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(LIFE Clean Energy Transition)

Topic: LIFE-2021-CET-AUDITS Type of Action: LIFE-PJG

Proposal number: **101076459**

Proposal acronym: **EnergyEfficiency4SME**

Proposal title: **Accompanying SMEs in implementing energy efficiency measures**

D2.4 Set of recommendations for making the energy transition in SMEs

Summary

DESCRIPTION OF THE PROJECT

The project LIFE-2021-LIFE Clean Energy Transition EnergyEfficiency4SMEs has been structured with particular attention to ensuring that activities support both companies and their internal personnel in improving their competences and activate the implementation of energy efficiency improvements. The project consortium brings together essential actors—including local and regional authorities, energy agencies, foundations, and chambers of commerce and industry—who are directly involved as partners in project execution.

The initiative will concentrate its actions on selected NACE sectors considered highly relevant for energy impact and replicability:

- Accommodation and Food Services (NACE I55–I56.30)
- Food and beverage Manufacturing (NACE C10–C11.07)
- Metalworking and Fabricated Metal Products (NACE C24–C25.99)

The primary objectives and activities of the EE4SMEs project include:

- Identifying best practices from large enterprises and adapting them into actionable, cost-effective recommendations for SMEs in the targeted sectors;
- Developing practical tools to facilitate the energy transition within small and medium-sized businesses;
- Defining specific energy-saving actions and pinpointing areas where further technical studies, such as energy audits or feasibility assessments, may be required;
- Fostering a culture of sustainable energy management through awareness-raising initiatives that may lead to the adoption of formal energy management systems, based on the company's readiness;
- Delivering capacity-building activities and directly supporting the implementation of energy efficiency measures in SMEs;
- Conducting a comprehensive analysis of energy efficiency financing mechanisms tailored to the SME context.

PARTNERS

Organisation	Description
EUROCHAMBRES	Eurochambres coordinates the EE4SMEs project and is a business network acting both in Belgium and at EU level. Eurochambres leads a range of EU projects on sustainability and supporting the SMEs in entrepreneurship, skills, internationalisation and access to finance. The coordinator has a vast network made of EU national chambers and EU regional chambers therefore making it possible to incorporate and disseminate project results to national, regional, and local chambers of commerce in the 27 Member States.
CCI FRANCE	CCI France is the national body representing the network of French Chambers of Commerce and Industry (CCIs). It speaks on behalf of 120 regional and local CCIs, representing 3.8 million companies across the trade, industry, and services sectors. Acting at national, European, and international levels, CCI France engages with public authorities, international organizations, and key public and private stakeholders to promote and defend the interests of French businesses. Its core mission is to coordinate, support, and advise the CCIs in areas crucial to business development, including environmental and energy transitions, digital transformation, internationalization, training and education, as well as regional planning and infrastructure.
CCI of Nice-Côte-d'Azur	The Chamber of Commerce and Industry Nice Côte d'Azur (CCI NCA) is a public administrative institution (EPA) dedicated to supporting and representing the interests of businesses in the Alpes-Maritimes region. Governed by an assembly of 59 elected business leaders serving five-year terms, the CCI also includes associate members and technical advisors who contribute in an advisory capacity. Its mission is to advocate for the needs of companies in the commercial, industrial, and service sectors, while offering a range of services to facilitate their development. For instance,it offers a wide range of services tailored to support the growth, transition, and competitiveness of businesses in the Alpes-Maritimes. One of its key priorities is sustainability, with dedicated programs to support companies in their decarbonation efforts, such as energy transition. Additionally, the CCI manages key infrastructure and facilities that benefit the local economic ecosystem.
CCI of Bourgogne-Franche-Comté (BFC)	CCI BFC is one of the 13 regional Chambers of commerce and industry in France covering the Bourgogne Franche Comté region in eastern France.It is providing information and advisory services to companies – with a focus on SMEs – on several topics (internationalisation, digitalisation, innovation, sustainaibility…) In the field of environment protection, climate and energy transition, CCI BFC helps SMEs on several issues such as how to reduce their energy consumption for production, mobility matters…, how to better manage energy (ex: ISO 50001), how to benefit from renewable energies in particular photovoltaic panels, how to access public grants to invest in energy solutions. For that purpose CCI BFC works at regional and national levels with all specialized organizations and dedicated authorities (ex:: ADEME, Afnor, Conseil régional).

Organisation	Description
CCI NOUVELLE-AQUITAINE	The Nouvelle-Aquitaine Chamber of Commerce and Industry coordinates and supports the activities of the network of 13 Territorial Chambers of Commerce and Industry to provide services to enterprises. The CCI's initiatives are designed to help enterprises meet several challenges: competitiveness, social and environmental changes, skills development and attractiveness. The strength of the CCIs lies in the expertise and proximity of a certain number of individual business advisers who cover the whole region, on all the important subjects mentioned above. The CCI work in direct collaboration with national and regional business support partners - for sustainable development and energy matters, ADEME is our main partner.
CCI Auvergne Rhône-Alpes (ARA)	The Chamber of Commerce and Industry network is the leading local public economic network serving businesses and regions. The Auvergne-Rhône-Alpes Regional Chamber of Commerce and Industry represents the interests of industrial, commercial and service companies at the regional level, supports regional economic development and coordinates the activities of its 13 local Chambers of Commerce and Industry. This organisation makes it possible to support various public policies as closely as possible to the beneficiaries, in a comprehensive manner, with full regional coverage and a very high degree of proximity thanks to the historical roots of our expert advisors. The CCIR ARA is active in several key areas: - Ecological, digital and HR transitions: supporting businesses in their transformation. - International development: supporting exports via Team France Export. - Innovation and competitiveness: supporting innovative projects. - Training: managing apprenticeship training centres, schools and continuing education centres (more than 55,000 people trained per year). - Business creation, takeover and transfer: supporting project leaders (more than 50,000 in 2024). - Trade and tourism development: actions to boost the regions. - Regional development: participation in structural projects and management of economic infrastructure.
UCV – Unioncamere del Veneto	Unioncamere del Veneto (UCV) is the Association of the 5 Chambers of Commerce of Veneto region. Its main tasks are the coordination of the provincial Chambers, the design and implementation of activities in strict coordination with regional and local institutions, business associations, research centers and universities, in favour of economic development, SME's internationalization, consumer protection, fight of counterfeiting, quality insurance, market surveillance, IP protection etc.. Since 2008 UCV coordinates Friend Europe Consortium of Enterprise Europe Network (EEN), the consortium is composed of 13 partners of the Northeast of Italy *(mainly chambers of Commerce, Regional development Agencies, innovation Agencies and research Centers).* The Department staff has developed an excellent knowledge of EU institutions and programmes and thanks to the participation in EEN, it acquired specific skills in the field of *innovation support, internationalization services, research and innovation, green sector - environment, technology transfer and SME feedback.* The combination of these skills with the competences of the Chamber of Commerce offers a great synergy between the typical Chambers competences and the EEN services

