EnergyEfficiency4SMEs

ENERGY EFFICIENCY 4SMES

FINAL PUBLISHABLE REPORT

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1. Table of Content

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EnergyEfficiency4SMEs

2. Project Overview

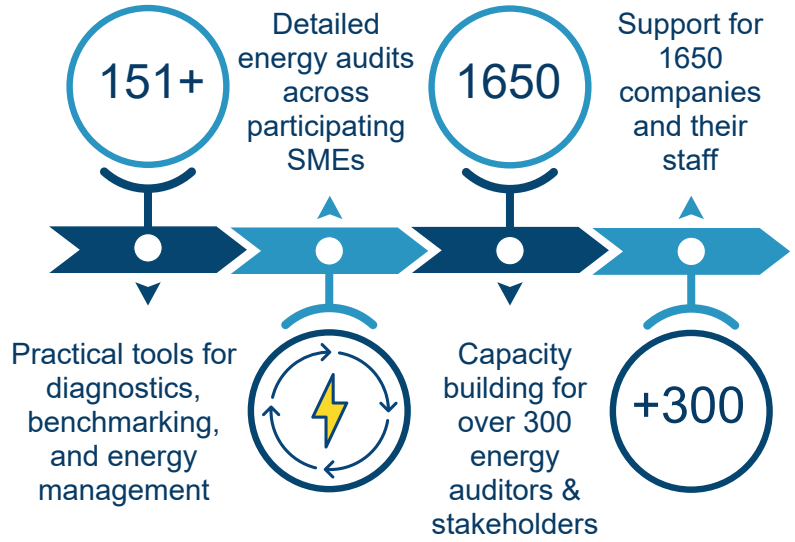
A European Boost for SME Energy Efficiency

EnergyEfficiency4SMEs (EE4SMEs) is an EU-funded initiative aiming to unlock the untapped potential of small and medium-sized enterprises (SMEs) to contribute to Europe's climate and energy goals. Recognizing that 99% of all European businesses are SMEs - and that they collectively represent a substantial share of energy use - EE4SMEs was created to help these enterprises become key players in the energy transition.

The project supports the EU's ambition of achieving **net-zero emissions by 2050**, focusing on the cost-effective path of improving **energy efficiency (EE)** in SMEs. EE4SMEs has worked across **nine countries** (Austria, Bulgaria, Cyprus, Estonia, France, Germany, Italy, Malta, and Spain) to drive change in three high-impact sectors:

- Accommodation & Food Services
- Agri-food Manufacturing
- Metalwork Manufacturing

Over its 36-month implementation period, the project carried out the actions outlined below, encouraging SMEs to adopt concrete energy-efficiency measures and a long-term mindset that supports sustainability and competitiveness.



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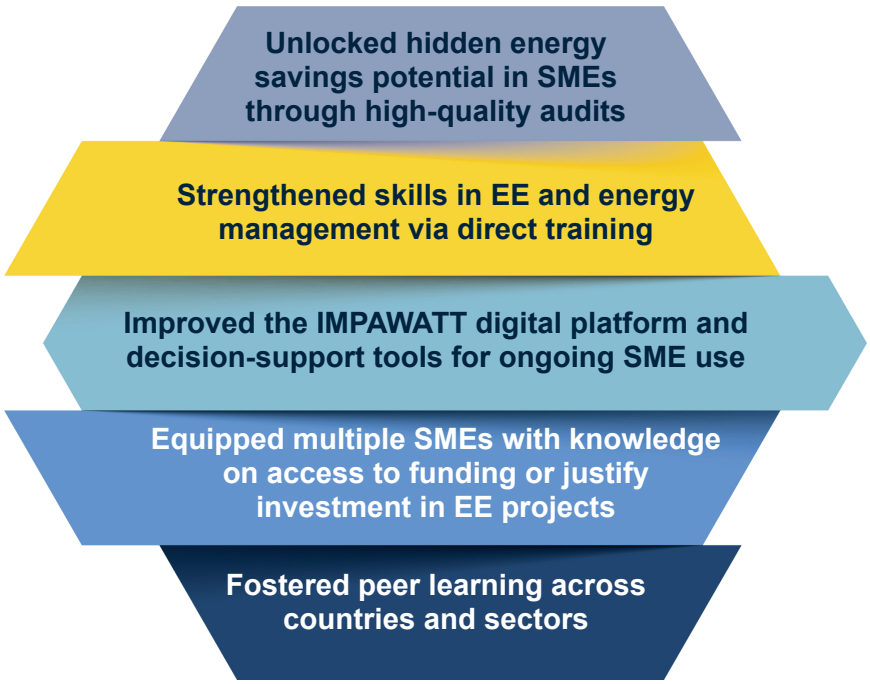
Main Achievements & Impacts:

The project achieved significant impact by identifying hidden energy-saving opportunities in SMEs, enhancing their energy-efficiency skills, upgrading the IMPAWATT digital platform, supporting access to funding for EE investments, and fostering peer learning across countries and sectors.



