DEESME 2050

Developing Energy Efficiency Projects in SMEs for European 2050 targets

Report on implemented audits and EMS

Deliverable 3.1

Matthieu BOURGAIN, Michaël TOMA (MT Partenaires)

Co-funded by the European Union under Project n°101076386. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

Project Acronym	LIFE21-CET-AUDITS-DEESME 2050
Project Name	Developing Energy Efficiency Projects in SMEs for European 2050 targets
Project Coordinator	IEECP, Ivana Rogulj, ivana@ieecp.org
Project Duration	November 2022 - October 2025
Website	https://ieecp.org/projects/deesme2050/

Deliverable No.	3.1
Dissemination Level	Public
Work Package	WP3
Lead beneficiary	European Center for Quality
Author(s)	Matthieu BOURGAIN et Michaël TOMA (MT Partenaires)
Reviewed by	Dario Di Santo, FIRE
Date	23/09/2025
File Name	D3.1 - Report on implemented audits and EMS

Legal Notice

Published in 2025 by DEESME 2050.

Contents

1. Project Information

Since businesses represented about 37% of the EU's final energy consumption in 2022 (according to data from the 2024 edition of the EU statistical pocketbook), an effective action to promote energy efficiency among them is a priority both to improve competitiveness and to reduce GHG emissions. To accelerate the implementation of energy efficiency measures, the Energy Efficiency Directive introduced mandatory energy audits for non-SMEs and promoted them also across SMEs. Thanks to this policy and to high energy prices, also small and medium enterprises, depending on their energy intensity and technology level, are introducing energy auditing and the uptake of the measures suggested by the energy audits. However, some sectors are not in the primary focus of the auditing companies, and they do not consider energy as their major concern, also for lack of competences and resources.

Europe still plays a key role in the global furniture industry and with a market value of nearly EUR 100 billion, it is the second-largest furniture market in the world, and the most integrated one (over 80% of the demand is satisfied by EU production). Also, in the four Member States included as pilot countries in DEESME 2050, the furniture industry is among the most important industries.

Therefore, DEESME 2050 has identified this sector as important for the EU economy. In the 2020 annual report, the European Furniture Industry Confederation explicitly supports the climate-neutrality objectives of the European Green Deal and the transition to a circular economy. The furniture sector has 130,000 companies without counting the companies in the value chain that we are addressing as project target companies, it employs more than one million people and mostly involves SMEs.

Therefore, the general objective of DEESME 2050 project is to capacitate, assist and motivate companies to overcome the obstacles in energy efficiency measures uptake and sustainability advancement.

This deliverable describes the results of energy audits and/or the implementation of an energy management system using the ISO 50001 methodology, in the furniture production and related sectors. These actions follow the implementation of a WTA in the companies as described in deliverable D2.2.

The activities carried out with the companies, focus on the impact of energy efficiency measures implementation towards sustainability using EFRAG standards or other tools for ESG assessment linking Multiple Benefits triggered by efficiency

measures to ESG reporting requirements (partially responding to the CSRD obligations), as follows.

- Involving, supporting and accompanying a significant number of companies in the implementation of energy efficiency measures based on their level of readiness;
- Building capacities of the companies' staff at all working levels;
- Endorsing sustainability of the proposed actions through preparation of financing, standardization and replication, in cooperation with associations and policymakers;
- Supporting companies to achieve Carbon Neutrality status and integrating Multiple Benefits of energy efficiency into sustainability analysis;
- Evaluating the impact of energy efficiency measures implementation towards sustainability using EFRAG standards or other tools for ESG assessment linking Multiple Benefits triggered by efficiency measures to ESG reporting requirements (partially responding to the CSRD obligations).

The project is built on a strong consortium of academics, research organizations and consultancies from Belgium, Bulgaria, France, Italy, the Netherlands and Poland, namely: IEECP (NL, coordinator), FIRE (IT), SOGESCA (IT), MT PARTENAIRES (FR), ECQ (BG), KAPE (PL), EEIP (BE).

The project has received funding from the European Union's LIFE21 Programme for Environment and Climate Action under Grant Agreement No. 101076386.

2. Executive Summary

The DEESME 2050 project was launched to help small and medium-sized enterprises (SMEs) overcome barriers to energy efficiency (EE) and integrate sustainability practices aligned with EU climate neutrality goals.

This deliverable (D3.1) reports on the results of implemented energy audits and Energy Management Systems, using the ISO 50001 framework. These efforts followed Walk-Through Audits (WTAs) previously conducted under Deliverable 2.2 and targeted SMEs demonstrating readiness and commitment to adopt structured approaches for energy and sustainability improvements.

2.1 Methodology and Tools

The project engaged 60 companies through surveys and selected 30 per pilot country for WTAs. From these, 10 per country received in-depth energy audits or EMS implementation support. The methodology included:

- Audit and EMS templates: Standardized reporting frameworks (in national language and English) were developed to ensure consistent outputs.
- Training programs (Levels 2 & 3): Delivered in parallel with audits, these sessions deepened company staff understanding of the Multiple Benefits (MB) approach, ISO 50001 requirements.
- Documentation system: A generic ISO 50001-compliant set of documents was created to reduce barriers to EMS adoption.
- Evaluation tools: Attendance sheets and evaluation forms were deployed to measure training impact and participant satisfaction.

2.2 Results of Energy Management Systems (EMS)

A total of 12 companies implemented EMSs (10 in France, 2 in Bulgaria). Their motivations reflected a desire to structure continuous improvement processes beyond audits.

Key risks identified included:

- Long ROI periods for measures.
- Complications for tenant companies lacking control over building upgrades.
- Old building stock requiring full renovation.
- Limited human resources for EMS maintenance.

- Resistance to change and dependence on a small number of customers.

Opportunities identified were:

- Rising energy prices, which increased the attractiveness of efficiency investments.
- Regulatory drivers (decarbonization, CSRD, ESG).
- Customer demand for sustainability and CSR alignment.
- Strong leadership commitment in some firms.

Significant energy uses (SEUs) highlighted were heating, vehicle fleets, and lighting—each offering clear efficiency potential. Energy Performance Indicators (EPIs), such as kWh/degree-day for heating, kWh/100 km for vehicles, and kWh per unit of production, were developed to monitor progress.

EMS adoption yielded multiple benefits beyond energy savings, notably improved client relationships (loyalty, new market access, brand image) and enhanced employee satisfaction through better comfort and workplace engagement.

Internal audits revealed common non-conformities, including incomplete action plans, limited metering, poor documentation practices, and weak regulatory monitoring. However, strong management commitment and technical knowledge of processes were key strengths enabling companies to progress.

2.3 Results of Energy Audits

In parallel, 21 companies (6 in Poland, 10 in Italy, 5 in Bulgaria) underwent NF EN 16247-compliant energy audits, identifying 48 actions (2.3 per company).

Main findings:

- Focus areas: Heating (25%), renewables (23%), and ventilation (17%).
- Multiple Benefits: Carbon footprint reduction (29%), energy savings (20%), productivity and maintenance improvements (9% each).
- Energy savings potential: Average of 138,700 kWh/year per action.
- Investments: Averaged €78,600 per action, with 23% below €10,000 but 27% above €70,000.
- Return on investment: Average 7.2 years, with only 21.9% of actions below 3 years (the typical SME acceptance threshold). Without MB consideration, many measures risk rejection due to perceived long payback.

2.4 Conclusions

The DEESME 2050 project demonstrates the importance of structured approaches—via audits and ISO 50001 EMSs—in enabling SMEs to implement meaningful energy efficiency actions. While financial and organizational barriers persist, the project highlights how framing EE through Multiple Benefits—such as sustainability compliance, productivity gains, and customer satisfaction—can transform perceptions of energy investments from cost to opportunity.

In doing so, the project directly supports EU 2050 climate goals, helps SMEs align with ESG and CSRD reporting obligations, and strengthens their long-term competitiveness. The findings confirm that SMEs can integrate energy efficiency into broader sustainability strategies if provided with appropriate methodologies, capacity-building, and policy support.

3. Methodology

According to the DEESME 2050 proposal, out of the 60 companies contacted thanks to the survey conducted in T2.1, 30 companies per pilot country were offered a Walk-Through Audit (T.2.2 WTA). Among these companies, 10 per country have undergone an energy audit and/or implemented an energy management system in accordance with the ISO 50001 standard.

