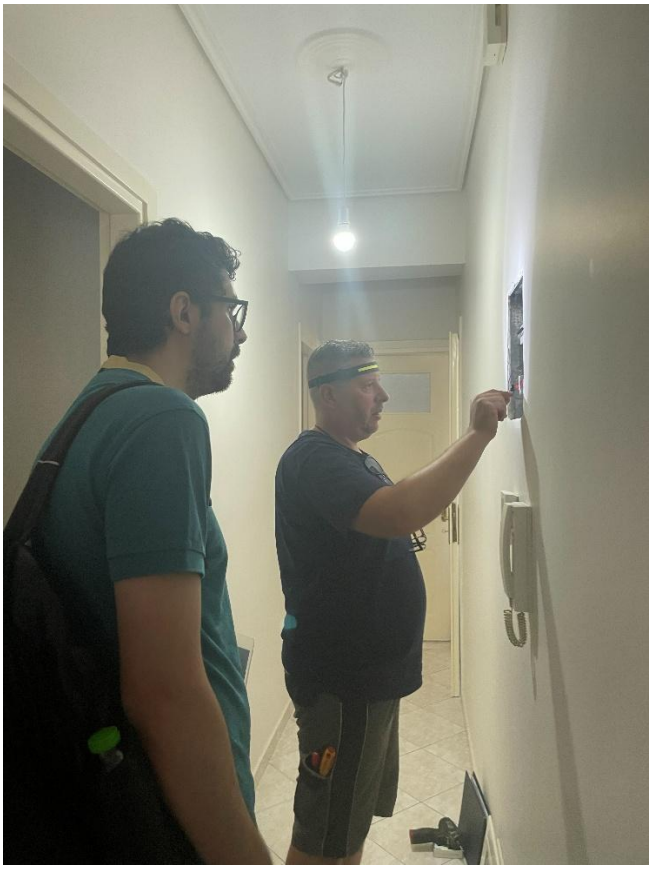
Picture. 5 3rd Testing Activity - Awareness Campaign

The second testing action focused on door-to-door household engagement and the collection of household-level energy information. This activity aimed to test a more personalised intervention model, recognising that direct contact with residents is essential for identifying hidden energy vulnerability and understanding the real-life challenges faced by households. Following the awareness campaigns, the testing team conducted 30 household visits with citizens who volunteered to participate.

During these visits, municipal staff and technical partners followed a structured approach combining dialogue, diagnosis, and practical support. Households were asked about their building characteristics, heating and cooling systems, appliance use, consumption patterns, and daily energy habits. This information provided an initial picture of the local housing stock and helped identify common challenges affecting household energy performance. At the same time, residents received personalised advice on low-cost energy-saving measures and were introduced to digital energy monitoring solutions.

Smart energy meters were installed and demonstrated to participating households, enabling citizens to visualise their consumption patterns and better understand how everyday actions influence energy use and costs. The combination of technical support and behavioural guidance aimed to transform residents from passive energy consumers into active energy managers. Follow-up activities were also included to ensure that residents could correctly use the monitoring tools, interpret the collected data, and receive additional support when required.





The results of these testing activities provided valuable evidence for the further development of the Energy Office. Beyond raising awareness, the actions generated practical knowledge on household conditions, citizen concerns, behavioural patterns, and the effectiveness of direct engagement mechanisms. The experience demonstrated that combining communication campaigns, personalised household support, and digital monitoring tools can create stronger relationships between citizens and municipal services, while providing the municipality with a more accurate understanding of local energy challenges.

3. CORE OPERATIONAL PILLARS OF THE ENERGY OFFICE

3.1 The Value Proposition

The core value proposition of the Energy Office is to create a permanent, accessible, and data-informed municipal mechanism that empowers citizens to overcome energy vulnerability while advancing the city's sustainability objectives.

Trikala's experience through Energy4All demonstrated that the lack of a coherent, institutional entry point often prevents households from accessing support schemes or technical advice. The Energy Office addresses this fragmentation by serving as a "one-stop shop" where residents can receive end-to-end assistance, from initial diagnosis of their energy situation to the completion of retrofit works or access to financial relief.

For citizens, the Office offers clarity, guidance, and trust. It translates complex energy regulations and financial mechanisms into practical, personalised solutions. Its advisors help households understand consumption patterns, identify efficiency measures, and access subsidies or low-interest loans. The inclusion of social-support officers ensures that the service remains sensitive to the realities of vulnerable groups, such as elderly residents, families in economic distress, or flood-affected households.

For the municipality, the Office functions as a strategic data hub. By integrating social, technical, and spatial information, it allows for a precise mapping of energy poverty across neighbourhoods and supports the prioritisation of interventions. The data collected through case management and household audits feeds into the city's digital platform, enabling a continuous feedback loop between service delivery and policy design.

At a broader level, the Office enhances the city's institutional capacity to mobilise and absorb European and national funds. By maintaining a permanent operational unit with skilled staff and standardised procedures, Trikala strengthens its eligibility for future funding opportunities and ensures continuity across political cycles.

Ultimately, the value proposition of the Energy Office lies in its ability to translate policy ambition into lived improvement, generating social, environmental, and economic returns. It is an investment not only in buildings and technologies, but in the human and institutional capital that sustains long-term change.

3.2 The workplan

The Workplan of Trikala's Energy Office is structured into four integrated Workstreams reflecting a full public value chain: (i) institutionalisation and stable governance, (ii) citizen empowerment and personalised service delivery, (iii) progressive market mobilisation with public leverage first, and (iv) data-driven transition intelligence through the Energy Transition Observatory. This structure advances the coherence between policy objectives, service delivery, funding design and evidence generation. Together, these workstreams establish the Office as a stable, efficient, and participatory structure capable of evolving with the city's needs.