Organisation	Description
	in the fields of Industry 4.0, digitalization, trademarks, patents, start up support, economic development promotion and internationalization.
Fondazione Fenice **Green Energy Park**	Fondazione Fenice Green Energy Park is an Italian non-profit foundation dedicated to promoting sustainable development, environmental education, and innovation. Located in Padua, Fondazione Fenice acts as a training and research center, fostering knowledge and skills in renewable energy, energy efficiency, and circular economy. Through educational programs, professional courses, and partnerships with universities and industries, the foundation supports the transition toward cleaner energy systems and smarter energy use. Its mission is to empower communities and future professionals to address climate challenges through the adoption of renewable technologies and energy-saving solutions.
CCI Genova	The Chamber of Commerce of Genoa is an autonomous public organisation operating at provincial level performing functions of general interest aimed at supporting the local business system and the development of the local economy with promotional, administrative and specific competences which promote the development of the local economy. Thanks to its structure, which includes the Special Agency WTC Genoa and the training agency CLP, CCI Genova is actively involved in supporting SMEs to perform a digital and green transition, particularly referring to energy efficiency and circular economy objectives. Considering the energy efficiency field, CCI Genoa cooperates with the regional government (Regione Liguria), the regional agencies and the regional and local Association System to counter the effects of the energy crisis, to assess the SMEs' energy efficiency status and to invest in the definition of Energy Communities involving local businesses, also organising informative workshops and training sessions for SMEs. CCI Genoa is also partner of some European projects supporting companies in improving the energy efficiency and the circularity of their economic activity and in raising their awareness of Green Public Procurement procedures and their benefits.
Azienda Speciale Riviere di Liguria (ASRL)	RIVIERE DI LIGURIA works for the development, competitiveness, innovation and economic promotion of SMEs and the region, with particular attention to local and regional stakeholders (trade associations, local authorities, consortia, etc.). It is a point of reference and contact for SMEs, to which it offers a wide range of support services, both institutional and non-institutional including: economic development, innovation and environment, digitalisation, promotion, fairs and events, internationalisation, business meetings, and access to financing. (P06) RIVIERE DI LIGURIA is a Special Agency of the Chamber of Commerce Riviere di Liguria, including the Provinces of Imperia, Savona and La Spezia. Riviere di Liguria has been a partner of the ALPS consortium (and of the Enterprise Europe Network) since 2019, when it formally replaced the former partner Unioncamere Liguria, due to the national reform of Chambers of Commerce. Riviere di Liguria is a public body originating from the Chamber of Commerce Riviere di Liguria, and its purpose is to provide services to support the activities and projects of the Chamber of Commerce, within the scope of the institutional aims of the organisation. It operates with its own charter, board of directors, budget and financial administration.

Organisation	Description
	Riviere di Liguria operates - as a direct emanation of the Chamber of Commerce - for the development, competitiveness, innovation and economic promotion of its territory and its SMEs, with particular attention to local and regional stakeholders (trade associations, local authorities, consortia, etc.). Riviere di Liguria specifically pursues the following aims: - organisation of regional and national events and exhibitions - participation in international trade fairs, in Italy and worldwide, with SME collectives - organisation of business meetings (BtoB or Matchmaking) - national and international trade missions - national and international partner search - information and assistance to SMEs including access to financing from European, national and regional funds - participation in European and national projects, both as partner and lead partner (LIFE, Interreg, Maritime, Alcotra, POR FESR, PSR, etc.) - activities, tasks and projects delegated by the Chamber of Commerce (institutional services, initiatives and events, European projects including Interreg, Maritime, FEAMPA, Alcotra, etc.), PID service Digital Enterprise Point - training and information. Special attention is paid to sustainability (energy and digital transition), innovation and the blue economy. Riviere di Liguria can guarantee links with regional professional associations, thus providing broader access to value-added services and complementarity.
Energy Institute for Businesses	The Energy Institute for Businesses (EIW) is a non-profit research institute that promotes energy efficiency, climate protection, and the transformation towards a sustainable future energy system, among others by initiatives, seminars and publications related to the increase of energy efficiency and renewable energy use in businesses, including energy management. EIW publishes studies and strategy papers related to the transition towards a sustainable future energy system and necessary framework conditions, further organizes trainings, capacity building activities and fosters exchange of experience (nationally and internationally) for businesses and business support organisations like the Chambers of Commerce and of Industry. EIW has also been involved in the evaluation of data for the development of sectorial energy efficiency indicators, it has further conducted several surveys on barriers and supporting factors for the implementation of energy efficiency measures in businesses. It has also published information materials for SMEs like brochures, factsheets and e-learning-materials – mainly on energy efficiency measures, on funding and financing programmes, and on good practice examples. It has also been part of several international training and capacity building projects for business support organisations and SMEs.
E7	e7 energy innovation & engineering, based in Vienna, is a private research and consulting firm specializing in energy efficiency, energy audits, and energy and climate policy advisory. The interdisciplinary team provides technical and strategic support to companies, public authorities, and municipalities, with a strong focus on optimizing energy use in buildings, industry, and infrastructure. e7 has several certified energy auditors under Austria's Energy Efficiency Act and promotes a practical approach that combines audits with the implementation of identified measures. In addition to technical consultancy, e7 plays an active role in policy development, particularly in the context of the EU Energy Efficiency Directive (taking part writing th Guidance note),

Organisation	Description
	where it supports ministries and institutions in shaping regulatory frameworks and translating EU goals into national strategies. Close collaboration with stakeholders—including ministries, industry, the Austrian Chamber of Commerce, and research networks—ensures that their solutions are both scientifically sound and aligned with real-world needs. e7 also contributes to EU and national demonstration projects, helping to develop innovative models and tools for the energy transition.
Wirtschaftskammer Tirol	Wirtschaftskammer Tirol, the Tyrol's Economic Chamber, represents the interests of its more than 45.000 active member businesses vis-à-vis policy makers, and supports them with different types of services like advice on legal (employment laws, customs formalities et al.), training centres (WIFI) for education and development of skills (both of entrepreneurs and staff), support with finding business partners and accessing international markets (WKT is also part of the Enterprise Europe Network) and information on new developments and trends, facilitation of exchange of experience and networking among businesses. With regards to energy efficiency, the main areas of experience are in providing energy audits for businesses, advice on energy measures and new technologies, providing advice on available subsidies and project finance, further providing Information and advice related to legal obligations (e.g. resulting from the energy efficiency directive) and the co-ordination and administration of subsidised energy and environmental consultancy services provided by external experts.
CCI CYPRUS	The Cyprus Chamber of Commerce and Industry (CCCI) is the largest and most influential business organization in Cyprus, representing over 8,000 enterprises and 120 professional associations across all sectors of the economy—commerce, industry, services, and tourism. CCCI plays a vital role in shaping economic and business policies in Cyprus. It participates in over 60 national and international committees, influencing trade regulations, labor policies, and economic development strategies. It provides members with specialized advice on green innovation, sustainability, and digital transformation, as well as trade and environmental policies, supporting SMEs and large enterprises in navigating regulatory frameworks. It is a key player in European and international business networks, among which the EUROCHAMBRES (Association of European Chambers of Commerce and Industry), International Chamber of Commerce (ICC), International Labour Organization (ILO), Assembly of Mediterranean Chambers of Commerce (ASCAME). It is also worthwhile to note that CCCI hosts and operates two EU support tools in Cyprus, the Enterprise Europe Network (EEN) and the European Digital Innovation Hubs Network (EDIH). DiGiNN (Cyprus's European Digital Innovation Hub, which helps businesses adopt AI, cybersecurity, and high-performance computing).
Cyprus Energy Agency (CEA)	The Cyprus Energy Agency (CEA) is an independent, non-governmental, non-profit organization, founded in 2009. CEA was co-funded by the European Commission, through the Programme "Intelligent Energy for Europe" and by the Cyprus Union of Communities, for its establishment and first three years of operation. CEA has become an information point for the local