These companies have been targeted in WP2 due to their higher level of readiness and interest and have demonstrated their commitment by appointing a person to support the energy audit or management process with the necessary information on energy consumption, technologies used within the company and access to company premises and equipment for the purposes of the project. Companies have also kept detailed records of their energy consumption, energy supply, energy sources, etc.

In parallel with the energy audit and/or the implementation of an energy management system, advanced level 2 & 3 training courses in the DEESME multiple benefits approach have been carried out.

DEESME Approach Advanced sessions, aimed at explaining to companies:

- how the energy audit will be carried out;
- how Energy Management System based on ISO 50001 and combined with MB approach (scoping, data needed and indicators) will be developed and implemented;
- what will be required from them in terms of data.

At the start of the task, MT Partenaires created document templates for the energy audit and energy management system implementation reports.

In addition, MT Partenaires provided a standard documentation system to meet the requirements of ISO 50001 for companies wishing to implement an energy management system.

The following paragraphs briefly illustrate the content of each of the documents prepared to carry out and report on the activities and main results.

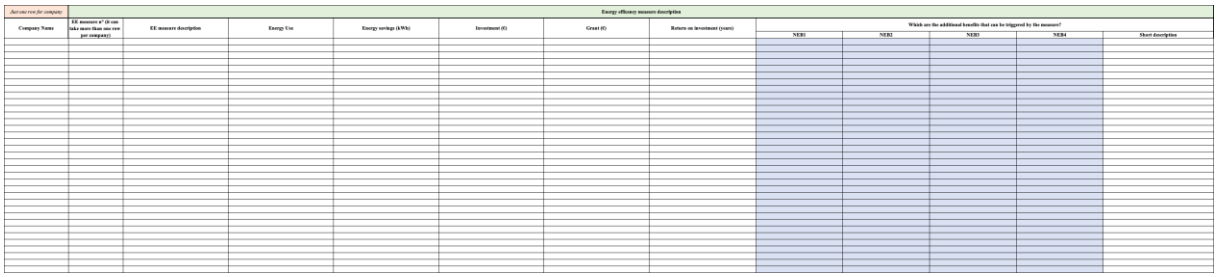
3.1 Energy audit report template

The energy audit reports produced by each partner are in national language and translated into English and have an homogeneous structure. The template for reporting was created by MT Partenaires and contains the following information:

1. Audit Summary
2. Executive Summary
3. Business profile
4. Result from Energy Analysis
    a. Energy consumption
    b. Actions
5. Result from Multiple Benefits Analysis

3.2 Energy audit report template (xls)

Finally, MT Partenaires produced an xls file that each partner completed (one row for each visited company energy efficiency measure). The Figure bellow reports a screenshot of the template.



3.3 Energy management system report template

The energy management system reports produced by each partner are in national language and translated into English and have an homogeneous structure. The template for reporting was created by MT Partenaires and contains the following information:

1. EMS Summary
2. Company profile
3. Organisational context
    a. Risk and opportunities
    b. Multiple Benefits
4. Energy Review
    a. Scope

b. Energy uses
c. Indicators

5. Energy Policy
6. EMS Actions plan
7. EMS Analysis

3.4 Energy management system report template (xls)

Finally, MT Partenaires produced an xls file that each partner completed (one column for each company). The Figure bellow reports a screenshot of the template.

		Company 1	Company 2	Company 3
Organizational context	Name of the company			
	Risk 1			
	Risk 2			
	Risk 3			
	Risk 4			
	Opportunity 1			
	Opportunity 2			
	Opportunity 3			
	Opportunity 4			
	NEB1			
	NEB2			
	NEB3			
	NEB4			
Energy review	Significant energy use 1			
	Significant energy use 2			
	Significant energy use 3			
	Significant energy use 4			
	Energy performance indicator 1			
	Energy performance indicator 2			
	Energy performance indicator 3			
	Energy performance indicator 4			
	NEB indicator 1			
	NEB indicator 2			
	NEB indicator 3			
	NEB indicator 4			
Energy policy	Objective 1			
	Objective 2			
	Objective 3			
	Objective 4			
EMS Analysis	Major non-compliance 1			
	Major non-compliance 2			
	Major non-compliance 3			
	Major non-compliance 4			
	Minor non-compliance 1			
	Minor non-compliance 2			
	Minor non-compliance 3			
	Minor non-compliance 4			
	Sensitive point 1			
	Sensitive point 2			
	Sensitive point 3			
	Sensitive point 4			
	Strong point 1			
	Strong point 2			
	Strong point 3			
	Strong point 4			
Commentary				

3.5 Energy management system templates

The implementation of an energy management system in accordance with the ISO 50001 standard requires the setting up of a documentation system. As this documentation system is an obstacle to the implementation of a management system for many companies, MT Partenaires has created a generic body of

documentation for companies in order to facilitate the implementation of an energy management system.

The documents created by MT-Partenaires are:

1. Organisational context
    a. Background
    b. Challenges, Risks and Opportunities
    c. SME Actors
    d. Interested Parties
    e. Multiples Benefits
2. Energy manual: This 28-page document covers all the paragraphs of ISO 50001 and describes the basic organisation of the company in relation to the requirements of the standard in each paragraph. This manual is essential for describing the chosen organisation and guaranteeing the sustainability of the energy management system over time.
3. Energy policy
4. Energy review
    a. Scope (Tertiary, Industry and Mobility)
    b. Energy consumption and use
    c. Significant energy uses (Indicators, areas for improvement and baseline energy situation)
5. Management review
6. Action plan (xls)
7. Data collection plan (xls)

3.6 Training (level 2&3 DEESME training)

Level 2 & 3 DEESME training were developed in the 40 companies where the energy audit or EMS were conducted.

Each partner adapted the training materials to the national context and carried out the training in parallel with the audit or implementation of an energy management system.

This training campaign targeted business managers and energy managers that have already developed an initial interest and possibly an initial intention to implement the DEESME multiple benefits approach.

The objective of this training campaign is to demonstrate the details of the DEESME multiple benefits approach, both at conceptual lever and implementation

level, provide knowledge and develop the capacity for the implementation of the DEESME multiple benefits approach.

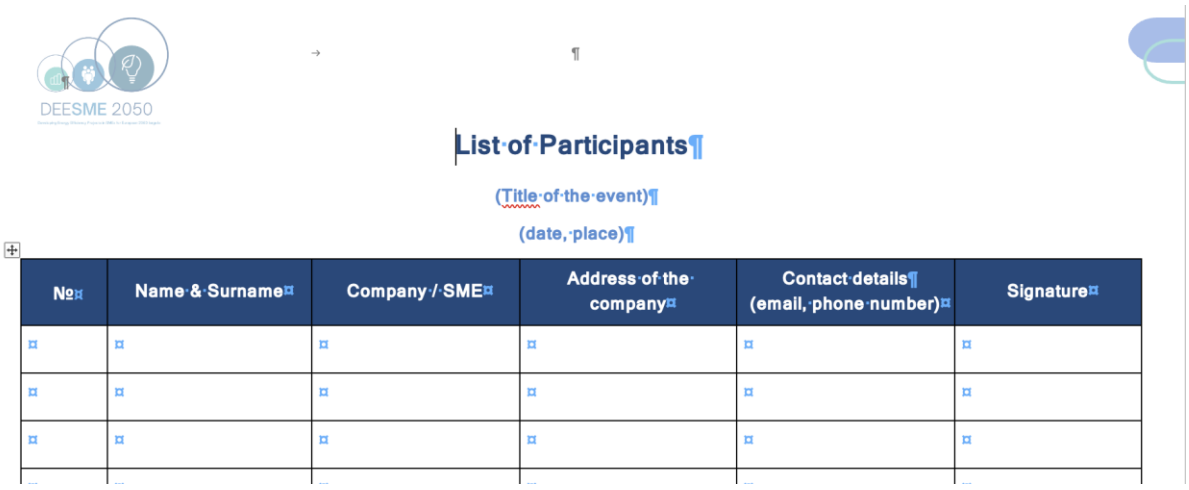
This training campaign was planned to take place in two sessions lasting between 2 and 4 hours each, depending on the background, the interest and the training needs of the participants.

The training level 2 & 3 includes the introduction to DEESME multiple benefits approach, presentations of the 4 stages (7 steps) of the approach and a presentation of the requirements of the development of the energy management system. After the end of each presentation a discussion followed with and questions from the participants.