Workstream 1: Institutionalisation and stakeholder system

Establishing the Energy Office as a stable, municipally-embedded public service function, with clear mandate, permanent staffing, updated Standard Operating Procedures (SOPs), secure municipal anchoring, and structured cooperation agreements with key ecosystem partners (e.g., Technical Chamber of Greece-TEE, regional authorities, social services). This includes continuous ULG activation and stakeholder governance as a delivery instrument.

Workstream 2: Citizen empowerment and service delivery

Operation of a one-stop interface supporting vulnerable households and wider target groups through information provision, eligibility guidance, referrals, advisory on renovation pathways, behaviour change support, distribution of low-cost energy kits, and personalised case handling. This Workstream is where the first testing actions will be implemented at operational launch (questionnaire deployment + energy kit distribution).

Workstream 3: Market mobilisation and financing enablement

Coordinated activation of market actors (banks, installers, technical consultants, EPC providers) to expand renovation financing uptake starting with public leverage (municipality + National Energy and Climate Plan - NECP + Regional Operational Programme) and then gradually enabling blended financing models. This Workstream focuses on achieving renovation to become financially realistic and scalable, not dependent exclusively on grants.

Workstream 4: Data-driven transition intelligence and evaluation

Deployment and continuous operation of the Energy Transition Observatory to collect, classify, analyse and interpret energy vulnerability data, service utilisation patterns, citizen outcomes, retrofit pathways, and emissions reduction impact. This Workstream ensures the Office evolves as an evidence-generating municipal intelligence function that improves policy targeting and resource allocation over time.

3.2.1 Indicative Implementation Moments (2026–2030)

Institutional anchoring and staffing (support Workstream 1)

The Municipality will formalise the administrative embedding of the Energy Office within its organisational structure, including the creation of a dedicated budget line. The core team will include: one coordinator (strategic management), two technical advisors (energy efficiency / RES), one social officer (vulnerability & citizen liaison), and one administrative assistant. Short-term experts will support specialised tasks (audits / campaigns). This configuration ensures professional competence while remaining financially viable for a medium-sized municipality.

Daily service delivery and case management (supports Workstream 2)

Parallel to institutionalisation, front-line service provision will operate daily. Citizens will be able to access the Office in person, online via the Smart Trikala portal, or by phone. To ensure inclusion of households with limited digital access, the Office will also rely on proactive, non-digital outreach channels, including referrals from municipal social services, collaboration with community organisations and NGOs, targeted information and communication campaigns in neighbourhoods with high vulnerability, and direct engagement through trusted local intermediaries. Advisors will deliver personalised consultations. Each case will be tracked end-to-end (diagnosis → eligibility → funding application → verification of implementation), regardless of the initial access channel.

Expected outputs 2026–2030 (cross cutting, Workstream 2 + 3)

The Office aims to support ~3,000 households, conduct ~1,500 detailed home audits, and enable ~500 successful programme applications. These targets although indicative are considered realistic and based on comparable European municipal energy poverty interventions.

Digital integration through the Energy Transition Observatory (supports Workstream 4)

The Energy Transition Observatory will automate case tracking, anonymise data, generate analytical reporting and evaluate performance quarterly (households served, savings, emissions avoided, citizen satisfaction). The Office will also measure and report its own carbon footprint to demonstrate exemplary practice.

Community activation and awareness (supports Workstream 2 + Workstream 3)

Annual community engagement programmes (events, school cooperation, neighbourhood activation, workshops with Cooperative Bank of Thessaly, etc.) will increase engagement and strengthen a culture of energy responsibility. By 2030 the Office expects to reach minimum 10.000 citizens digital channels.

These indicative implementation moments operationalise the four Workstreams in a time-progressive sequence, facilitating coherence between institutionalisation, citizen services, market enablement and evidence production.

3.3 Governance and delivery model

The governance model of the Energy Office is centred on strong municipal leadership, with accountability, coordination and financial stewardship. The Municipality of Trikala is the executive authority for the Office: it holds strategic decision-making, resource allocation authority, quality control, and risk management responsibility. This governance structure minimises institutional risk, guarantees continuity, and increases investment confidence.

Cooperation partners (i.e., TEE, Cooperative Bank of Thessaly, University / Research Bodies, Social Welfare Services, installer networks, etc.) participate through formalised cooperation arrangements, memoranda of collaboration, and structured delivery interfaces. In this model:

- Municipality is responsible and accountable for service operation, performance and public value creation.
- Stakeholders are consulted and informed, and activated as delivery support partners (e.g., advisory, data contribution, outreach, financing pathways, technical validation).

This distribution ensures both operational efficiency and inclusiveness, while staying administratively realistic for a medium-sized municipality.

Overall, the proposed governance architecture of the Energy Office reflects Trikala's mature approach to collaborative management. At the institutional side, the Municipality of Trikala retains full political responsibility for policy alignment and budgetary oversight. The Mayor and Deputy Mayor for Environment and Energy provide strategic direction and ensure coherence with broader city strategies, including the Trikala 2030 Climate Action Plan and the Climate City Contract.