Lessons Learned & Policy Relevance:

Energy audits have proven to be a powerful tool for change - but require **targeted support, funding access, and skilled guidance** to yield results. EE4SMEs showed that there is no **one-size-fits-all solution**: companies benefit most from tailored guidance, coupled with general capacity-building and accessible financial pathways. Policymakers should embed SME-specific EE strategies within climate and energy planning at EU, national, and local levels to scale this success.

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3. Knowledge Exchange & Capacity Building

Training that Drives Change

A cornerstone of the EE4SMEs project has been equipping people - business owners, facility managers, and energy auditors - with the skills they need to carry out and act on energy audits. Throughout the project, partners organised:

- **Workshops and webinars** in 9 countries
- **Hands-on energy audits** in sectors like hospitality, agri-food, and metalwork manufacturing

Target Audiences

- SMEs (technical and non-technical staff)
- Chambers of Commerce and Industry
- Energy and sustainability consultants

To support this learning effort, five training modules were developed which partners further tailored to their specific contexts:

- **Module 1: Photovoltaics** — This module demystified the planning and technical challenges of installing solar PV systems, offering SMEs guidance on how to navigate constraints like grid connection costs, shading effects, and structural requirements. It empowered companies to make realistic and informed decisions around renewable energy investment.

- **Module 2: Geothermal Energy** — Designed to expand SMEs' horizons beyond conventional renewables, this module introduced geothermal heating and cooling systems. It offered insights on opportunity analysis, feasibility, and implementation processes, encouraging SMEs to consider long-term, low-emission energy solutions.

- **Module 3: ISO 50001** — To help companies adopt structured energy management systems, this module provided a step-by-step approach to implementing ISO 50001. It clarified both technical and organisational aspects and highlighted how SMEs could improve performance, reduce costs, and access regulatory incentives like France's PRO-SMEn bonus.

- **Module 4: How to Read an Energy Invoice** — Many SMEs lack clarity on how their energy costs are structured. This module offered a practical guide to interpreting invoices—covering tariff structures, taxes, reactive energy charges, and usage patterns—empowering SMEs to reduce avoidable expenses and make informed procurement decisions.
- **Module 5: IMPAWATT Platform** — This module introduced the functionalities and services of the IMPAWATT platform, helping SMEs use its tools for benchmarking, planning, and implementing energy efficiency measures. Delivered in English and German, it encouraged adoption of the platform as a long-term energy management resource.

Through this comprehensive training strategy, EE4SMEs **built capacity at scale**, creating a lasting knowledge base for SMEs to carry forward their energy transition.

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4. Project recommendations

Supporting SMEs in Energy Management

A Energy efficiency (EE) measures offer more than just lower energy bills. They deliver **process stability, better environmental performance, and stronger market positioning**—benefits that are increasingly important in today's sustainability-driven landscape. However, for many SMEs, accessing these gains isn't always straightforward. Financial limitations, technical gaps, and lack of time often hold companies back.

To bridge this gap, EE4SMEs emphasised personalised consultancy, easy-to-use tools, and sector-specific guidance. Whether it's through energy audits or tailored workshops, the project has shown that **targeted support unlocks energy-saving potential**, especially when paired with financial incentives or accessible platforms like IMPAWATT. These tools empower businesses to take control of their energy use, build internal expertise, and plan for long-term improvements.

Tailored Solutions by Sector

Each project target SME sector has unique energy needs. EE4SMEs developed customised recommendations to ensure that efficiency measures are both technically sound and economically viable.

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ACCOMMODATION AND FOOD SERVICES

In the Accommodation & Food Services sector, energy consumption patterns vary significantly depending on whether the primary business activity is guest accommodation or food preparation and service. This distinction is crucial for identifying the most effective energy efficiency measures.

For businesses primarily focused on accommodation—such as hotels, B&Bs, and resorts—the dominant energy loads are typically associated with space heating and cooling, domestic hot water production, and lighting. Recommended interventions in this context include the installation of reversible heat pumps, solar thermal collectors, high-efficiency chillers, and LED lighting systems. Integration of Building Management Systems (BMS) can further optimize HVAC and lighting control based on occupancy, improving both energy performance and guest comfort. In addition, building envelope retrofitting and improved thermal insulation play a key role in reducing heating and cooling demand, especially in older structures.