These training campaign also served to prepare the participating SMEs in DEESME 2050 project for the implementation of the DEESME multiple benefits approach. Hence, the DEESME 2050 partners (who will serve as trainers) will have the opportunity to explain the procedures and the requirements for the implementation of the DEESME multiple benefits approach, especially with regard to the commitment of the owner/ the management board, the formation of the management team that will participate in the procedures, the human resources required, the information/ data required and the potential data sources, etc.

3.7 Signature list

A simple template was created by KAPE to gather evidence of participation to the training by requesting participants to sign the attendance list. Figure below shows a screenshot of the signature list:


DEESME 2050

List of Participants

(Title of the event)

(date, place)

№	Name & Surname	Company / SME	Address of the company	Contact details (email, phone number)	Signature

3.8 Evaluation form

A simple template was created by KAPE to gather feedback from participants on the training by requesting them to complete a simple evaluation form divided in 4 main sections.

1. General information

1.1 Name of the company	
1.2 Participant position	☐Owner ☐Management ☐Energy manager or energy expert ☐Other technical personnel ☐Other financial personnel ☐Other ……..

2. Topic of the training

2.1 Did you know about the Multiple Benefits approach before training?	☐ Yes ☐ No ☐ Yes, but only from the first training Approach Basics
2.2 I have already applied the concept of Multiple Benefits of energy efficiency in my company.	☐ Yes ☐ No
2.3 If yes, please describe how it was applied and what results it brought:	

3. Specific steps of the Training

	1	2	3	4	5
3.1 The presentation was presented in an accessible and easy-to-understand way					
3.2 The presentation contained valuable and useful information					
3.3 I will use the presented methodology in my company					
3.4 Additional observations					

4. Feedback about the concept of the Training

	1	2	3	4	5

4.1 The training allowed me to learn more about energy efficiency and the multiple benefits					
4.2 The training supplemented the knowledge before the audit					
4.3 The scope of the training was appropriate and sufficient					
4.4 The application of the presented methodology will allow me to increase energy savings in my company					
4.5 I would recommend participation in this training to other entrepreneurs					
4.6 Additional observations					

4. WTA main results

4.1 Perimeter

All the results of the conducted WTAs have been analysed to gain an insight of the most commonly perceived companies' needs and the solutions (opportunities) they are already adopting or that are suggested by the auditors in the four pilot countries. Moreover, the MB of EEM have been introduced to companies to prompt them to act for EEM implementation.

Country	N° of companies	N° of analyzed measures	% SME	% Micro	% Large
Poland	2	3	100	0	0
Italy	11	40	45	45	10
France	28	80	68	32	0
Bulgaria	29	91	n.d.	n.d.	n.d.
Tot.	**70**	**214**	n.d.	n.d.	n.d.

The previous table summarizes data from companies across four European countries, detailing the number of companies, the number of analysed measures, and size distribution (SMEs, Micro, and Large). In Poland, 2 companies did the WTA, 3 energy efficiency measures were identified. The companies are all SMEs. Italy conducted 11 WTAs and 40 energy efficiency measures were identified. In Italy 45% of the companies were SMEs, 45% Micro, and 10% Large companies. France conducted 28 WTAs identified 80 energy efficiency measures. The companies were 68% SMEs and 32% Micro Enterprises. Bulgaria did 29 WTAs and identified 91 energy efficiency measures. Category-size data is unavailable.

Overall, 70 companies and 214 measures were analysed.

4.2 Conclusions

Overall, 70 companies benefited from the DEESME2050 Walk-Through Audits (WTAs). Most companies were SMEs or Micro Enterprises, and a total of 214 energy efficiency measures (EEMs) were identified. The assessments pointed to understand companies' needs, propose tailored energy efficiency solutions, and highlight the Multiple Benefits (MBs) associated with implementing of these measures.

The majority of companies (40.2%) identified improving overall performance as their top priority and key need. Energy efficiency and cost reduction were the

second priority at 25.3%. Sustainability and environmental considerations accounted for 16.1% of the needs, influenced by regulatory pressures such as the Corporate Sustainability Reporting Directive (CSRD).

Common energy efficiency measures proposed included photovoltaic (PV) installations, which were the most frequent at 16.8%. Insulation and building envelope improvements accounted for 15.2%, aiming to reduce energy loss and enhance building thermal performance. Energy management and monitoring systems represented 14.7% of the measures. Other measures involved heating and cooling system improvements, air handling and ventilation enhancements, and upgrades the compressed air systems, lighting, and specific equipment.

The implementation of these measures was analysed to identify the significant Multiple Benefits triggered by each intervention. As expected, reduced energy consumption was the most important benefit at 29.8%. Reduced carbon footprint accounted for 23.4%, aligning with environmental sustainability goals and compliance with regulations like the CSRD. Operational improvements were also significant, including improved maintenance (11.9%), increased employee satisfaction (8%), and increased productivity (7.6%).

The role of DEESME2050 auditors was critical in identifying energy efficiency opportunities. Auditors proposed 73.5% of the measures. This remarks their essential contribution, especially for companies lacking in internal expertise. Companies themselves had planned 18.5% of the measures.

Country-specific perceptions revealed variations in priorities and challenges. In France, 28 companies participated, with needs focusing on energy transition and consumption (57.1%) and business development (39.3%). Italian companies, 11, placed the highest emphasis on energy and environmental needs (45.5%), reflecting a strong interest to sustainability. Bulgaria's 29 companies primarily focused on operational efficiency improvements (75%), with financial constraints being a significant barrier to implementation.

Challenges to implementing energy efficiency measures included financial constraints, especially for SMEs and micro-enterprises. However, the identification of Multiple Benefits provided a convincing reason for considering energy efficiency as a strategic investment rather than just an operational cost.

To summarize, while companies recognize the importance of energy efficiency, it is often not their top priority. To better align with EU 2050 energy targets, it is essential to enhance awareness of the long-term benefits of comprehensive energy strategies, strengthen regulatory incentives, facilitate access to expert

guidance, promote integrated energy management systems, and cultivate an organizational culture that values energy efficiency as a driver of competitiveness and sustainability.

4.3 EMS main results

4.3.1 Perimeter

Depending on the context and maturity of the companies that took part in the WTA, they had the option of carrying out an energy audit or implementing an energy management system based on the principles of the ISO 50001 standard. This paragraph describes the main results of the companies that implemented an EMS.

The table below shows the number of companies involved and their nationality.

Country	Number of companies supported in implementing an EMS
Poland	0
Italy	0
France	10
Bulgaria	2
Total	**12**

We can see that French companies had a very strong desire to structure themselves and implement a continuous improvement approach to energy performance rather than carrying out an energy audit to identify savings actions. In fact, these companies have already identified actions to be implemented and are seeking to control their energy consumption.

This trend is also found in Bulgaria, although to a lesser extent.

4.3.2 Organizational context

Defining the organisational context is a fundamental step in implementing an ISO 50001-compliant Energy Management System (EMS). This enables the organisation to understand the internal and external factors that can influence its energy performance and management system. By identifying these factors - such as legal requirements, stakeholder expectations, economic, technological or climatic conditions - the organisation is better prepared to guide its energy strategy in a relevant and sustainable way. The organisational context also forms the basis for identifying risks and opportunities, setting energy objectives and planning the corresponding actions. A clear analysis of the context makes it easier to identify priorities, such as energy-intensive processes or areas with

high potential for improvement. By integrating this understanding into EMS planning, the company can ensure that its actions are aligned with its real challenges, strengthening its resilience, regulatory compliance and overall performance.

Risks

Among the companies supported in implementing an Energy Management System (EMS) as part of the DEESME 2050 project, the main risk identified concerns the return on investment time, which is considered to be too long for certain energy efficiency actions. This is a major factor holding back the decision to commit, particularly in SMEs, where financial resources are often limited. As a result, many companies restrict the scope of the measures they implement, concentrating solely on quick wins. This situation considerably limits the overall impact of the EMS on the sustainable reduction of energy consumption.

The second risk most frequently raised by some of the companies supported as part of the DEESME 2050 project concerns their status as tenants of the buildings they occupy. This situation complicates the implementation of energy efficiency measures, as some of the necessary investments - particularly those relating to the building envelope or technical systems - are the responsibility of the owner. It is not always easy to convince the landlord to commit to expenditure that will primarily benefit the tenant. This separation of interests slows down the implementation of structural improvements that are essential if energy consumption is to be significantly reduced, thus limiting the overall effectiveness of the EMS.