Operational implementation is **delegated to e-Trikala S.A.,** the city's publicly owned digital enterprise, which manages the Office's ICT infrastructure, data systems, and integration with municipal services. e-Trikala ensures the secure handling of citizen data, compliance with GDPR regulations, and interoperability with existing digital platforms. Strategic coordination is maintained through a Municipal Steering Committee, meeting quarterly and composed of senior representatives from the municipal departments of Social Policy, Technical Services, Finance, and Quality of Life. This committee validates annual workplans, reviews performance data, and approves major operational decisions.

External stakeholders are engaged through the URBACT Local Group (ULG), which has evolved from a project-level network into a standing consultative forum for energy policy. The ULG includes the Cooperative Bank of Thessaly, the Energy Community of Thessaly, the Municipal Water Company, the Technical Chamber of Greece (TEE), the Trikala Chamber of Commerce, and local NGOs such as Syneirmos. Its function is twofold: to ensure that local expertise and community needs inform municipal policy, and to promote joint initiatives that extend the impact of the Office.

As noted above, the existing ULG will continue to play a critical role during the Implementation Phase as a co-design body and validation mechanism (the consultative forum for energy policy mentioned above). However, as the Office matures, the ULG will progressively transition into a formal Advisory Forum to the Energy Office institutionalised within the governance architecture, but not responsible for executive decision-making, without diluting municipal accountability.

This governance model embodies transparency, accountability, and inclusivity. It also reflects a conscious balance between political leadership and technical autonomy: the municipality sets direction, e-Trikala manages execution, and the ULG ensures social legitimacy. Such a tripartite structure is one of the distinctive strengths of the Trikala approach and a key factor in its transferability to other contexts.

3.4 Overall project schedule

The operationalisation of the four Workstreams is sequenced through three progressive implementation phases (Consolidation, Expansion and Enhancement, and Maturity and Replication). Each phase comprises a coherent set of actions designed to transform the Office from a pilot project into a stable municipal institution capable of innovation, outreach, and long-term sustainability.

Each Phase combines activities across all four Workstreams, but with differentiated focus and intensity depending on maturity level and available financing pathway. Phase-based implementation therefore does not replace the Workstreams, it operationalises them over time.

Phase 1 (initial operational period): Consolidation (from Project to Institution)

Action 1 – Institutional integration and capacity building

Description
This action consolidates the transition of the Energy Office from the Energy4All project framework to a permanent municipal service. It entails legal and organisational integration within the municipality, the creation of a stable budget line, recruitment and training of core staff, and the adoption of operating procedures aligned with national and EU standards.

Baseline, Output and Result Indicators
Baseline: project-based operation with temporary staff.
Outputs: municipal decree establishing the Office; five staff appointed and trained; internal procedures manual adopted.
Result: fully functioning, municipally financed service by end-2027.

Risk Analysis
- Financial delay (High / Medium): mitigated through early budget negotiations and phased funding.
- Administrative inertia (Medium / High): sustained political oversight by Deputy Mayor for Energy.
- Staff turnover (Medium / Medium): career-development incentives and continuous professional training.

Timeframe and Phasing
Q1 2026 – formal integration; Q2–Q4 2026 – staffing and training; 2027 – procedures consolidated and service continuity secured.

Action 2 – Baseline mapping and digital integration

Description
Establish an integrated municipal database linking social, technical, and energy-consumption data through Trikala's digital platform. This enables the Office to "understand" energy poverty territorially, providing the analytical foundation for evidence-based interventions.

Indicators
Baseline: fragmented data across departments.
Outputs: unified database; first energy-poverty heat map; digital case-management software operational.
Result: quarterly analytical dashboards produced by 2027.

Risk Analysis
- Data-protection concerns (Medium / High): strict GDPR protocols and anonymisation.
- Technical delays (Low / Medium): reliance on e-Trikala's in-house ICT capacity.

Timeframe
Development 2026 Q2–Q4; pilot 2027 Q1; full operation 2027 Q4.

Phase 2 (2028–2029): Expansion and enhancement (from support to Innovation

Action 3 – Enhanced citizen services and energy audits

Description
Implement structured household energy audits and personalised action plans that move the Office from advisory support to proactive intervention. The Office will mediate citizens' participation in national retrofit and energy-efficiency programmes (Exoikonomo, RRF, ELECTRA*), ensuring inclusiveness and efficiency.

Indicators
Baseline: general advice only.
Outputs: 200 audits completed; 3.000 applications facilitated.
[3]Results: cumulative savings ≈ 16.000 GWh; ≈ 4.000 t CO_2 avoided; ≥ 30% average bill reduction among assisted households.

Risk Analysis
- Low citizen uptake (Medium / Medium): mitigated through targeted outreach and NGO partnerships.
- Funding gaps in national schemes (Medium / High): diversification toward regional or private co-funding.
- Limited technical capacity (Low / Medium): staff up-skilling and expert-support contracts.

Timeframe
Design and pilot 2028; full rollout 2029 with mid-term evaluation.

Action 4 – Awareness, education and community outreach

Description
A continuous outreach and behavioural-change programme translating the Support/Outreach pillar into practice. It will engage citizens through schools, neighbourhood associations, and the media, promoting efficient energy use and participation in local sustainability actions.

Indicators
Baseline: sporadic campaigns.
Outputs: annual outreach plan; > 2.000 citizens directly involved; > 5.000 reached digitally.
Results: 10% of participants reporting improved understanding or behavioural change.

Risk Analysis
- Public fatigue (Low / Medium): adopt interactive, co-creative formats.
- Budget constraints (Medium / Low): leverage sponsorships and EU awareness grants.

Timeframe
2028–2029 continuous implementation with annual review.