Conversely, in businesses where food preparation is the core activity—such as restaurants, catering facilities, or hotel kitchens—the energy profile shifts toward kitchen equipment and process heat. In these cases, significant savings can be achieved by upgrading to induction cooking systems, energy-efficient refrigeration units, and kitchen hood heat recovery systems. Where applicable, these interventions should be aligned with on-site renewable energy systems, such as photovoltaic panels, to maximize sustainability impact.

Ultimately, tailoring energy efficiency measures to the operational profile of each facility ensures both technical appropriateness and economic viability, enhancing return on investment and aligning with decarbonization objectives.

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FOOD AND BEVERAGE

In the Food and beverage sector, energy efficiency interventions must be tailored to the specific characteristics of the production process, which often involves temperature-controlled environments, thermal processing, and continuous refrigeration. Facilities engaged in food transformation, storage, and packaging typically exhibit high thermal and electrical loads, concentrated in HVAC systems, industrial refrigeration units, and equipment for cooking, drying, or pasteurization.

One of the most impactful strategies in this context is the optimization of HVAC and refrigeration systems through the adoption of high-efficiency chillers, reversible heat pumps, and variable refrigerant volume (VRF) systems. These technologies provide both process cooling and climate control, with the potential to integrate heat recovery for use in low temperature washing or pre-heating phases.

In processes requiring significant thermal energy, such as baking, fermentation, or dehydration, interventions may include the modernization of heat generators, implementation of power factor correction, and insulation of steam lines or heated tanks.

The high and often continuous electrical demand makes the Food and beverage sector particularly suitable for the integration of self-produced energy systems, especially photovoltaic plants sized according to rooftop availability and production schedules. Coupling PV systems with storage solutions or with high daytime loads improves the self-consumption rate and economic returns.

Designing energy efficiency strategies in this sector requires careful analysis of load profiles, seasonal variations, and processing cycles, ensuring that measures are technically compatible and aligned with food safety and production continuity requirements.

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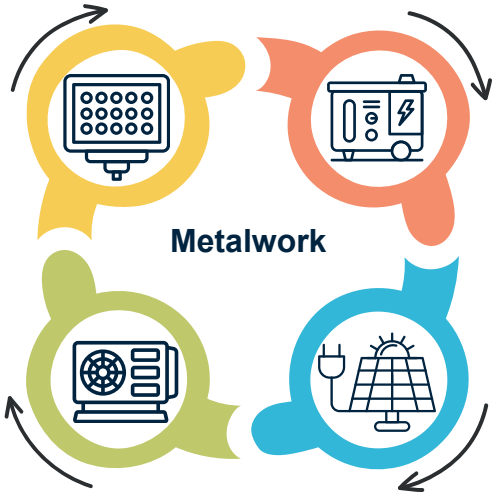
METAL WORK

In the metalworking sector, energy efficiency interventions must be closely aligned with the type of processes and machinery in use, as production activities often involve high-power electromechanical systems, compressed air, thermal treatments, and intensive ventilation or cooling. The energy profile is typically dominated by electricity consumption, driven by machine tools, welding units, induction furnaces, and CNC equipment, with additional loads from ambient HVAC systems and lighting in large production halls.

A first-level intervention involves the upgrade of lighting systems to LED technology, combined with occupancy or daylight sensors to reduce unnecessary usage. In terms of process optimization, modernization of production machinery—for example, replacing outdated motors with high-efficiency IE3/IE4 models or integrating variable frequency drives (VFDs)—can yield substantial reductions in energy demand. Similarly, power factor correction systems and energy monitoring tools allow for the reduction of reactive power losses and the identification of operational inefficiencies.

For companies operating heat-intensive processes (e.g., metal forming, surface treatments), opportunities include the recovery of waste heat for space heating or pre-heating, and the insulation of furnaces and piping to minimize losses.
The sector is also particularly suited for self-produced energy via photovoltaic systems, especially when installed on large industrial rooftops and dimensioned to match peak daytime loads.

Given the strong correlation between machine-specific usage and energy performance, effective strategies must be based on detailed audits of equipment, real-time load profiling, and process integration analysis, ensuring that proposed measures are compatible with production needs and capable of delivering sustained energy and cost savings.