The third most identified risk is the obsolescence of buildings, particularly very old ones that will require complete renovation in the next decade. This prospect is holding companies back from taking action in the short term, as they are reluctant to invest in one-off energy improvements to infrastructures that will be radically transformed or replaced. Although these buildings represent a real opportunity to significantly improve energy performance, this can only be achieved in the long term. This time lag between the immediate need to reduce consumption and the planning of major works limits the effectiveness of the EMS in the short and medium term.

Another risk frequently identified within the companies supported as part of the DEESME 2050 project is the limited human resources available. As the majority of these structures are SMEs, they generally do not have staff specifically dedicated to energy issues. Energy management is often entrusted to one person with multiple responsibilities - production, maintenance, safety, regulatory

compliance, etc. - which leads to an overload of work. - which leads to work overload. This lack of time and specialisation can compromise the company's ability to run and develop the Energy Management System on a long-term basis, thereby limiting its effectiveness in the long term.

Other risks have also been identified, albeit less generally, by the companies involved in the DEESME 2050 project. Change management is a major issue, with some teams expressing resistance to integrating new practices or changing operational habits, which can slow down the implementation of the EMS. Dependence on a single or dominant customer is also perceived as a risk: in the event of a change in demand or loss of contract, the company's priorities can quickly change, relegating energy issues to second place. Climate change is a factor that is increasingly considered, particularly in relation to heat waves or extreme events that can have an impact on energy requirements (e.g. air conditioning) and the stability of processes. Finally, the risk of breakdowns, particularly in energy-intensive or ageing equipment, is also mentioned, as it can lead to temporary over-consumption, business interruptions or delays in optimisation projects. Although less frequent, these risks underline the importance of agile, integrated management of the EMS.

Opportunities

One of the most significant opportunities identified in the DEESME 2050 project is the rise in energy prices. This increase, which is weighing more and more heavily on operating costs, acts as a powerful lever for internal mobilisation, particularly with general management and shareholders. This economic context makes energy efficiency actions more attractive by improving their profitability and sometimes shortening the payback period. In many of the companies we have worked with, this financial pressure has been a decisive factor in launching or accelerating energy efficiency initiatives that had previously been put off. Rising costs are also encouraging better control of consumption, more rigorous monitoring of usage, and the exploration of alternative solutions such as self-consumption or waste heat recovery. As a result, this tense energy context is creating a wider awareness and encouraging the integration of energy issues into the company's strategic decisions. In short, the rise in energy prices, while restrictive, represents a major opportunity to advance energy management systems and accelerate the energy transition of SMEs.

Regulatory compliance also represents a major opportunity identified by the companies supported as part of the DEESME 2050 project. Recent changes in legislation, particularly with regard to decarbonisation obligations, extra-financial

reporting and carbon footprint reduction, are encouraging companies to structure their energy approach. Reducing energy consumption is becoming a concrete way of meeting these new requirements, while anticipating future regulatory constraints. For some companies, the implementation of an Energy Management System is a way of structuring actions in favour of decarbonisation, ensuring better monitoring of direct and indirect emissions (scope 1 and 2) and rigorously demonstrating their commitment to the energy transition. This dynamic is all the more powerful because principals, investors and end customers are increasingly incorporating these criteria into their choices. Regulatory compliance is no longer seen as a constraint, but as a factor in competitiveness and added value. Against this backdrop, the EMS is emerging as a relevant tool for helping companies adapt to a constantly changing regulatory framework.

Another significant opportunity identified as part of the DEESME 2050 project is customers' growing awareness of sustainable development issues. More and more clients, particularly in industrial value chains, are incorporating environmental criteria into their supplier selection and evaluation processes. For the companies we work with, this customer expectation translates into positive pressure to take steps to reduce their environmental impact, particularly through better control of their energy consumption. Implementing an Energy Management System (EMS) becomes a concrete way of meeting these expectations, by providing guarantees of continuous improvement in energy performance. This strengthens the company's credibility, improves its brand image, and can even be a competitive advantage when tenders are invited. In some cases, environmental commitment becomes a decisive differentiating criterion for retaining or winning contracts. In this way, taking into account the expectations of customers who are sensitive to sustainable development is proving to be a powerful driver for deploying an effective and sustainable EMS.

To a lesser extent, but nonetheless significant, some of the companies involved in the DEESME 2050 project emphasised the strong support of their management, driven by a desire on the part of shareholders to reduce the environmental impact of their business. This strategic direction is part of an overall Corporate Social Responsibility (CSR) approach, in which energy performance is seen as a concrete lever for continuous improvement. In this context, the implementation of an Energy Management System is facilitated by a clear commitment on the part of governance, which lends legitimacy to the project and mobilises teams around shared objectives. This support can take the form of the allocation of resources, the inclusion of the subject on steering committees, or the inclusion of energy issues in medium and long-term strategy. Although this opportunity

does not always exist, it is a significant factor in success when the company's environmental ambitions are taken to the highest level.

Multiple benefits

As part of the DEESME 2050 project, the multiple benefits approach aims to identify not only the direct energy savings, but also the indirect positive effects generated by the actions implemented. Among these non-energy benefits, reducing the carbon footprint is the one that has been unanimously recognised by all the companies supported. Indeed, any action aimed at reducing energy consumption - whether it involves optimising processes, modernising equipment or improving behaviour - automatically leads to a reduction in greenhouse gas emissions. This benefit, which can be measured and valorised, is fully in line with the objectives of ecological transition supported by public policies. It is also an asset for companies in their environmental communications, CSR reporting and response to customer demands. In this way, reducing the carbon footprint becomes an additional driver to reinforce the strategic interest of energy efficiency actions within organisations

One of the recurring multiple benefits observed as part of the DEESME 2050 project concerns the improvement of customer relations, with three multiple benefits frequently cited: increased customer loyalty, the acquisition of new customers, and improved customer satisfaction.

First of all, the companies being supported are finding that by committing to a structured approach to energy performance, they are boosting the confidence of their existing customers. The latter, who are increasingly attentive to environmental criteria, value their suppliers' commitment to reducing their carbon footprint and optimising resources. This alignment of values creates a more lasting commercial relationship, fostering loyalty over time.

Secondly, this commitment also gives many companies access to new markets. In some sectors, energy efficiency and carbon footprint transparency have become essential selection criteria in calls for tender. By implementing an Energy Management System, companies can improve their competitive position and meet more stringent customer requirements, or even enter previously inaccessible value chains.

Finally, the approach has a positive effect on customer satisfaction. The company's image - proactive, responsible and forward-looking - is perceived very favourably. Some customers have welcomed these initiatives, which have helped to strengthen commercial ties and enhance the value of the brand. These three benefits

demonstrate that energy efficiency, beyond its technical and financial effects, also plays a strategic role in strengthening customer relations and creating long-term value.

A multiple benefit sometimes mentioned by the companies supported as part of the DEESME 2050 project is the improvement in employee satisfaction. Implementing an Energy Management System can have a positive impact on working conditions, particularly through actions aimed at improving thermal comfort, air quality and lighting in production areas. These improvements, although originally aimed at energy performance, are often perceived positively by employees, who see them as a sign of attention from their management. This recognition of their well-being helps to boost their motivation and commitment, and more generally, the quality of the social climate within the company. In addition, involving employees in the energy process, by raising their awareness or giving them an active role, reinforces their sense of belonging and contribution to a meaningful collective project. So, even if this effect is not systematic, the improvement in employee satisfaction appears to be a real non-energy benefit, reinforcing the overall relevance of the EMS.

4.3.3 Energy review

The energy review is a key stage in the ISO 50001 standard, which provides a detailed understanding of how energy is used within the organisation. It consists of analysing consumption data, identifying energy sources and uses, as well as the variables influencing consumption. The aim is to identify opportunities for improving energy performance, based on a factual and structured approach. A key element of this review is the identification of significant energy uses (SEUs), i.e. equipment, processes or systems that consume a significant proportion of energy or offer a high potential for improvement. These SEUs become the priority targets of the Energy Management System, both for monitoring and for implementing corrective actions or investments. Without this identification, the organisation runs the risk of dispersing its efforts or missing out on major savings levers. The energy review therefore provides the technical basis for defining performance indicators and targets, and directing resources where they will have the greatest impact.