Organisation	Description
	society, providing education and vocational training. It participates in projects in partnership with local, European, and international organisations, contributing to innovation, research, and sustainable development. It enhances the role of local authorities in sustainable energy planning, providing technical support for developing and implementing actions to mitigate and adapt to climate change. It supports the Covenant of Mayors for Climate & Energy initiative, and it has a vision of a just, inclusive, and climate resilient Cyprus, governed by the principles of sustainability. Up to today the Cyprus Energy Agency has participated in more than 70 EU/National projects that cover a wide range of topics, such as Climate change mitigation and adaptation, Energy efficiency, Just transition, Renewable energy sources, Circular economy, Education and awareness, Financing and project facilitation. CEA coordinates a 3.4 M€ funded project (eea and Norway grants) on youth employment with 10 international partners. CEA also leads a contract for Project Development Assistance (funded by the European Commission) to be provided to the Ministry of Education, Culture, Sport and Youth of Cyprus in order to trigger investments of 7.5 M € in upgrading 25 school buildings into Nearly Zero Energy Buildings. Since 2022, CEA coordinates and supports four investments approved for funding under the National Recovery and Resilience Plan of Cyprus, to promote energy transition and climate adaptation in local authorities, to tackle energy poverty for disabled people and to mainstream the installation of publicly accessible EV chargers.
The Energy & Water Agency (EWA)	The Energy & Water Agency is an organisation of the Government of Malta. Since starting in 2014, our mission has been to ensure the security, sustainability and affordability of energy and water in Malta. As a governmental agency, we formulate and coordinate the implementation of the Government's national policies for energy and water, as well as EU legislation for energy and water sustainability. We also act on laws and set in motion policies related to renewable energy, energy efficiency, water demand management, and the security of Malta's electricity, gas, and water supply. Through extensive modelling and research, we forecast Malta's energy and water demands and work to ensure energy and water are delivered across the country in an environmentally stable way.
Malta Business Bureau (MBB)	The Malta Business Bureau represents the Malta Chamber of Commerce, Enterprise and Industry and the Malta Hotels and Restaurants Association (MHRA) in Brussels and Malta. It does so by liaising directly with the European institutions, the Maltese Permanent Representation and with umbrella organisations such as Business Europe, EUROCHAMBRES and HOTREC on all policy and funding issues affecting Maltese business interests. One of the main tasks of the organisation is to provide information to the Maltese business community with regards to EU policy and legislation related to their operations, while also keep them up to date in the sphere of EU funding for business. The MBB also has vast experience in EU funding projects which bring together the EU vision and the interests of the Maltese business community. In addition, the MBB has experience in the field of business support, especially through its Enterprise Europe Network (EEN) service-provision. In Brussels, the organisation plays a key role in continuing to develop and strengthen the organisation's ties with its Pan-European networks and European partners. The MBB's technical experts make it possible for the organisation to thrive in

Organisation	Description
	its EU advocacy and policy work, continue following business-related EU policies and also make it possible to target legislative lobbying in Brussels with European legislators, allowing MBB to play an active role in the EU's legislative process.
CCI BULGARIA	The Bulgarian Chamber of Commerce and Industry (BCCI) is a nationally represented horizontal non-profit private NGO with over 58 000 associated member companies. The main role of BCCI is to assist, promote, represent and protect the business interests of its members. The activities and services of BCCI cover the whole territory of Bulgaria through its nationally represented membership and its network of 28 regional chambers. Through its membership in different European and international associations of chambers of commerce (such as International Organization of Employers, International Chamber of Commerce, Eurochambres), BCCI can disseminate information about the project to relevant stakeholders at international level. In its capacity as an officially recognised employer's organisation, BCCI is a social partner and participant in the tripartite dialogue with the right to initiate legislative changes. BCCI also has partnership agreements with 9 leading Bulgarian universities.
CCI ESTONIA	The Estonian Chamber of Commerce and Industry (ECCI) is the oldest and largest business representation organisation in Estonia, bringing together nearly 3,500 members—98% of them small and medium-sized enterprises. ECCI members generate over 40% of Estonia's total business turnover and taxes, and more than 85% of exports. The Chamber operates nationwide with regional offices in Tartu, Pärnu, Jõhvi, and Kuressaare, and its headquarters in Tallinn. ECCI's mission is to foster entrepreneurship by contributing actively to economic policy development and providing a wide range of business services. It is a trusted partner to the Parliament and government in shaping a business-friendly environment, and has coordinated the Enterprise Europe Network in Estonia from 2008 to 2025. In the field of energy and resource efficiency, ECCI has hands-on experience advocating for enterprises in policy discussions and supporting the development of national support measures. The Chamber actively raises awareness among businesses by distributing relevant information, organising trainings and awareness-raising events, and implementing international cooperation projects focused on energy efficiency in SMEs. This has strengthened ECCI's competence in driving practical and strategic improvements in energy performance across sectors
CCI Murcia	Public Law Corporation established as a collaborative body of public government. We represent more than 33.300 companies (including the self-employed, entrepreneurs, small and medium-sized enterprise and corporations) from all sectors of activity. Our mission is to be a consultant and collaborator organism between public administrations and private companies. The Chamber has a wide range of services adapted to the needs of Murcia's companies to promote their growth, consolidation, innovation and expansion. Our work is focused on a wide range of areas, all of them with the objective of support the local companies. We

Organisation	Description
	are specialized in different business areas such as: Internationalisation: advise, training and promotion; Commerce and Entrepreneurship; Training and employment; ICT, Innovation and Digitalization; Legalization of commercial documents; Environment and sustainability.
CCI Sevilla	**T**he Official Chamber of Commerce, Industry, Services and Navigation of Seville, created on June 13, 1886, aims to represent, promote and defend the general interests of Commerce, Industry and Navigation, and provide services to companies. In addition, it is set up as a consultative and collaborative body with the Public Administrations and it is presented as an institution that represents the general interests of the companies. There are many activities that the Chamber of Commerce develops to boost the growth of the economic activity of the province. Its goal is to be a meeting and information place for companies providing access to all its services. Mainly, it has 8 areas of activity: training, entrepreneurship, internationalisation, marketing, innovation, consulting, communication, management and administration.
CCI Terrassa	The Chamber of Commerce, Industry and Services of Terrassa was founded in 1886, making it the second oldest Chamber of Commerce in Spain. With more than a century of experience, it has continuously adapted to the evolving needs of the business community. The Chamber's main mission is to represent and defend the interests of companies in the Terrassa area, support economic development, and provide essential services such as training, internationalization support, guidance for new entrepreneurs, and business advisory. With an area of influence that includes approximately 32,000 companies, the Chamber is one of the most important in Catalonia, both in terms of the number of businesses represented and the economic significance of its territory. It is part of the national network of 88 public Chambers of Commerce in Spain, contributing to the country's economic competitiveness and acting as a key institutional player in fostering business growth and innovation.
CCI Valencia	Valencia Chamber of Commerce, Industry, Services and Shipping is a public, non-profit organization established by law in 1886. As a public body with a democratic structure and governance, it possesses its own legal personality and full capacity to act. As a public entity, the Chamber represents all the companies in the province of Valencia. Among its key functions are providing services and training to SMEs, fostering their competitiveness, and promoting innovation and technology transfer. Sustainability, circular economy, and energy are central pillars of Valencia CCI's activities. The Chamber works across these areas of sustainability by both encouraging concrete measures within companies and offering them training and information to support their transition.
Senercon	Senercon is an energy consultancy and software company located in Berlin. Senercon's energy experts are performing full certified energy audits at companies and developing online energy advising and monitoring tools that are used in the national climate protection