Phase 3 (2030): Maturity and replication (from Local Service to Reference Model)

Action 5 – Financial diversification and replication

Description
Secure the Office's long-term sustainability and extend its impact regionally. Activities include multi-annual funding agreements, creation of a replication toolkit, and coordination of a Thessalian Energy-Offices Network to share data and best practices.

Indicators
Baseline: reliance on short-term project funding.
Outputs: three multi-annual agreements signed; one replication toolkit published; regional platform operational.
Results: diversified funding portfolio; institutional autonomy and recognition as good practice by 2030.

Risk Analysis
- Policy changes (Medium / High): maintain alignment with national NECP objectives.
- Delays in funding calls (Low / High): proactive engagement with Managing Authorities.
- Replication fatigue (Low / Medium): ensure visibility of proven benefits and data-driven evidence.

Timeframe

[3] Assuming that we will have 1000 successful interventions by 2029.

2030 Q1–Q4 – funding agreements secured; replication guide published; final evaluation and dissemination events held.

Through these five actions, the Workplan operationalises the *Understand – Support – Act* methodology within a realistic municipal framework.

The consolidation phase builds institutional capacity and analytical baselines. The expansion phase delivers tangible results for citizens and communities and the maturity phase guarantees continuity and regional influence.

Risks are systematically monitored using the URBACT probability–impact matrix and reviewed quarterly. This phased, results-based approach ensures that the Energy Office evolves from a pilot initiative into a resilient, data-driven public institution delivering lasting social and environmental value for the citizens of Trikala.

4. BUDGET

The Investment Plan presents a full institutionalisation pathway funding scenario for achieving the objectives of the Energy Office. This approach allows the municipality to preserve service continuity and long-term investability.

The financial dimension of the Investment Plan is designed to ensure both the continuity of the service and its gradual consolidation as a financially and institutionally sustainable municipal public service. The objective is to combine fiscal realism with strategic ambition by establishing a funding framework anchored in stable public financing and diversified external co-funding, one that is viable within the city's existing administrative capacity while remaining capable of leveraging regional, national, and European resources.

The budget reflects three guiding principles. The first is *efficiency*, meaning that every euro invested should generate measurable social and environmental benefits. The second is *diversification*, ensuring that the Energy Office does not depend on a single funding stream but instead draws on a balanced mix of municipal, regional, national, and European sources. The third is *sustainability*, understood in both financial and environmental terms: financially the Office is designed to operate with predictable baseline public funding, controlled operating costs and resilience to funding-cycle, fluctuations; environmentally, it is structured as a low-carbon service that minimises its own operational footprint. Together, these principles ensure long-term continuity and avoid the discontinuity often associated with project-based initiatives.

4.1 Project costs

Full Institutionalisation Pathway (€2.1M total)

The total investment required for the continuation and enhancement of the Energy Office of Trikala for the 2026–2030 period is estimated at €2.1 million.

This figure reflects a realistic assessment of the resources needed to consolidate the Office as a permanent municipal service, expand its digital and community functions, and establish mechanisms for long-term financial sustainability.

In line with the nature of the Office as a service-oriented and data-driven structure, the overall budget follows an approximate 70:30 revenue–capital split, where:

- Revenue expenditure (≈€1.47 million) covers staffing, operational costs, communication activities, and evaluation,
- Capital expenditure (≈€0.63 million) supports digital infrastructure, equipment, and minor upgrades to office facilities.

This composition reflects the reality of Greek municipal energy offices, where most costs relate to human resources, service provision, and outreach, rather than heavy infrastructure investment.

Table 1 Breakdown of Estimated Project Costs (2026–2030)

CATEGORY	TYPE	ESTIMATED COST (€)	% OF TOTAL	DESCRIPTION/KEY COMPONENTS
PERSONNEL AND CAPACITY BUILDING	Revenue	1,250,000	59.5%	Salaries and social contributions for 5 core staff (coordinator, 2 technical advisors, social-support officer, administrative assistant), external experts, and training.
OPERATIONS AND UTILITIES	Revenue	220,000	10.5%	Office maintenance, rent, consumables, communication, and logistics.

DIGITAL INFRASTRUCTURE AND DATA SYSTEMS	Capital	250,000	12.0%	Smart Trikala data integration, software licences, IT equipment, and system maintenance.
COMMUNICATION, OUTREACH AND EDUCATION	Revenue	150,000	7.0%	Awareness campaigns, citizen workshops, events, and educational materials.
MONITORING, EVALUATION AND AUDITING	Revenue	100,000	4.8%	Internal and external evaluations, audits, and impact-assessment tools.
FACILITY AND EQUIPMENT UPGRADES	Capital	130,000	6.2%	Minor refurbishment, accessibility improvements, and low-carbon office retrofits.
TOTAL ESTIMATED INVESTMENT	-	**2,100,000**	**100%**	-

The above cost categories correspond structurally to the four Workstreams described in Section 3.1: (1) Institutionalisation and stakeholder system, primarily personnel and capacity building and operations; (2) Citizen empowerment and service delivery, personnel, operations and communication and outreach; (3) Market mobilisation and financing enablement, personnel and expert support embedded within personnel category; and (4) Data-driven transition intelligence and evaluation, digital infrastructure and monitoring / evaluation.

The expenditure follows the phasing of the Workplan, beginning with institutional consolidation, continuing with service expansion, and culminating in long-term sustainability actions.

The annual investment trajectory is presented below.