Significant energy use

For 50% of the companies involved in the DEESME 2050 project, heating was identified as a significant energy use. This finding is particularly marked in the woodworking sector, where heating requirements are amplified by the presence of air extraction systems that are essential to the smooth running of the

production process. These systems constantly renew the air to eliminate suspended wood dust, which is essential both to guarantee the safety of employees - by avoiding the risk of inhaling harmful particles - and to comply with current health and safety standards. However, this constant renewal of air results in significant heat loss, forcing heating systems to work harder to maintain a stable indoor temperature. The thermal comfort of employees therefore becomes a crucial issue, not only for their well-being, but also to maintain productivity and reduce absenteeism.

Faced with this problem, several avenues for improvement can be explored as part of an Energy Management System (EMS). It is possible, for example, to optimise ventilation systems by using heat recovery systems on extracted air to preheat the fresh air that is blown in. Improving the thermal insulation of buildings, sectorising heating zones according to actual needs, and using intelligent control systems are all actions that can help to reduce consumption while maintaining a high level of comfort for teams. By identifying heating as a significant energy use, we can target these actions as a priority and maximise their energy, economic and human impact.

Another significant energy use (SEU) frequently identified as part of the DEESME 2050 project is the vehicle fleet, particularly for companies involved in transport, delivery or travel to worksites or customers. This result often came as a surprise to the companies involved, who had underestimated the share of fuel in their overall energy consumption. In fact energy used for travel - whether diesel, petrol or even electricity in some cases - can account for a significant, even dominant share in some sectors. This new awareness has revealed significant scope for progress. A number of avenues for improvement have been identified: educating drivers about eco-driving can significantly reduce fuel consumption without major investment; better vehicle maintenance (tyre pressure, filters, oil changes) also helps to optimise fuel efficiency; finally, the gradual transition to less polluting vehicles, whether hybrid, electric or low-emission, represents a longer-term opportunity to reduce the company's energy and carbon footprint over the long term. The identification of vehicles as an ESU means that this issue can be integrated into the overall management of the EMS, where it was sometimes totally absent from the initial considerations.

Finally, lighting was identified as the third most frequent significant energy use (SEU) among the companies supported as part of the DEESME 2050 project. Although its share of total energy consumption is generally low - rarely more than 10% - it almost always has a high potential for improvement. Many companies still have obsolete, inefficient lighting systems that can easily be

replaced by energy-efficient LED solutions. Installing presence detectors and automatic regulation systems can also optimise lighting times and avoid unnecessary consumption, particularly in low-traffic areas such as transit or logistics zones. In addition to energy savings, lighting initiatives also contribute to improving the visual comfort of employees and enhancing safety in work areas, making them a relevant lever in a multiple-benefit approach. So, despite its moderate energy weight, lighting remains a strategic area to integrate into the Energy Management System, both for its rapid profitability and for its positive effects on working conditions.

Energy performance indicator

Energy performance indicators (EPIs) play an essential role in the management and effectiveness of an ISO 50001-compliant Energy Management System. They make it possible to objectively measure, monitor and evaluate changes in energy performance over time. By providing clear, quantifiable data, ECIs help the company to check whether the actions implemented are producing the expected effects, to detect any drift, and to steer decisions towards the most strategic energy uses. These indicators can relate to overall energy consumption, but also to targeted items such as significant energy uses (heating, processes, vehicles, etc.). They must be relevant, comparable over time, and correlated with influential variables (such as production, weather or occupancy of premises) in order to accurately reflect actual performance. A good command of EPIs also makes it possible to mobilise teams around concrete objectives, justify investments and meet the requirements of stakeholders (customers, shareholders, authorities). In short, energy performance indicators are a key tool for structuring, managing and continuously improving a company's energy strategy.

As part of the DEESME 2050 project, the energy performance indicators (EPIs) most used by the companies supported were chosen to reflect the main significant energy uses in a relevant and consistent way. These EPIs make it possible not only to monitor consumption, but above all to relate it to influential variables, to obtain a reliable reading of actual energy performance, regardless of variations in activity or context.

For heating, the most used indicator is kWh per UDD (Unified Degree Day). This indicator makes it possible to analyse heating-related energy consumption in terms of actual heating requirements, which are themselves directly dependent on climatic conditions. UDDs are indices calculated from the difference between a reference temperature (generally 18°C for heating) and the average daily outside temperature. The higher the UDT, the greater the heating requirement.

By relating energy consumption to these DJUs, the company can assess whether its consumption is evolving in a manner consistent with the severity of the winter, and identify any deviations independently of climatic fluctuations. This indicator is particularly useful in companies where heating represents a significant energy use, such as in the wood sector, where air extraction systems increase heating requirements.

For vehicles, the most relevant KPI is kWh/100 km, which tracks the energy consumption of business travel as a function of distance travelled. This unit, inspired by practices in the automotive sector, makes it easier to compare over time and between different vehicles or drivers. It can also be used to assess the impact of actions such as eco-driving, fleet renewal or improved maintenance. By correlating the energy consumed with the actual kilometres travelled, companies can identify abnormal deviations, detect energy-guzzling behaviour, and then take targeted action to optimise its use.

Finally, one of the most widely used, cross-cutting indicators is kWh per unit of production, which can be defined in several ways depending on the company's activity: kWh per hour of operation, per turnover, per quantity produced. This KPI enables energy consumption to be directly related to the actual level of activity. It is particularly useful for avoiding misinterpretations: an increase in consumption is not necessarily a bad signal if it is linked to an increase in production. Conversely, stable consumption despite a drop in activity may indicate a loss of energy efficiency. This indicator therefore provides an adjusted view of performance, taking into account the operational fluctuations specific to the company.

To sum up, these KPIs - kWh/DJU, kWh/100 km and kWh/production unit - are essential tools in the ISO 50001 approach. They make it possible to monitor energy performance in detail, detect discrepancies, reward progress and embed an energy culture in day-to-day management practices. Although they require rigorous data collection, their implementation is a powerful lever for continuous improvement, in line with the objectives of the DEESME 2050 project.

Multiple benefits

As part of the multiple benefits approach applied to the DEESME 2050 project, the analysis of energy uses is not limited to kWh consumption alone, but extends to the assessment of their positive non-energy spin-offs. As the main benefit identified is the reduction of the carbon footprint, this can be measured simply by converting energy consumption (expressed in kWh) into equivalent CO_2 emissions, using emission factors adapted to each energy source (electricity, gas,

fuels, etc.). This makes it possible to objectify the environmental impact of the actions implemented and to concretely value the efforts made in terms of decarbonisation. For other benefits, such as improving employee satisfaction, qualitative and quantitative indicators can be mobilised: internal surveys can be used to gather feedback from teams, while monitoring changes in the absenteeism rate can provide a more objective indication of well-being at work. Finally, to assess the effects on customer relations - another benefit that is regularly mentioned - it is relevant to analyse the change in sales linked to new customers acquired or those who have renewed their order. This cross-referencing of energy performance and multiple benefits enables the scope of the ISO 50001 approach to be broadened and its strategic contribution to be demonstrated in concrete terms, over and above energy gains alone.

4.3.4 Energy policy

As a fundamental requirement of ISO 50001, the energy policy forms the basis of the Energy Management System (EMS). It formalises management's commitment to continuously improving the organisation's energy performance. This policy sets a clear and coherent course, aligned with the company's context, its challenges and the expectations of interested parties (customers, shareholders, authorities, employees, etc.).

The challenges of the energy policy are manifold. At a strategic level, it reflects the company's desire to control consumption, reduce operating costs and limit its environmental impact, particularly in terms of reducing greenhouse gas emissions. It also strengthens regulatory compliance and prepares the company for future legal requirements, which are increasingly focused on energy efficiency and decarbonisation.

The energy policy also plays a role in internal mobilisation: it serves as a reference for defining energy objectives, directing resources and involving all stakeholders in a collective approach. By clearly communicating the commitments made (e.g. continuous improvement, provision of resources, inclusion in investment decisions), it creates a framework that gives meaning to everyone's actions. Finally, a well-defined and visible policy contributes to the company's responsible image and credibility in the eyes of its customers, partners and investors.

In short, the energy policy is much more than a formal document: it is a strategic tool that guides, unites and commits the organisation to a sustainable energy performance trajectory.