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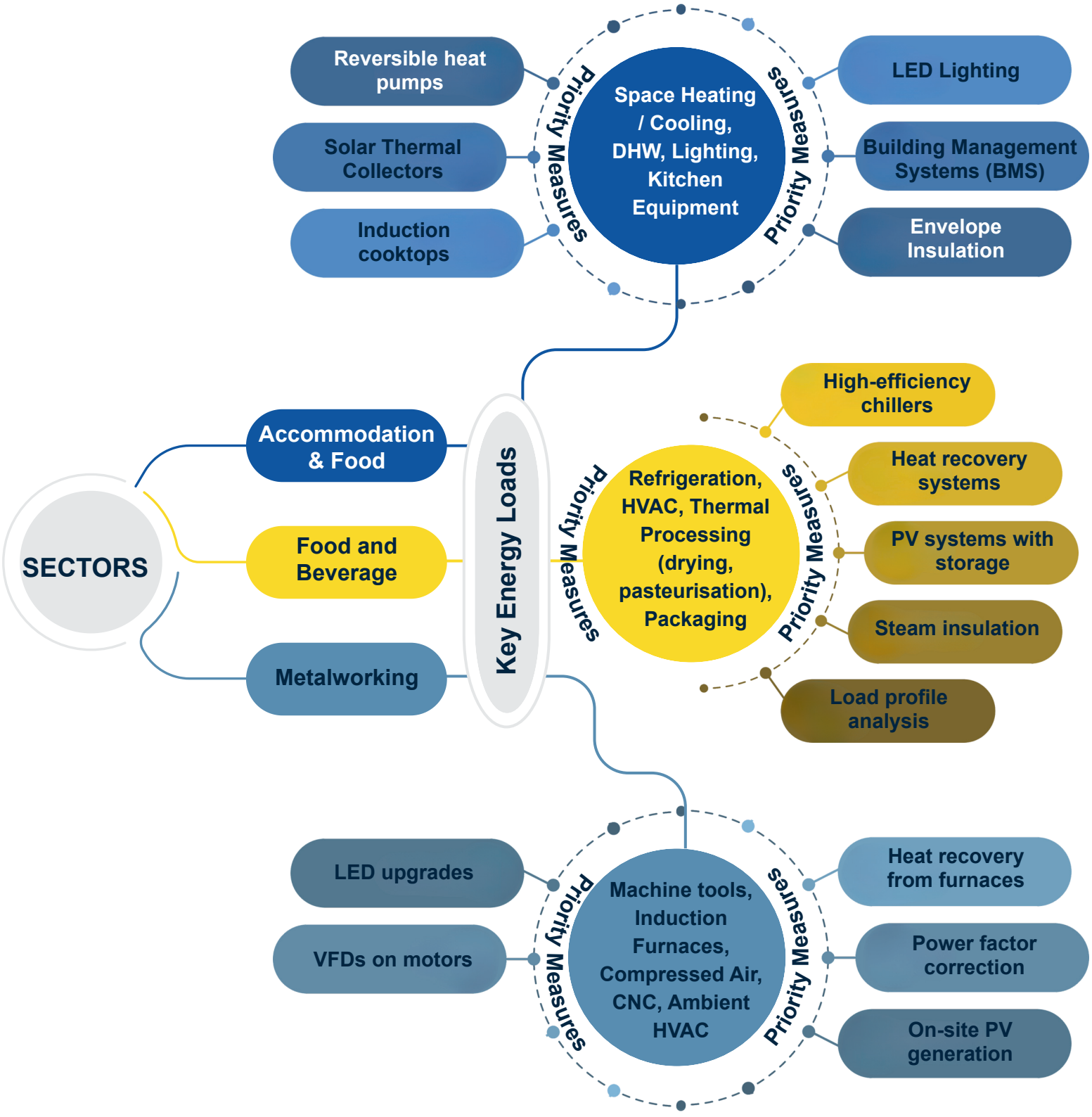
Tailored Solutions by Sector schema



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5. Strategic Policy Integration

To scale up these solutions, **policy support is critical**. At the **EU-Level**:

- Align SME programmes with Green Deal and Fit for 55 targets.
- Integrate SME-friendly digital tools into EU energy efficiency schemes.
- Ensure SME participation in eco-design, energy taxation, and carbon pricing frameworks.

At the **National level**:

Several national policies of EE4SMEs countries as highlighted below demonstrate alignment with project goals and show potential for integration of project results in future revisions:

Austria: Environmental subsidies in Austria form the national environmental and energy subsidy programme, supporting projects that contribute to sustainability and energy efficiency. Findings from EE4SMEs can inform adjustments to existing funding frameworks, refining subsidy criteria without requiring new programmes, and helping integrate SME-specific energy efficiency results into ongoing support schemes.

Bulgaria: The Integrated Energy and Climate Plan and National Development Programme “Bulgaria 2030” focus on advancing energy efficiency, promoting low-carbon technologies, and supporting digital innovation particularly among SMEs, while aligning with EU climate goals.