Table 2 Funding Time Schedule (2026–2030)

YEAR	PHASE / MAIN FOCUS	ESTIMATED ANNUAL INVESTMENT (€)	CUMULATIVE (€)
2026	Institutional integration, staffing, baseline mapping	400,000	400,000
2027	Consolidation, data integration, initial outreach	420,000	820,000
2028	Launch of expanded services and audits	430,000	1,250,000
2029	Full-scale implementation, community programmes	440,000	1,690,000
2030	Evaluation, replication, and sustainability measures	410,000	**2,100,000**

This time schedule ensures a balanced expenditure pattern, with slightly higher allocations during the middle implementation years (2028–2029), corresponding to the rollout of the new service portfolio and intensive citizen engagement.

Personnel and operational costs remain the largest component, reflecting the Energy Office's nature as a knowledge and service centre. Capital costs are moderate, directed primarily toward digital infrastructure and modest physical improvements.

The overall structure is consistent with comparable energy-poverty and smart-city initiatives in Greece and Europe, demonstrating that the proposed investment is financially feasible, scalable, and proportionate to the city's administrative capacity.

4.2 Investment sources and Financing Strategy

The long-term viability of the Energy Office of Trikala depends on a coherent and diversified financing strategy that combines local commitment with multi-level support from regional, national, European, and private partners. The municipality's vision is to ensure that the Office evolves from a project-based initiative into a stable public institution capable of sustaining its activities beyond individual funding cycles. This requires not only identifying multiple financial sources but also aligning their timing, eligibility, and objectives with the phases of implementation described in the Workplan.

The financing strategy is adaptive by design. Under the Full Institutionalisation Pathway, the municipality will pursue a fully diversified portfolio combining municipal resources, Cohesion Policy, National Climate Fund and European innovation instruments, enabling the Energy Office to deliver intensive, proactive, and comprehensive support to households experiencing energy poverty, including facilitated access to renovation financing, and systematic follow-up toward durable exits from energy vulnerability.

At the core of this strategy lies the commitment of the Municipality of Trikala, which will continue to allocate part of its annual budget to cover basic operational needs, staff salaries, and co-financing obligations required by national and European programmes. This municipal contribution, estimated at around 20–25% of the total investment provides the foundation of financial continuity and signals strong political ownership. The integration of the Energy Office into the municipality's medium-term financial planning ensures that its operation will not be dependent solely on external funds.

Complementing this local commitment is the **Regional Operational Programme of Thessaly 2021–2027**, under the European Structural and Investment Funds. The Programme supports interventions that promote energy efficiency, social innovation, and digital transformation, objectives that coincide with the mission of the Energy Office. Through dedicated calls for urban sustainability and social inclusion, the Regional Programme will co-finance activities such as staff costs, the development of data systems, and the implementation of awareness campaigns during the initial consolidation and expansion phases. The municipality has the capacity to prepare project proposals in alignment with the Programme's energy transition and digital innovation priorities to secure co-funding during 2026–2028.

Another key resource will be the **National Climate Fund**, which already supports similar initiatives across Greece. The Municipality of Trikala has secured preliminary approval for financing the Energy Office through this mechanism. The Climate Fund can cover part of the operational and infrastructural expenditures between 2027 and 2029, including upgrades to office facilities, energy-monitoring equipment, and local training programmes. Its involvement not only provides financial stability but also embeds the Office within the national framework for climate and energy governance.

Additional support will come from **European projects and initiatives** such as URBACT, LIFE, Horizon Europe, or future successors of the Energy4All project. Participation in these transnational schemes will allow the municipality to finance innovation-oriented actions, pilot digital tools, and strengthen knowledge exchange with other European cities. These sources are typically smaller in scale but strategically valuable, as they help the Office to remain at the forefront of methodological and technological advances in tackling energy poverty. They are expected to be activated periodically throughout the 2026–2030 period, in line with open calls and partnerships.

In parallel, the municipality will explore **private-sector partnerships and corporate social responsibility (CSR)** contributions. These may include sponsorships or co-financing from local financial institutions, energy suppliers, or foundations interested in supporting community outreach, education, or awareness campaigns. Any private contribution will be subject to approval by the Municipal Committee and Council, ensuring transparency and compliance with public procurement and ethical standards. While modest in scale, such collaborations can enhance the visibility of the Energy Office, encourage local investment in the green transition, and foster a shared sense of responsibility among public and private stakeholders.

Taken together, these funding sources, municipal, regional, national, European, and private, cover the full spectrum of the Office's operational needs and growth ambitions. Their temporal distribution mirrors the project's three implementation phases: during 2026–2027, the Energy Office will rely primarily on municipal funding and the Regional Operational Programme to ensure institutional consolidation and digital integration; between 2028 and 2029, the National Climate Fund will play a central role, providing stable financing for expanded services and energy audits; and in 2030, as the Office moves toward maturity and replication, additional resources from private partners and European initiatives will sustain dissemination and replication activities.

Despite this solid funding architecture, certain **gaps and uncertainties** remain inherent to the multi-source nature of the plan. The transition between programming periods after 2027 may temporarily delay the availability of regional funds, creating risks for the continuity of services targeting households most exposed to energy poverty in Trikala, including low-income families, elderly residents, single-parent households, unemployed citizens, and flood-affected populations. To mitigate this risk, the municipality will actively engage in the design of the new 2028–2034 Regional Programme to ensure that the Energy Office is recognised as a flagship intervention under the region's Green Transition priority.