Setting one or more quantified energy performance targets is an integral part of energy policy, in line with the requirements of ISO 50001. For the SMEs supported as part of the DEESME 2050 project, this exercise proved particularly tricky. The majority of these companies have only just embarked on a structured approach to energy management and still have only a partial view of their uses, their potential for improvement, and the real impact of the actions envisaged. In this context, it can be difficult to set an objective that is realistic, achievable and meaningful. Some companies have therefore opted for caution, setting modest targets - around 1.5% energy savings by 2030 - so as not to commit to results they cannot guarantee at this stage. On the other hand, other organisations, which are more advanced or more strategically committed, have opted for more ambitious targets, reaching up to 15% reduction in consumption over the same period. This diversity clearly illustrates the need to adapt targets to the specific context of each company, its level of energy maturity and its capacity for action. The most important thing is that the objective, whatever it may be, should be clear, measurable and supported by management, as it provides a central reference point for guiding the implementation of the EMS and measuring the progress made.

4.3.5 EMS analysis

The internal audit plays a central role in the management and continuous improvement of an ISO 50001-compliant Energy Management System (EMS). It is a structured and objective assessment tool, making it possible to measure the maturity of the system, to identify any non-conformities in relation to the requirements of the standard or the processes defined internally, and also to highlight the strengths and good practices already in place

As part of the DEESME 2050 project, the internal audit is also a key opportunity to assess the company's progress in its energy strategy, in particular by measuring its level of structuring, the involvement of stakeholders, the relevance of performance indicators and the effectiveness of the action plan. By detecting both weaknesses that need to be corrected and strengths that need to be consolidated, the internal audit feeds into the management review and contributes to the dynamic of continuous improvement that lies at the heart of the ISO 50001 standard. It is an invaluable management tool for ensuring the robustness, consistency and evolution of the EMS over time.

Non-compliance

As part of the DEESME 2050 project, although each of the companies being supported has its own specific characteristics linked to its size, sector of activity

or level of energy maturity, a number of recurring non-compliances were observed during the internal audits. These findings reveal weaknesses common to many SMEs in the implementation of their Energy Management System (EMS), and constitute priority levers for improvement to ensure compliance with the ISO 50001 standard.

The first non-compliance frequently encountered concerns the action plan, which is often limited or only partially completed. While companies generally manage to identify relevant actions to improve their energy performance, they find it more difficult to estimate the expected gains in figures, or to monitor and measure the actual gains after implementation. The lack of a suitable methodology or tools makes this stage complex, limiting the company's ability to effectively manage its results and prioritise its efforts.

Another notable point of difference concerns the metering plan. In many SMEs, consumption monitoring is based solely on global billing meters, with no specific instrumentation for each significant energy use (heating, process, lighting, etc.) or functional area. Although this approach is sufficient for a general overview, it does not allow for fine-tuned management or rapid detection of deviations. It also limits our ability to produce relevant performance indicators tailored to operational needs.

The documentation system is also a frequent weakness. In small organisations, the culture of a formalised management system is not deeply rooted, and limited human resources make it difficult to put in place and regularly update the documentation required by the standard: procedures, records, analyses, reports, etc. This situation complicates traceability, the capitalisation of knowledge and the maintenance of the EMS over time.

Finally, regulatory monitoring is often absent or inactive. Few companies have a structured process for regularly keeping abreast of legal and regulatory developments in the fields of energy and the environment. This shortcoming can lead to a risk of non-compliance with applicable requirements, but it can also deprive the company of opportunities linked to aid schemes or favourable changes in the regulatory framework.

These findings do not call into question the commitment of companies, but they do highlight the structural difficulties encountered by many SMEs in fully implementing an ISO 50001-compliant EMS. The support offered as part of the DEESME 2050 project is aimed precisely at bridging these gaps, by providing methodological, technical and organisational support tailored to their realities.

Strong points

It is equally important to highlight the strengths observed in the companies supported as part of the DEESME 2050 project, which demonstrate the solidity of certain foundations on which the implementation of the Energy Management System (EMS) is based. Although each company is unique in its structure, organisation and level of maturity, a number of positive trends have emerged.

The first major strength is management commitment. In the vast majority of cases, senior management actively supports the energy performance initiative, often in conjunction with a voluntary CSR (Corporate Social Responsibility) strategy that has already been initiated. This commitment translates into a clear desire to reduce the company's environmental footprint, optimise resources and meet the growing expectations of customers and partners in terms of sustainability. Management plays a driving role: it legitimises the approach, facilitates the mobilisation of teams and, in some cases, allocates resources to implement the actions identified. This support at the highest level is a key success factor in the deployment of the EMS.

The second strength lies in the teams' excellent command of their industrial facilities. Although they do not always have a formalised management system, the companies demonstrate a great deal of technical and pragmatic knowledge of their facilities, processes and operational constraints. This on-the-ground expertise means they can quickly identify the energy uses that have the greatest impact, target realistic and effective actions, and react quickly if things go wrong. This direct link between the technical teams and the reality of energy consumption is a considerable asset in the drive for continuous improvement.

To sum up, despite certain structural non-conformities linked to the specific characteristics of SMEs, the companies supported as part of the DEESME 2050 project have solid assets: committed management and a mastered technical approach. These strengths, combined with appropriate support, enable them to build a relevant, effective EMS that is tailored to their operational reality.

4.3.6 EMS conclusion

The DEESME 2050 project has enabled the support of numerous SMEs in the implementation of an Energy Management System (EnMS) in accordance with the ISO 50001 standard, through a pragmatic approach tailored to their specificities. This support has shed light on the challenges, barriers, opportunities,

and benefits associated with integrating energy performance into a company's strategy.

Among the main risks identified, the most common is a perceived long return on investment, which limits the implementation of concrete actions. In addition, the status of being a tenant makes investment decisions more complex when they depend on building owners. Other frequently encountered barriers include older buildings nearing end-of-life, limited internal human resources dedicated to energy issues, and difficulties related to change management or external uncertainties (climate conditions, client dependence, equipment failures).

At the same time, several major opportunities were identified, with the rising cost of energy being the most significant, encouraging shareholders and leadership to invest in energy-saving actions. Regulatory compliance, client expectations regarding sustainability, and strong support from company leadership—often within a broader CSR (Corporate Social Responsibility) strategy—are also key drivers of EnMS adoption.

The DEESME 2050 approach also incorporates a multiple benefits perspective, going beyond energy savings alone. The reduction of carbon footprint was identified by 100% of supported companies, and other frequently cited benefits include improved customer relationships (loyalty, acquisition, satisfaction), employee satisfaction, and an enhanced brand image.

From a technical standpoint, the most common significant energy uses (SEUs) identified were heating, vehicles, and lighting, each offering notable improvement potential in relation to comfort, safety, or emissions. The energy review and implementation of tailored Energy Performance Indicators (EnPIs) (such as kWh/HDD for heating, kWh/100 km for vehicles, and kWh per production unit) allowed for a better understanding of energy consumption and a more accurate correlation with business activity levels.

Analysing the multiple benefits associated with SEUs—such as converting consumption to CO_2 equivalent, monitoring absenteeism trends, or analysing sales related to client loyalty or acquisition—further strengthens the value of the EnMS approach.

Lastly, internal audits helped identify frequent non-conformities, particularly regarding the action plan, metering, documentation, and regulatory watch, while also highlighting key strengths, such as top management commitment and technical mastery of industrial processes.

In conclusion, the DEESME 2050 project has demonstrated that an EnMS can be a powerful tool to structure an effective energy strategy within SMEs, provided their specific constraints are taken into account. It also shows that beyond energy savings, improving energy performance contributes to the overall transformation of the company on environmental, social, and economic levels.

4.4 Energy Audit main results

4.4.1 Perimeter

Depending on the context and maturity of the companies that took part in the WTA, they had the option of carrying out an energy audit or implementing an energy management system based on the principles of the ISO 50001 standard. This paragraph describes the main results of the companies that have carried out an energy audit.

The table below shows the number of companies involved and their nationality.

Country	Number of companies that have carried out an energy audit
Poland	6
Italy	10
France	0
Bulgaria	5
Total	**21**

4.4.2 Principle of the energy audit

An energy audit, in accordance with the NF EN 16247 standard, is a structured approach aimed at thoroughly analysing the energy consumption of a site, building, or set of processes in order to identify the most relevant energy-saving opportunities, both technically and economically. It is an essential tool for any organization seeking to engage in energy efficiency initiatives, whether for environmental, economic, or regulatory reasons.