Organisation	Description
	campaign. Moreover, SEnercon developed the Impawatt platform which is used in several projects targeting SMEs.

CONTEXT

The EE4SMEs project addresses the critical need to improve energy efficiency within small and medium-sized enterprises (SMEs) in three strategic sectors of European Union:

- Accommodation and food services, which includes hotels, restaurants, catering services, and bars, the sector generated approximately €446 billion in revenue in 2021, with a value added of €203.6 billion and employing around 10.9 million people.
- Food and beverage manufacturing sector, encompassing food and beverage production such as meat processing, dairy, and beverages, with a revenue of approximately €1,000 billion in 2021, and a value added of €251 billion and employing around 16 million people.
- Metalworking and fabricated metal products, which includes the manufacturing of structural metal products, metal containers, and other fabricated metal products, the projected revenue for 2025 is approximately €657.4 billion, with an expected employment of 5 million people and a compound annual growth rate (CAGR) of 5.8% from 2019 to 2024.

These sectors must modernize to align with the latest advancements in industrial energy use. Energy efficiency will be crucial moving forward, especially given the rising energy costs and uncertainties and increasingly stringent environmental regulations. In addition to its economic and environmental benefits, enhancing energy performance is becoming an important social factor, as it boosts a company's appeal to sustainability-conscious consumers. The project seeks to support SMEs in this transformation by recognizing the significant, untapped energy-saving potential within the sector. Unlocking this potential requires increased competences, investments in energy efficiency and wider adoption of energy audit recommendations.

DESCRIPTION OF CHALLENGES TO ADOPT ENERGY EFFICIENCY FOR SMEs

Small and medium-sized enterprises (SMEs) encounter a complex and interrelated set of barriers when attempting to implement energy efficiency measures. One of the most critical challenges lies in the procedural complexity and administrative burden associated with energy-related initiatives. Long timelines, bureaucratic hurdles, and the difficulty of navigating incentive schemes or regulatory frameworks often discourage SMEs' entrepreneurs from actively pursuing energy efficiency improvements. These processes are rarely designed with smaller businesses in mind, which typically lack the dedicated personnel or in-house capacity to manage them effectively.

Equally significant is the limited availability of internal resources. Many SMEs operate with constrained financial and human capital, which if this is one of their strengths, on the other side it limits their ability to allocate staff time or budget toward energy management. In most cases, there is no internal figure specifically responsible for energy performance, resulting in a lack of structured monitoring and long-term strategic oversight. This absence of energy governance makes it difficult to maintain continuity in energy-saving actions or to adapt dynamically to consumption trends.

Another barrier that undermines implementation efforts is the difficulty many SMEs face in clearly communicating and demonstrating the value of energy efficiency—both internally to decision-makers and externally to clients or stakeholders. Although in many cases the benefits of energy efficiency far outweigh the economic effort required, this return is not always visible or easily quantifiable without proper tools, benchmarks, or technical support. As a result, energy-related investments are often seen as secondary compared to core business activities, especially when immediate cost savings are not obvious.

These primary challenges are compounded by other recurring factors such as limited access to capital, lack of technical knowledge, and the absence of economies of scale. In fragmented operational environments, where long-term planning is often sacrificed to day-to-day priorities, energy efficiency is rarely perceived as a strategic goal. Furthermore, the evolving nature of energy policy and the complexity of compliance requirements add a layer of uncertainty, further discouraging proactive engagement.

TRANSFERABLE METHODOLOGIES AND TOOLS OF THE PROJECT

This chapter 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. The key methodologies and tools include:

1. **Learning from Large Enterprises:** Adapting best practices and operational models from large enterprises to the specific needs of SMEs, enabling them to streamline operations and implement efficient energy management strategies. The project ran questionnaires and interviews that resulted in a list of indicators of most applicable measures.

2. **Energy Audits:** Using energy audits as an initial tool to raise awareness about energy efficiency within SMEs, helping them identify inefficiencies and uncover opportunities for improvement.

3. **Energy Performance Indicators (EPIs):** Employing EPIs and savings indicators to quantify the cost-benefit of different energy-saving measures, enabling SMEs to make informed decisions about energy-efficient investments.

4. **IMPAWATT Platform:** Leveraging the IMPAWATT platform, which consolidates best practices and European projects on energy efficiency, providing SMEs with valuable resources for learning and implementation.

5. **Training and Capacity-Building:** Offering targeted training sessions to SME personnel to foster a culture of energy efficiency within organizations, improving internal skills and knowledge.

6. **Consulting Services for Accessing Funding:** Providing consulting services to guide SMEs in accessing financial support for energy efficiency projects, ensuring they have the resources needed to implement energy-saving measures.

These methodologies and tools together established a comprehensive framework for SMEs that endures beyond the project's conclusion, empowering them to learn, adopt, and benefit about energy efficiency, strengthen their competitiveness, and actively contribute to broader sustainability goals.

1. LEARNING FROM LARGE ENTERPRISES

The selection of best practices to be transferred to SMEs presented in D2.3 (Selection of best practices suitable for transfer from large companies to SMEs) was based on a rigorous and structured methodology applied to identify and validate 26 energy efficiency measures, tailored to the three targeted NACE sectors. The data collected through company questionnaires were carefully analysed and benchmarked against scientific literature and expert insights. Building on this analysis,

a comprehensive set of energy performance indicators was developed to define relevant energy-efficient technologies and quantify potential energy savings across Northern, Central, and Southern Europe.

These indicators support decision-making by aligning measures with regional and sector-specific conditions. Each measure includes estimated energy savings (in % and kWh), cost per m² or kW, feasibility, and return on investment. As shown in the tables, the approach integrates the harmonized performance indicators developed in Work Package 2 with the identified energy efficiency measures, adapting them to the diverse climatic zones across Europe.

Measures are paired with case studies and minimum applicability criteria to enhance transferability. This framework complements D5.1 (Financing List) and links to regional financing tools. It set the foundation for the next project phase which involved detailed technical support and on-site audits presented in D3.2 (Energy Audit Reports and basic findings for the participating SMEs).