A second potential gap concerns recurrent costs, particularly staff and front-line service provision, which are not always eligible under capital-oriented funding schemes. To address this, the Municipality of Trikala will maintain an annual guaranteed baseline contribution to safeguard staff continuity and uninterrupted support to vulnerable households. Finally, recognising that participation in European projects entails uncertainty linked to competitive calls, the municipality plans to establish a modest internal reserve, potentially funded through energy savings or municipal surpluses, to buffer temporary interruptions in external funding and protect ongoing assistance to households experiencing energy poverty.

Overall, the financing strategy of the Energy Office is designed to ensure stability in the short term and sustainability in the long term. It represents a balanced combination of public and complementary private investment, firmly anchored in existing national frameworks and EU policy instruments. More importantly, it demonstrates the city's capacity to translate complex funding architecture into a coherent local model of financial governance. By combining diverse sources and embedding them within its strategic planning, Trikala ensures that the Energy Office will continue to operate as a reliable, adaptive, and innovative public service well beyond the 2026–2030 investment horizon.

5. MONITORING AND EVALUATION

The success of the Energy Office of Trikala depends on the quality of its activities and on the city's capacity to measure, understand, and communicate their effects. Monitoring and evaluation (M&E) are therefore conceived as integral components of the Investment Plan and they provide the evidence base for decision-making, enable continuous improvement, and secure the confidence of funders and citizens alike.

The municipality's approach to M&E follows the principles of transparency, proportionality, and learning. Indicators are chosen to quantify outputs and to capture the transformation that the Office aims to generate in the local energy landscape: reduced household vulnerability, improved energy performance, and stronger institutional capacity. Evaluation is understood as a cyclical process that links resources, actions, results, and impacts in a coherent logic of change.

5.1 The Monitoring and evaluation approach

Monitoring and Evaluation are established as core pillars of the Energy Office of Trikala, ensuring that its activities produce measurable public value and contribute meaningfully to the city's wider objectives of social inclusion, resilience, and climate neutrality. The M&E framework is designed to be proportionate to the Office's scale, operationally feasible for a medium-sized municipality, and fully integrated into everyday practice rather than existing as a parallel administrative process

The municipality adopts a learning-oriented approach to monitoring. This means that performance measurement serves as a constant source of insight for improving service design, targeting, and delivery. Through regular analysis, this information allows the municipality to understand whether the Office is reaching the households who need support most, where barriers exist in accessing funding or technical help, and which interventions deliver the greatest social impact.

The monitoring framework follows three guiding principles. First, relevance, meaning that indicators are directly linked to the Office's mission to reduce energy vulnerability and improve well-being. Second, proportionality, ensuring that monitoring does not impose undue administrative burdens on staff or citizens. Third, ethics and trust, with strict compliance to GDPR and national data-protection legislation, safeguarding confidentiality at all times. In this way, Monitoring and Evaluation reinforce the credibility, transparency, and long-term sustainability of the Energy Office as a permanent municipal service.

The Monitoring and Evaluation system is structured around a clear intervention logic, linking resources to real-world change. This logic is expressed in five progressive stages:

- **Inputs**

These include municipal financial resources, co-funding from national and European programmes, the expertise of Office staff, digital infrastructure provided by e-Trikala S.A., and partnerships with social-welfare services, NGOs, and financial institutions.

- **Activities**

The Office delivers a range of interconnected actions: citizen advice and guidance, eligibility assessment and referrals to funding schemes, coordination with technical experts, data collection and analysis, awareness-raising activities, and outreach to vulnerable populations.

- **Outputs**

These are the measurable products of activity, such as the number of households assisted, audits completed, applications submitted, or citizens participating in awareness events.

- **Outcomes**

Outcomes reflect tangible improvements in citizens' lives, including reduced energy bills, increased comfort levels inside homes, reduced stress and vulnerability, and greater participation in renovation or subsidy schemes.

- **Impacts**

Over time, these outcomes contribute to systemic change: a structural reduction in energy poverty, improved public health and social resilience, enhanced energy efficiency in the building stock, and progress toward climate-neutrality targets.

5.2 Key Performance Indicators

A set of Key Performance Indicators (KPIs) has been defined to assess performance across institutional, social, financial, and environmental dimensions. These indicators serve both as reporting mechanisms and strategic management tools, enabling the municipality to assess service performance, equity of access, cost-effectiveness, and long-term social and environmental impact. The KPI framework is structured around the four Workstreams of the Investment Plan.

At the institutional level, indicators measure the stability and maturity of the Office as permanent public service. These include continuity of staffing, the share of budget secured annually, the number of formalised partnerships, and the frequency of coordination and governance meetings. Together, they indicate whether the Office has achieved durable municipal anchoring.

At the service-delivery level, indicators capture accessibility, responsiveness, and user experience. They include the number of households contacting the Office, the proportion of vulnerable households supported, case-resolution rates, and citizen satisfaction based on structured surveys. These metrics confirm whether the Office functions effectively as a trusted one-stop service.

At the market mobilisation level, indicators monitor renovation uptake and financial leverage, including the number of technical audits completed, the volume of public and private investment mobilised, and the estimated average reduction in household energy expenditure among supported cases.

Finally, energy and climate indicators are compiled through the Energy Transition Observatory. These include estimated kWh savings, avoided CO_2 emissions, and the number of analytical reports or policy recommendations produced annually. Through these indicators, the Office contributes to, and helps steer, broader municipal sustainability goals.

A specific sub-set of indicators focuses on equity and inclusion, ensuring that support reaches households at greatest risk of energy poverty, such as elderly residents, single-parent families, unemployed citizens, persons with disabilities, and flood-affected populations.