Cyprus: Sustainable Energy and Climate Action Plans (SECAPs) via Cyprus Energy Agency (CEA) which supports local governments in setting energy/climate goals, including public and private sector efficiency were identified best practices and strategies from EE4SMEs can pro on automation and energy management for SMEs to integrate into SECAPs.

Estonia: Estonian Energy Sector Development Plan until 2030 (ENMAK 2030) and Estonia’s Recovery and Resilience Plan place strong emphasis on improving energy efficiency and reducing energy consumption across all sectors. They provide concrete implementation pathways at the SME level.

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France: Existing schemes such as the CEE and ADEME programs share a common focus on accelerating industrial and SME energy transition through structured frameworks that combine regulatory incentives, financial support, and performance-based approaches to improve energy efficiency and promote low-carbon innovation.

Germany: National Action Plan on Energy Efficiency (NAPE / NEEAP) which contains cross-sectoral efficiency targets and measures like building renovation, tendering, tax incentives, energy efficiency networks where EE4SMEs can provides SME-specific audit and peer-networking tools that complement NAPE's mechanisms.

Italy: The national strategy incorporates regional initiatives (e.g., the NPER) and supports decentralized energy planning with SME considerations.

Malta: National plans such as the National Energy and Climate Plan (NECP) and the Recovery and Resilience Plan which emphasize advancing Malta's green transition by integrating energy efficiency, capacity building, and innovation within SMEs to support sustainable economic growth and meet long-term climate and development goals. The Energy & Water Agency (EWA) also promotes energy audits by its 'Energy Audits for SMEs' scheme, where audit fees are reimbursed up to a maximum of €6k by a simple on-line application & quick refund process. EWA also promotes sustainability by holding free on-line courses aimed at employees from the corporate sector.

Spain: National Energy Efficiency Fund (FNEE) which offers technical assistance, training, and incentives to deliver EED-aligned savings where project results (e.g., SME audit insights, cost-benefit analyses) can guide fund allocation, training curricula, and targeted support services.

A commonality observed throughout all EE4SMEs countries is that national ministries could embed EE4SMEs methodologies into NECPs and recovery strategies by:

- Enhancing technical assistance for SMEs via chambers of commerce or innovation agencies.
- Including EE4SMEs tools in monitoring and implementation frameworks.
- Promoting targeted communication and incentives to increase SME participation.

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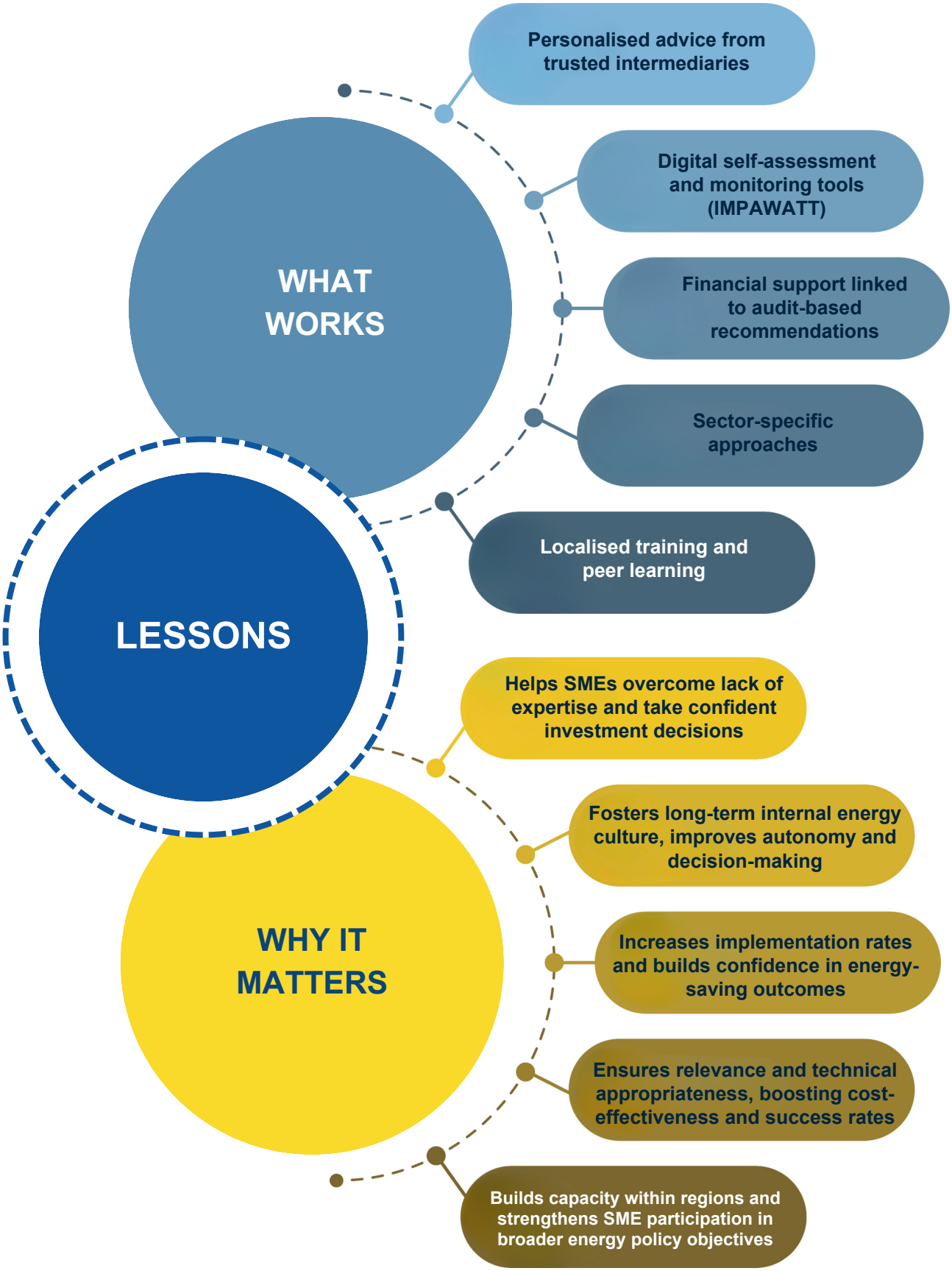
6. From Lessons to Action: What Works for SMEs