The NF EN 16247 standard, which defines the minimum requirements for a high-quality energy audit, specifies the following key steps:

- Audit preparation: defining the scope, collecting historical data (bills, meter readings, contracts…), identifying key stakeholders
- On-site work: technical visits, operational observations, measurements, and interviews with staff
- Energy analysis: modelling energy consumption, identifying significant energy uses, detecting losses and inefficiencies
- Improvement proposals: prioritizing energy-saving actions with quantified estimates of savings (kWh, CO_2, euros), investment costs, and payback periods

An energy audit is therefore not merely a snapshot of consumption: it provides a detailed understanding of energy behaviours, highlights the levers for continuous improvement, and contributes to embedding an energy-conscious culture within the company. When conducted according to the NF EN 16247 standard, it ensures rigor, traceability, transparency, and credibility of the recommendations, thereby supporting sound decision-making and facilitating access to public subsidies or financing where applicable.

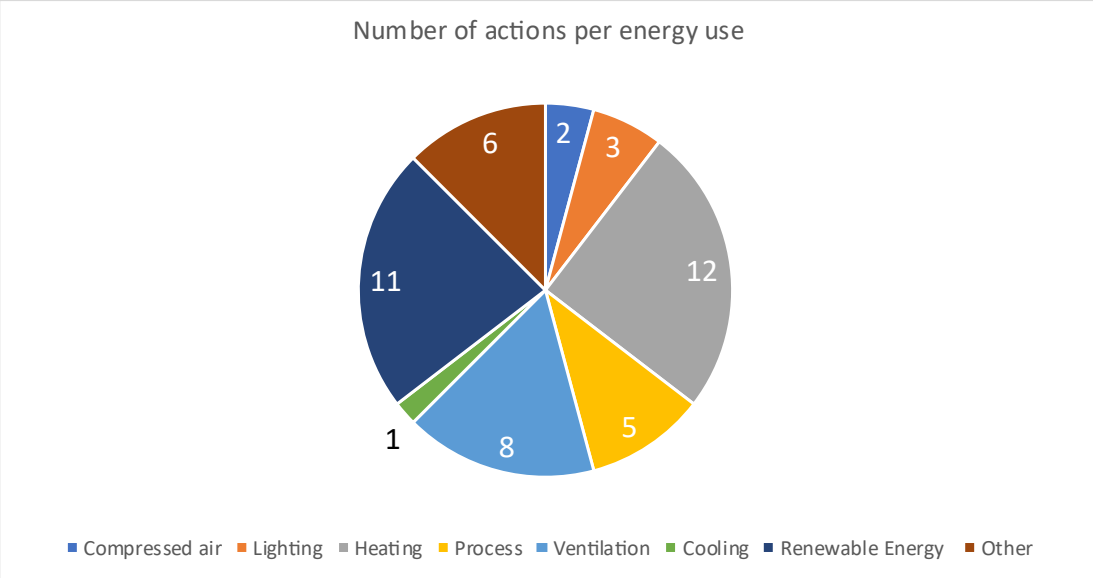
Audit report: a formal document enabling the organization to make informed decisions.

4.4.3 Main results

Following the audit of 21 companies, 48 actions were identified, an average of 2.3 actions per company.

The energy uses for which the most actions were identified are : heating (25%), renewable energy (23%) and ventilation (17%).

This is logical, as heating and ventilation represent one of the main areas of consumption due to the requirement to extract air during the process.

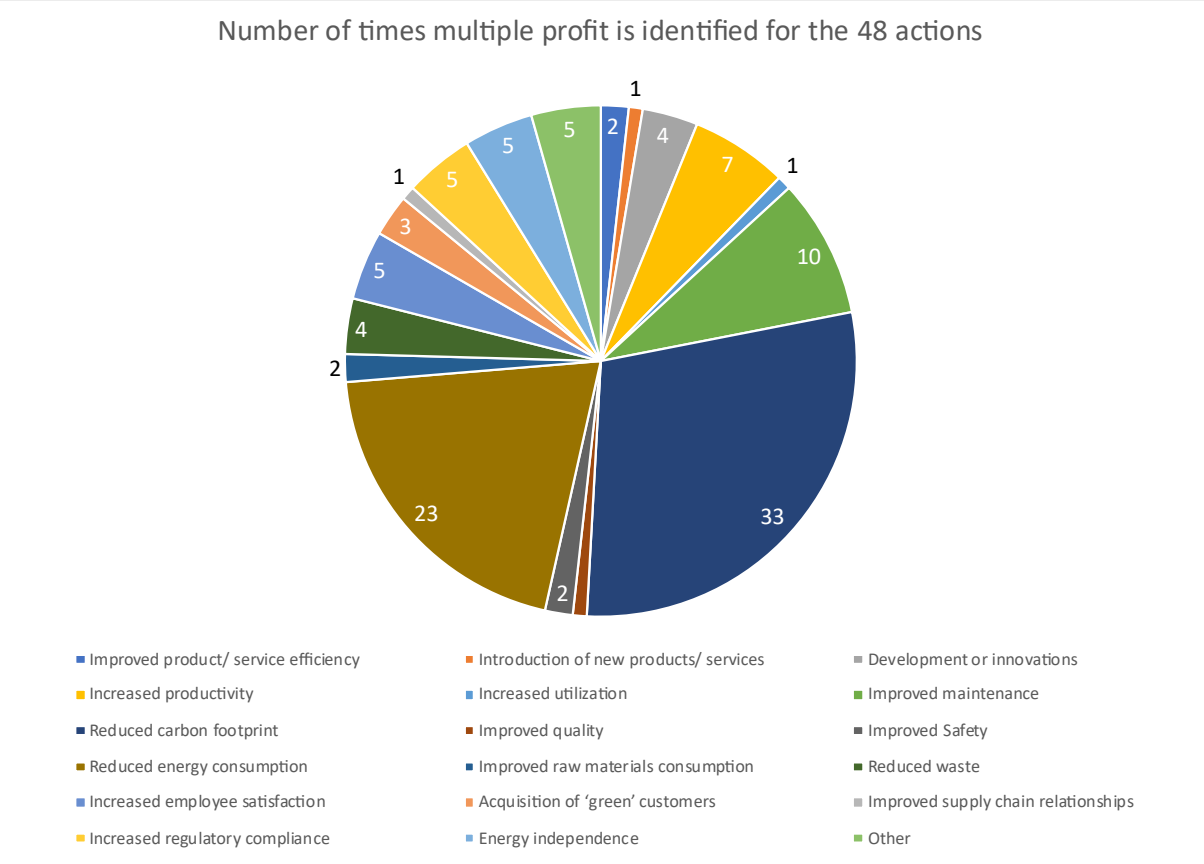


During the energy audits, multiple benefits were identified for each energy-saving measure in accordance with the DEESME 2050 approach.

Of the 48 actions identified during the project, the most recurring multiple benefits were: reducing carbon footprint (29%), reducing energy consumption (20%), improving maintenance (9%) and improving productivity (6%).

This clearly shows the willingness of companies in the furniture sector to reduce their greenhouse gas emissions, in particular by reducing energy consumption (scope 1 and scope 2).

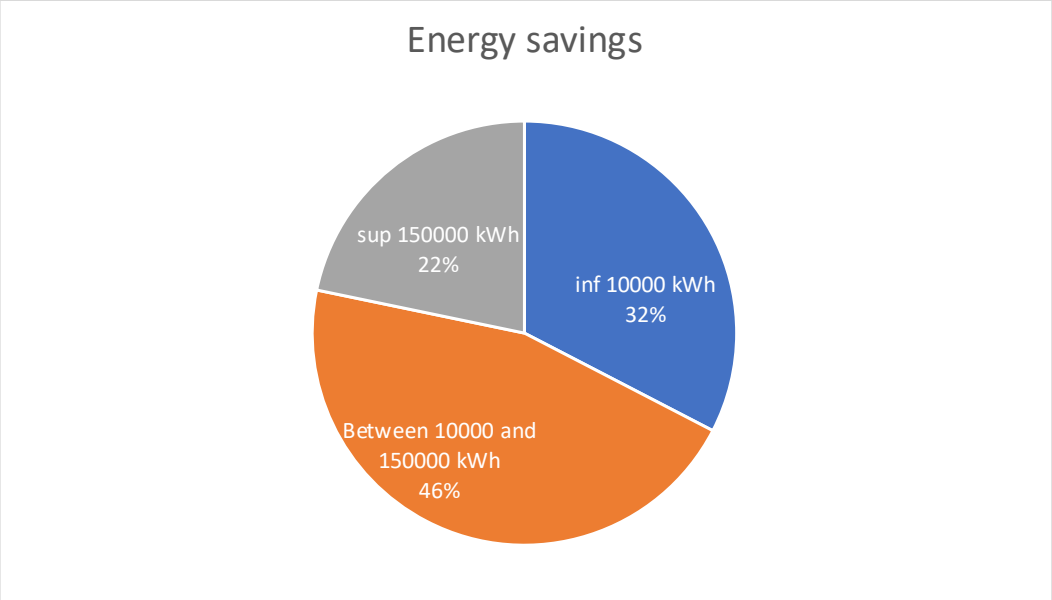
There is also a desire to improve productivity and maintenance, as this directly affects the core business of these companies.