Table 3. Key Performance Indicators

Dimension / Workstream	KPI	What It Measures	Purpose / Insight Gained
Institutional Performance	Continuity of staffing	Stability and maturity of the Office team	Indicates institutionalisation and service continuity
	Share of annual budget secured	Proportion of funding ensured each year	Tracks financial stability and long-term viability
	Number of formalised partnerships	Active agreements with stakeholders	Reflects ecosystem strength and collaboration
	Frequency of governance/coordination meetings	Regularity of oversight and coordination	Demonstrates structured management and accountability

Service Delivery & Social Impact	Number of households contacting the Office	Demand and accessibility of services	Measures service reach and awareness
	Proportion of vulnerable households supported	Share of at-risk households receiving assistance	Tracks inclusion and equity performance
	Case-resolution rate	Share of cases successfully resolved	Assesses operational effectiveness
	Citizen satisfaction score (survey-based)	User-reported satisfaction levels	Measures service quality and trust
Market Mobilisation & Financial Leverage	Number of technical audits completed	Volume of renovation support activity	Indicates pipeline maturity and market engagement
	Public and private investment mobilised	Total financing leveraged	Captures financial impact and scaling potential
	Average reduction in household energy expenditure	Financial benefit to supported households	Demonstrates economic value for citizens
Energy & Climate Outcomes	Estimated kWh savings	Energy efficiency improvement	Tracks contribution to energy transition
	Avoided CO_2 emissions	Emission reductions achieved	Measures climate impact
	Number of reports / policy recommendations produced	Evidence and insights generated	Supports broader municipal sustainability strategy
Equity & Inclusion (Cross-Cutting)	Support to priority vulnerable groups	Extent of service coverage among: elderly, single parents, unemployed, disabled, flood-affected households	Ensures fair access and social targeting

5.3 Methods and Tools

Evaluation complements day-to-day monitoring by providing structured reflection on performance and impact. It is implemented at three levels.

First, internal quarterly reviews assess operational performance, workloads, citizen demand, and service quality. These sessions enable rapid adjustment where needed.

Second, annual evaluations assess whether the Office is contributing to local, regional, and national policy objectives. They examine outcomes such as increased renovation uptake, reduced energy vulnerability, mobilisation of financial resources, and improved comfort and well-being among supported households.

Third, at the end of the implementation period, a final impact evaluation will analyse long-term effects, including the Office's contribution to reducing energy poverty and advancing Trikala's journey toward climate neutrality. Where possible, external evaluators will support this process to strengthen independence and credibility.

Evaluation is explicitly learning-oriented. Findings are not simply reported, they are fed back into planning, staff training, communication strategies, and partnership development. Lessons learned will also inform the evolution of the Energy Transition Strategy, the Trikala 2030 Climate Action Plan, and the Climate City Contract.

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5.5 The monitoring and evaluation framework

The Monitoring and Evaluation framework serves as a risk-management instrument. Key risks include changes in national subsidy frameworks, delays in regional funding, fluctuations in citizen demand, staff turnover, technological interoperability challenges, and limited digital access among vulnerable citizens. These risks are reviewed quarterly, and mitigation measures are implemented proactively, ensuring continuity and resilience in service provision.

By embedding Monitoring and Evaluation at the heart of the Energy Office, the municipality strengthens its capacity to ensure that public resources generate maximum benefit. The data and evidence produced reinforce the city's commitment to citizen well-being, social justice, and climate responsibility, while supporting Trikala's position as one of Europe's leading medium-sized cities in designing a fair and inclusive energy transition.

Ultimately, the Monitoring and Evaluation system transforms the Energy Office from a simple service provider into a knowledge-producing municipal institution, capable of shaping more effective, equitable, and data-driven public policy for the benefit of all citizens, especially those most exposed to energy vulnerability.

6. CLOSING REMARKS

The establishment and consolidation of the Energy Office of Trikala mark a decisive step in the city's long-standing commitment to social inclusion, technological innovation, and sustainable urban transformation. Through this Investment Plan, the municipality moves beyond fragmented or short-term projects toward a stable, institutionally grounded public service that accompanies citizens through the energy transition and ensures that no household is left behind.

The Plan demonstrates that tackling energy poverty is both an environmental priority and a question of dignity, health, and equal opportunity. By aligning municipal governance, digital tools, social policy, and market engagement, the Energy Office becomes both a practical support mechanism and a strategic intelligence hub, strengthening Trikala's capacity to deliver targeted, data-driven and humane public policy.

Above all, the Energy Office embodies the values that define Trikala's governance culture: partnership, participation, responsibility, and innovation with a human focus. It converts the city's digital strengths into tangible social benefits, empowers citizens to take part in the transition, and reinforces trust between residents and local government.

Looking ahead, the Municipality of Trikala will continue to nurture this structure, ensure its sustainability, and integrate its learning into broader urban development strategies. Through this approach, the city reaffirms its position as a leading European example of how climate action, technological capacity, and social solidarity can be woven together into a coherent and enduring public mission.

The Energy Office is therefore a new municipal function that promises fairness and resilience, ensuring that the path toward climate neutrality is shared, inclusive, and centred on the well-being of every citizen.

I. Scenario 2 - Lean Institutional Pathway (~€560,000 total)

The alternative investment configuration represents a fiscally conservative continuity pathway for the Energy Office of Trikala, targeting its long-term operation even in conditions of limited external financing availability. Under this scenario, the annual operating envelope is approximately €140,000 per year over four years (~€560,000 total). This model protects public value, secures municipal continuity and preserves core service delivery functions while deferring larger scale market mobilisation investments to later phases when external funding is secured.