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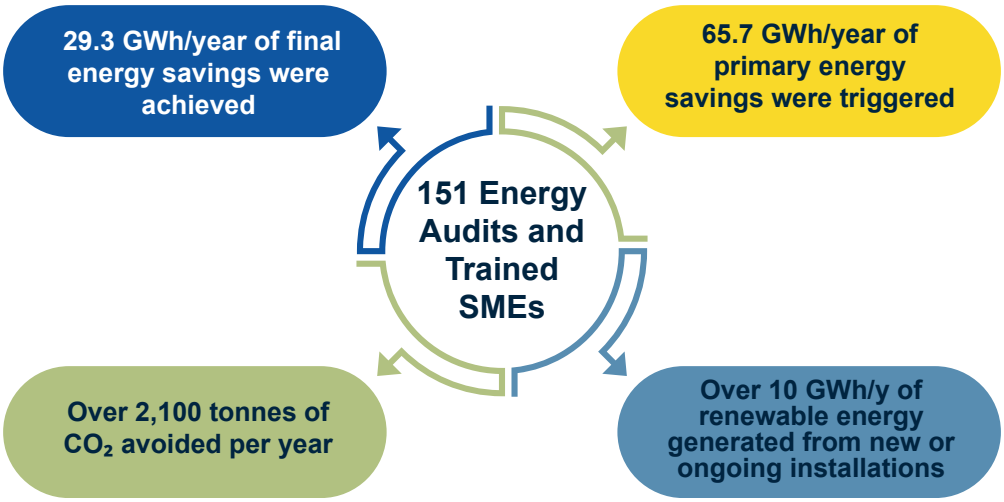
7. EE4SMEs Impact

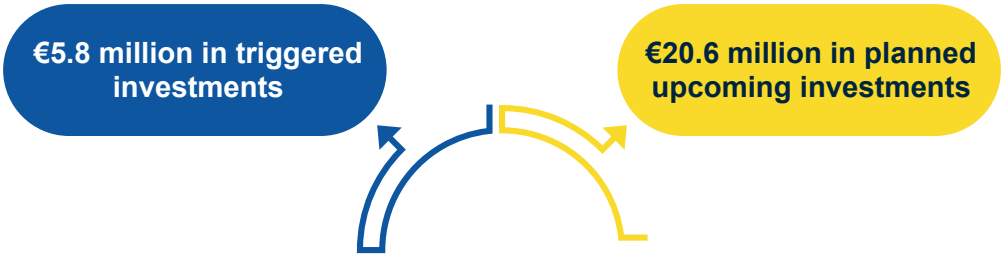
Technical and Environmental Impact

EE4SMEs delivered strong, measurable results in reducing energy consumption and greenhouse gas emissions, far exceeding several of its original targets.

Through the combination of **151 energy audits** and the active participation of trained SMEs:



These savings were driven by measures such as efficient lighting, heating upgrades, process optimisation, and small-scale renewable energy systems. The accommodation & food services sector was the most active in implementing measures, followed closely by agrifood manufacturing. Medium-sized SMEs generated the largest technical impact due to their higher baseline energy use, while micro and small SMEs showed the highest implementation rates relative to their size. The project also mobilised:



Together, these achievements demonstrate that SMEs can play a major role in Europe's energy transition when given the right tools and support.