Among the 48 actions identified, on average, one action generates 138,700 kWh of energy savings per year.

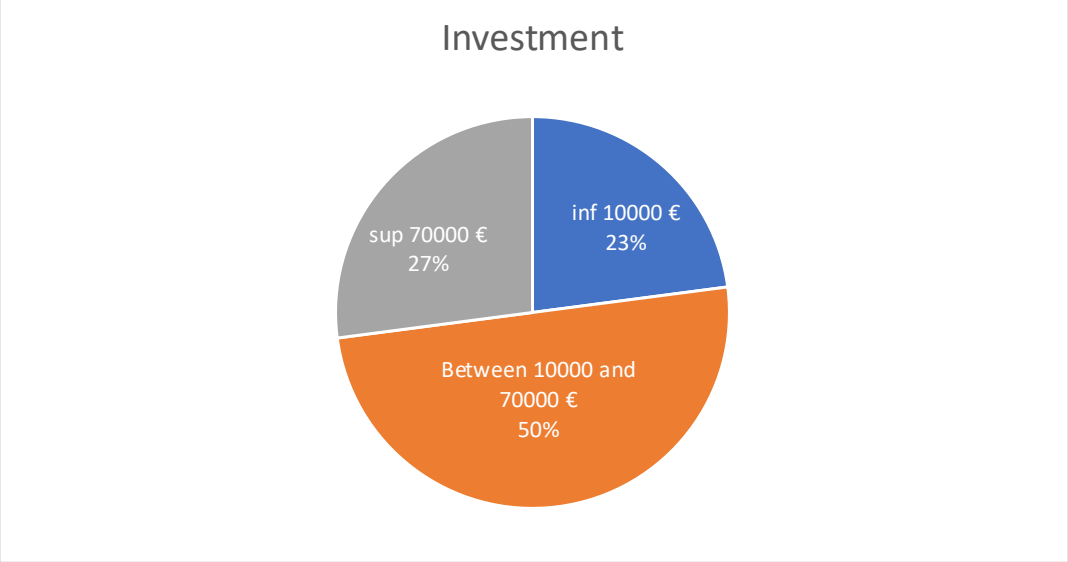
Some actions may only generate a few savings, with the action generating the least savings amounting to 755 kWh per year.

More generally, 32% of actions generate savings of less than 10,000 kWh and 22% generate savings of more than 150,000 kWh, all energy sources combined.



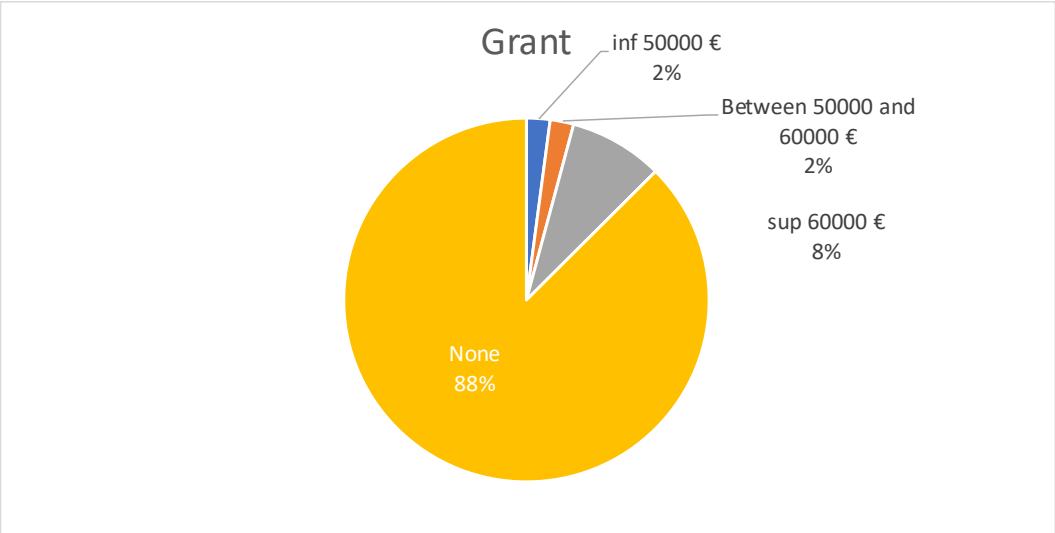
To generate these savings, the average investment per action is €78,600.

More generally, 23% of actions require an investment of less than €10,000, while 27% of actions require an investment of more than €70,000.



Depending on the location and type of action, subsidies may be available to facilitate implementation. During the energy audits of the 21 companies, potential

subsidies were assessed. However, it appears that for 88% of the actions, no subsidies are available.



Finally, in order to assess the feasibility of implementing the actions, it is essential to calculate the return on investment.

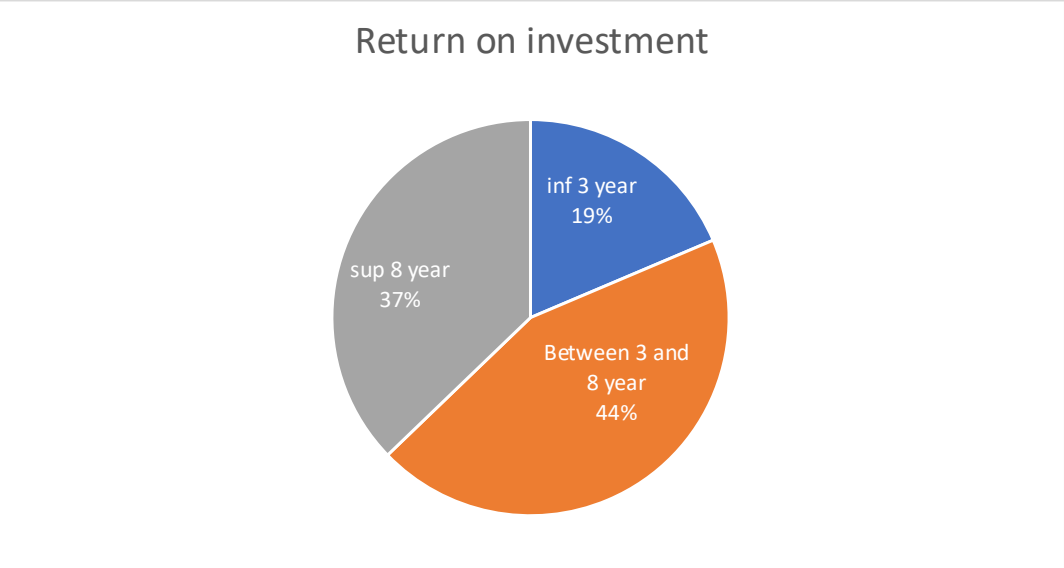
The return on investment presented below does not take into account multiple benefits, but only savings related to reduced energy consumption.

The return on investment will depend in particular on the type of energy concerned.

Analysis of the 48 actions clearly shows that only 19% of actions have a return on investment of less than three years, which is often the upper limit for companies.

44% of the actions have a return on investment of between three and eight years, and 37% have a return on investment of more than eight years.

This shows that it is essential to take into account the multiple benefits in order to convince managers to implement the actions, otherwise the ROI seems too high.



The average return on investment period is 7.2 years.

4.4.4 Energy audit conclusion

The completion of 20 energy audits enabled the analysis of 48 energy-saving measures, showing that in 80% of cases the return on investment exceeds three years.

This can be explained in particular by the fact that many measures concern heating, which is a significant item but, as it is only used in winter, takes longer to generate a return on investment.

The measures also often involve the implementation of renewable energy, which are projects requiring significant investment.

It is therefore essential to take into account the multiple benefits in order to encourage managers to implement these measures.

Project partners

- Website: https://ieecp.org/projects/deesme2050/
- Twitter: @DeesmeH2020
- LinkedIn: DEESME H2020
- #DEESME2050

Co-funded by the European Union under Project n°101076386. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.