In line with the Office's mandate as a municipal service with strong social impact, the lean scenario maintains adequate staffing for core case management activities, minimal baseline investment for the Energy Transition Observatory, and limited but continuous outreach and testing actions. Expenditure priority is therefore placed on Workstream 2 (Citizen empowerment and service delivery) and Workstream 4 (Energy Transition Observatory baseline intelligence), while Workstream 3 (Market Mobilisation) is activated in a more selective and targeted form.

Table 3 Breakdown of Estimated Project Costs (2026–2030)

CATEGORY	TYPE	ESTIMATED COST (€)	% OF TOTAL	DESCRIPTION/KEY COMPONENTS
PERSONNEL AND CORE OPERATIONS	Revenue	300,000	53.5%	Two full-time personnel (Coordinator + Technical/Social hybrid advisor), limited part-time administrative support, necessary consumables, communications and minimal logistics.
DIGITAL INFRASTRUCTURE AND DATA BASELINE	Capital	100,000	17.8%	Light-weight Observatory analytics, simplified dashboards, interoperability with Smart Trikala core modules.
COMMUNITY ENGAGEMENT & ENERGY KITS	Revenue	60,000	10.7%	Focused awareness actions, selective testing actions tied to specific pilot events, targeted energy kit deployment.
EXTERNAL EXPERT SUPPORT (TARGETED)	Revenue	50,000	8.9%	On-demand expert support when strategically necessary (specific audits, legal checks, communication bursts).
MONITORING, EVALUATION & REPORTING	Revenue	50,000	8.9%	Basic evaluation reporting cycle, lean KPI dataset, simplified cost–benefit tracking.
TOTAL ESTIMATED INVESTMENT	-	560,000	100%	4-year lean investment horizon.

These expenditure categories reflect the 4 Workstreams described in Section 3.1, prioritising continuous citizen-facing services (Workstream 2) and maintaining essential evidence production (Workstream 4). Workstream 1 remains minimally resourced but stable, while Workstream 3 is selectively activated when investment leverage is realistic.

The annual investment trajectory below applies to Scenario 2 (Lean Institutional Pathway), following the same phasing logic as Scenario 1, but with capped annual expenditure to guarantee continuity.

Table 4 Funding Time Schedule (2026–2030)

YEAR	PHASE / MAIN FOCUS	ESTIMATED ANNUAL INVESTMENT (€)	CUMULATIVE (€)
YEAR 1	Institutional continuity, baseline Observatory, service continuity	140,000	140,000
YEAR 2	Citizen support scaling at controlled pace, small testing actions	140,000	280,000
YEAR 3	Targeted audits + evidence-based prioritisation, selective financing enablement	140,000	420,000
YEAR 4	Consolidation, performance verification, preparation for future scale-up	140,000	560,000

This financial profile guarantees that Trikala can maintain a minimum level of continuous operation, visibility, and social impact even if external funding cycles are delayed. Scenario 2 is therefore designed to protect institutional memory, core public value, and essential data continuity, rather than to deliver the full scale of services and impacts envisaged under Scenario 1. At the same time, it preserves the organisational and technical capacity required to transition to Scenario 1, enabling rapid scaling when larger funding windows become available.

II. Benchmarking with Greek Municipal Practice

For a municipality of Trikala's size (approximately 80,000 inhabitants), maintaining a medium-scale Energy Office with 4–6 staff, hybrid physical and digital services, and light capital investment represents an operational structure that is both common and feasible under Greek conditions.

Typical cost parameters for such offices or equivalent sustainability units are as follows:

Category	Indicative Annual Range (€)	Description
Personnel (4–6 FTEs)	200,000 – 300,000	Salaries, social contributions, and professional training.
Operations & Utilities	40,000 – 60,000	Office rent, utilities, consumables, communication.
Digital Infrastructure & Data Management	40,000 – 80,000	Software, hardware, licences, maintenance.
Outreach & Education	20,000 – 40,000	Citizen engagement, awareness campaigns, events.
Monitoring & Evaluation	15,000 – 25,000	External audits, data collection, impact assessment.

This correspond to an annual expenditure of €320,000–€500,000, depending on the level of digital sophistication and outreach intensity.

Over a five-year period, a financially sustainable investment envelope would therefore range between €1.6 million and €2.4 millions.

The proposed total of €2.1 million sits exactly at the midpoint of this benchmark range. It therefore provides adequate resources for:

- Stable multi-year staffing and social contributions,
- Investment in digital infrastructure (Smart Trikala integration, data systems),

- Comprehensive outreach and training activities, and
- Periodic external evaluation and quality assurance.

The magnitude of the budget also aligns with comparable EU-supported initiatives:

- *Energy Offices in Karditsa and Larissa* (RRF and LIFE programmes, 2021–2027) operate with budgets of €1.8–€2.3 million over similar five-year horizons.
- Medium-scale *URBACT* and *Horizon Europe* urban-energy pilots in Southern Europe typically range between €1.9–€2.5 million for equivalent staff and operational models.

The €2.1 million allocation aims that the Office can deliver measurable results without exceeding the fiscal capacity of the Municipality of Trikala or the co-financing thresholds of the Region of Thessaly's Operational Programme.

It also maintains a realistic capital/revenue ratio of approximately 30/70, reflecting the service-oriented nature of the initiative, which focuses on human resources, outreach, and digital tools rather than heavy infrastructure.

This proportion is coherent with national guidelines under the *ELECTRA* and *Exoikonomo* frameworks and provides flexibility for co-funding across regional, national, and European lines.