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8. Available materials via the website

Over its three-years, the EnergyEfficiency4SMEs project published a series of reports showcasing its results and progress. These insights highlighted the tangible benefits and success stories, driving momentum for future energy efficiency initiatives. All public deliverables produced under the project, including strategic studies, self-assessment tools, financing overviews, and implementation guides, are available via the project website.

Additionally, the Impawatt e-learning platform features training modules, presentations, quizzes, checklists, and tools for assessment, finance, and monitoring. Recordings of webinars and videos produced by the partner network on practical energy-efficiency measures and financing support are also accessible through the project's online platform and partner channels.

EnergyEfficiency4 SMEs public deliverables are available for download.

1. Accompanying SMEs in implementing energy efficiency measures. The document presents three separate documents that contain the methodology for analysing energy efficiency practices in large companies, the collection of good energy practices from large companies to support the ecological transition of SMEs, and the selection of best practices suitable for transfer from large companies to SMEs.
2. High-level Economic Study on Energy Efficiency in Accommodation and Agri-foods & Metalwork Manufacturing. The purpose of this initial analysis was to offer support to the partners consortium, in presenting an initial state of play report for energy efficiency measures in the Accommodation and food service activities, Agri-food and Metalwork Manufacturing.
3. Questionnaire self-assessment on the energy efficiency measures in the companies. This questionnaire was designed to take into account the key evaluation criteria of energy efficiency according to Organisation for Economic Co-operation and Development standards.
4. Financing list. The document brings information on financial measures available to businesses in each participating country, and brings the information directly to the businesses through an individual contact point in each participating partner.
5. Follow-up High-level Economic Study on Energy Efficiency in Accommodation and Agri-foods & Metalwork Manufacturing (pending validation by CINEA): This follow-up study to revisit key areas covered in the initial report while expanding its scope to include: an analysis of the number and types of initiatives financed under the EE4SMEs project, a review of the financing mechanisms used for these initiatives, identification of barriers to financing, emerging trends and opportunities in the financing landscape, and recommendations for both the public and private sectors to develop or enhance financial mechanisms supporting energy efficiency initiatives.

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6. Set of recommendations for making the energy transition in SMEs (pending validation by CINEA): This document outlines the various methodologies and tools developed within the project to facilitate the transfer of energy efficiency practices to small and medium-sized enterprises (SMEs). These methodologies and tools are designed to support SMEs in adopting sustainable energy practices and maximizing their energy-saving potential.

7. Summary report of the basic recommendations for energy upgrading per type of SME and the common Energy Performance Indicators (pending validation by CINEA): This report measures the recommendations deriving from the energy audits performed by the participating countries within the project's framework.

8. Training Material for SMEs (pending validation by CINEA): This deliverable presents an overview of the training activities carried out across the participating countries. It outlines the modules developed in the project and the methodologies applied in the various workshops implemented. Furthermore, it highlights how these trainings contributed to equipping SMEs with the tools and knowledge required to maintain their improved energy performance over time—thereby supporting the broader objectives of the LIFE programme in fostering a low-carbon and energy-efficient European economy.

9. EnergyEfficiency in Action – final event presentation.

These downloadable deliverables are central to supporting SME understanding and implementation of energy efficiency practices.

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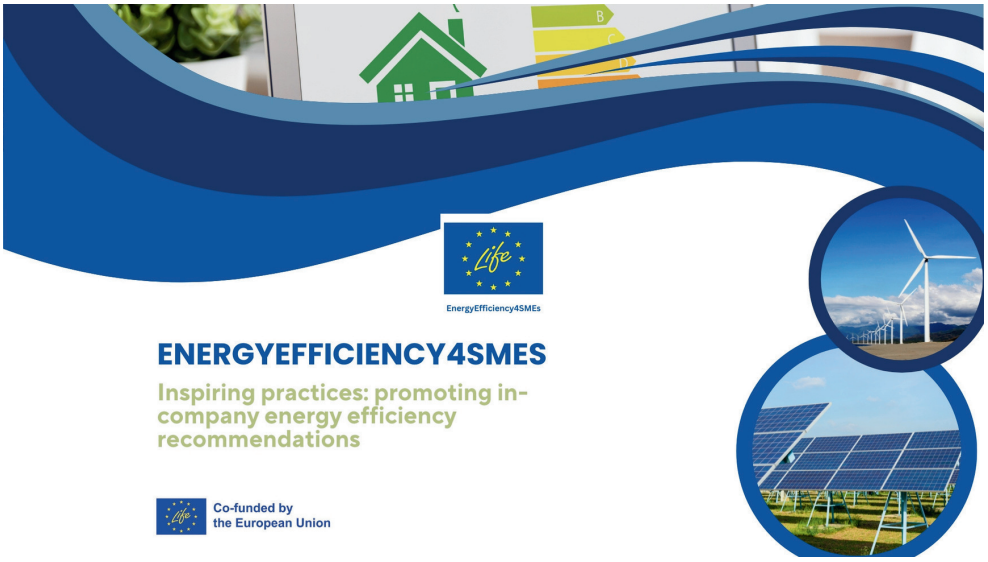
Success Stories