NACE SECTOR		Energy Efficiency Measure	First Set of Indicators														
			% of saved energy in South Europe	% of saved energy in Central Europe	% of saved energy in North Europe	% saved energy - measures climate independent	implementability	Cost		Energy saving in South Europe	Energy saving in Central Europe	Energy saving in North Europe	Energy saving independent on climate	Payback time in South Europe	Payback time in Central Europe	Payback time in North Europe	Payback time independent climate
								[€/m2]	[€/kW]	[kWh/m2]	[kWh/m2]	[kWh/m2]	[kWh/kW]	Years	Years	Years	Years
All sectors		PV cells	50%	38%	30%		medium	132,0		168,0	126,0	102,0		3,5	4,7	5,8	
Accomodation		BMS	15%	15%	15%		medium	50,0		4,5	4,0	5,0		11,0	13,0	10,0	
All sectors	Office	Led	60%	60%	60%		easy	24,0		19,0	25,3	41,7		5,0	3,8	2,3	
Accomodation		Led	60%	60%	60%		easy	5,0		2,0	2,0	2,0		2,0	2,0	2,0	
All sectors	Production zone	Led	60%	60%	60%		easy	21,5		17,0	22,7	37,3		5,0	3,8	2,3	
All sectors	Productive zone	Roof and walls	35%	35%	35%		medium	90,0		36,8	52,5	73,5		20,0	14,0	10,0	
All sectors	Buliding	Roof and walls + windows	40%	40%	40%		high	110,0		42,0	60,0	84,0		22,0	15,0	10,7	
Accomodation		Windows	15%	15%	15%		medium	45,0		19,5	24,5	34,0		21,0	14,0	10,0	
All sectors		Opaque envelope	45%	45%	45%		medium	65,0		40,0	70,0	100,0		15,0	8,0	5,7	
All sectors		All envelope	60%	60%	60%		medium	110,0		59,5	94,5	134,0		17,0	9,6	6,8	
All sectors		Solar thermal collectors	50%	50%	50%		medium	1300,0		700,0	550,0	450,0		9,4	12,0	14,7	
All sectors	Productive zone	Hybrid boilers	67%	47%	26%		easy	175,0		70,0	70,8	55,1		20,0	20,0	20,0	
All sectors	Office	Hybrid boilers	67%	47%	26%		easy	75,0		46,7	76,3	59,4		12,0	8,0	9,0	
Accomodation		Hybrid boilers	67%	47%	26%		easy	75,0		46,7	76,3	59,4		12,0	8,0	9,0	
Metal Work/ Food Industry	Production sites	Direct evaporation heat pumps	68%	65%	56%		easy	25,0		120,0	115,0	100,0		1,5	5,0	15,0	
All sectors		Inverter pumps				25%	easy		250,0				480,0				1,5
All sectors		Inverter fans				25%	easy		250,0				480,0				1,5
All sectors	Production site	Inverter compressors				15%	easy		250,0				230,0				4,0
All sectors	Production site	Heat recovery compressors				50%	medium		200,0				750,0				2,0
Food industry		Chillers				30%	easy		700,0				1000,0				7,0
Food industry		Heat pump & chillers (heat recovery)				80%	medium		850,0				2250,0				3,0
All sectors		Heat recovery ventilation	85%	85%	85%		medium	40,0		11,0	25,0	35,0		30,0	12,0	9,0	
All sectors		Electric vehicles				77%	easy		970,0				550,0				11,0
All sectors	Production site	Cogeneration	50%	50%	50%		medium	90,0		35,0	80,0	115,0		30,0	20,0	15,0	
All sectors		Green electricity			100%	easy		0,0									1,0
All sectors		Cosfi	5%	5%	5%	easy		80,0					100,0				1,5

NACE SECTOR		Energy Efficiency Measure	Second set of indicators
			Minumum Applicability Criteria
All sectors		PV cells	in tilted roofs South orientation
Accomodation		BMS	Integrate energy control with management of the hotel
All sectors	Office	Led	applicable in all the context
Accomodation		Led	applicable in all the context
All sectors	Production zone	Led	check production activity while working at height
All sectors	Productive zone	Roof and walls	timing for the works, space to locate the materials
All sectors	Buliding	Roof and walls + windows	timing for the works, space to locate the materials, presence of single glazings
Accomodation		Windows	presence of single glazings
All sectors		Opaque envelope	timing for the works, space to locate the materials
All sectors		All envelope	timing for the works, space to locate the materials, presence of single glazings
All sectors		Solar thermal collectors	check the amount of energy need for sanitary hot water
All sectors	Productive zone	Hybrid boilers	check the noise of the air to water heat pump
All sectors	Office	Hybrid boilers	site to locate the air to water heat pump, check the noise of the air to water heat pump
Accomodation		Hybrid boilers	site to locate the air to water heat pump, check the noise of the air to water heat pump
Metal Work/ Food Industry	Production sites	Direct evaporation heat pumps	check the noise of the air to water heat pump
All sectors		Inverter pumps	no particular limitation
All sectors		Inverter fans	no particular limitation
All sectors	Production site	Inverter compressors	no particular limitation
All sectors	Production site	Heat recovery compressors	check how to recovery the heat
Food industry		Chillers	no particular limitation
Food industry		Heat pump & chillers (heat recovery)	proper selection of temperatures for heating and cooling
All sectors		Heat recovery ventilation	check the feasibility of the heat recovery unit
All sectors		Electric vehicles	
All sectors	Production site	Cogeneration	check prices of elecrricity and gas. It is useful when heating and electricity demands are quite constant alolng the whole year
All sectors		Green electricity	check the costs of electricity
All sectors		Cosfi	if inverters on machiunes are present this technical solution is not relevant anymore

2. ENERGY AUDITS

The approach used to carry out the energy audits takes as a methodological reference the principles outlined in the UNI EN 16247 series (Parts 1–5), which define the requirements and best practices for conducting effective energy audits. In this context, the role of the energy auditor is not limited to the technical assessment of the company's energy consumption profile. Instead, the auditor is expected to develop a comprehensive understanding of the company's operational characteristics, enabling the delivery of tailored advisory services, particularly for SMEs.

This approach shifts the focus from merely identifying the current state of energy use to providing customized guidance on feasible and cost-effective improvement measures. The aim is to support companies not only in analysing their energy performance but also in making informed decisions about energy efficiency upgrades.

As highlighted in Deliverable D3.2, which summarizes the findings from the energy audits carried out, the following table presents the distribution of the 151 audits performed, exceeding the original target of 141. These audits are distributed across the three main NACE sectors identified in the project: 102 in the Accommodation and Food Services sector, 29 in the Food and beverage industry, and 19 in the Metalworking sector.

Country	Accomodation & Food Service	Agri-food	Metalworks
Belgium	N/A	-	-
France	17	2	10
Italy	10	5	3
Austria	25	-	-
Cyprus	3	2	-
Malta*	22	3	-
Bulgaria	5	12	3
Estonia	3	-	-
Spain	12	6	3
Germany	5	-	-
TOTAL	**102**	**30**	**19**

Each audit aimed to identify current consumption patterns, highlight inefficiencies, and propose targeted improvement measures. The approach combined site inspections, data analysis, and stakeholder interviews, ensuring that recommendations were tailored to the operational realities and constraints of each sector. This sector-specific focus allows for the development of scalable and replicable strategies to support the energy transition in SMEs.