A video collection supports the project's aim to engage and inform stakeholders in an accessible format. Each story showcases practical actions and tangible results, from cutting energy costs to improving resource efficiency, inspired by the tailored recommendations and expert support provided through the EnergyEfficiency4SMEs project.



Final Event

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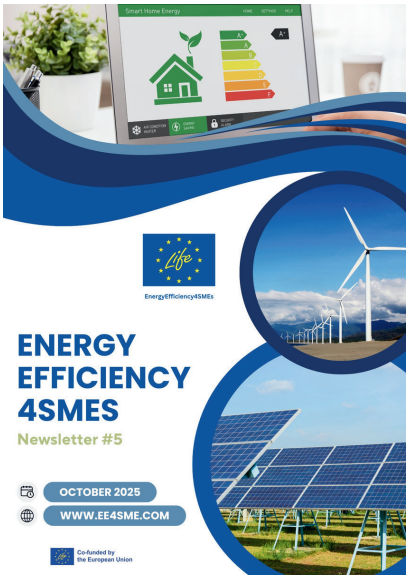
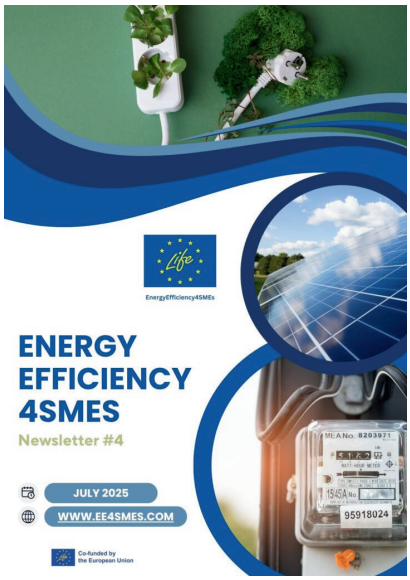
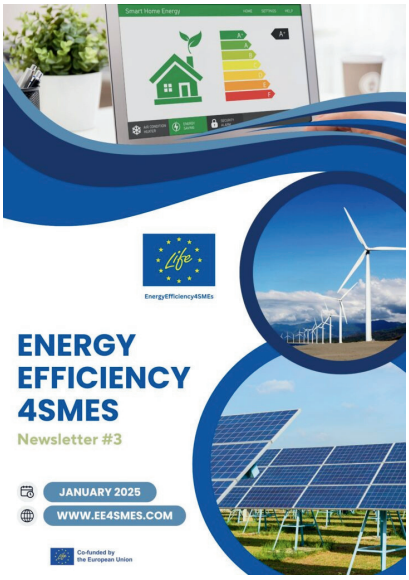
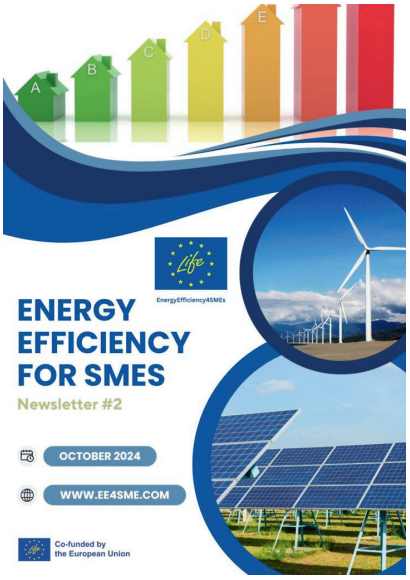
Newsletters









Project Partners

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ENERGIEINSTITUT DER WIRTSCHAFT GmbH

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Cámara Sevilla

Cambra de Terrassa

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EnergyEfficiency4SMEs Project website is the ultimate resource for energy efficiency insights. Discover innovative best practices, cutting-edge tools, and dive into our comprehensive e-learning platform. Everything your SME needs for a green transformation is just a click away.

Visit www.ee4sme.com!

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