The processed data yielded two distinct datasets:

1. Energy performance indicators (EnPIs)

2. Recommended economic and environmental measures to support SMEs.

3. EnPIs - Energy Performance Indicators

To ensure consistency and comparability across the energy audits conducted in different companies, standardized process indicators were used to normalize energy consumption data. These key Energy Performance Indicators were selected based on the specific operational characteristics of each sector, allowing for meaningful benchmarking.

As outlined in Deliverable D3.2, the indicators defined in Work Package 2 (WP2) of the project serve as a fundamental tool for conducting a quantitative analysis of potential energy savings. This analysis begins with an assessment of process characteristics, which are essential for establishing reference values and for aligning energy performance with actual production or service outputs. The use of normalized indicators enables a cross-company comparison that facilitates the identification of inefficiencies and the extraction of best practices. These findings form the basis for developing targeted and sector-specific energy-saving recommendations that are both technically grounded and economically relevant.

The energy audits generated Energy Performance Indicators for both buildings and processes, with average values calculated per country across the three NACE sectors. Buildings refer to audited premises, while processes cover sector-specific energy-consuming activities.

ENERGY PERFORMANCE INDICATORS - BUILDING	
INDICATOR	**UNIT**
OVERALL ANNUAL SPECIFIC CONSUMPTION	**KWh / m²**
HEATING ANNUAL SPECIFIC CONSUMPTION	**KWh / m² / HDD**
COOLING ANNUAL SPECIFIC CONSUMPTION	**KWh / m² / CDD**
LIGHTING ANNUAL SPECIFIC CONSUMPTION	**KWh / fixture**

ENERGY PERFORMANCE INDICATORS - PROCESSES	
Accommodation & Food services	
INDICATOR	**UNIT**
ANNUAL CONSUMPTION PER BOOKED ROOM	**KWh / room**
ANNUAL TOTAL CONSUMPTION PER COVER	**KWh / meal**
ANNUAL FUEL CONSUMPTION PER COVER	**KWh(oil) / meal**
ANNUAL CONSUMPTION PER AREA	**KWh / m²**
Food and beverage	
INDICATOR	**UNIT**

ANNUAL CONSUMPTION PER TON PRODUCE	**kWh / ton**
ANNUAL CONSUMPTION PER AREA	**KWh / m²**
Metal work	
INDICATOR	**UNIT**
ANNUAL CONSUMPTION PER TON PRODUCE	**kWh / ton**

4. ENERGY EFFICIENCY MEASURES

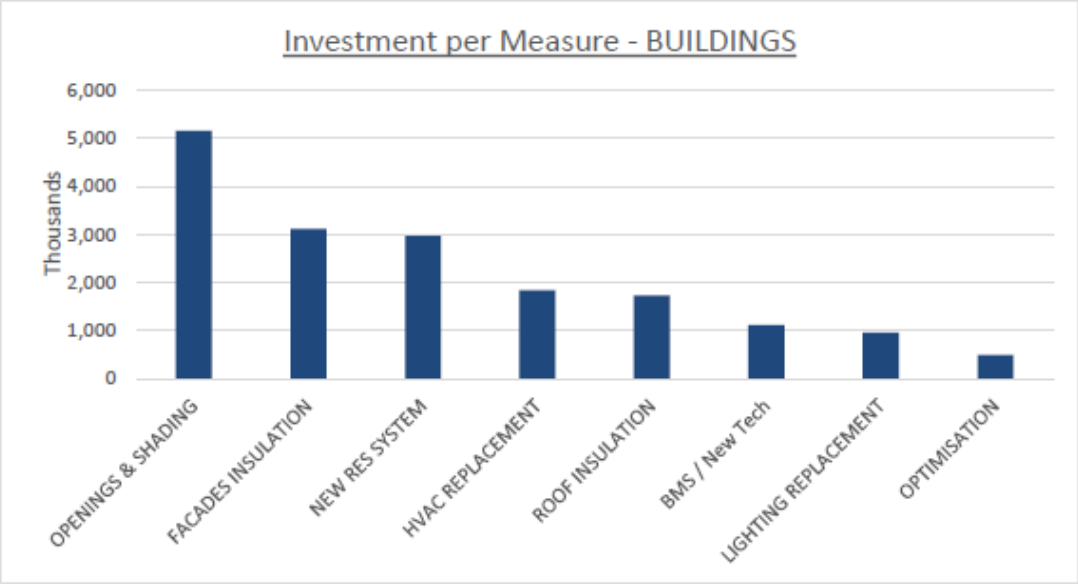
As part of the energy audits conducted across SMEs, a range of improvement measures were identified and evaluated from both a technical and economic standpoint.

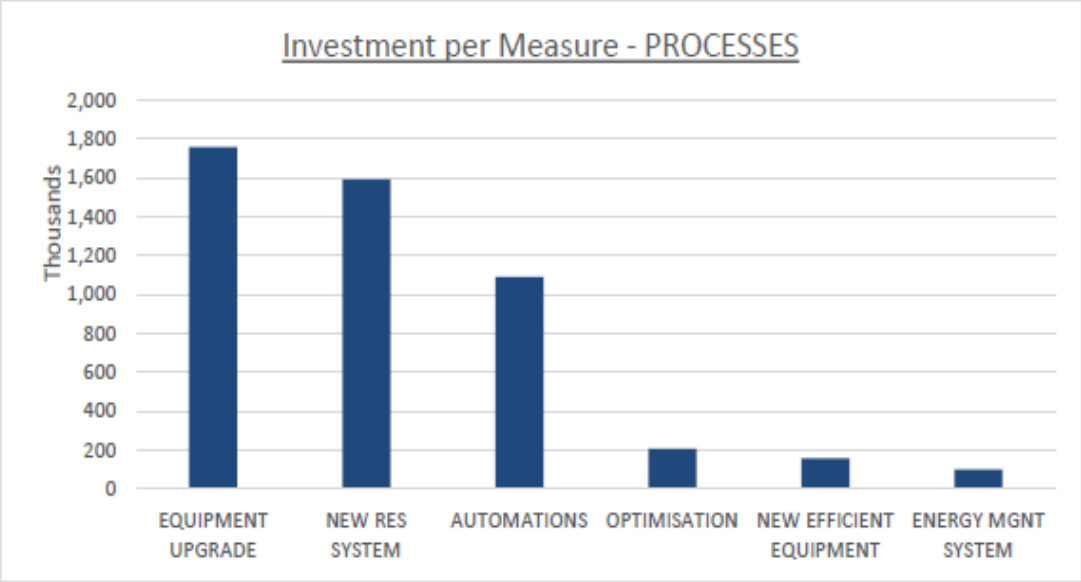
The economic assessments were carried out using an appropriate degree of approximation, as is often necessary in preliminary evaluations. The goal was to provide a realistic estimate of the payback period for each proposed energy efficiency measure, as well as an overall indication of the financial feasibility of the investments. Each intervention was classified under either building-related or process-related categories and assessed using key financial indicators:

- **Capital Cost (€)**: the initial investment required.
- **Net Present Value (NPV, €)**: the projected profitability of the investment.
- **Internal Rate of Return (IRR, %)**: the expected annual return.
- **Break-even Year**: the time required to recover the initial investment.

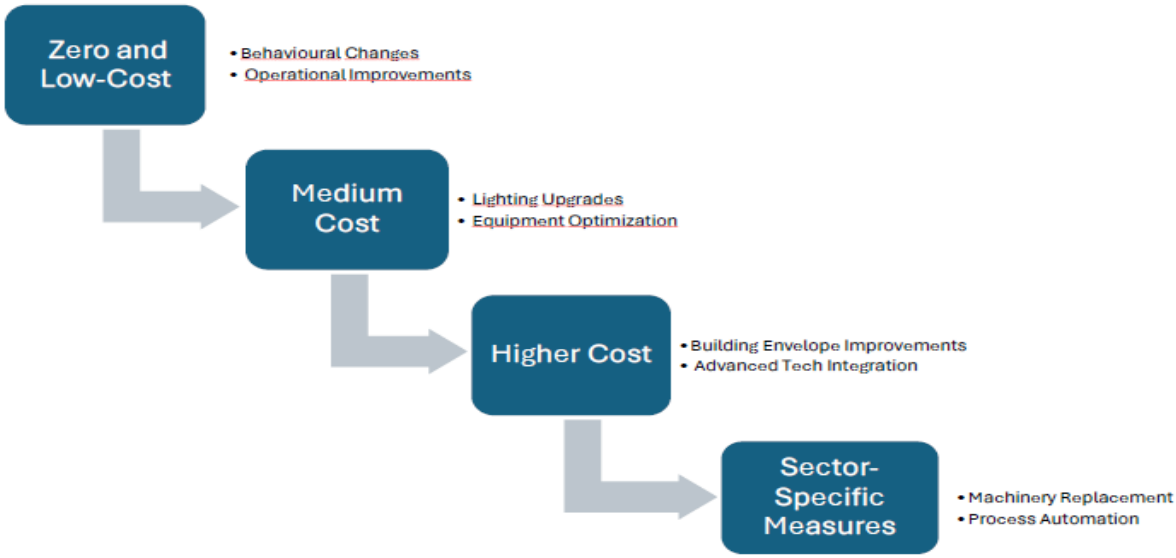
To ensure the reliability and contextual relevance of the analysis, energy costs were defined by calculating an average of current market prices specific to the geographic area in which each company operates. This approach allowed for a more accurate estimation of economic performance and payback dynamics, aligning financial projections with real-world conditions.

The following section presents the list of identified measures, as included in D3.3 (Summary report of the basic recommendations for energy upgrading per type of SME and the common Energy Performance Indicators), categorized by intervention area: building-related and process-related.





As a result of the data analysis, an executive summary was produced, outlining the recommended energy efficiency measures for each company. This analysis led to the identification of a set of improvement actions and best practices that can be feasibly implemented by the companies involved. This set of improvement actions has been also shared with training participants to raise awareness, foster knowledge transfer, and support the practical application of energy efficiency strategies within their respective organizations.



A more comprehensive evaluation also considers their environmental impact. For each EEM identified during the audit phase, primary energy savings were quantified in kilowatt-hours per year (kWh/y), based on the projected reduction in energy consumption. These values were then used to estimate the associated reduction in greenhouse gas emissions, expressed in metric tons of CO_2 equivalent per year (tCO_2/y).

The methodology adopted for evaluating the sustainability of energy efficiency measures is based on two key components:

1. Primary Energy Savings

- Derived from audit data for each proposed intervention.

- Expressed in **kWh/year**, accounting for the **energy vector** involved (e.g. electricity, gas).
- Reflects the energy avoided at the source, before conversion and distribution losses.

2. Emission Reduction Estimation

- Calculated by applying **standardized emission factors** to primary energy savings.
- Factors are sourced from recognized technical references (e.g. JRC Technical Reports).
- The method distinguishes between:
    - Measures impacting **electrical consumption** (e.g. lighting, motors, HVAC).
    - Measures affecting **thermal consumption** (e.g. boilers, insulation, heat recovery).

5. TRAINING AND CAPACITY BUILDING

The implementation of 68 targeted training courses across nine European countries represented a significant achievement in strengthening energy efficiency capacity within the SME sector. These initiatives engaged more than 1000 participants, equipping company managers with practical, actionable knowledge to improve energy performance and to adopt cost-effective energy efficiency measures. The trainings addressed not only technical solutions but also supported the development of skills for effective decision-making and investment planning, thereby increasing SMEs' readiness to implement energy-saving actions.

Each project partner adapted and customised the training content to align more closely with the specific needs and priorities of their local SME audience. This tailored approach proved high effectiveness in capturing the attention and interest of participating companies, ensuring strong relevance, engagement, and practical applicability. Furthermore, cooperation with Chambers of Commerce was a fundamental aspect for identifying tailored solutions for SMEs and facilitating their access to appropriate funding opportunities and advisory resources.

In parallel to the SMEs trainings, 11 training courses and 2 workshops were delivered specifically for Business Support Organisations. These activities enhanced the BSOs' capacity to serve as strategic multipliers, expanding the dissemination of knowledge and tools through their well-established advisory networks. These capacity-building activities have directly contributed to overcoming common barriers faced by SMEs, such as limited financial resources, insufficient human capacity, time constraints, uncertainty around return on investment, and complex administrative requirements. Providing targeted knowledge and fostering a supportive network of advisors and enablers, the project has laid the groundwork for SMEs to pursue their energy transition with greater confidence and autonomy.

Overall, this action demonstrated that, through well-structured, locally adapted training and collaborative partnerships with actors such as Chambers of Commerce and BSOs, it is possible to empower SMEs to contribute meaningfully to Europe's broader sustainability and competitiveness objectives.

6. THE IMPAWATT PLATFORM

As part of the project, the IMPAWATT portal (https://eu.impawatt.com/) was improved and adapted to the participating countries of the project. The IMPAWATT portal, developed under an EU Horizon 2020 initiative, is an e-learning and energy monitoring platform aimed at boosting energy efficiency and energy culture within industrial and service sectors. It offers more than 200 content elements for staff training, like e.g., detailed descriptions and presentations of energy efficiency measures, best practice factsheets, energy quizzes, check lists and calculation tools. Registered users get a pre-selection of content elements tailored to their sector and profile by a smart search engine. In addition to the content section, users can evaluate their energy status by a self-assessment tool, check financing opportunities by a financing tool and monitor their energy consumption and track energy efficiency measures implemented or planed and correlate them to the energy consumption.

The platform has been deployed in 12 EU countries, 10 of them were part of the EE4SME project. Within the EE4SME Project, it is specifically used for staff training and energy and EE measure monitoring.

7. ACCESS TO FINANCE

Securing financial resources to implement energy efficiency measures and renewable energy projects is a critical step that requires a well-structured and informed preliminary assessment. This initial phase enables companies to analyse their current energy profile, identify potential areas for improvement, and define realistic, measurable objectives. As part of the project, a dedicated advisory activity was carried out to support companies in accessing financial instruments, including public funding opportunities and incentive schemes. This specific type of consultancy aimed to guide SMEs through the complex procedures associated with grants and financing mechanisms, helping them to identify suitable calls, prepare applications, and optimize the use of available incentives to support their energy transition.

To support this process, the project developed a dedicated One Stop Help Desk service that compiles all currently available public funding opportunities and incentive programs and provide support for SMEs that are aiming to apply for energy efficiency funding opportunities. This tool was designed to raise awareness and stimulate engagement by providing clear, accessible information. It includes a database with essential details for each active funding call, such as eligibility criteria, technical requirements, application procedures, and the amount and nature of the incentives offered. In this context, chambers of commerce have played an important role in bridging the gap between companies and the complex world of public incentive mechanisms. Their institutional presence and proximity to the business community made them instrumental in promoting financial instruments and facilitating their uptake. Since the procedures to access these funds are often complex and time-consuming, the involvement of such intermediary bodies proved its benefit in helping SMEs overcome administrative barriers and engage more effectively with energy transition financing opportunities.

RECOMMENDATIONS

GENERAL

Energy efficiency measures offer a wide array of benefits that extend beyond the simple reduction of energy consumption. In addition to lowering operational costs, these interventions contribute to increased process reliability, enhanced environmental performance, and improved market positioning—especially as sustainability becomes a key criterion for customers, investors, and regulators.

For SMEs however, accessing these benefits is not always straightforward. Limited financial resources, lack of internal expertise, and organizational constraints often prevent smaller companies from initiating or managing energy upgrades on their own. In this context, one-on-one, personalized consultancy plays a crucial role. Tailored technical support helps guide companies through the decision-making process, identify the most suitable measures for their operational context, and access available incentive schemes. This direct assistance is essential to unlock energy-saving potential and ensure that even the smallest enterprises can take part in the energy transition.

In parallel, tools such as the IMPAWATT platform have demonstrated strong potential in supporting the creation of an internal energy culture within companies. By offering structured training materials, self-assessment tools, and technical resources, the platform empowers SMEs to build awareness and autonomy in managing energy performance.

Additionally, the energy performance indicators (EnPIs) developed under WP2 of the project serve as a valuable foundation for quantitative analysis. These indicators, based on process-specific characteristics, enable benchmarking, facilitate comparisons across companies, and support data-driven identification of energy-saving opportunities.

Finally, achieving widespread and lasting impact will require the strategic involvement and leadership of policy makers. Their role is fundamental in designing clear regulatory frameworks, ensuring the continuity of incentive mechanisms, and promoting targeted support schemes. Public institutions must act as enablers—coordinating efforts between private stakeholders, financial actors, and technical experts—to scale up energy efficiency across the productive sector and accelerate the decarbonization of the industrial economy.

SECTOR SPECIFIC

Accommodation & 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.

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.

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.

POLICY INTEGRATION

An application to policy can also be observed with the above project results. Below are examples of possible integration opportunities at EU-level and specific national and regional cases.

EU-level

At the EU level, flagship frameworks such as the European Green Deal and the Fit for 55 Package provide ambitious climate and energy targets which are highly relevant to the EE4SMEs project. These frameworks emphasize:

- Decarbonization and energy efficiency targets that can be directly supported through SME-focused measures.
- Legislative tools (e.g., energy taxation, emissions trading, and eco-design standards) that SMEs must increasingly navigate.

The European Commission and relevant DGs (e.g., DG CLIMA, DG ENER) should incorporate SME-oriented insights and digital tools (such as those developed in EE4SMEs) into energy efficiency frameworks and related funding programs. These tools can enhance SME participation and compliance across sectors.

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:

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

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.

Regional/Local level

At the local level, the project's methodology, such as offering tailored support to SMEs, identifying specific energy-saving opportunities, and building internal competencies, aligns closely with the strategic goals of many regional initiatives, enabling them to move from high-level objectives to measurable, company-level impacts.

In Austria, several strong regional initiatives provide ideal platforms for EE4SMEs integration. The *OÖ Energiesparverband* in Upper Austria, the *Umwelt Service Salzburg*, and Salzburg 2050, for example, already provide extensive consultation and funding for energy efficiency and renewable energy measures. EE4SMEs results can be used to extend these services by contributing replicable auditing methods and benchmark data for SMEs, particularly in energy-intensive sectors. In Tyrol, the project has already influenced hotel energy audits. These results could be scaled further by incorporating EE4SMEs tools into the Tyrolean Consultancy Fund, providing standardized, subsidized assessments for additional SME sectors.

In Styria, the *Wirtschaftsinitiative Nachhaltige Steiermark* (WIN) promotes sustainable corporate practices. By adapting EE4SMEs' energy audit templates and process maps into WIN's consultancy services, SMEs could benefit from more structured support in identifying resource-saving measures. The Lower Austrian Chamber of Commerce's Ecological Business Counselling could use EE4SMEs results to streamline its assessments across multiple environmental dimensions—particularly by incorporating the project's digital audit tools into its consulting workflow. Meanwhile*, OekoBusiness Wien*, as part of Vienna's Smart City Strategy, offers a natural partner for extending EE4SMEs into urban SME settings by leveraging its automation diagnostics and success cases to help companies achieve both sustainability and cost-saving targets.

In France, the *Fonds Chaleur* managed by the Nouvelle-Aquitaine region, already provides targeted funding for renewable heat generation technologies. The EE4SMEs project complements this by providing decision-making support and return-on-investment estimates through its audits, making it easier for SMEs to apply for and justify funding. Moreover, energy advisors trained within EE4SMEs can serve as intermediaries, helping regional authorities to promote uptake of this funding.

On the other hand, in Spain, the *Plan Valenciano Integrado de Energía y Cambio Climático* (PVIECC) and the IVACE 2024–2027 funding programme are designed to accelerate renewable energy deployment and industrial energy retrofitting. EE4SMEs directly complements these policies by identifying viable self-consumption options through audits, supporting SME participation in business energy communities (BECs), and training both technicians and managers. EE4SMEs case studies and tools can be added to IVACE's repository of best practices, helping businesses demonstrate project viability and unlock public support.

The regional cohesion plan of Liguria in Italy, focused on circular economy transitions, can equally benefit from EE4SMEs insights especially regarding how automation and digitalization contribute to energy and material efficiency.

In Malta, the EE4SMEs has formalised and enhanced the post-audit process, where SMEs obtain a clear understanding of the findings & recommendations noted in the energy audit, and technical advice & support is provided to enable SMEs move forward with any of the improvement opportunities. During the closing meeting expert advice is also given to SMEs to gain a good

awareness of the various funding opportunities. During the project seven SMEs have secured funding, and invested in low-carbon technologies, including solar thermal, PV panels, and heat pump technology.

Lastly, initiatives like the Sustainable Energy and Climate Action Plans (SECAPs) coordinated by the Cyprus Energy Agency already offer planning frameworks for local climate action. By incorporating EE4SMEs' tools and success metrics into the private sector component of SECAPs, municipalities can more effectively engage SMEs as partners in their climate targets.

Regional and local policy effectiveness could be enhanced by EE4SMEs results by operationalizing policy goals, improving SME access to funding, training local stakeholders, and fostering cross-regional learning through its catalogue of results and tools. The project's alignment with circular economy, self-consumption, and green transition goals makes it a vital asset for any region working on decarbonizing its SME base.